Technical Specification Group Services and System Aspects
Meeting #7, Madrid, Spain, 15-17 March 2000

TSGS#7(00)0061

Source: **TSG SA1**

Title: **CRs to 02.66 and 22.066 on Service provider number portability**

Document for: **Approval**

Agenda Item: **5.1.3**

Doc-1st-Level	Status-1st-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New
SP-000061		02.66	A001		R98	PCS-1900 Service Provider Number Portability impacts for Mobile Number Portability	A	7.0.1	7.1.0
SP-000061		22.066	002		R99	PCS-1900 Service Provider Number Portability impacts for Mobile Number Portability	A	3.0.1	3.2.0

TSG-SA Working Group 1 (Services) meeting #7 **TSG S1 (00) 136**
Sophia Antipolis, France 7 - 11 February 2000 **Agenda Item: 5.18**

3GPP TSN CN WG2 **Tdoc N2B000194**
Milan, Italy
***14 -16 February*, 2000**

CHANGE REQUEST No :	**A001**	*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*			
Technical Specification GSM	02.66	Version:	7.0.1		
Submitted to TSG *list SMG plenary meeting no. here ↑*	TSG SA1	for approval	X	without presentation ("non-strategic")	
		for information		with presentation ("strategic")	X

PT SMG CR cover form is available from: http://docbox.etsi.org/tech-org/smg/Document/smg/tools/CR_form/crf28_1.zip

Proposed change affects: SIM [ ] ME [ ] Network [X]
(at least one should be marked with an X)

Work item: Mobile Number Portability (MNP)

Source: T1P1.5 **Date:** 21st Dec 99

Subject: PCS-1900 Service Provider Number Portability impacts for Mobile Number Portability

Category: *(one category and one release only shall be marked with an X)*

		Release:	
Correction		Phase 2	
Corresponds to a correction in an earlier release		Release 96	
Addition of feature	X	Release 97	
Functional modification of feature		Release 98	X
Editorial modification		Release 99	

Reason for change: Add information to support PCS-1900 Number Portability

Clauses affected: Foreword, 1,3, 4, 5, 6, 8, A

Other specs affected:

Other releases of same spec		→ List of CRs:	Tdoc 99-xxx - GSM 03.18 V7.1.0 and 3GPP 23018-320 Tdoc 99-xxx - GSM 03.66 V7.2.0 and 3GPP 23066-310
Other core specifications		→ List of CRs:	
MS test specifications / TBRs		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments: Conventions: yellow highlightring = change to SMG#28 CR agreed by T1P1.5 on 30/4/99
blue highlighting = change to CR after 30/4/99 not yet agreed by T1P1.5

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETR 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available **free of charge** from the ETSI Secretariat. Latest updates are available on the ETSI Web server (http://www.etsi.fr/ipr).

Pursuant to the ETSI Interim IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETR 314 (or the updates on http://www.etsi.fr/ipr) which are, or may be, or may become, essential to the present document.

Foreword

This ETSI Technical Specification has been produced by ETSI Special Mobile Group (SMG).

- This specification defines the stage one description of the Support of Mobile Number Portability between GSM networks in the same country as well as PCS-1900 cross-sector portability (i.e.,~~e.g.~~ number portability between fixed and PCS-1900 mobile networks).

The contents of this TS is subject to continuing work within SMG and may change following formal SMG approval. Should SMG modify the contents of this TS, it will be republished by ETSI with an identifying change of release date and an increase in version number as follows:

Version 7.x.y

where:

7 indicates GSM Phase 2+ Release 1998;

y the third digit is incremented when editorial only changes have been incorporated in the specification;

x the second digit is incremented for all other types of changes, i.e. technical enhancements, corrections, updates, etc.

1 Scope

This GSM Technical Specification defines the stage one description of the Support of Mobile Number Portability between GSM networks in the same country as well as PCS-1900 cross-sector portability (i.e.,~~e.g.~~ number portability between fixed and PCS-1900 mobile networks). Stage one is an overall service description, primarily from the service subscriber's and user's points of view, but does not deal with the details of the human interface itself.

This TS is in response to a study mandate agreed between the European Commission and ETSI under order voucher ESTI/97/M-251and the mandate by the US Federal Communications Commission for Service Provider Portability in North America.

Mobile Number Portability (MNP) is applicable only to those telecommunication services identified by an MSISDN.

This specification includes information applicable to network operators, service providers and terminal, switch and database manufacturers.

This specification contains the core requirements for the Support of Mobile Number Portability between GSM network operators in the same country as well as PCS-1900 cross-sector portability -which are sufficient to provide a complete service.

