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Storitve in protokoli za napredna omreǵja (SPAN) ï Storitev kratkih sporoḍil (SMS) za ISDN/PSTN ï Opis storitve

Services and Protocols for Advanced Networks (SPAN); Short Message Service (SMS) for PSTN/ISDN; Service description

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

In accordance with ITU-T Recommendation I.130 [1] the following three level structure is used to describe the supplementary telecommunication services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's stand-point;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

The present document details the stage 1 aspects (overall service description) for the Short Message Service (SMS).

Introduction

The Short Message Service (SMS) is a service that shall make it possible to offer seamless SMS over different networks (PSTN, ISDN, PLMN).

In the following of the present document it is assumed that both the sending and receiving Terminal Equipment (TE) have appropriate capabilities to send, receive, store, display and delete short messages.

1 Scope

The present document defines the stage 1 service description of the Short Message Service (SMS). Stage 1 is an overall service description, primarily from the service subscriber's and user's point of view, but does not deal with the details of the human interface itself.

The SMS can be provided via ISDN and PSTN accesses. The present document includes information applicable to service providers and equipment manufacturers. Where the text indicates the status of a requirement, (i.e. as strict command or prohibition, as authorization leaving freedom or, as a capability or possibility), this shall be reflected in the text of the relevant stage two and stage three standards.

The present document describes only the short message service between Terminal Equipment (TE) and a Short Message Service Centre (SM-SC). The kind of protocols for sending and receiving a Short Message (SM) as well as charging principles are outside the scope of the present document.

Interactions with supplementary services not mentioned in clause 7 and the respective annexes are outside the scope of the present document.

The present document contains the core service features and also optional service features for the Short Message Service. A service may be provided on the basis of the core requirements alone. The present document does not deal with a Short Message Service Broadcast.

Furthermore, additional functionalities not covered in the present document may be implemented. The requirements of which are considered outside of the scope of the present document are consequently outside the scope of the corresponding stage 2 and stage 3 standards. Such additional functionalities may be on a network-wide basis, or particular to one user or a group of users. Such additional functionalities do not compromise conformance to the core requirements of the service.

Furthermore, conformance to the present document is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for the present document.

The SMS can be realized in two ways, either as a network based solution or as a user based solution using the basic call procedures only. The sending and/or receiving part can be preceded in the same or in a different way.

1) Network Based Solution: a service offered as part of a function within the public network.

2) User Based Solution: a service offered as part of a function within the end-user equipment, which does not require any specific short message transfer function inside the public network.

The present document covers in general both possibilities but if different or specific descriptions are necessary, the relevant clauses are marked as "**NBS**" (Network Based Solution) or "**UBS**" (User Based Solution). Clauses that are valid for both realizations are marked as "**UBS/NBS**".

There are two different protocols known for the UBS (protocol 1 and protocol 2; see ES 201 912 [3]) and a third one for NBS. The handling between terminals with different protocols on the same subscriber line and service centres should be managed within the service centres or the terminals. These handling matters are outside the scope of the present document.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1] ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[2] Void.

[3] ETSI ES 201 912: "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication between a fixed network Short Message Terminal Equipment and a Short Message Service Centre".

[4] ETSI ETS 300 345: "Integrated Services Digital Network (ISDN); Interworking between public ISDNs and private ISDNs for the provision of telecommunication services; General aspects".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

deliver report: response from the destination terminal to the SM-SC indicating that an SM has been accepted or not with the appropriate cause, if rejected

destination SM-TE: terminal with short message functionalities on the receiving user's side, connected to the subscriber line which receives an incoming message

originating SM-TE: terminal with short message functionalities on the sending user's side, connected to the subscriber line which initiates an outgoing message

receiving user: user who receives an incoming message on his/her SM-TE from the SM-SC via the subscriber line

replace Short Message Function: optional function of the SM-SC and the SM-TE that enables the automatic replacing of a Short Message by a new one

NOTE: The replacement indication is transmitted in conjunction with the Short Message. See Replace Short Message Type.

