

TELECOMMUNICATIONS REGULATORY AUTHORITY BAHRAIN



هيئة تنظيم الاتصالات
Telecommunications Regulatory Authority

Bahrain Number Portability Implementation

MNP Process specification

Version: 0.5
Status: draft
Date: 14-01-2010

Modification History

Issue	Date	Modification
0.1	27-09-2009	First draft specification document
0.2	26-10-2009	Second draft specification, completed chapters, incorporated operator's comments to specification version 01 and decisions from working groups
0.3	09-11-2009	Review of previous versions included. Results of MNPW WG included.
0.31	18-11-2009	Change of text concerning resolution procedure changed
0.4	09-12-2009	Review of specification text, clarifications, and proof-reading in preparation for public consultation
0.5	14-01-2010	Formatting changes

Distribution

Issue	Date	Addressees
0.1	27-09-2009	Mobile Number Portability Working Group (MNP WG), TRA
0.2	26-10-2009	Mobile Number Portability Working Group (MNP WG), TRA
0.3	09-11-2009	Mobile Number Portability Working Group (MNP WG), TRA
0.31	18-11-2009	Mobile Number Portability Working Group (MNP WG), TRA
0.4	09-12-2009	TRA
0.5	14-01-2010	Public Consultation

Review History

Issue	Date	Reviewed By
0.1	22-10-2009	Batelco, STC, ZAIN

Referenced Documents

Reference	Description
[1]	Number Portability, A Regulation issued by the Telecommunications Regulatory Authority
[2]	National Numbering Plan; 10-09-2008; final version; TRA Bahrain
[3]	Routing and Charging Specification; DRAFT v0.4; 14-01-2010;
[4]	FNP Process Specification; DRAFT v0.4; 14-01-2010;
[5]	Central System specification; DRAFT v0.4; 14-01-2010;
[6]	Resolution Procedure Specification for Bad Debt Subscribers; DRAFT v0.3; 14-01-2010

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1 Introduction

This is the specification document of the Mobile Number Porting (MNP) process for the Kingdom of Bahrain.

1.1 NP implementation in Bahrain

Number portability will be introduced in the Kingdom of Bahrain in two phases:

Phase 1: Mobile Number Portability (MNP)

Phase 2: Full NP (including Fixed Numbers, Service Numbers, Universal Numbers, Short codes)

The Number Portability process is led by the Recipient Operator, which means that the Subscriber does not need to communicate with the Donor Operator. Communication between Recipient and Donor Operators will be managed through the Bahrain Number Portability System (BNPS). Details on the BNPS are referenced in the Central System Specification.

More details on routing aspects are specified in document [3] Routing and Charging Specification.

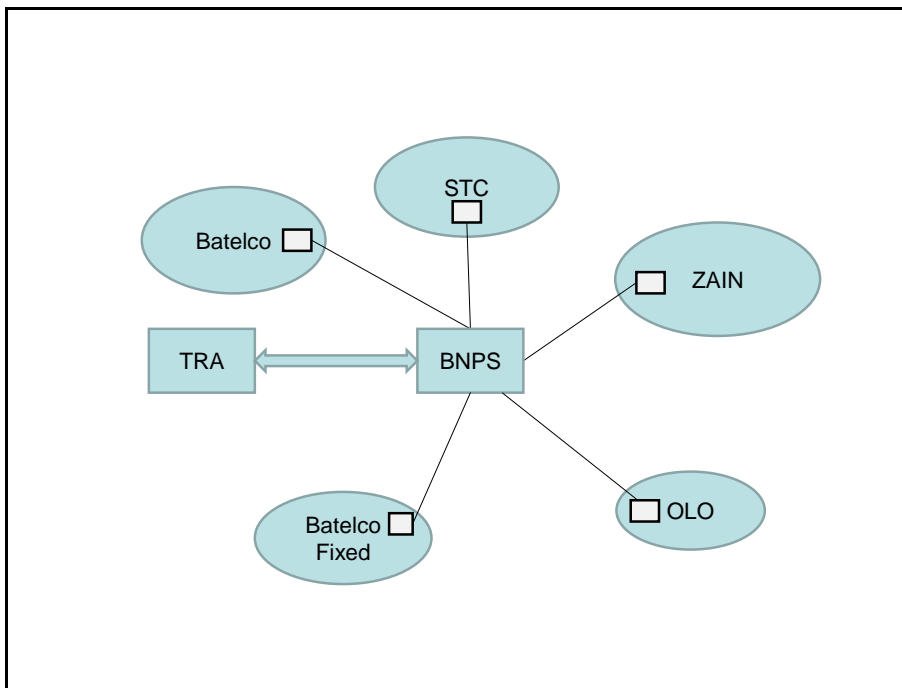


Figure 1 Centralized model for MNP implementation

All Mobile Licensed operators will have to connect to the BNPS. Other Licensed Operators and Transit Operators will also have to connect to BNPS for originating and routing calls to mobile numbers.

2 Mobile Number Portability (MNP)

2.1 Definitions

Participants in the Mobile Number Portability (MNP) process are Licensed Operators who have Mobile Number ranges allocated, including Universal Numbers allocated for Mobile Services.

The Licensed Operator to whom the number is being ported is referred to as RECIPIENT Network Operator (RECIPIENT). The Licensed Operator who is transferring the number to the RECIPIENT is referred to as DONOR Network Operator (DONOR). The Licensed Operator who is the original owner of a ported number-as it has been assigned the range, is referred to as Block Operator (BLOCK OPERATOR). Once a number has ported then the RECIPIENT is further referred to as the Subscription Network (SUBSCRIPTION NETWORK). As the subscriber can be located on a visited network, the term Serving Network can be used in the context of a call. In the context of a deactivation the term Last Serving Network is used.

Any other party involved in the mobile number portability process is referred to as 'other operator' or 'other participant' (OTHER).

The Central system for Number portability is called Bahrain Number Portability System, referred to as BNPS.

A Service Provider is a reseller, using the SIM cards and Mobile Numbers of a Licensed Operator. The Licensed Operator will have to take care of the porting process as it is responsible towards TRA to meet the MNP regulation and is liable in case the reseller violates the regulation. The resellers will not have to be connected to the BNPS.

BNPS is transparent for these type of services providers. Registration and validation shall be based on the Licensed Operator networks hosting the Service Provider.

3 MNP Procedures

This chapter describes the Number Porting processes for Mobile Numbers.

3.1 Number Porting procedures and exchange of messages (functional)

The Number Porting Process consists of five procedures, not all of which are invoked sequentially:

1. Preparation
2. Execution
3. Deactivation
4. Query
5. Billing Notification

3.1.1 Phase 1: Preparation

During the Preparation phase, the customer requests the Recipient Operator to initiate a Number Porting request. The Recipient Operator sends a Porting Request to the Donor Operator via the BNPS. This request will either be acknowledged by the BNPS and forwarded to the Donor Operator or rejected due to missing information or technical error. On receipt of the request, the Donor Operator can subsequently accept or reject the porting request according to possible reject codes and reasons (see section 4.5.4.1 for Reject Codes). After the porting request has been accepted – and until Porting execution- it is at all times possible for the Recipient Operator to cancel the Porting Request. The Donor Operator may not cancel the porting.

If a Recipient Operator wants to port several numbers (groups of numbers, not including FAX or DATA numbers) belonging to one customer (e.g. to one company), then the RECIPIENT should send individual porting requests for each number. However, if a customer wishes to port multiple numbers that form a consecutive sequential range, then the customer may submit a single request for the entire range.

If a Recipient Operator wants to port a fax or data number (GSM Phase 2 service), then this information should be added to the SUBSEQUENT_NUMBERS field.

There are three possible scenarios for the preparation phase:

- 1) The Porting request is rejected by the BNPS (figure 2)
- 2) The Porting Request is rejected by the DONOR (figure 3)
- 3) The Porting request is accepted by the DONOR (figure 4)

It should be noted that BNPS will not change the response to a porting request from the DONOR.

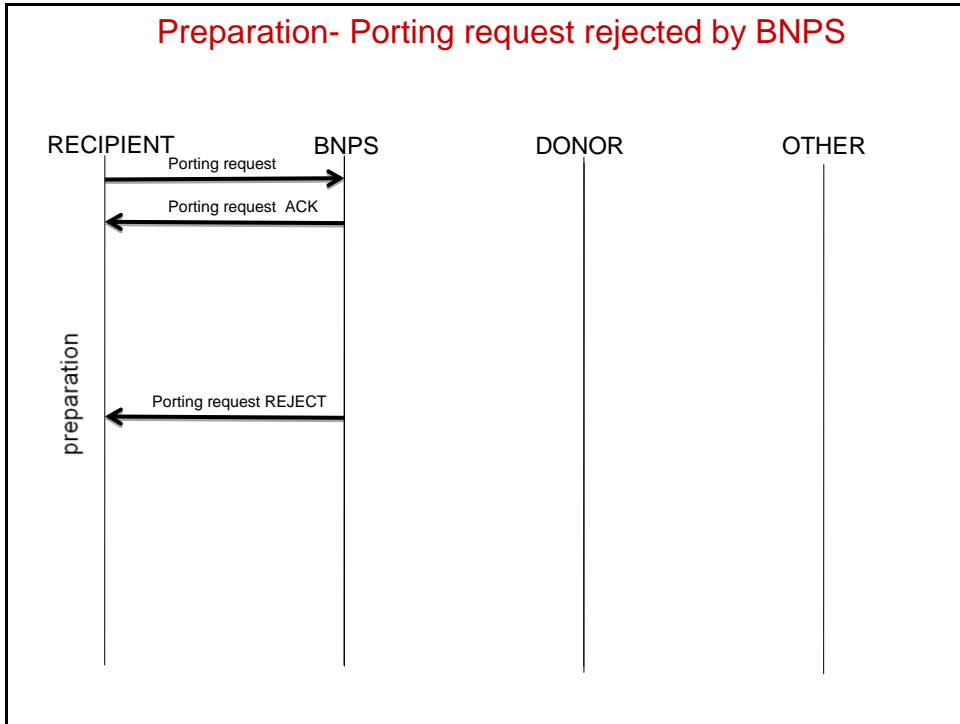


Figure 2 Process Diagram of the preparation phase- porting request rejected by BNPS

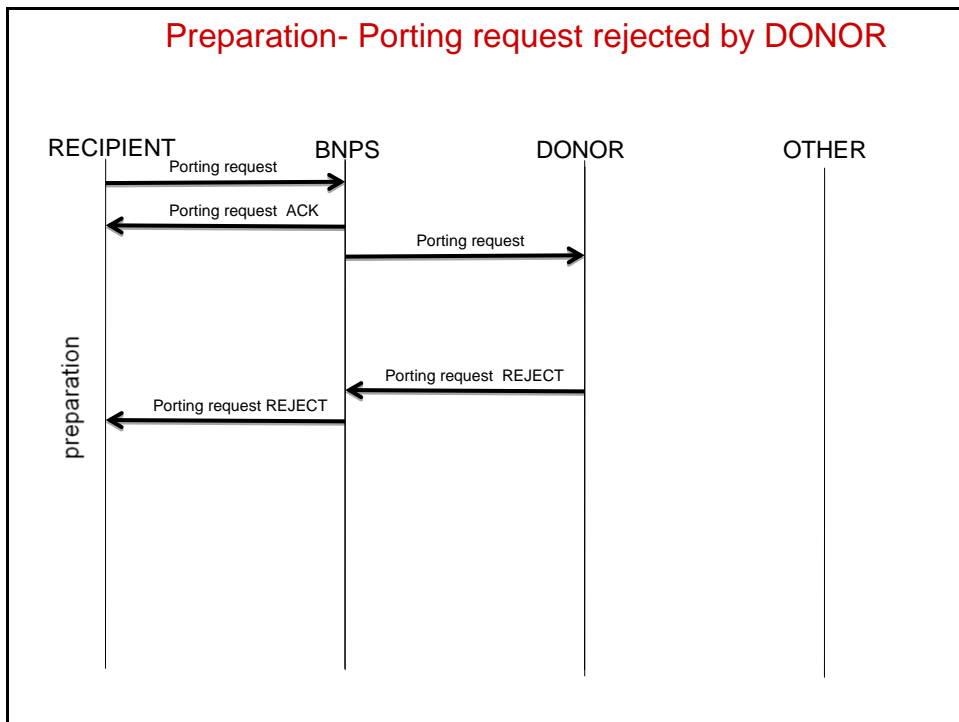


Figure 3 Process Diagram of the preparation phase- porting request rejected by the DONOR

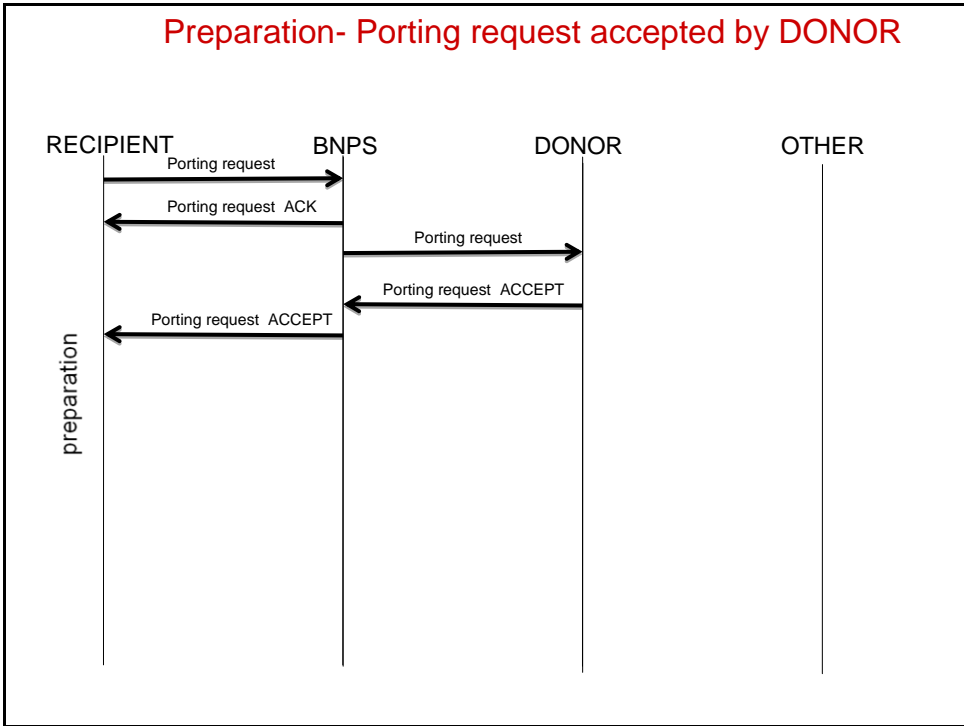


Figure 4 Process Diagram of the preparation phase- porting requested accepted by the DONOR

3.1.2 Phase 2: Execution

During the Execution phase the Donor and Recipient Operators will prepare their systems for porting of a number. Once the actual porting takes place, the porting shall be communicated by the BNPS to all other participants via a broadcast message.