Other cross-sector ~~Cross-sector~~ portability options -(e.g. number portability between fixed and mobile networks) are ~~is~~ outside the scope of this technical specification. It is highly desirable however, that technical solutions for MNP should be sufficiently flexible to allow for possible enhancements, e.g. cross-sector number portability, and MNP between analogue and digital mobile networks. Additional functionalities not documented in this specification may implement requirements which are considered outside the scope of this specification. This additional functionality may be on a network-wide basis, nation-wide basis or particular to a group of users. Such additional functionality shall not compromise conformance to the core requirements of the service.

Porting between Service Providers (i.e. service provider portability) which does not involve a change of Network Operator is outside the scope of this specification.

The relationship between Service Providers and Network Operators is outside the scope of this specification.

The relationship between a Service Provider and subscriber is outside the scope of this specification. The interface between the Mobile Station (MS) and any external applications are outside the scope of this specification. Charging principles are outside the scope of this specification except where explicitly stated in the text.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this specification the following definitions apply:
number range owner network: The network to which the number range containing the ported number has been allocated.
directory number: any E.164 dialable number assigned to a wireline or a wireless subscriber. A DN can be a 10-digit number in the context of the North American Numbering Plan (without a country code) or up to 15 digits for an international number(country code included).
donor network: The subscription network from which a number is ported in the porting process. This may or may not be the number range owner network.
mobile number portability: The ability for a mobile subscriber to change the ~~GSM~~ digital mobile subscription network within the same country or within an FCC regulated geographical area within North America whilst retaining their original ~~MSISDN(s)~~ DNs.
network operator: A GSM PLMN operator.
PCS-1900 number portability: the ability for a subscriber to change subscription between PCS-1900 and other subscription networks within an FCC regulated geographical area within North America
originating network: the network where the calling party is located.
ported number: Is a MSISDN that has undergone the porting process.
ported subscriber: The subscriber of a ported number.
porting process: A description of the transfer of a number between network operators.
recipient network: The network which receives the number in the porting process. This network becomes the subscription network when the porting process is complete.
service provider: An entity which offers service subscriptions to individual subscribers and contracts with a network operator to implement services for a specific DN ~~MSISDN~~. A service provider may contract with more than one network operator.
service provider portability: The transfer of numbers between two unique Service Providers.
subscription network: The network with which the customer's Service Provider has a contract to implement the customer's services for a specific DN ~~MSISDN~~.

NOTE: The term "recipient network" is used during the porting process. The recipient network becomes the "subscription network" after the completion of the porting process.

3.2 Abbreviations

For the purposes of this specification the following abbreviations apply:

DN	Directory Number
MMI	Man Machine Interface
MNP	Mobile Number Portability
MSISDN	Mobile Station ISDN number
PNP	PCS-1900 Number Portability
PLMN	Public Land Mobile Network
SIM	Subscriber Identity Module

Further GSM related abbreviations are given in GSM 01.04.

4 Applicability

Mobile Number Portability cannot be offered to a subscriber as a stand alone service. Mobile Number Portability is applicable to all GSM teleservices (e.g. SMS, voice fax) and bearer services (e.g. data), except for TS12 (emergency call).
The implementation of MNP shall be flexible enough to apply to each ~~MSISDN~~ DN of a subscriber separately. Where the ~~MSISDNs~~ DNs used in the donor network are ported to different recipient mobile networks then a new IMSI (and SIM) will be required for each recipient network. The basic and supplementary services provisioned in the recipient network shall not be dependent on those that were provisioned in the donor network.

5 Description

Mobile Number Portability (MNP) is the ability for a mobile subscriber to change ~~GSM~~ the digital mobile subscription networks within the same country or within an FCC regulated geographical area within North-America whilst retaining her original ~~MSISDN~~ DN or ~~MSISDNs~~ DNs.
PCS-1900 Number Portability (PNP) is the ability for a subscriber to change subscription between PCS-1900 and other subscription networks within an FCC regulated geographical area within North-America.
The IMSI shall not be ported, hence the recipient mobile network of the porting process will issue a new IMSI for the

ported subscription. The porting process may, but need not, include a change in service provider.
The ported subscriber can use exactly the same services as non-ported customers in the same subscription network. That is: whether the ~~MSISDN~~ DN of a subscriber belongs to a subscription network or is ported to the subscription network shall have no influence on the services offered to the customer by that subscription network.
The services offered by the number range owner network and/or the donor network have no influence on the services offered by the subscription network. When a subscriber ports a ~~MSISDN~~ DN to a new network then the donor network no longer provides support for the services of the ported number (this includes supplementary and value added services).

NOTE: This also implies that if a service supported in the donor network is not available on the recipient network then number portability mechanisms need not provide that service for the ported subscriber.