replace short message type: indication to be sent with a short message (in both submission and delivery cases) that the short message is of a particular type allowing the destination SM-TE or SM-SC to replace an existing message of the same type held in the SM-TE or SM-SC provided it comes:

- in SM delivery cases: from the same SM-SC and originating address;
- in SM submission cases: from the same SM-TE.

reply path procedure: mechanism which allows an SM-TE to request that an SM-SC should be permitted to handle a reply sent in response to a message previously sent from that SM-TE to another SM-TE

NOTE: This may happen even though the SM-SC may be unknown to the SM-TE that received the initial message.

sending user: user who sends an outgoing message from his/her SM-TE to the SM-SC via the subscriber line

Service Centre Time Stamp (SCTS): information element offering the destination SM-TE of an SM the information of when the message arrived at the SM-SC

Short Message (SM): information that may be conveyed by means of the SMS described in ES 201 986

Short Message Service Centre (SM-SC): function unit, which is responsible for the relaying and store-and-forwarding of a short message (SM) between two SM-TEs

NOTE: The SM-SC can functionally be separated from or integrated in the network.

Short Message Terminal Equipment (SM-TE): terminal that may send or receive short messages

SM data: contains all the information which is needed by the SM-SC (e.g. destination address, text, etc.)

status report: information used to inform the originating SM-TE of the status of a short message previously submitted by this SM-TE, e.g. whether the SM-SC was able to successfully forward the message or not, or whether the message was stored in the SM-SC for later delivery

submit report: response from the SM-SC to the originating SM-TE indicating that an SM has been accepted or not with the appropriate cause, if rejected

Validity Period (VP): information element enabling the originating SM-TE to indicate the time period during which the sending user considers the SM to be valid

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3PTY	Three ParTY
ACR	Anonymous Call Rejection
ASMR	Anonymous SM Rejection
CCBS	Completion of Calls to Busy Subscriber
CCNR	Completion of Calls on No Reply
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
COLP	COnnected Line identification Presentation
COLR	COnnected Line identification Restriction
CONF	CONFerence call, add-on
CUG	Closed User Group
DDI	Direct Dialling In
FSK	Frequency Shift Keying
GSM	Global System for Mobile communications
ISDN	Integrated Services Digital Network
ISMBL	Incoming SM Black List
ISMWL	Incoming SM White List
LH	Line Hunting
MCID	Malicious Call IDentification
MMC	Meet-Me Conference
MSMID	Malicious SM IDentification
MSN	Multiple Subscriber Number
MWI	Message Waiting Indication

NBS	Network Based Solution
OCB-F	Fixed Outgoing Call Barring
OCB-UC	User Controlled Outgoing Call Barring
OSMBL	Outgoing SM Black List
OSMWL	Outgoing SM White List
PIN	Personal Identification Number
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
SCF	Selective Call Forwarding
SCTS	Service Centre Time Stamp
SM	Short Message
SMDL	SM Distribution List
SMF	SM Forwarding
SMS	Short Message Service
SM-SC	Short Message Service Centre
SMSUIR	SM Sending User Identification Restriction
SMSUIR	SM Sending User Identification Restriction
SM-TE	Short Message Terminal Equipment
SUB	SUB addressing
TE	Terminal Equipment
TP	Terminal Portability
UBS	User Based Solution
UMTS	Universal Mobile Telecommunications System
UUS	User-to-User Signalling
VP	Validity Period
xDSL	x Digital Subscriber Line

4 Description

UBS/NBS:

The Short Message Service (SMS) enables a sending user to send a SM of a limited size to a receiving user via an SM-SC.

The Short Message Service described in the present document applies to PSTN and ISDN accesses. In case of ISDN the SMS shall be possible on a number basis.

A short message can be initiated upon a request of the sending user or by the service provider itself, and shall be sent to the receiving user. An SM is always conveyed via an SM-SC. The SM-SC receives the SM from an originating SM-TE (sending user), converts the message if necessary, and relays the SM to the destination SM-TE (receiving user).

Having received one or more SM, the receiving user can subsequently read, store or delete the messages on its terminal.