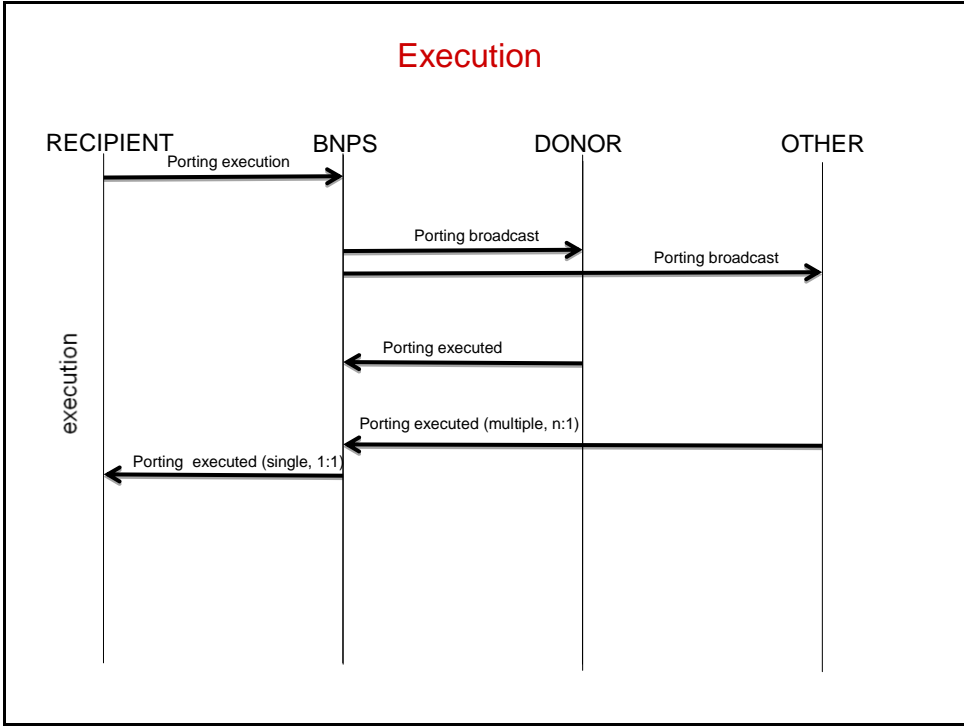


Figure 5 Process diagram of the Execution phase

The Recipient Operator will send a Porting Execution message to BNPS once the porting number has been activated on its network. BNPS will broadcast the execution of the porting to the DONOR and to all other participants in the number porting process. The Donor Operator, on receiving the Porting Broadcast message, will disconnect the number from its network and respond with a Porting Executed message. All other Operators will have to update their network routing database.

3.1.3 Phase 3: Deactivation

If a Subscriber has terminated a subscription with a Recipient Operator after successfully Porting a number, a Deactivation procedure will inform all other participants via a broadcast message. This enables Operators to update the network routing database as the previously ported number falls back to the original number holder (Block operator) and will become available for re-use by the Block operator after the applicable freeze periods have passed.

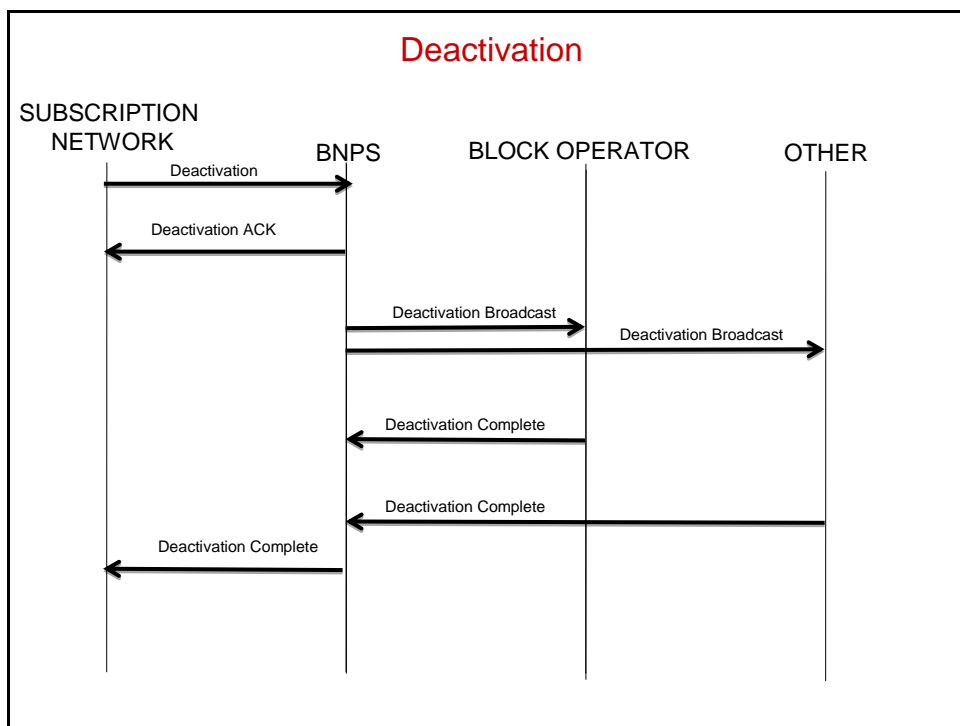


Figure 6 Process Diagram of Deactivation

After updating their respective network routing databases, each Operator- including the Block Operator- will respond to the Deactivation Broadcast message with a Deactivation Complete message.

When the Block Operator has responded successfully to the Porting Execution Message the BNPS will send a Deactivation Complete message to the RECIPIENT(see [5]).

3.1.4 Phase 4: NP Query

Operators will be able to request and obtain number porting data from the BNPS by sending a NP Query message to the BNPS. The NP Query message will define which data is requested. The BNPS will respond to the NP Query by sending the message NP Query Complete. The BNPS will also store a file for the requestor that contains the requested data at a designated location. The query process allows for specific criteria:

- 1) Service Type
- 2) Start date/time
- 3) End date/time
- 4) Operator Code

5) Number or Number Range

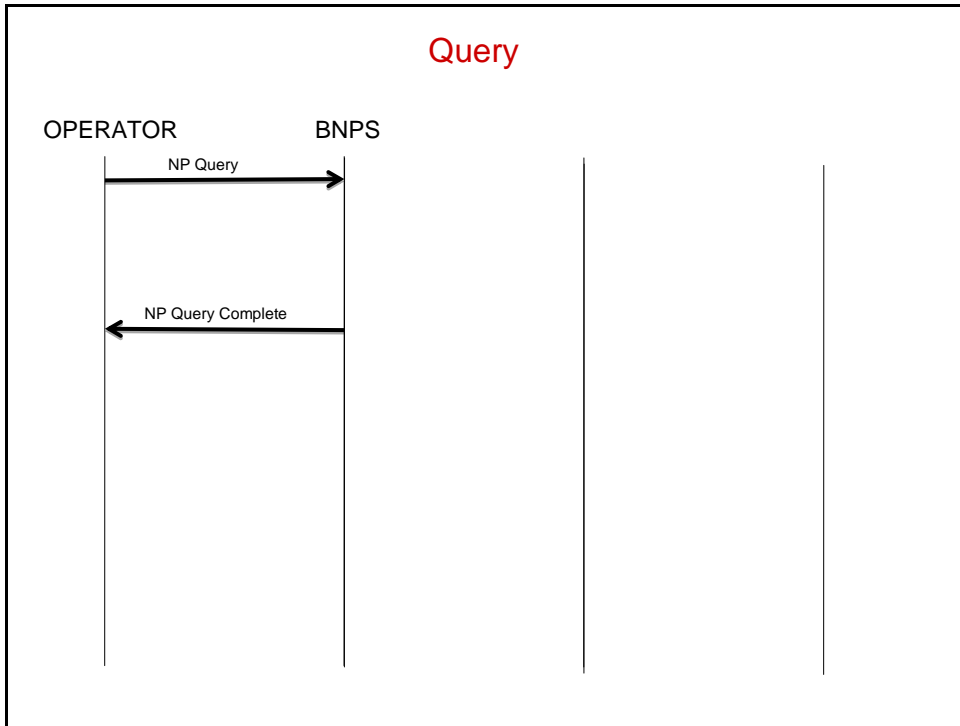


Figure 7 Process diagram of Query

3.1.5 Phase 5: Billing Notification

In the event that a Subscriber has outstanding dues with their Donor Operator, the Donor Operator may initiate the Billing Notification procedure in order to recover the owed amounts. The Billing Notification Procedure ends either when the Subscriber settles the outstanding amounts or with the disconnection and fallback of the ported number.

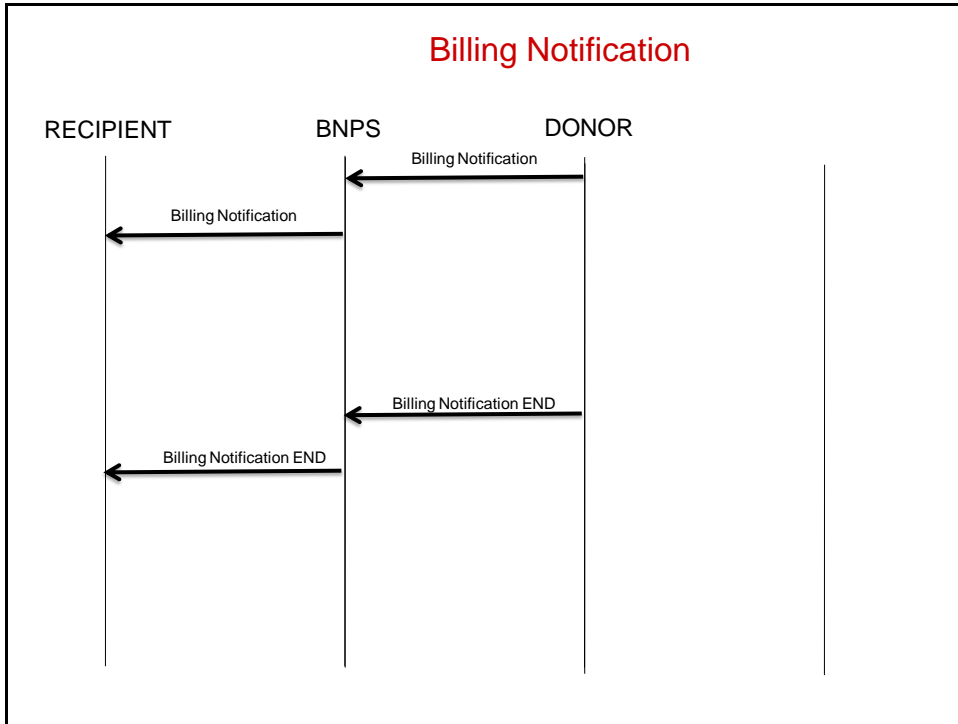


Figure 8 Process diagram of a Billing Notification

Details of the Billing Notification procedure are outlined in the Resolution Procedure Specification for Bad Debt Subscribers.

3.2 Error Notifications

All participants (RECIPIENT, BNPS, DONOR, OTHER, BLOCK OPERATOR, OPERATOR) can send an error notification to any message received in the following cases :

- 1) the NP message format is not correct or cannot be read
- 2) the content of the message fields are not according to the specified format

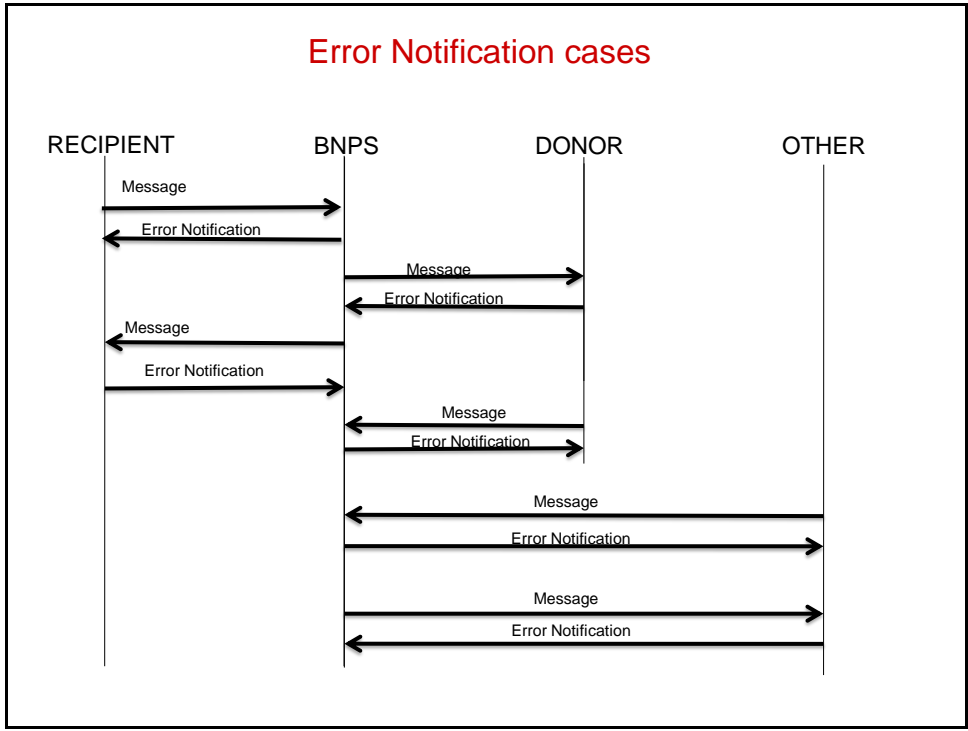


Figure 9 Example of error notification

The Error Notification shall contain an Error Code, indicating what part of the NP message was found to be in error. See Section 4.6 for details on Error Messages.

4 MNP Messages

4.1 MNP messages codes

The following table defines the Message Codes of the porting messages:

	Phase	Functional name	Message Code
1	Preparation	Porting request	NpRequest
2		Porting request ACK	NpRequestAck
3		Porting request ACCEPT	NpRequestAccept
4		Porting request REJECT	NpRequestReject
5		Porting Cancellation	NpRequestCancel
6	Execution	Porting Execution	NpExecute
7		Porting broadcast	NpExecuteBroadcast
8		Porting executed	NpExecuteComplete
9	Deactivation	Deactivation	NpDeactivate
10		Deactivation ACK	NpDeactivateACK
11		Deactivation Broadcast	NpDeactivateBroadcast
12		Deactivation Complete	NpDeactivateComplete
13	Query	NP Query	NpQuery
14		NP Query Complete	NpQueryComplete
15	Billing Notification	Billing Notification	NpBillingNotification
16		Billing Notification END	NpBillingNotificationEND

4.2 MNP message description

Below table explains the purpose of every porting message and the relation between the messages:

Message	Purpose	Next message which can be sent by receiver

1	NpRequest	This message is sent from the RECIPIENT to the DONOR. The NpRequest starts the porting process. The DONOR should be able to identify the customer based on provided information. If the NpRequest is rejected, a new NpRequest for the same number may be sent.	NpRequestAck and (NpRequestAccept OR NpRequestReject)
2	NpRequestAck	The BNPS validates the porting request. If the message and fields are according to the required format (no error notification), then the NpRequestAck shall be sent to the RECIPIENT. The Port ID assigned by the BNPS will be part of this message.	none
3	NpRequestAccept	The DONOR will send a NpRequestAccept provided that information in NpRequest meets the necessary conditions.	NpRequestCancel OR NpExecute
4	NpRequestReject	The BNPS can reject the porting request if there are inconsistencies or certain conditions are not met (i.e. DONOR is not a valid participant, or another party has already requested porting). The Porting Request REJECT message will contain the Reject Code, indicating the reason of blocking. After the BNPS has passed on the Porting request to the DONOR, the DONOR will send a Porting request REJECT if the provided information does not meet the necessary conditions. The message will contain the Reject Code, indicating the reason of blocking.	Optionally: NpRequest (new request)
5	NpRequestCancel	The RECIPIENT can cancel the number porting , but only after the Porting request has been accepted and before the porting Execution starts.	none
6	NpExecute	The RECIPIENT will inform the BNPS that the number to be ported has been activated on the RECIPIENT network. This will be forwarded by the BNPS to all other participants (DONOR and OTHER) as a broadcast (NpExecuteBroadcast)	NpExecuteComplete: one single message from BNPS to RECIPIENT instead of all individual messages from every participant.