A network can be a donor of numbers and a recipient of numbers. A ~~MSISDN~~ DN can be ported more than once; a ported number can be ported back to its number range owner network. Even after multiple portings, the technical solution shall involve only the number range owner network and recipient network.
The solution for MNP~~/NP~~/PNP shall have a minimal adverse effect upon the quality of service offered to ported and non-ported subscribers. It may be the case that the quality of service for ported and non-ported subscribers differs slightly (e.g. due to additional call set-up delay).
Any additional delay in call set-up to ported numbers shall be minimised.
The process of porting a number may involve a disruption in service to the customer. The time that no service is available shall be minimised.
The technical implementation of the support of MNP~~/NP~~/PNP in a network should not impede number availability and efficient use of numbers.
The technical implementation for the support of MNP~~/NP~~/PNP shall not involve loss of functionality in the number range owner, donor or subscription network.
The technical implementation of MNP~~/NP~~/PNP shall support optimisation of the use of network and inter-network resources so as to minimise costs associated with transport of traffic and/or appropriate signalling and/or processing activities (e.g. optimal routing).
In addition, for the porting process an efficient and effective way is needed to exchange porting information between all types of GSM network operators.

6 Normal procedures with successful outcome

Mobile Number Portability is offered to all subscribers of ~~GSM~~ telephone services subject to regulatory requirements.
A porting process is initiated at a subscriber's request on their selected ~~MSISDN(s)~~ DN(s) with the relevant networks.
Initiation of the porting process is an off-line administrative process and cannot be invoked via a specific MMI on the hand-set.
After successful porting the subscriber, is able to use the provisioned ~~GSM~~ telephone services and network specific services of the subscription network as offered to non-ported subscribers on that network. Porting will effectively initiate a new subscription
As part of the porting process, the donor, number range owner and recipient networks shall update their relevant network elements in order to perform the porting. After the porting process is complete, the subscription details related to the ported ~~MSISDN~~ DN on the donor network shall not be required and can be deleted. Therefore, only the number range owner network and the recipient network are involved in the MNP~~/NP~~/PNP solution for support of service to the ported subscriber.
The originating network may not be aware of the ported nature of the number; therefore the technical solution shall work even if networks other than the number range owner and recipient have no knowledge of the ported nature of the number.

NOTE: Other networks may be involved to increase the efficiency of call-set-up to ported numbers.

When a ported subscriber takes an additional ~~MSISDN~~ DN at her subscription network that additional ~~MSISDN~~ DN should not have to come from the number range owner network(s) of the subscriber's ported numbers.
Where number ranges are assigned to network operators, the number range owner network shall receive the ported number back from the recipient network when the subscriber relinquishes the ported number, i.e. when the ported number ceases to be an active service number.

8 Addressing

As a consequence of MNP, the ~~MSISDN~~ DN of a subscriber may no longer explicitly identify the subscription network of that subscriber.

Annex A (Informative): List of informative documents

The following documents are listed for information and as such do not count as normative references:

[1] European Commission DG XIII “Equal access & interconnection” Final Report

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[4] MNPTG-CP(97)22 Version 10: “Technical Feasibility Study UK Mobile Number Portability”

[5] MNPTG-CP(97)0 Version4: “High Level Service Description UK Mobile Number Portability”

[6] Federal Communications Commission (FCC) Second Order and Report, CC Docket No. 95-116, August 18, 1997.

[7] CTIA report on Wireless Number Portability , Version 2.0.0.

TSG-SA Working Group 1 (Services) meeting #7 **TSG S1 (00) 134**
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3GPP TSN CN WG2 **Tdoc N2B000194**
Milan, Italy
***14 -16 February*, 2000**

CHANGE REQUEST No :	**002**	*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*			
Technical Specification GSM	22.066	Version:	3.0.1		
Submitted to TSG SA #7 *list SMG plenary meeting no. here ↑*	for approval	X	without presentation ("non-strategic")		
	for information		with presentation ("strategic")	X	

PT SMG CR cover form is available from: http://docbox.etsi.org/tech-org/smg/Document/smg/tools/CR_form/crf28_1.zip

Proposed change affects: SIM [ ] ME [ ] Network [X]
(at least one should be marked with an X)

Work item: Mobile Number Portability (MNP)

Source: TSG SA1 **Date:** 21st Dec 99

Subject: PCS-1900 Service Provider Number Portability impacts for Mobile Number Portability

Category: *(one category and one release only shall be marked with an X)*

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[6] Federal Communications Commission (FCC) Second Order and Report, CC Docket No. 95-116, August 18, 1997.

[7] CTIA report on Wireless Number Portability , Version 2.0.0.