If the SM-TE supports the optional Replace Short Message Function, Short Messages with the respective Replace Short Message Type indication held in the SM-TE are automatically replaced by received new ones.

The SMS shall support "core service features", available to all SMS users. In addition "optional service features" may be provided.

The means by which the receiving user manages these features are outside the scope of the present document.

The preparation of an SM as well as the kind of data transmission between the sending or receiving users and the SM-SC are outside the scope of the present document.

UBS:

The annexes describe the interactions with PSTN and ISDN supplementary services.

NBS:

None.

4.1 Core service features

4.1.1 Short Message Service Centre (SM-SC) capabilities

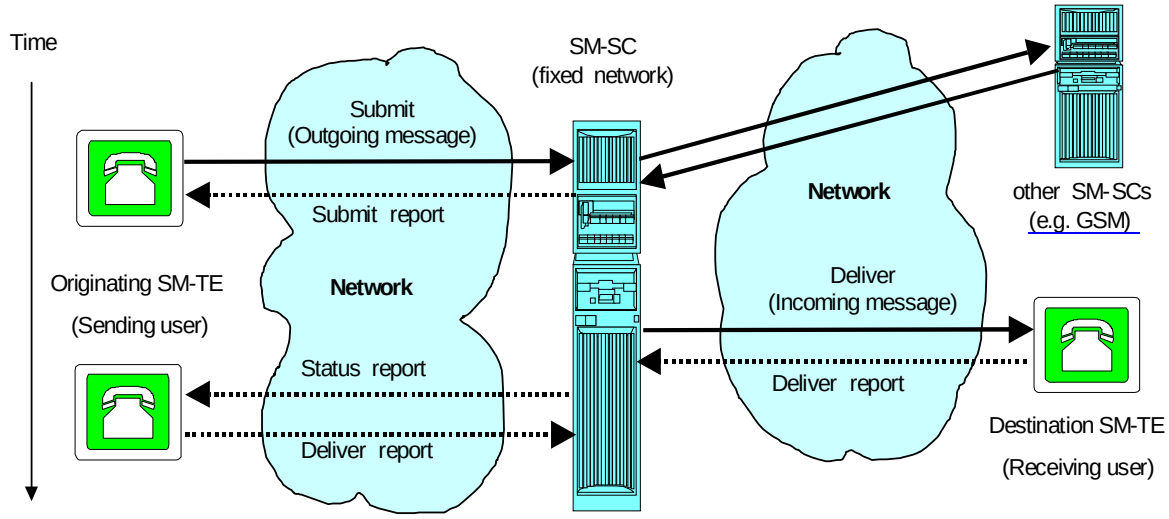

Figure 1: SM-SC capabilities

UBS/NBS:

For both, outgoing and incoming messages, the SM-SC acts as a store and forward centre. The SM-SC can be functionally separated from the network (PSTN/ISDN) although this does not preclude an integrated implementation. More than one SM-SC may be connected to a network (PSTN/ISDN). Each SM-SC may have connections to other SM-SC (e.g. PLMN SM-SC). In case that the sending user has required a status report in conjunction with an outgoing message, a report (positive or negative) shall be sent to the originating SM-TE as soon as this information is available.

As a service provider option, an SM-SC may serve multiple types of accesses.

NOTE 1: The SM-SC shall deliver SM in an appropriate format to the destination SM-TE, this format depends on the protocol the destination SM-TE is using.

NOTE 2: Speech, telex, facsimile, etc., or a message from a mobile network customer may be input to the SM-SC by means of a suitable telecommunication service.

UBS:

None.

NBS:

None.

4.1.2 Outgoing message (from the originating SM-TE)

UBS:

The outgoing message from the originating SM-TE shall be sent to the SM-SC and shall contain the address of the receiving user. The SM-SC shall send a submit report to the originating SM-TE.

NBS:

To initiate an outgoing message the originating SM-TE has to provide the SM text, the sending user's number and the receiving user's number; further information may be provided by the sending user (e.g. SM-SC number, status report request, etc.).