7	NpExecuteBroadcast	This message is sent by the BNPS to all Operators, allowing them to update their routing tables. In addition, for the DONOR, receiving this message is the trigger to disconnect the porting number from its network and systems.	NpExecuteComplete (from DONOR and OTHER)
8	NpExecuteComplete	This message will be sent by all participants who have updated their routing tables after having received the NpExecuteBroadcast. The DONOR, after disconnecting the porting number from its network, confirms the release of the number by sending the NpExecuteComplete message. The BNPS will send one NpExecuteComplete message to the RECIPIENT to confirm that the porting execution is finalized.	none
9	NpDeactivate	If a previously ported number is disconnected from the Recipient Operators Network, then the number should fall back to the Block Operator. The Recipient Operator notifies the BNPS about the deactivation and the BNPS will inform all other participants via a NpDeactivateBroadcast.	NpDeactivateAck and NpDeactivateComplete
10	NpDeactivateAck	The BNPS validates the Deactivation. If the message and fields are according to the required format (no error notification), then the NpDeactivateAck shall be sent to the Recipient Operator. The Port ID assigned by the BNPS will be part of this message.	none
11	NpDeactivateBroadcast	The BNPS sends this message to all Operators, after having received a Deactivation request. When the Operators receive this broadcast, they will have to update their network routing databases.	NpDeactivateComplete
12	NpDeactivateComplete	When Operators have updated their network routing databases after having received a Deactivation Broadcast, then they will send a NpDeactivateComplete Message.	none

13	NpQuery	When new or existing participants wish to synchronize their NP database to the actual situation, then they can request a file by sending a NpQuery to the BNPS.	NpQueryComplete
14	NpQueryComplete	The BNPS sends this message, indicating that the requested file is ready. The file will subsequently be transferred to a designated directory on BNPS.	None
15	NpBillingNotification	The DONOR sends the NpBillingNotification message to notify the RECIPIENT that a subscriber has debt with the DONOR operator (postpaid customers only), after the porting has been executed and a Billing Notification Period has expired,	NpBillingNotificationEND
16	NpBillingNotificationEND	The DONOR sends the NpBillingNotificationEND message following the NpBillingNotification message to notify that the subscriber has no outstanding debt.	None

4.3 MNP Message fields description

Below are stated all possible fields in the MNP messages, a description of the content, the format and additional remarks where applicable.

	Field name	Description	Format	Additional Remarks
1	SERVICE_TYPE	Type of telephone service: M (Mobile), F (Fixed), S (Special Service Number), U (Universal Number), P (Premium Rate Service) or B (Type B Short Code)	"M"	
2	MESSAGE_CODE	The message code corresponding to the porting message: i.e. NpRequest	See 4.1 MNP message codes	
3	NUMBER_FROM	The number being ported.	Mobile number, National significant format (NSN), ABCDEFGH	
4	NUMBER_TO	The number being ported. This field is of value when	Mobile number, National significant	For MNP number ranges are not

	Field name	Description	Format	Additional Remarks
		porting a sequential range of numbers. In case of porting a single number, the value is the same as NUMBER_FROM	format (NSN), ABCDEFGH	ported so NUMBER_TO will have the same value as NUMBER_FROM field
5	SUBSEQUENT_NUMBERS	This field holds additional numbers connected to the subscription. In case of Mobile these are restricted to FAX or DATA numbers	Mobile number, National significant format (NSN), ABCDEFGH If there are multiple numbers then divide by “,”: ABCDEFGH,ABCDEFH, H, ABCDEFH	In case of a mobile subscription the maximum number of subsequent numbers is 2.
6	DATE_FROM	Only used for NP Query to select a specific time span of which a porting register is required.	YYYYMMDDhhmm	
7	DATE_TO	Only used for NP Query to select a specific time span of which a porting register is required.	YYYYMMDDhhmm	
8	PORT_ID	Unique ID assigned by BNPS to be used in messages referring to this port.	4 digit RECIPIENT operator code-4 digit DONOR operator code- date of sending porting request DDMMYYYY- 5 digit sequence number per day. The combination of Date and Sequence Number is unique. Example: ZAIN-BATM-07092010-00001	For a deactivation this will be: BLOCK_ID- LAST_SERVING_NETWORK_ID-date of sending deactivation DDMMYYYYY-5 digit sequence number per day starting at 90000 Example: ZAIN-STCB-22102010-90001
9	DONOR_ID	The ID used by the BNPS to identify the DONOR organization.	4 digit operator code, i.e. ZAIN See 4.4 for operator codes	

	Field name	Description	Format	Additional Remarks
10	RECIPIENT_ID	The ID used by the BNPS to identify the RECIPIENT organization.	4 digit operator code, i.e. BATM See 4.4 for operator codes	
11	ORINATION_ID	The ID of the party that is originating the message.	4 digit code, i.e. BNPS See 4.4 for operator codes	The BNPS will not change the ORINATION_ID e.g. in case a porting request is sent onwards to a DONOR.
12	DESTINATION_ID	The ID of the party that the message is destined for	4 digit code, i.e. BNPS See 4.4 for operator codes	In case of a broadcast message the BNPS will use the DESTINATION_ID = ALLO (all operators)
13	BLOCK_ID	Used in case of a Deactivation. This ID identifies the Block operator (the original number holder) of the deactivated number	4 digit operator code, i.e. ZAIN See 4.4 for operator codes	
14	OPERATOR_ID	Used only in case of a NpQuery. This ID identifies the operator of which the registered number portings are requested	4 digit operator code, i.e. BATM See 4.4 for operator codes	
15	LAST_SERVING_NETWORK_ID	Used in case of a Deactivation. This ID identifies the Subscription Network which deactivates a number that was previously ported in.	4 digit operator code, i.e. BATM See 4.4 for operator codes	
16	NEW_ROUTE	The route identified for the new NP.	a number in the range of 001 to 999, See 4.4 for Routing numbers	
17	BACKPORT_FLAG	This field indicates whether the number ports back to	“Y” or “N”	

	Field name	Description	Format	Additional Remarks
		the Block Operator/ original number holder.		
18	PORTING_DATE_TIME	This is the date at which the porting is requested to take place.	YYYYMMDDhhmm	
19	REJECT_CODE	Used when a porting request is rejected. The Reject code indicates the reason the request is rejected.	See 4.5.4.3 for blocking codes, i.e. REJ0001	
20	SIM_CARD_NUMBER	The Integrated Circuit Card ID (ICCID, ITU E.118) as written on the SIM card	Length 18-19 digits Format (ITU E.118) is: 89<cc><mnc><rest>	Formats for the mobile operators are: BATM: 8997301x..x ZAIN: 8997302x..x STC: 8997303x..x
21	COMPANY_FLAG	Used to indicate the subscriber is either a private person or a Company.	"Y" if the subscriber is a company else "N" if the subscriber is a private person.	
22	CPR	Central Population Register number	9 digit number Example: 123456789	If COMPANY_FLAG = Y then the COMMERCIAL_REG_NUMBER is mandatory and
23	COMMERCIAL_REG_NUMBER	Commercial Registration Number in case of a company (COMPANY_FLAG is "TRUE")	5 digit number Example: 12345	CPR or PASSPORT_NUMBER should be provided.
24	PASSPORT_NUMBER	Passport number	12 characters maximum	If COMPANY_FLAG = N then the COMMERCIAL_REG_NUMBER is empty. CPR or PASSPORT_NUMBER should be submitted. It is

	Field name	Description	Format	Additional Remarks
				allowed to provide both.
25	COMMENTS_1	Text field for additional information which is not formalized in the message content	Free text field, 100 characters maximum	
26	COMMENTS_2	Text field for additional information which is not formalized in the message content	Free text field, 100 characters maximum	
27	RESPONSE_DUE_DATE	Date and time set by the BNPS by when a response is expected from the Donor Operator	YYYYMMDDhhmm	

4.4 Operator Codes and Routing numbers

The below table defines the operator codes used in the fields DONOR_ID, RECIPIENT_ID, ORIGINATION_ID, DESTINATION_ID, BLOCK_ID and LAST_SERVING_NETWORK_ID as well as the associated Routing number as used in the field NEW_ROUTE.

	Company Name	Operator Code	Routing number	Remark
1	Bahrain Telecommunications Company (BATELCO) B.S.C	BATM	a01	
2	MTC-Vodafone Bahrain B.S.C. Closed	ZAIN	a02	
3	Saudi Telecommunications Company (STC) - Bahrain B.S.C	STCB	a03	
4	Bahrain Number Portability System	BNPS	N/A	Populated in ORIGINATION_ID field in case of messages initiated by BNPS, for example broadcast messages
5	N/A	ALLO	N/A	All Operators in case of broadcast messages

6	Bahrain Telecommunications Company (BATELCO) B.S.C	BATF	N/A	Fixed Operator: not involved with porting (Mobile) numbers but acts as transit operator
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4.5 MNP messages structure

4.5.1 Porting request (NpRequest)

4.5.1.1 Porting Request (NpRequest), from RECIPIENT to BNPS

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	"NpRequest"
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	EMPTY	
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORIGINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
DESTINATION_ID	Mandatory	Must be equal to DONOR_ID
PORTING_DATE_TIME	Mandatory	Example: 201010141200
SIM_CARD_NUMBER	Mandatory	Example: 8997301012345678901
COMPANY_FLAG	Mandatory	Example: Y
CPR	Mandatory (if COMPANY_FLAG =N) Empty (if COMPANY_FLAG =Y)	Example: 123456789
COMMERCIAL_RE	Mandatory (if COMPANY_FLAG =Y)	Example: 12345

FIELD	Optional/Mandatory/Empty	Remark
G_NUMBER	Empty (if COMPANY_FLAG =N)	
PASSPORT_NUMBER	Mandatory (if COMPANY_FLAG =N) AND IF If NO CPR is populated Empty (if COMPANY_FLAG =Y) Empty if CPR is populated	Example: NRDR42CJ9
COMMENTS_1	Optional	
COMMENTS_2	Optional	
RESPONSE_DUE_DATE	Empty	

4.5.1.2 Porting Request (NpRequest) from BNPS to DONOR

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	"NpRequest"
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885, 38888889
PORT_ID	Mandatory	Provided by BNPS and used throughout the whole porting process: Example: ZAIN-BATM-07092010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to RECIPIENT_ID

FIELD	Optional/Mandatory/Empty	Remark
DESTINATION_ID	Mandatory	Must be equal to DONOR_ID
PORTING_DATE_TIME	Mandatory	Example: 201010141200
SIM_CARD_NUMBER	Mandatory	Example: 8997301012345678901
COMPANY_FLAG	Mandatory	Example: Y
CPR	Mandatory (if COMPANY_FLAG =N) Empty (if COMPANY_FLAG =Y)	Example: 123456789
COMMERCIAL_REG_NUMBER	Mandatory (if COMPANY_FLAG =Y) Empty (if COMPANY_FLAG =N)	Example: 12345
PASSPORT_NUMBER	Mandatory (if COMPANY_FLAG =N) AND IF If NO CPR populated Empty (if COMPANY_FLAG =Y) Empty if CPR is populated	Example: NRDR42CJ9
COMMENTS_1	Optional	
COMMENTS_2	Optional	
RESPONSE_DUE_DATE	Mandatory	Example: 201010131200

4.5.2 Porting request ACK (NpRequestAck)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpRequestAck

FIELD	Optional/Mandatory/Empty	Remark
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885, 38888889
PORT_ID	Mandatory	Provided by BNPS and used throughout the whole porting process Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID

4.5.3 Porting request ACCEPT (NpRequestAccept)

The BNPS is transparent for the NpRequestAccept message, no information shall be added.

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpRequestAccept
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885, 38888889
PORT_ID	Mandatory	Provided by BNPS upon receipt of NpRequest and used by all participants throughout the whole porting process Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB

FIELD	Optional/Mandatory/Empty	Remark
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to DONOR_ID
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
PORTING_DATE_TIME	Mandatory	Example: 201010141200

4.5.4 Porting request REJECT (NpRequestReject)

4.5.4.1 Porting request REJECT (NpRequestReject) by BNPS

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	"NpRequestReject"
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Provided by BNPS and used throughout the porting process Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
REJECT_CODE	Mandatory	BNPS will validate the codes if they are valid ones Example: REJ0099

FIELD	Optional/Mandatory/Empty	Remark
COMMENTS_1	Optional	

4.5.4.2 Porting request REJECT (NpRequestReject) by DONOR

BNPS is transparent for this message towards the RECIPIENT, only ORIGINATION_ID will be added by BNPS

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	"NpRequestReject"
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888888,38888889
PORT_ID	Mandatory	Provided by BNPS and used throughout the porting process Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORIGINATION_ID	Mandatory	Must be equal to DONOR_ID
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
REJECT_CODE	Mandatory	BNPS will validate the codes if they are valid ones Example: REJ0099
COMMENTS_1	Optional, mandatory in case of REJECT_CODE: REJ0099 or REJ0009	

4.5.4.3 Reject codes for NpRequestReject

Reject Codes Used by BNPS or DONOR:

Code	Text	BNPS	DONOR
REJ0001	Already porting process in progress for this (these) number(s)	X	X
REJ0002	RECIPIENT_ID is not valid	X	X
REJ0003	DONOR_ID is not valid	X	X
REJ0004	ORINATION_ID not valid	X	X
REJ0005	PORTING_DATE_TIME is not valid	X	X
REJ0006	Number(s) and SERVICE_TYPE do (does) not match	X	X
REJ0007	Wrong DONOR: DONOR is not serving the number(s) in the porting request	X	X
REJ0008	Number(s) is (are) not connected to the subscription		X
REJ0009	Number(s) has (have) been disconnected, and retention period has expired - include disconnection date in comments field		X
REJ0010	SIM_CARD_NUMBER does not match with Number(s)		X
REJ0011	CPR was expected		X
REJ0012	CPR or PASSPORT_NUMBER is missing	X	X
REJ0013	CPR number does not match the requested porting number		X
REJ0014	PASSPORT_NUMBER does not match the requests porting number		X
REJ0017	COMMERCIAL_REG_NUMBER is missing	X	X
REJ0018	COMMERCIAL_REG_NUMBER does not match the requested porting number		X
REJ0019	Subscriber is in bad debt		X
REJ0099	Other- Reason included in COMMENTS field		X

4.5.5 Porting cancellation (NpRequestCancel)

BNPS is transparent for this message to the DONOR.

