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Short Message Service Centre (SMSC) External Machine Interface (EMI) Description

Version 4.4a

May 2013

Contents

Preface

This manual describes the interface used between the SMSC System and other computer systems and applications on the fixed network side. It is based on [1] and has been adapted to the requirements and characteristics of VF D2's SMSC. The interface is based on the ERMES UCP (Universal Computer Protocol) with some SMSC-specific extensions.

References

[1] ETS 300 536, Technical realisation of the Short Message Service (SMS) Point-to-Point, GSM 03.40, version 7.1.0
[2] Alphabets and language-specific information, GSM 03.38, version 7.0.0
[3] Short Message Service Centre External Machine Interface, CMG Informatietechniek b. v., Version 4.0, February 2001
[4] ETS 300 133-3, Paging Systems; European Radio Message System (ERMES) Part 3: Network aspects, Section 9
[5] Short Message Service Centre 4.6 EMI - UCP Interface

Intended Audience

All persons involved in the design and implementation of applications on external computer systems that have to interact with the SMSC.

For professional systems that require high performance and extra functionality please refer to [2]. Provision of this extra functionality is a matter of contracts. Please refer to Annex F for contact persons.

Abbreviations used in this document

ACK	Positive Acknowledgement
ADT	Abstract Data Types
CLI	Calling Line Identity
CMG	Computer Management Group
EMI	External Machine Interface
ERMES	European Radio Messaging System
ETS	European Technical Standard
FAX	Facsimile
GSM	Global System for Mobile communications
UDH	User Data Header
LA	Large Account
ME	Mobile Equipment
VF D2	Vodafone D2
MO	Mobile Originated
MS	Mobile Station
MT	Mobile Terminated
NAK	Negative Acknowledgement
NPI	Numbering Plan Identification
O&M	Operations and Maintenance
PC	Personal Computer
PLMN	Public Land Mobile Network
PSTN	Public Switched Telephone Network
SM	Short Message
SME	Short Message Entity
SMS	Short Message Service
SMSC	Short Message Service Centre
SMT	Short Message Terminal
TON	Type Of Number
UCP	Universal Computer Protocol
UD	User Data
VMS	Voice Mail System
VSMSC	Virtual Short Message Service Centre

1 INTRODUCTION

For submission and reception of Short Messages the Short Message Service Centre (SMSC) can interface with (among others):

VF D2 or other GSM Mobile subscribers with SM capable mobile stations (MSs) in the PLMN,
Applications on external machines (e.g. PCs, UNIX based machines), on which we will focus in this document.

The SM transaction must involve, however, at least one MS.

An example of such a dedicated PC application would be a system that monitors the status of a computer system. It can generate a short message to alert support staff if something goes wrong.

The External Machine will be referred to as 'PC', but it can, of course, be any application system.

In order to allow any service provider to develop dedicated applications an interface was developed to access SMSC functions. This manual describes that interface.

CONTRACT ISSUE

It is important to note that all the options explained may not be valid or available for each and every customer. The validity of these options depends upon the type of contract signed with Vodafone D2. All of them are clear marked as a ‘contract issue option’ in the document.

For queries and further information please contact the Key-Account-Manager Vodafone-Corporate SMS as mentioned in Annex F.

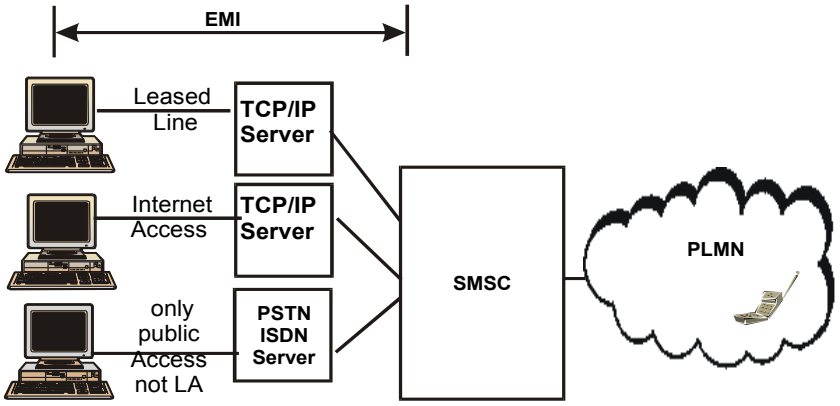
IMPORTANT NOTE

As new requirements and improvements may be taken into account, the interface may change, backward compatibility shall be given.

The information in this document is subject to change without notice and should not be construed as a commitment by Vodafone D2 (VF D2). VF D2 takes no responsibility whatsoever for disadvantages caused by such changes or any errors that may appear in this document.

1.1 Position of interface

When viewed from the external application, the EMI provides access to the SMSC functions: submission of Short Messages, and reception of Short Messages and notifications. The SMSC can be viewed as a Black Box: Short Messages are directed to the GSM mobile telephone of the recipient. The SMSC and the PLMN only function as relay mechanisms for those messages. The only visible action of the SMSC apart from this is the provision of notifications: upon request the SMSC will notify the originator of the SM regarding the delivery status of the SM.



(Note: PAD access (X.29) is not foreseen as a general user access to the SMSC)

Figure 1.2 EMI: Internal view

The EMI can use the following lower level protocols as a carrier:

TCP/IP via Leased Line – for LA mandatory
TCP/IP via Public Internet – for LA mandatory
ISDN (V.110 and transparent X.75) - for LA mandatory

The setup of the connection between the SMSC Platform and the remote machine depends on the carrier used. Once the connection is established, the EMI commands can be used.

Please note that correct interworking with the SMSC can be guaranteed just for the case that transparent X.75 and not any protocol derived of X.75 or set on top of X.75 is used for the ISDN access.

1.2 Interface history

The SMSC External Machine Interface (EMI) is based on an extended subset of the UCP protocol defined for the ERMES paging system in ETS 300 133-3 [6]. When referring to 'UCP' in the context of the SMSC, the EMI, the extended subset of the ERMES UCP, is meant. In the SMSC the UCP protocol was chosen as the basis for the EMI because

1. It saves the trouble of having to re-invent a protocol structure for an interface that is very similar to the ERMES interface to external machines.

2. It allows application developers to use a single mechanism to interface to both ERMES based paging systems and the SMS.

In order to provide access to the more extensive set of SMS commands, it was necessary to extend the UCP definition with some additional, SMSC specific commands, such as 'Submit Short Message Operation' and 'SMT alert operation'.