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpRequestCancel

NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
DESTINATION_ID	Mandatory	Must be equal to DONOR_ID

4.5.6 Porting execution (NpExecute)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpExecute
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
DESTINATION_ID	Mandatory	BNPS

4.5.7 Porting broadcast (NpExecuteBroadcast)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpExecuteBroadcast
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	Must be equal to ALLO
NEW_ROUTE	Mandatory	example: 003
BACKPORT_FLAG	Mandatory	Populated by BNPS if RECIPIENT=Block Operator For example: FALSE, meaning there is no backport to the Block Operator
PORTING_DATE_TIME	Mandatory	Example: 201010141200
RESPONSE_DUE_DATE	Mandatory	States when a reponse is required (NpExecuteComplete) Example: 201010141330

4.5.8 Porting executed (NpExecuteComplete)

4.5.8.1 Porting executed (NpExecuteComplete) from DONOR to BNPS

FIELD	Optional/Mandatory/Empty	Remark
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FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpExecuteComplete
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	STCB
RECIPIENT_ID	Mandatory	BATM
ORINATION_ID	Mandatory	e.g. ZAIN
DESTINATION_ID	Mandatory	BNPS

4.5.8.2 Porting executed (NpExecuteComplete) from BNPS to RECIPIENT

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpExecuteComplete
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	STCB
RECIPIENT_ID	Mandatory	BATM
ORINATION_ID	Mandatory	BNPS

DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID
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4.5.9 Deactivation (NpDeactivate)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpDeactivate
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
ORINATION_ID	Mandatory	e.g. STCB
DESTINATION_ID	Mandatory	BNPS

4.5.10 Deactivation ACK (NpDeactivateAck)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpDeactivateAck
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: ZAIN-STCB-22102010-90001
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	Example: STCB
LAST_SERVING_NETWORK_ID	Mandatory	Example: STCB The same as DESTINATION_ID

BLOCK_ID	Mandatory	Example: ZAIN
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4.5.11 Deactivation Broadcast (NpDeactivateBroadcast)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpDeactivateBroadcast
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: ZAIN-STCB-22102010-90001
ORIGINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	ALLO
LAST_SERVING_NETWORK_ID	Mandatory	Example: STCB
BLOCK_ID	Mandatory	Example: ZAIN
RESPONSE_DUE_DATE	BNPS	Indicates when a response (NpDeactivationComplete) is required by BNPS Example: Example: 201010221130

4.5.12 Deactivation Complete (NpDeactivateComplete)

4.5.12.1 Deactivation Complete (NpDeactivateComplete) from BLOCK OPERATOR/OTHER to BNPS

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpDeactivateComplete

FIELD	Optional/Mandatory/Empty	Remark
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: ZAIN-STCB-22102010-90001
ORINATION_ID	Mandatory	Example: ZAIN
DESTINATION_ID	Mandatory	BNPS
LAST_SERVING_NETWORK_ID	Mandatory	Example: STCB
BLOCK_ID	Mandatory	Example: ZAIN

4.5.12.2 Deactivation Complete (NpDeactivateComplete) from BNPS to RECIPIENT

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpDeactivateComplete
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: ZAIN-STCB-22102010-90001
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	example: STCB
LAST_SERVING_NETWORK_ID	Mandatory	Example: STCB

		Is the same as DESTINATION_ID
BLOCK_ID	Mandatory	Example: ZAIN

4.5.13 NP Query (NpQuery)

FIELD	Optional/Mandatory/Empty	Remark
MESSAGE_CODE	Mandatory	NpQuery
DATE_FROM	Optional	Example: 20100101hhmm If left empty then the BNPS assumes the whole NP register, or if populated the whole register up to the date entered in DATE_TO.
DATE_TO	Optional	Example: 20100922hhmm If DATE_TO is left empty then the BNPS assumes the whole NP register, or to date of request if DATE_FROM is provided.
NUMBER_FROM	Optional	Example: 30000000 If NUMBER_FROM is left empty then BNPS assumes all numbers, or all numbers up to the number populated in NUMBER_TO field, if provided.
NUMBER_TO	Optional	Example: 39999999 If NUMBER_TO field is left empty then the BNPS assumes all numbers, or all numbers starting from the number in NUMBER_FROM field, if provided.
OPERATOR_ID	Optional	Example: BATM If OPERATOR_ID is left empty then the BNPS assumes all operators
ORIGINATION_ID	Mandatory	Requester Operator ID
DESTINATION_ID	Mandatory	BNPS

FIELD	Optional/Mandatory/Empty	Remark
COMMENTS_1	Optional	e.g. a reference code from the requester to match the answer to.

4.5.14 NP Query Complete (NpQueryComplete)

FIELD	Optional/Mandatory/Empty	Remark
MESSAGE_CODE	Mandatory	NpQueryComplete
ORINATION_ID	Mandatory	BNPS
DESTINATION_ID	Mandatory	Initial Requester Operator ID
COMMENTS_1	Optional	Copy of comments of NP Query

4.5.15 Billing Notification (NpBillingNotification)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpRequestCancel
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to DONOR_ID
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID

4.5.16 Billing Notification END (NpBillingNotificationEND)

FIELD	Optional/Mandatory/Empty	Remark
SERVICE_TYPE	Mandatory	"M"
MESSAGE_CODE	Mandatory	NpRequestCancel
NUMBER_FROM	Mandatory	Example: 39999999
NUMBER_TO	Mandatory	Example: 39999999
SUBSEQUENT_NUMBERS	Optional	Example: 38888885,38888889
PORT_ID	Mandatory	Example: BATM-STCB-12102010-00001
DONOR_ID	Mandatory	Example: STCB
RECIPIENT_ID	Mandatory	Example: BATM
ORINATION_ID	Mandatory	Must be equal to DONOR_ID
DESTINATION_ID	Mandatory	Must be equal to RECIPIENT_ID

4.6 Error Notifications

4.6.1 Structure of Message

FIELD	Optional/Mandatory	Format	Description
MESSAGE_CODE	Mandatory	"ErrorMessage"	
PORT_ID	Mandatory if available	See 4.3 for field format	Provided by the BNPS and used throughout the whole porting process. Example: BATM-STCB-12102010-00001
ORINATION_ID	Mandatory	See 4.3 for field format	Example: STCB or BNPS
DESTINATION_ID	Mandatory	See 4.3 for field	Example: BATM or BNPS. This

FIELD	Optional/Mandatory	Format	Description
		format	must be the initial origination!
REJECTED_MESSAGE_CODE	Mandatory	See 4.1 for Message Codes	Example: NpRequest
ERROR_CODE	Mandatory	ERRXXXX X=0-9 See 4.6.2 for Error Codes	The BNPS will validate the codes if they are valid codes. Example: REJ0001
COMMENTS_1	Optional, however mandatory in case of ERROR_CODE: ERR0099	Free text field, 100 characters maximum	Text field for additional information which is not formalized in the message content

4.6.2 Error Codes

Code	Text
ERR0001	Message Format incorrect
ERR0002	Message out of sequence
ERR0003	Invalid reject code
ERR0004	Field SERVICE_TYPE not according to format
ERR0005	Field MESSAGE_CODE not according to format
ERR0006	Field NUMBER_FROM not according to format
ERR0007	Field NUMBER_TO not according to format
ERR0008	Field SUBSEQUENT_NUMBERS not according to format
ERR0009	Field DATE_FROM not according to format
ERR0010	Field DATE_TO not according to format
ERR0011	Field PORT_ID not according to format
ERR0012	Field DONOR_ID not according to format
ERR0013	Field RECIPIENT_ID not according to format

ERR0014	Field ORIGINATION_ID not according to format
ERR0015	Field DESTINATION_ID not according to format
ERR0016	Field BLOCK_ID not according to format
ERR0017	Field LAST_SERVING_NETWORK_ID not according to format
ERR0018	Field OPERATOR_ID not according to format
ERR0019	Field NEW_ROUTE not according to format
ERR0020	Field BACKPORT_FLAG not according to format
ERR0021	Field PORTING_DATE_TIME not according to format
ERR0022	Field REJECT_CODE not according to format
ERR0023	Field SIM_CARD_NUMBER not according to format
ERR0024	Field COMPANY_FLAG not according to format
ERR0025	Field CPR not according to format
ERR0026	Field COMMERCIAL_REG_NUMBER not according to format
ERR0027	Field PASSPORT_NUMBER not according to format
ERR0028	Field RESPONSE_DUE_DATE not according to format
ERR0029	Unexpected or inconsistent data
ERR0030	Billing Notification Period not expired
ERR0099	OTHER- Reason included in COMMENTS field

5 Porting Conditions

This chapter describes in detail the porting procedures and each possible step to take in the MNP process. Each step in the preparation, execution, deactivation and query procedures are defined by any of the following process states:

prep(n) - Preparation process

exec(n) - execution process

deac(n) - execution process

quer(n) - query process

bill(n) - billing notification process

In addition there are Time Interval (Tn) defined between some of the process states defined e.g. T1.

5.1 Preparation

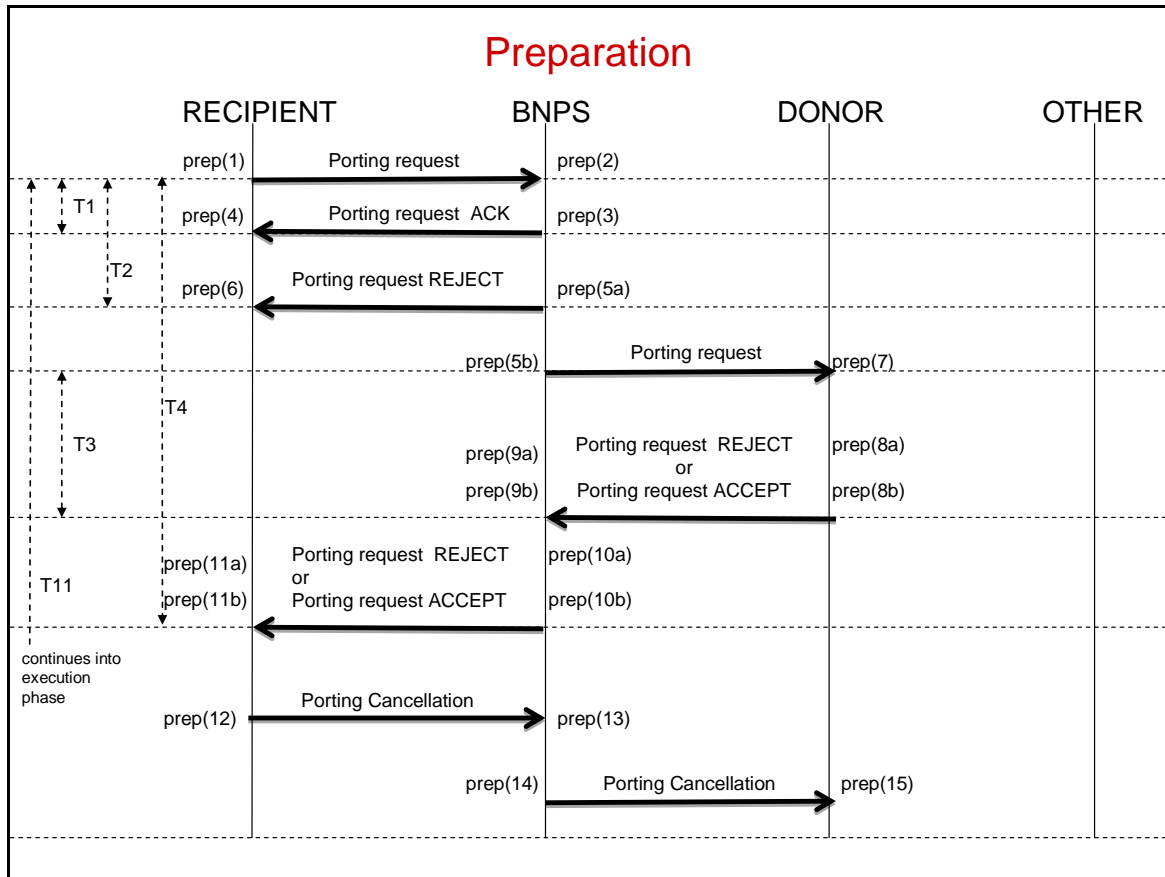


Figure 10 Preparation: process states and timers

Prep(1): Process Stage Prep(1) is the state in which the RECIPIENT sends the Porting Request message. All fields in the Porting Request must be filled in according the field definitions in the MNP process specifications in chapter 4.

- The RECIPIENT collects and provides data for the porting processes such as: Service Type, Message Code, Telephone number, Subsequent Numbers (Data or Fax numbers), DONOR ID, RECIPIENT ID, Originating ID, Destination, Porting Date and Time (the time and date at 16 working hours after the submission of the number porting request) , SIM card number.
- If the customer is a private customer the RECIPIENT fills in the Company Flag (Value='N'), and the CPR. If no CPR exists then the passport number is mandatory.
- If the Company Flag (Value='Y') the CPR or passport number are used for an authorized representative, and the Commercial Register Number must be filled.

- If a customer wishes to port multiple numbers (for instance a company) then individual requests should be submitted: one for each number. Each number to be ported individually reaches process stage prep(1).
- It is possible for Mobile Number Portability to include FAX and DATA numbers –belonging to the porting primary number- in the Subsequent Numbers fields.

Prep(2): Process Stage Prep(2) is the BNPS receiving the Porting Request

BNPS receives the NpRequest and validates the message and fields format:

- Timer T1 is started to track the time between sending the Porting request and Porting Acknowledgement by the DONOR.
- Timer T2 is started to track the time of the BNPS checking on blocking issue: time between receiving the Porting request at BNPS and BNPS replying with a REJECT (reject by BNPS).
- Timer T4 is started to track the time elapsed between BNPS receiving the Porting request and sending the Porting request ACCEPT/REJECT (reject by DONOR) to the RECIPIENT
- Timer T11 is started to track the duration of the complete porting process: time between receiving the Porting request in BNPS until sending Porting Executed from BNPS to the RECIPIENT
- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 (according chapter 4.6.2).
- If any of the fields in the porting request message is not according to the correct format then the BNPS will send an Error Notification containing an Error Code referring to the field that is not compliant e.g. If the DONOR_ID is not the right length, code ERR0012 is sent by the BNPS. If the CPR code is not the right length or format, then code ERR0025 is sent by the BNPS. If several errors are found, then a like number of Error Notifications may be sent by the BNPS.
- If an error notification is sent by BNPS , and received by the RECIPIENT, the RECIPIENT will revert to Process Stage Prep(1)
- If all message fields are correct, the BNPS allocates a porting ID and prepares the sending of the Porting Request Acknowledgement

Prep (3): Process Stage Prep(3) is BNPS sending the Porting Request ACK

- The Porting request ACK is sent to the RECIPIENT containing the porting ID, and some additional data collected by the BNPS, like for origination ID the name “BNPS” is filled in by BNPS.
- Timer T1 is stopped by the BNPS
- The BNPS starts to prepare for prep(5a) and prep(5b) by validating the message contents and applies (at least) the following validation rules. If any of the business rules is violated then BNPS will reach process stage Prep (5a)
 - The BNPS checks if a Porting Request is already in progress for the number requested (if this is the case Reject code REJ0001 is applicable)

- The BNPS checks if the service Type (=‘M’) and the Number From/Number To (Number =3BCDEFGH) match (if not REJ0006)
- The BNPS checks if the DONOR and the RECIPIENT are mobile licensed operators (if not then REJ0003 or REJ0002)
- BNPS checks if the Origination is a mobile licensed operator and is the RECIPIENT (if not REJ0004)
- The BNPS checks if the requested porting date and time are valid. Time and date should be in the porting window, and should be at 16 working hours in the future (if not REJ0005)
- The BNPS check in the Central Porting Database if the number requested for porting is served by the DONOR according the porting request message (if not REJ0007)
- The BNPS checks the Company Flag. If the Company FLAG = N then CPR OR Passport number should be provided (if not REJ0012)
- The BNPS checks the Company FLAG. If the Company FLAG = Y then Commercial Register Number should be provided (if not REJ0017)
- If any of the business rules are violated then the BNPS will reach process stage Prep (5a)
- If no business rule is violated then the BNPS will reach process stage Prep (5b)

Prep (4): Process Stage Prep(4) is the RECIPIENT receiving Porting Request ACK

- If the Porting Request ACK message cannot be read the RECIPIENT will send an Error Notification containing Error Code ERR0001 to the BNPS. (according chapter 4.6.2).
- If the Porting Request ACK message was not expected by the RECIPIENT, The RECIPIENT will send an Error Notification containing Error Code ERR0002 (Message out of sequence) to the BNPS.
- If any of the fields in the Porting Request ACK message is not according to the correct format then the RECIPIENT will send an Error Notification containing an Error Code referring to the field that is not compliant. If several errors are found, then a like number of Error Notifications may be sent by the BNPS.
- The RECIPIENT validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case an error message was sent, the BNPS shall go back to Prep(3)
- If no error notifications are sent, the RECIPIENT processes the Porting request ACK, prepares for prep(6) and awaits receiving the response to the Porting Request (ACCEPT or REJECT)

Prep(5a): Process Stage Prep(5a) is the BNPS sending a Porting Reject Message

- The BNPS prepares the Porting Reject message, the applicable Reject Code is added to the message, the Port ID is added, and several data fields are populated from the porting request (Service Type, Number TO/Number From, DONOR, RECIPIENT). ORIGINATION_ID is set to BNPS, and Destination_ID is the RECIPIENT_ID.
- The BNPS sends the Porting Reject Message out to the RECIPIENT
- The BNPS stops Timer T2

Prep(5b): Process Stage Prep(5a) is the BNPS sending a Porting Request to the DONOR

- The BNPS fills in the port-ID, replicates all data from the Porting request received from the RECIPIENT and prepares the Porting Request message
- The BNPS fills in the due date for the response of the porting requests, which is the date and time of sending the porting request, increased with the response time to the porting request of 8 working hours.
- Timer T3 is started to track the time between BNPS sending the Porting Request to the DONOR and receiving a response (ACCEPT or REJECT)
- Porting Requests message is sent to the DONOR

Prep (6): Process Stage Prep(6) is the RECIPIENT receiving the Porting Reject message from BNPS (Reject by BNPS)

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- RECIPIENT checks the data content of the message. In case of an error an Error Notification will be sent (according to chapter 4.6.2).
- In case the RECIPIENT is not expecting a Porting Reject message then an Error Notification (out of sequence) is sent back to the BNPS
- RECIPIENT validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case an error message was sent, the BNPS shall go back to Prep(5a)
- If the message was found correct then the PREPARATION process has been reached.
- The RECIPIENT may decide to start the process again at Prep(1) by preparing a new Porting Request.

Prep (7): Process Stage Prep(7) is the DONOR receiving the Porting Request message from the BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- In case the DONOR is not expecting a Porting Request message then an Error Notification (out of sequence) is sent back to the BNPS
- The DONOR checks the data content of the message. In case of an error an Error Notification will be sent to the BNPS (according to chapter 4.6.2) and the corrected message will be sent.
- The DONOR prepares for Process Stage Prep(8a) and Prep(8b) and validates the following set of rules :
 - The DONOR may repeat business rules that the BNPS has applied (to verify that REJ001-REJ007, REJ012, and REJ017 do not apply). If any of these Reject Codes apply then the DONOR will start to prepare for prep(8a).
 - The DONOR checks if number is activated to a subscription, if not then Reject code REJ0008 applies.

- If the number had been activated to a subscription, but the number is disconnected and the retention period has expired then Reject code REJ0009 applies, and the disconnection date should be filled in the Comments field.
- If the provided SIM card number (ICCID, as printed on the SIM card) does not correspond to the provided number (and the number has passed the validation) then Reject Code REJ0010 applies
- If the customer is a residential customer (COMPANY='N') , and if the CPR was expected (since a CPR is registered with the DONOR) then REJ0011 applies
- If the customer is a residential customer at the DONOR (COMPANY='N') and the CPR in the message provided does not match with the customer records of the DONOR then REJ0013 applies
- If the customer is a residential customer at the DONOR (COMPANY='N') without a CPR therefore identification is to be based on passport number If passport number in the message provided does not match with the customer records of the DONOR then REJ0014 applies
- If the customer is a business customer at the DONOR (COMPANY='Y') and if the Commercial register Number in the message provided does not match with the customer records of the DONOR then REJ0018 applies
- If the subscriber that wishes to port a number has been issued an invoice for which the stated due date has passed, and a minimum amount of debt value is exceeded" then the DONOR can reject the porting request for reasons of 'Bad Debt'. Specifically the Reject Code (REJ0019) applies if:
 1. A porting Subscriber has received an invoice by the DONOR for charges directly related to its telephone services contract (the contract upon which the Subscriber has been allocated the number to be ported);
 2. The invoiced amount equals or exceeds BHD 3/-;
 3. An SMS notification has been sent to the Subscriber shortly before the due date; and
 4. The due date has passed

Existing unpaid charges, whether billed or unbilled, which have not exceeded the due date are NOT considered 'Bad Debt', and are not allowed to lead to a Reject Code REJ0019 as the response to a Porting Request.
- A spare Reject Code REJ0099 is reserved for unexpected reject causes that cannot be covered by any of the listed causes. REJ0099 shall always be accompanied with explanation in the Comments field. See chapter 6 for the procedure to be followed when using Reject Code REJ0099
- If any of the business rules at the DONOR is violated then DONOR will prepare for process stage Prep (8a)
- If no business rule at the DONOR is violated then DONOR will be prepared for process stage Prep (8b)

Prep(8a) Process Stage Prep(8a) is the DONOR sending Porting Reject Message

- DONOR prepares the Porting reject messages, the applicable Reject Code is added to the message, several data fields are populated from the porting request (Service Type, Number

TO/Number From, DONOR, RECIPIENT, port-ID). ORIGINATION_ID is set to DONOR_ID, and Destination_ID is set to the RECIPIENT_ID.

- DONOR sends the Porting Reject Message out to BNPS

Prep(8b) Process Stage Prep(8b) is the DONOR sending Porting ACCEPT Message

- DONOR prepares the Porting ACCEPT message. Several data fields are populated from the porting request (Service Type, Number TO/Number From, DONOR, RECIPIENT, port-ID) . ORIGINATION_ID is set to DONOR_ID, and Destination_ID is set to the RECIPIENT_ID.
- DONOR sends the Porting ACCEPT Message out to BNPS

Prep(9a): Process Stage Prep(9a) is BNPS receiving the Porting REJECT message from DONOR

BNPS receives the Porting Reject message and validates the message and data field format:

- T3 is stopped
- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to DONOR (according chapter 4.6.2).
- In case the BNPS is not expecting a Porting Reject message then an Error Notification (out of sequence) is sent back to DONOR.
- If any of the fields in the porting request message is not according format then BNPS will send an Error Notification containing and Error Code referring to the field that is not compliant (according to chapter 4.6.2).
- BNPS validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to the DONOR.
- If an error notification is sent by BNPS , and received by the DONOR, the DONOR will go back into process stage prep(8a)
- If all message field are found correct BNPS prepares for Prep(10a) to send the Porting Reject message to the RECIPIENT.

NOTE: BNPS can only move from prep(9a) to prep(10a) and from prep(9b) to prep(10b). In other words it will not replace the Porting Reject Message as sent by the DONOR into a Porting Accept Message and vice versa.

Prep(10a): Process Stage Prep(10a) is BNPS sending the Porting REJECT message to RECIPIENT

- BNPS sends the Porting Reject message to the RECIPIENT.
- T4 is stopped

Prep(9b): Process Stage Prep(9b) is BNPS receiving the Porting ACCEPT message from DONOR

BNPS receives the Porting ACCEPT message and validates the message and data field format:

- T3 is stopped
- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to DONOR (according chapter 4.6.2).
- In case the BNPS is not expecting a Porting Accept message then an Error Notification (out of sequence) is sent back to DONOR.

- If any of the fields in the porting request message is not according format then BNPS will send an Error Notification containing and Error Code referring to the field that is not compliant (according to chapter 4.6.2).
- BNPS validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to the DONOR.
- If an error notification is sent by BNPS , and received by the DONOR, the DONOR will go back into process stage prep(8b)
- If all message fields are found correct BNPS prepares for Prep(10b) to send the Porting ACCEPT message to the RECIPIENT.

NOTE: BNPS can only move from prep(9a) to prep(10a) and from prep(9b) to prep(10b). In other words it will not replace the Porting Reject Message as sent by the DONOR into a Porting Accept Message and vice versa.

Prep(10b): Process Stage Prep(10b) is BNPS sending the Porting ACCEPT message to RECIPIENT

- BNPS sends the Porting ACCEPT message to the RECIPIENT.
- T4 is stopped

Prep(11a): Process Stage Prep(11a) is RECIPIENT receiving the Porting REJECT message from BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to BNPS (according chapter 4.6.2).
- In case the RECIPIENT is not expecting a Porting Accept message then an Error Notification (out of sequence) is sent back to BNPS.
- RECIPIENT checks the data content of the message. In case of an error an Error Notification will be sent (according chapter 4.6.2).
- RECIPIENT validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case an error notification message is sent, then the BNPS will go back to Prep(10a)
- In case no error messages have been sent, then the end of the PREPARATION process has been reached. The RECIPIENT may decide change to start the process again at Prep(1).

Prep(11b): Process Stage Prep(11b) is RECIPIENT receiving the Porting ACCEPT message from BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to BNPS (according chapter 4.6.2).
- In case the RECIPIENT is not expecting a Porting Accept message then an Error Notification (out of sequence) is sent back to BNPS.
- RECIPIENT checks the data content of the message. In case of an error an Error Notification will be sent (according chapter 4.6.2).
- RECIPIENT validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case an error notification message is sent, then the BNPS will go back to Prep(10b)

- If no error message is sent then the RECIPIENT will prepare for prep(12) and for exec(1)

Prep(12): Process Stage Prep(12) is the RECIPIENT sending the Porting Request Cancellation message

- RECIPIENT collects and provides data for the porting cancellation process: from the porting request that was accepted, after which the RECIPIENT reached process stage prep(11b).
- RECIPIENT sends Porting Cancellation message to BNPS
- If no error notifications are received then RECIPIENT has reached the end of the process . The RECIPIENT may decide change to start the process again at Prep(1) to submit a new Porting Request

Prep(13) : Process Stage Prep(13) is BNPS receiving the Porting cancellation Message from the RECIPIENT

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the RECIPIENT (according chapter 4.6.2).
- In case the BNPS is not expecting a Porting Cancellation message (cancellation may be expected by BNPS between prep(10b) and exec(1) then an Error Notification (out of sequence) is sent back to RECIPIENT.
- BNPS checks the data content of the porting cancellation message. In case of an error an Error Notification will be sent to RECIPIENT (according chapter 4.6.2).
- BNPS validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to the RECIPIENT.
- In case an error notification message is sent, then the RECIPIENT will go back to Prep(12)
- If no error messages have been sent then the BNPS will prepare for prep(14)

Prep(14): Process Stage Prep(14) is the BNPS sending a Porting Cancellation Message to the DONOR

- BNPS collects data for the cancellation message and prepares the Porting Cancellation
- Porting Cancellation Message is sent to the DONOR

Prep(15): Process Stage Prep(15) is the DONOR receiving the Porting cancellation Message from BNPS

- If the message cannot be read then the DONOR will send an Error Notification containing Error Code ERR0001 to DONOR (according chapter 4.6.2).
- In case the DONOR is not expecting a Porting Cancellation message (cancellation may be expected by DONOR between prep(8b) and exec(..) then an Error Notification (out of sequence) is sent back to BNPS.
- DONOR checks the data content of the porting cancellation message. In case of an error an Error Notification will be sent to RECIPIENT (according chapter 4.6.2).

- DONOR validates and processes the content of the message. If values are inconsistent/ not according to the initial request then an error code ERRO029 “unexpected or inconsistent data” is sent to BNPS.
- In case an error notification message is sent, then the BNPS will go back to Prep(14)
- In case no error messages have been sent then the end of the PREPARATION process has been reached.

5.2 Execution

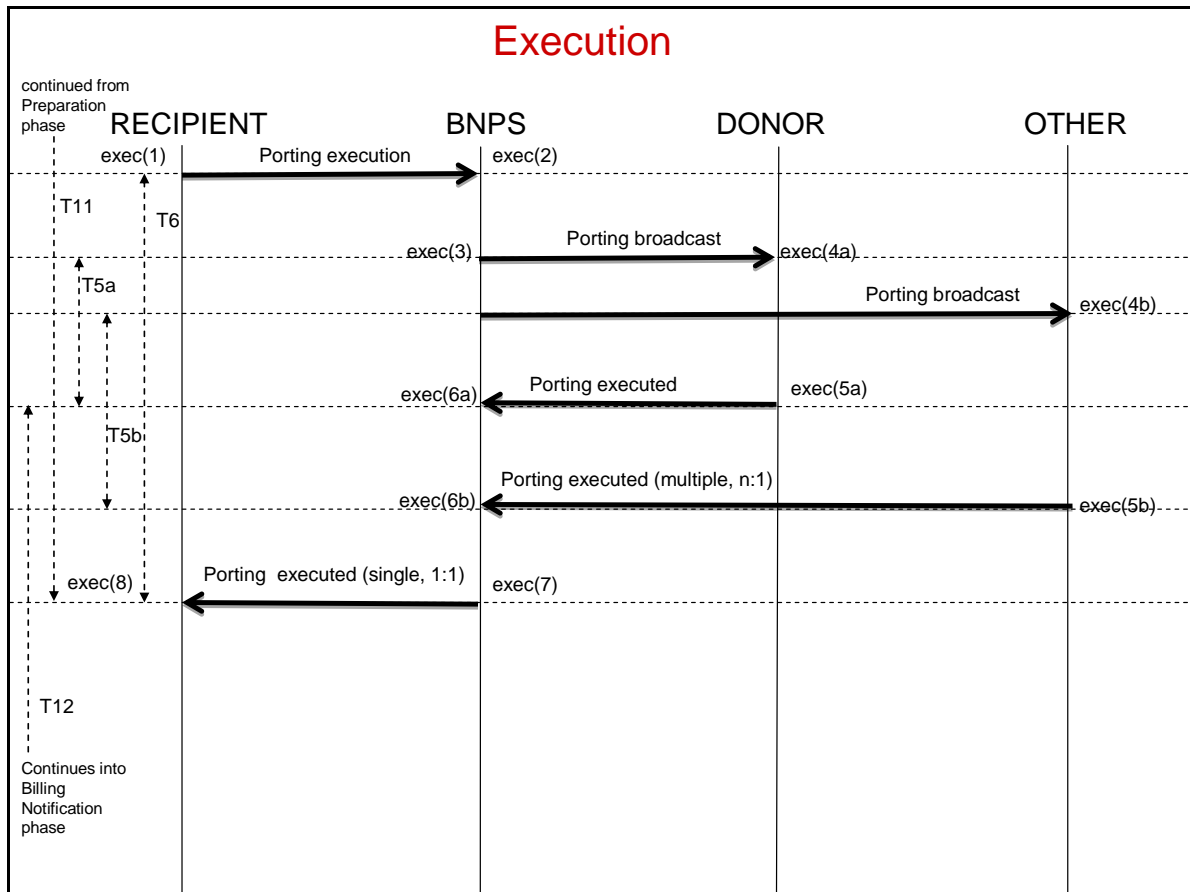


Figure 11 Execution: process states and timers

Exec(1): Process stage Exec(1) is the start of the Execution phase, with RECIPIENT sending a Porting execution message to BNPS

- At the date and time of porting –as agreed in the Preparation phase- the RECIPIENT activates the number on its network and systems
- The RECIPIENT collects information as exchanged during the Preparation phase and prepares the Porting execution message
- The Porting execution message is sent to BNPS

Exec(2): Process stage Exec(2) is the BNPS receiving the Porting execution message from the RECIPIENT

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the RECIPIENT (according chapter 4.6.2).
- In case the BNPS is not expecting a Porting Execution message then an Error Notification (out of sequence) is sent back to RECIPIENT.
- BNPS checks the data content of the porting cancellation message. In case of an error an Error Notification will be sent to RECIPIENT (according chapter 4.6.2).
- BNPS validates the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to the RECIPIENT.
- In case an error notification message is sent, then the RECIPIENT will go back to Exec(1)
- In case no error message was sent BNPS starts timer T6 to measure the time of the Execution phase: time between BNPS receiving the Porting Execution message from the RECIPIENT and sending back the Porting Executed message
- BNPS will prepare for stage Exec(3).

Exec(3): Process stage Exec(3) is the BNPS sending a Porting Broadcast to the DONOR and OTHER

- The BNPS prepares the Porting Broadcast message by collecting information like:
 - BACKPORT_FLAG: “Y” if the number is ported back to the original number holder (RECIPIENT = BLOCK OPERATOR)
 - NEW_ROUTE: the Routing Number associated with the RECIPIENT (in line with chapter 4.4)
- BNPS sends the Porting Broadcast to the DONOR and OTHER
- BNPS start timers T5a and T5b to measure the time between sending a Porting Broadcast to the DONOR/OTHER and receiving back a Porting Executed message from DONOR/OTHER

Exec(4a): Process stage Exec(4a) is the DONOR receiving the Porting Broadcast messages from BNPS

- If the message cannot be read then the DONOR will send an Error Notification containing Error Code ERR0001 to BNPS (according chapter 4.6.2).
- In case the DONOR is not expecting a Porting Broadcast message then an Error Notification (out of sequence) is sent back to BNPS.
- The DONOR checks the data content of the Porting Broadcast message. In case of an error an Error Notification will be sent to BNPS (according chapter 4.6.2).
- In case an error message is sent then the BNPS will go back to stage Exec(3)

- DONOR validates and processes the content of the message. If values are inconsistent/ not according to the initial request then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS.
- If all fields in the message were found correct then the DONOR starts deactivating the number from its network and systems and updates routing tables with the new Subscription (RECIPIENT) Network
- DONOR will move to stage Exec(5a)

Exec(4b): Process stage Exec(4b) is OTHER operator receiving the Porting Broadcast messages from BNPS

- If the message cannot be read then the OTHER will send an Error Notification containing Error Code ERR0001 to BNPS (according chapter 4.6.2).
- OTHER operator checks the data content of the Porting Broadcast message. In case of an error an Error Notification will be sent to BNPS (according chapter 4.6.2).
- In case an error message is sent, then the BNPS will go back to stage Exec(3)
- The OTHER operator validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS.
- If all message fields were found correct then the OTHER parties start updating their routing tables and systems with the new Subscription (RECIPIENT) Network corresponding to the ported number
- The OTHER operator will move to stage Exec(5a)

Exec(5a): Process stage Exec(5a) is DONOR sending a Porting Executed message to BNPS

- After having deactivated the number from its network and systems and updating routing tables with the new Subscription (RECIPIENT) Network, the DONOR replies to the Porting Broadcast with a Porting Executed message

Exec(5b): Process stage Exec(5b) is the OTHER operator sending a Porting Executed message to BNPS

- After having updated its routing tables and systems with the new Subscription (RECIPIENT) Network corresponding to the ported number, the OTHER operator replies to the Porting Broadcast with a Porting Executed message

Exec(6a): Process stage Exec(6a) is the BNPS receiving the Porting Executed messages from the DONOR

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the DONOR (according chapter 4.6.2).

- In case the BNPS is not expecting a Porting Executed message then an Error Notification (out of sequence) is sent back to DONOR.
- BNPS checks the data content of the Porting Executed message. In case of an error an Error Notification will be sent to DONOR (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Porting request then an error code ERR0029 “unexpected or inconsistent data” is sent to the DONOR.
- In case of an error message, the DONOR will go back to stage Exec(5a)
- Once the BNPS has received Porting Executed message from DONOR (Default setting) and no error message has been sent then BNPS sets timer T12 and T5a
- BNPS prepares for Exec(7).

Exec(6b): Process stage Exec (6b) is the BNPS receiving the Porting Executed messages from the OTHER operators.

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to OTHER (according chapter 4.6.2).
- In case the BNPS is not expecting a Porting Executed message then an Error Notification (out of sequence) is sent back to OTHER.
- BNPS checks the data content of the Porting Executed message. In case of an error an Error Notification will be sent to OTHER (according chapter 4.6.2).
- In case of an error message, the OTHER will go back to stage Exec(5b)
- BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Porting request then an error code ERR0029 “unexpected or inconsistent data” is sent to the OTHER.
- BNPS stops timers T5b: BNPS keeps track of also receiving Porting Executed Messages from OTHER operators. If no porting executed message is received then this will appear in BNPS reports as timer expires.

Exec(7): Process stage Exec(7) is the BNPS sending a Porting Executed message to the RECIPIENT

- After having received the necessary Porting Executed messages, the BNPS will prepare a Porting Executed message for the RECIPIENT: this means that BNPS receives more than one Porting Executed message, but the RECIPIENT will just receive one message.
- BNPS will collect the necessary information, prepare and send a Porting Executed message to the RECIPIENT
- Timers T6 and T11 are stopped

Exec(8): Process stage Exec(8) is the RECIPIENT receiving the Porting Executed message from BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to BNPS (according chapter 4.6.2).

- In case the RECIPIENT is not expecting a Porting Executed message at this stage then an Error Notification (out of sequence) is sent back to BNPS.
- RECIPIENT checks the data content of the Porting Executed message. In case of an error an Error Notification will be sent to BNPS (according chapter 4.6.2).
- RECIPIENT validates and processes the content of the message. If values are inconsistent or not in line with the initial Porting request then an error code ERRO029 “unexpected or inconsistent data” is sent to the BNPS.
- In case of an error message, the BNPS will go back to stage Exec(7)
- In case all message fields were found correct then the end of the EXECUTION process has been reached.

5.3 Deactivation

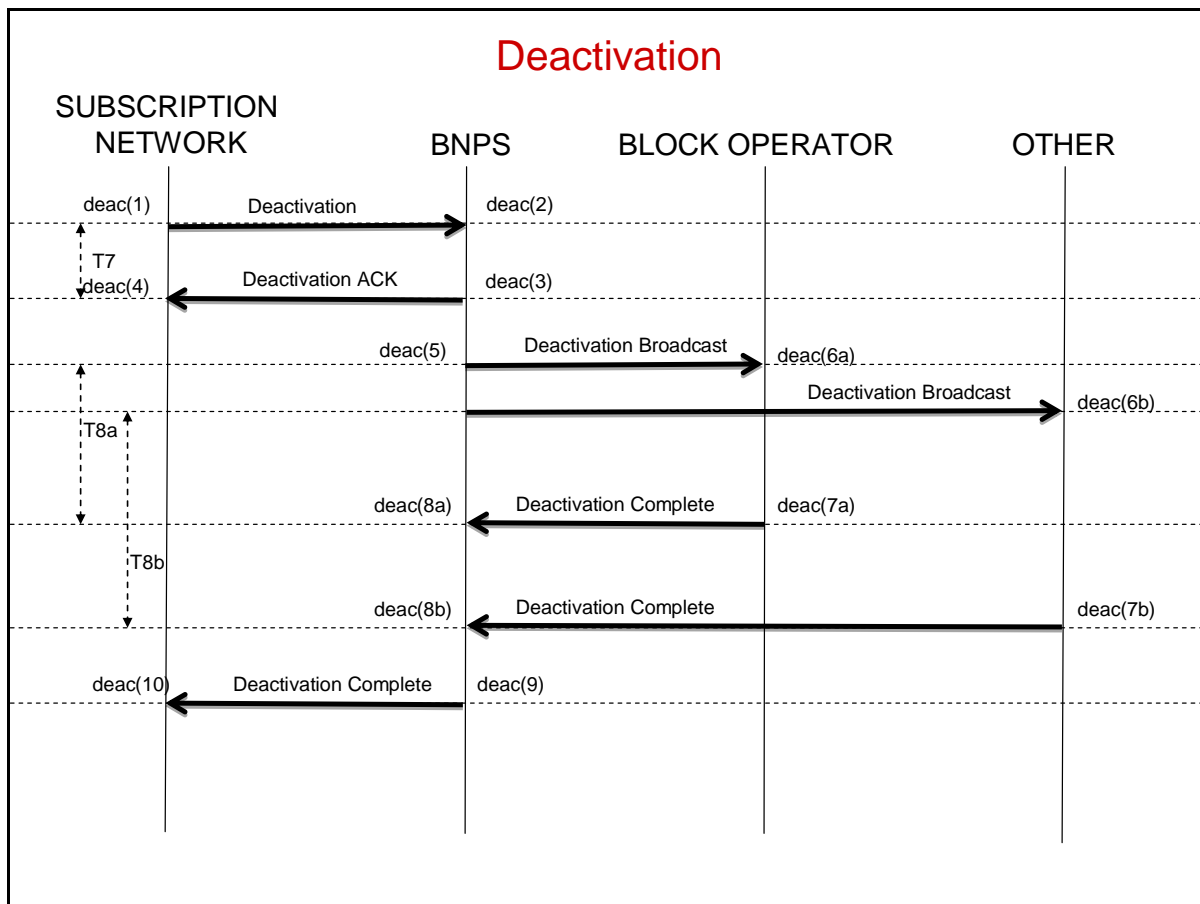


Figure 12 Deactivation: process states and timers

Deac(1): Process Stage Deac(1) is the SUBSCRIPTION NETWORK sending a Deactivation message to the BNPS

- If a number has been ported in the past and the SUBSCRIPTION NETWORK disconnects the number, then the number will fall back to the BLOCK OPERATOR. The BLOCK OPERATOR and OTHER shall be informed about this by the Deactivation procedure
- The SUBSCRIPTION NETWORK shall collect the necessary information: the number which is disconnected (if applicable including the subsequent numbers , fax and/or data number in case of MNP)
- The SUBSCRIPTION NETWORK sends a Deactivation message to BNPS, taking into account the Fall Back Period: time allowed to give back a number to the number range holder (BLOCK operator) after a (previously ported) number has been disconnected. The fall back period is 8 days at minimum (due to minimum retention period) and 30 days at maximum.
- The SUBSCRIPTION NETWORK will wait for Deac(4) Deactivation ACK message

Deac(2): Process stage Deac(2) is the BNPS receiving the Deactivation message from the SUBSCRIPTION NETWORK

- If the message cannot be read then BNPS will send an Error Notification containing Error Code ERR0001 to the SUBSCRIPTION NETWORK (according chapter 4.6.2).
- BNPS checks the data content of the Deactivation message. In case of an error an Error Notification will be sent to the SUBSCRIPTION NETWORK (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent (e.g the number was never ported) then an error code ERR0029 “unexpected or inconsistent data” is sent to the SUBSCRIPTION NETWORK.
- In case of an error message, the SUBSCRIPTION NETWORK may go back to stage Deac(1)
- In case all message fields were found correct then timer T7 is started to measure the time between receiving the Deactivation Message in BNPS and sending the Deactivation ACK to the SUBSCRIPTION NETWORK.
- BNPS moves to stage Deac(3)

Deac(3): Process stage Deac(3) is the BNPS sending a Deactivation ACK message to the SUBSCRIPTION NETWORK

- BNPS collects information like LAST_SERVING_NETWORK_ID (is the same as SUBSCRIPTION NETWORK) and BLOCK_ID
- BNPS assigns a PORT_ID which consists of BLOCK_ID- LAST_SERVING_NETWORK_ID- DDMMYYYY-5 digit sequence number
- BNPS sends the Deactivation ACK message to the SUBSCRIPTION NETWORK
- Timer T7 is stopped
- BNPS moves to stage Deac(5)

Deac(4): Process stage Deac(4) is the SUBSCRIPTION NETWORK receiving the Deactivation ACK message from BNPS

- If the message cannot be read then the SUBSCRIPTION NETWORK will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- In case the SUBSCRIPTION NETWORK is not expecting a Deactivation ACK message then an Error Notification (out of sequence) is sent back to the BNPS.
- SUBSCRIPTION NETWORK checks the data content of the Deactivation Ack message. In case of an error an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- SUBSCRIPTION NETWORK validates and processes the content of the message. If values are inconsistent or not in line with the initial Deactivation request then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS.
- In case of an error message, the BNPS will go back to stage Deac(3)
- In case all message fields were found correct, then the SUBSCRIPTION NETWORK will wait for Deac(10) Deactivation Complete message

Deac(5): Process stage Deac(5) is the BNPS sending a Deactivation Broadcast to the BLOCK OPERATOR and OTHER

- BNPS prepares the Deactivation Broadcast message for the BLOCK OPERATOR and OTHER
- BNPS sends the Deactivation Broadcast to the BLOCK OPERATOR and OTHER
- Timer T8a and T8b are started, measuring the time between sending the Deactivation Broadcast Message and receiving a response from DONOR/OTHER
- By default the BLOCK OPERATOR should reply with the Deactivation Complete message in order to continue with process stage Deac(9)

Deac(6a): Process stage Deac(6a) is the BLOCK OPERATOR receiving a Deactivation Broadcast message from the BNPS

- If the message cannot be read then the BLOCK OPERATOR will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- BLOCK OPERATOR checks the data content of the Deactivation Broadcast message. In case of an error an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- In case of an error message, the BNPS will go back to stage Deac(5)
- BLOCK OPERATOR validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS.
- The BLOCK OPERATOR will update their network and systems accordingly and then move on to process stage Deac(7a)
- The number(s) fall(s) back to the BLOCK OPERATOR. Block OPERATOR will be able to reuse the number(s) after a freeze period.

Deac(6b): Process stage Deac(6b) is the OTHER operators receiving the Deactivation Broadcast message from the BNPS

- If the message cannot be read then the OTHER will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- OTHER checks the data content of the Deactivation Broadcast message. In case of an error an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- OTHER validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS NETWORK.
- In case of an error message, the BNPS will go back to stage Deac(5)
- When all message fields are found correct then OTHER will update their network and systems accordingly and then move on to process stage Deac(7b)

Deac(7a): Process stage Deac(7a) is the BLOCK OPERATOR sending a Deactivation Complete message to BNPS

- After having updated its network and systems, the BLOCK OPERATOR sends a Deactivation Complete message to the BNPS

Deac(7b): Process stage Deac(7b) is OTHER sending a Deactivation Complete message to BNPS

- After having updated their network and systems, OTHER will send a Deactivation Complete message to the BNPS.

Deac(8a): Process stage Deac(8a) is BNPS receiving the Deactivation Complete message from the BLOCK OPERATOR

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the BLOCK OPERATOR (according chapter 4.6.2).
- In case the BNPS is not expecting a Deactivation Complete message then an Error Notification (out of sequence) is sent back to the BLOCK OPERATOR.
- BNPS checks the data content of the Deactivation Complete message. In case of an error an Error Notification will be sent to the BLOCK OPERATOR (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Deactivation request then an error code ERR0029 “unexpected or inconsistent data” is sent to the BLOCK OPERATOR.
- In case of an error message, the BLOCK OPERATOR/OTHER will go back to stage Deac(7a/ 7b)
- Timer T8a is stopped
- Once the BNPS has received Deactivation Complete message from BLOCK (Default setting) then BNPS prepares for Deac(9).

Deac(8b): Process stage Deac(8b) is BNPS receiving the Deactivation Complete message from OTHER

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to OTHER (according chapter 4.6.2).
- In case the BNPS is not expecting a Deactivation Complete message then an Error Notification (out of sequence) is sent back to the OTHER.
- BNPS checks the data content of the Deactivation Complete message. In case of an error an Error Notification will be sent to OTHER (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Deactivation request then an error code ERR0029 “unexpected or inconsistent data” is sent to OTHER.
- In case of an error message, the OTHER will go back to stage Deac(7b)
- Timer T8b is stopped
- By default a Deactivation Complete message should be received in order to continue to stage Deac(9)
- BNPS keeps track of receiving Deactivation Complete Messages.

Deac(9): Process stage Deac(9) is the BNPS sending a Deactivation Complete to the SUBSCRIPTION NETWORK.

- BNPS prepares the Deactivation Complete message
- The Deactivation Complete message is sent from the BNPS to the SUBSCRIPTION NETWORK

Deac(10): Process stage Deac(10) is the SUBSCRIPTION NETWORK receiving the Deactivation Complete message from BNPS

- If the message cannot be read then the SUBSCRIPTION NETWORK will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- In case the SUBSCRIPTION NETWORK is not expecting a Deactivation Complete message then an Error Notification (out of sequence) is sent back to the BNPS.
- The SUBSCRIPTION NETWORK checks the data content of the Deactivation Complete message. In case of an error an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Deactivation request then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case of an error message, the BNPS will go back to stage Deac(9)
- When all message fields are found correct then the the DEACTIVATION process has been reached.

5.4 Query

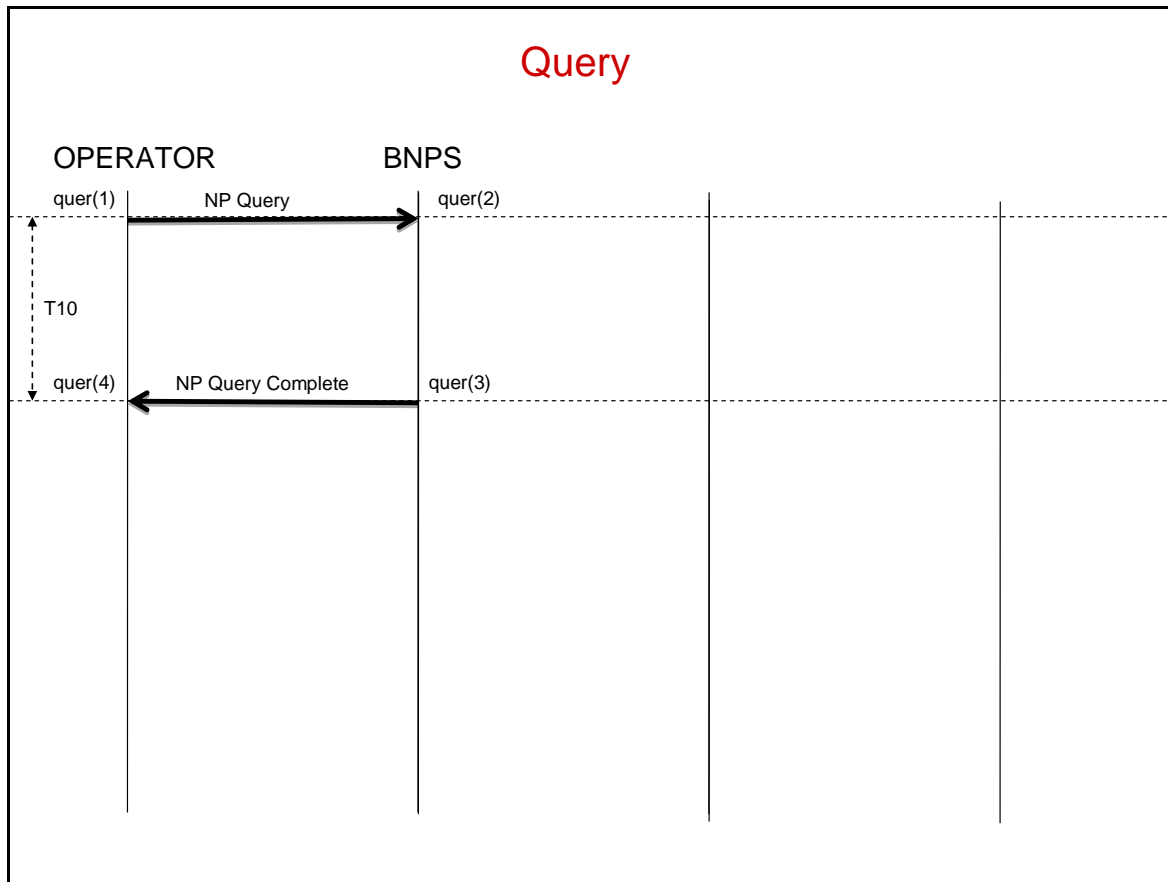


Figure 13 Query: process states and timers

Quer(1): Process stage Quer(1) is the OPERATOR sending a NP Query message to the BNPS

- When an OPERATOR wishes to obtain an extract of the NP Database then this will be requested to the BNPS via a NP Query Message
- Depending on the OPERATOR's needs:
 - All portings within a certain time span can be obtained by filling in DATE_FROM and DATE_TO. If not populated, then the whole NP register is prepared
 - And/or all portings within a certain number range can be obtained by filling in NUMBER_FROM and NUMBER_TO. If these fields are not populated then a register for all ported numbers of all ranges is prepared\
 - And/or if ported numbers to a certain operator are required, then this is filled in the field OPERATOR_ID. When left empty, then BNPS assumes all operators

Quer(2): Process stage Quer(2) is the BNPS receiving the NP Query from the OPERATOR

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the OPERATOR (according chapter 4.6.2).
- The BNPS checks the data content of the NP Query message. In case of an error an Error Notification will be sent to the OPERATOR (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to the OPERATOR.
- In case of an error message, the OPERATOR can go back to stage Quer(1)
- When the message and fields are found correct then timer T10 is started to measure the time between BNPS receiving the NP Query and replying with a NP Query Complete message
- BNPS starts preparing a file containing the requested NP Database extract
- BNPS moves to stage Deac(3) once the BNPS database extract has been stored on a designated directory

Quer(3): Process stage Quer(3) is the BNPS sending a NP Query complete message to the OPERATOR

- When BNPS has made the NP database extract available to the operator, the BNPS will notify the OPERATOR with a NP Query Complete message
- Timer T10 is stopped

Quer(4): Process stage Quer(4) is the OPERATOR receiving the NP Query Complete message from the BNPS

- If the message cannot be read then the OPERATOR will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- In case the BNPS is not expecting a NP Query Complete message then an Error Notification (out of sequence) is sent back to the BNPS.
- The OPERATOR checks the data content of the NP Query Complete message. In case of an error Error Notification will be sent to the BNPS (according chapter 4.6.2).
- The OPERATOR validates and processes the content of the message. If values are inconsistent or not in line with the initial Query then an error code ERR0029 “unexpected or inconsistent data” is sent to the BNPS.
- In case of an error message, the BNPS will go back to stage Quer(3)
- The Operator can obtain the requested file from the designated directory at BNPS
- End of the QUERY process

5.5 Billing Notification

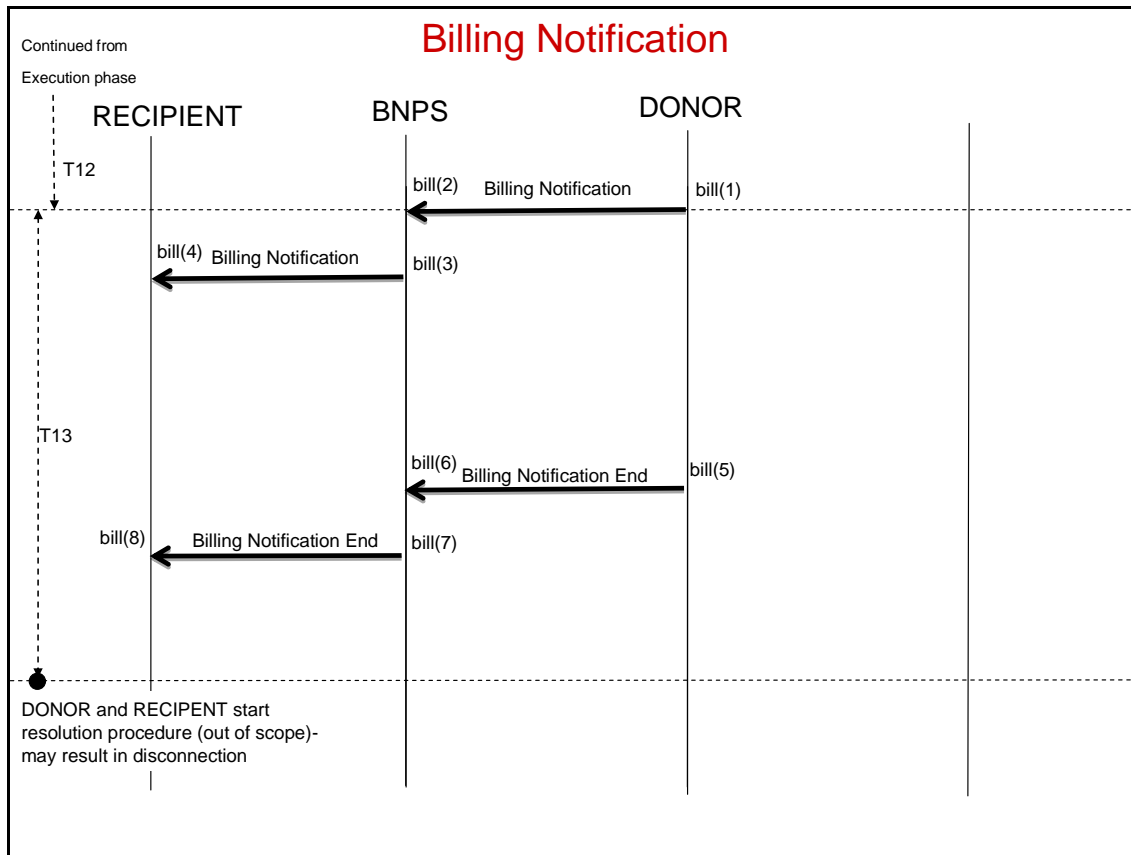


Figure 14 Billing Notification: process states and timers

Bill(1): Process stage Bill(1) is the DONOR sending a Billing Notification to the BNPS

- If after the Billing Notification period has expired the ported subscriber still has debts to the DONOR equal to or exceeding a value of 3 BHD, then the DONOR is entitled to submit a Billing Notification message
- The DONOR collects the data required for this message and submits the message to BNPS

Bill(2): Process stage Bill(2) is the BNPS receiving a Billing Notification from the DONOR

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the DONOR (according chapter 4.6.2).
- The BNPS checks the data content of the Billing Notification. In case of an error an Error Notification will be sent to the DONOR (according chapter 4.6.2).
- BNPS validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to the DONOR.
- Stop timer T12
- In case timer T12 has not expired (the Billing Notification Period is minimum 2 months), then ERR0030 “Billing Notification Period not expired” is sent to the DONOR

- In case of an error message, the DONOR can go back to stage Bill(1)
- When the message and fields are found correct and no error message has been sent then timer T13 is started to track the time allowed for the ported subscriber to clear all outstanding bills from the moment BNPS has received the Billing Notification
- BNPS moves to stage Bill(3)

Bill(3): Process stage Bill(3) is the BNPS sending a Billing Notification to the RECIPIENT

- BNPS forwards the Billing Notification message to the RECIPIENT. The message is not changed by BNPS
- BNPS prepare for stage Bill(6) –receive Billing Notification End

Bill(4): Process stage Bill(4) is the RECIPIENT receiving a Billing Notification from BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- The RECIPIENT checks the data content of the Billing Notification. In case of an error, an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- The RECIPIENT validates and processes the content of the message. If values are inconsistent then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case of an error message, the BNPS can go back to stage Bill(3)
- When the message and fields are found correct and no error message has been sent then the RECIPIENT prepares for stage Bill(8)- Billing Notification End.

Bill(5): Process stage Bill(5) is the DONOR sending a Billing Notification End to the BNPS

- If the ported subscriber has cleared all outstanding bills as stated in Bill(1)), then the Billing Notification Process can be ended by sending a Billing Notification End message
- The DONOR sends a Billing Notification End message to BNPS

Bill(6): Process stage Bill(6) is the BNPS receiving a Billing Notification End from the DONOR

- If the message cannot be read then the BNPS will send an Error Notification containing Error Code ERR0001 to the DONOR (according chapter 4.6.2).
- The BNPS checks the data content of the Billing Notification End. In case of an error, an Error Notification will be sent to the DONOR (according chapter 4.6.2).
- The BNPS validates and processes the content of the message. If values are inconsistent or not in line with the initial Billing Notification then an error code ERR0029 “unexpected or inconsistent data” is sent to DONOR.
- In case of an error message, then the DONOR can go back to stage Bill(5)
- When the message and fields are found correct and no error message has been sent then the BNPS moves to stage Bill(7)

Bill(7): Process stage Bill(7) is the BNPS sending a Billing Notification End to the RECIPIENT

- BNPS forwards the Billing Notification End message to the RECIPIENT. The message is not changed by BNPS

Bill(8): Process stage Bill(8) is the RECIPIENT receiving a Billing Notification End from the BNPS

- If the message cannot be read then the RECIPIENT will send an Error Notification containing Error Code ERR0001 to the BNPS (according chapter 4.6.2).
- The RECIPIENT checks the data content of the Billing Notification End. In case of an error, an Error Notification will be sent to the BNPS (according chapter 4.6.2).
- The RECIPIENT validates and processes the content of the message. If values are inconsistent or not in line with the initial Billing Notification then an error code ERR0029 “unexpected or inconsistent data” is sent to BNPS.
- In case of an error message, then the BNPS can go back to stage Bill(7)
- When the message and fields are found correct and no error message has been sent then the end of the BILLING NOTIFICATION process has been reached.

If after the Debt Clearance Period has expired (T13 has exceeded 15 days) and no Billing Notification END has been sent, a resolution procedure is started between the DONOR and RECIPIENT. The principal concept of this resolution procedure is that the RECIPIENT has to apply disconnection policy to the ported subscriber after the billing notification and debt clearance period have passed, and debt remains uncleared by the subscriber towards the DONOR. However there may be invoice, contractual etc. disputes to be taken into account. Eventually the RECIPIENT may be forced to- a disconnection by the RECIPIENT of the ported subscriber. The resolution procedure itself is out of scope of this specification.

6 Procedure for use of ERR0099 and REJ0099

The DONOR/originator of the message needs to make sure that sending of Reject Codes and of Error Codes is done in a correct way. Reject Code REJ0099 and Error Code ERR0099 should only be used in exceptional cases, in cases that none of the other defined Reject Codes or Error Codes is feasible.

In the exceptional case that an operator decides to use REJ0099 or ERR0099 the following procedure shall be followed:

- 1) REJ0099/ERR099 shall always be accompanied with explanatory text in the comments field in the same message
- 2) The DONOR/originator of the message shall contact the RECIPIENT's NP Service Desk within 1 working day (8 hours) – taking into respect the NP Service Desk opening hours- and discuss and agree with the RECIPIENT/receiver of the message concerning the next steps in the number porting process
- 3) According to the normal process, a new Porting Request/message could be sent once the blocking reason has been eliminated (and additional Reject Codes or Error codes may be prevented)
- 4) The DONOR shall submit a Change Request for additional Error Code and/or Reject Code values within 10 working days to the BNPS Administrator. In consultation with the parties involved in MNP (and FNP) process the Change Request may be awarded and implemented, and the MNP specification updated accordingly. In addition, or alternatively, the (temporary) use of ERR0099 and REJ0099 may be agreed upon.

7 Rules for use of ERR0029 “Unexpected or inconsistent data”

Error Code ERR0029 “unexpected or inconsistent data” shall be used in the following cases:

- The data in a NP message is technically correct
- The fields are populated according to the required format
- The provided data is however not in line with the expected data, i.e. the porting ID or porting number does not match previous messages.

ERR0029 shall not be used as an answer to a Porting request message. If a Porting request does not pass the validation then it is answered with a Porting request REJECT message.

8 Porting Windows/ Timers Definitions

The following timers and time windows are defined for the MNP process.

Timer/Window	Description	Remarks
Porting Time window	Working days: 8.00-16.00, 8 hours, from Sunday to Thursday, excluding all officially declared public	During the Porting Time Window the Porting Messages as defined in chapter 4.1 will have to be processed by the receiving parties. If porting messages are received outside the Porting Time window, the receiving parties should hold the porting messages until the Porting Window opens and then process the Porting message
NP Service Desk open	At least during porting window hours the NP service Desk Open	The NP service desk is an organizational entity at a Licensed Operator that is the contact for other Licensed operators and for the BNPS administrator in case of administrative operational issues and problems with number porting.
Out of Service window	There may be periods (length maximum 1 working day per period) agreed between an individual operator and TRA for maintenance and support purposes.	During the out of service window licensed operators are allowed to stop processing porting messages. The operator that is out service should however continue receiving porting messages and process these once the Out of Service window is closed.
NP Technical Desk open	At least during porting window	The NP Technical Desk is an organizational entity at a

	hours	Licensed Operator that is the contact for other Licensed operators and for the BNPS administrator in case of technical issues and problems with number porting
Processing time BNPS		Defined in Central System Specification [5]
Porting Request Acknowledge time	The time that the BNPS requires to respond (Porting Acknowledge message) to a Porting request received from a RECIPIENT operator In chapter 5 this timer is referred to as T1	5 minutes
BNPS check on blocking issues	Maximum time between Porting request received in BNPS from RECIPIENT and sending Porting request REJECT by BNPS. In chapter 5 this timer is referred to as T2	15 minutes
DONOR check on blocking issues	Time between Porting request (from BNPS to DONOR) and Porting request ACCEPT or REJECT by DONOR (received in BNPS) In chapter 5 this timer is referred to as T3	1 working day (8 working hours)
DONOR check on blocking issues: End to End from RECIPIENT point of view	Maximum time between Porting request by RECIPIENT (received in BNPS) and Porting request ACCEPT or REJECT by DONOR (sent from BNPS to	T1+T3 + 2 times the processing time BNPS

	<p>RECIPIENT).</p> <p>In chapter 5 this timer is referred to as T4</p>	
Standard Porting time (End to End)	<p>Time between Porting Request sent by RECIPIENT (received in BNPS) until Porting executed (from BNPS to RECIPIENT)</p> <p>In chapter 5 this is referred to as T11</p>	2 working days (16 working hours)
Porting Execution Time	<p>Time required for DONOR to disconnect a number and to update routing tables. The time is measured as the elapsed between sending the Porting Broadcast message (By BNPS to DONOR) and the receiving of the Porting Executed Message (by BNPS from DONOR)</p> <p>In chapter 5 this timer is referred to as T5a</p>	10 Minutes
Porting Broadcast Time	<p>Time required for other Licensed Operator to update their routing tables. The time is measured as the elapsed between sending the Porting Broadcast message (By BNPS to OTHER) and the receiving of the Porting Executed Message (by BNPS from OTHER)</p> <p>In chapter 5 this timer is referred to as T5b.</p>	15 Minutes
Porting Execution Time: end to end from RECIPIENT point of view	Time between RECIPIENT sending (BNPS receiving) a Porting Execution message and	T5a + 2 times processing time BNPS

	<p>RECIPIENT receiving (BNPS sending) a Porting executed message</p> <p>In chapter 5 this timer is referred to as T6</p>	
Deactivation Acknowledge time	<p>The time that the BNPS requires to respond (Deactivation Acknowledge message) to a Deactivation message received from an operator</p> <p>In chapter 5 this timer is referred to as T7</p>	5 Minutes
Deactivation Time	<p>Time required for BLOCK operator to respond in the NP Deactivation process.</p> <p>The time is measured as the elapsed between sending the Deactivation Broadcast message (By BNPS to BLOCK OPERATOR) and the receiving of the Deactivation Complete Message (by BNPS from BLOCK OPERATOR)</p> <p>In chapter 5 this timer is referred to as T8a</p>	30 Minutes
Deactivation Broadcast Time	<p>Time required for Other operator to respond in the NP Deactivation process.</p> <p>The time is measured as the elapsed between sending the Deactivation Broadcast message (By BNPS to OTHER) and the receiving of the Deactivation Complete Message (by BNPS from OTHER)</p>	30 Minutes

	In chapter 5 this timer is referred to as T8b	
Fall back period	Time allowed to give back a number to the number range holder (BLOCK operator) after a (previously ported) number has been disconnected.	8 days at minimum (due to minimum retention period) and 30 days at maximum
NP Query Time	Time between OPERATOR sending (BNPS receiving) NP Query and response with NP Query Complete. In chapter 5 this timer is referred to as T10	Defined in Central System Specification [5]
Billing Notification Period	Maximum time between DONOR sending (BNPS receiving) a Porting executed message and DONOR sending (BNPS receiving) a Billing Notification In chapter 5 this timer is referred to as T12	2 calendar months
Debt Clearance Period	Maximum time for the ported subscriber to clear outstanding bills with the DONOR, after having received a Billing Notification Time between DONOR sending (BNPS receiving) a Billing Notification and start of resolution procedure In chapter 5 this timer is referred to as T13	15 working days

9 Key Performance Indicators (KPI)

The following Key performance Indicators are defined for the MNP process:

Name of Timer	Timer value	KPI
Porting Request Acknowledge time (T1)	5 minutes	At least 98% of porting Acknowledgements should be sent by the BNPS to RECIPIENT within 5 minutes.
BNPS check on blocking issues (T2)	15 minutes	At least 98% of porting REJECTs should be sent by the BNPS to RECIPIENT within 15 minutes.
DONOR check on blocking issues (T3, T4)	8 working hours	At least 98% of porting requests received by DONOR must be responded to within 8 working hours
Standard Porting time (T11)	16 working hours	At least 98% of number ports requested should have been executed at the planned date of execution
Porting Execution Time (T6)	10 Minutes	At least 95% of porting execution cases by DONOR must be completed within 10 minutes.
Porting Broadcast Time (T5a/b)	15 Minutes	At least 95% of porting broadcast execution cases by other operators must be completed within 15 minutes.
Deactivation Acknowledge time (T7)	5 minutes	At least 98% of Deactivation Acknowledgements should be sent by the BNPS to RECIPIENT within 5 minutes
Deactivation Time (T8a)	30 Minutes	At least 95% of Deactivation execution cases by BLOCK operator must be completed within 30 minutes.

Deactivation Broadcast Time (T8b)	30 Minutes	At least 95% of Deactivation porting broadcast execution cases by other operators must be completed within 30 minutes.
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Glossary

Back port	A porting where the number ports back to the Block Operator/ original number holder. Participants are informed in the Porting Broadcast message whether there is a back port.
Bad Debt	Bad debt is one of possible reasons to reject a porting request. If the subscriber that wishes to port a number has been issued an invoice for which the stated due date has passed (and a notification of that status to the subscriber by SMS), and a minimum amount of debt value is exceeded then the DONOR can reject the porting request for reasons of 'Bad Debt'.
Billing Notification Period	If (bad) debt exists then the DONOR may send a Billing Notification message to the RECIPIENT, after a certain time window has expired after the completion of a number porting (RECIPIENT having received Porting executed message).
BLOCK OPERATOR	The Licensed Operator who is the original holder of a ported number-as it has been assigned the range
BNPS	Bahrain Number Portability System (central NP database). Central facility for validation of NP messages, Central NP database, administration and reporting, and customer inquiries.
Debt Clearance Period	If -within a certain period after the Billing Notification was sent- the subscriber has not cleared outstanding debts to the DONOR, then a resolution procedure needs to be started between the DONOR and the RECIPIENT. E.g. As part of this procedure the RECIPIENT may be forced the ported subscriber. This period from Billing Notification until start resolution procedure is called: Debt Clearance Period. The resolution procedure in all details is not defined in the scope of the MNP Process specification.
DONOR	DONOR Network Operator: the Licensed Operator who is transferring the number to the RECIPIENT
Fall Back	If a subscription with a previously ported number has ended and retention period has expired (8 days), the number will fall back to the Block Operator. The SUBSCRIPTION NETWORK sends a Deactivation message to the BLOCK OPERATOR and OTHER within 30 days after disconnecting the number. The Block Operator can subsequently start to reuse the number. It is advised that the Block Operator applies a freeze period until it re-uses the number.
FNP	Fixed Number Portability

Last Serving Network	Term used in the context of deactivation: this is the status of a subscription network after it has deactivated a number which has been previously ported in.
MNP	Mobile Number Portability
MNP Messages	Messages exchanged via BNPS during the porting process: between RECIPIENT and DONOR and OTHER
NP	Number Portability: the capability for a subscriber to change licensed operator without changing their number
NSN	National Significant Number, for MNP (Mobile/Universal Numbers) in Bahrain this is in the format ABCDEFGH
NP phase: Preparation	This process concerns the information exchange between a RECIPIENT operator and a DONOR operator and the negotiation between them to agree or disagree on a number porting request of a customer.
NP phase: Execution process	This process concerns the actual execution of the number porting between a RECIPIENT operator and a DONOR operator of the agreed number at the agreed date and time.
NP phase: Deactivation process	This process concerns the fall back of a number to the Block Operator holding the number range to which the previously ported number belongs to. This fall back will take place when the Subscription Network disconnects a number which has been previously ported to this network.
NP phase: Query process	This process concerns the query to BNPS on all ported numbers. The query may concern individual numbers, ranges of numbers, a certain time span or a specific operator's numbers ported in.
NP phase: Billing Notification process	This process concerns the notification process by the DONOR (to the RECIPIENT in case a subscriber that has ported a number has outstanding (bad) debt with the DONOR. The Billing Notification may be sent after expiry of a certain time window after the porting of the number was executed and completed.
OLO	Other Licensed Operator
OTHER	Other operator or other participants in the porting process: other mobile operator and fixed (transit) operators which are informed about porting or deactivations (of previously ported numbers) via broadcast messages
Operator Code	A code used in MNP messages to identify a participant (example: ZAIN or BNPS). Used in fields like DONOR_ID, RECIPIENT_ID, ORIGINATION_ID.

RECIPIENT	RECIPIENT Network Operator: the Licensed Operator to whom the number is being ported
Routing Number	A number (example A01) which is used to route voice calls or signaling (like sms) to the correct Subscription Network. This number is used in the Porting Broadcast messages, which allows participants to update their routing tables accordingly (also known as 'pointers')
Service Provider	A Service Provider is a reseller, using the SIM cards and Mobile Numbers of a Licensed Operator
Serving Network	Term used in the context of a call. This is not necessarily the Subscription Network, as a caller can use another network (international roaming)
SUBSCRIPTION NETWORK	a number has ported then the RECIPIENT is further referred to as the Subscription Network
Universal Number	Can be used for both Fixed purposes as Mobile