



## **TECHNICAL SPECIFICATION**

# **MC Connect EMI**

**Document version 1.05**

## Basic information

Identification	
Name:	Technical specification MC Connect EMI
Document version:	1.05
Create date:	2008-10-08
Last update date:	2019-10-22
Template version:	SAB_Uzivatel'ska_prirucka_20180723.docx
State:	production
Limitations:	none

## Purpose of this document

Complete specification of bi-directional UCP/EMI protocol for transport of short messages (SMS) and delivery reports is covered in [1]. This document defines subset of EMI operations supported, and additional error codes.

## References

[1] Short Message Service Centre 4.0, EMI - UCP Interface, © 2001 by CMG Wireless Data Solutions, EMI\_UCP\_Specification\_40-8156.pdf

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## History of changes

Date	Version	Author	Description
2008-10-08	1.0		Document created.
2010-02-12	1.01		detailed explanation of some error codes
2010-0-15	1.02		document re-formatting for export
2010-03-26	1.03		description of EC 07 "Authentication failure"; throttling EC renumbered 90->99
2010-03-26	1.04		O/51 – list of supported elements; Xser 0C "billing identifier"
2019-10-22	1.05	MSp	Company logo update

## 1. List of supported UCP/EMI operations

MC Connect EMI implements SMSC role of EMI/UCP interface (initiates O/52 deliver\_short\_message and O/53 deliver\_notification).

Client's application implements SMT role of EMI/UCP interface (initiates O/51 submit\_short\_message).

### List of commands supported by MMR implementation

EMI operation	Name	initiated by	supported
01	Call input operation	SMT	no
02	Multiple address call input operation	SMT	no
03	Call input with supplementary services operation	SMT	no
30	SMS message transfer operation	SMT	no
31	SMT alert operation	SMT	yes
51	Submit_short_message	SMT	yes
52	Deliver_short_message	SMSC	yes
53	Deliver_notification	SMSC	yes
54	Modify_message	SMT	no
55	Inquiry_message	SMT	no
56	Delete_message	SMT	no
57	Response_inquiry_message	SMSC	no
58	Response_delete_message	SMSC	no
60	Session Management	SMT	yes
61	List Management	SMT	no

## 2. Flow Control

According to [1], paragraph 3.3 "Flow control", MC Connect EMI provides:

windowing available                    yes  
maximum window size                10

### 3. Submit Short Message operation (O/51) – supported elements

<u>Elemets supported</u>	<u>Supported XSer values for O/51</u>	
AdC	yes	01 GSM UDH information
OAdC	yes	02 GSM DCS information
AC	no	020108 means unicode message
NRq	yes	0C Billing Identifier (applicable in selected countries/operators only)
NAdC	no	0C0101 ... set non-zero MT-billing code (subscriber is charged while receiving the message) (default)
NT	no	0C0100 ... set zero MT-billing code (subscriber receives message for free)
NPID	no	
LRq	no	
LRAAd	no	
LPID	no	
DD	no	
DDT	no	
VP	no	
RPID	no	
MT=2:	no	
NMsg	no	
MT=3:	yes	
AMsg	yes	
MT=4:	yes	
TMsg	yes	
MMS	no	
PR	no	
MCLs	no	
RPI	no	
OTOA	no	
HPLMN	no	
XSer	yes	

### 4. Error Codes

#### a) Unrecoverable errors in Negative Result of operation 51-Submit\_short\_message

Any of error codes declared in [1], paragraph "Error Codes Overview", page 66+, may occur. All error codes 00-89 are UNRECOVERABLE – don't submit the same message again.

There is more detailed explanation of following error codes:

#### EC 05 "Call Barring Active"

Recipient (AdC) is blacklisted for Premium Rate MT SMS.

#### EC 06 "AdC invalid"

Unable to record billing information of recipient (AdC) of Premium Rate MT SMS – not a number of domestic PLMN (often due to mobile number portability)

#### EC 07 "Authentication failure"

Message rejected – Sender number (OAdC) is not allowed

EC 16 “Reverse charging not allowed”

Submit of Premium Rate MT SMS is not allowed for this SMT (client)

EC 17 “Legitimation code for rev. charging, failure”

Premium Rate MT SMS rejected due to insufficient credit balance of recipient.

**b) Recoverable errors in Negative Result of operation 51-Submit\_short\_message**

MC Connect EMI specifies additional error code 99 which is not specified in [1].

EC 99 “Throttling active”

Message not accepted – maximum throughput exceeded. Please re-send the same message again. You should **wait spacificed amount of milliseconds** (see SM parameter) before re-sending, otherwise the message will be rejected again.

SM (System Message) contains number of milliseconds to wait

Example: 97/00026/R/51/N/90/5870/C4

How to interpret: Operation 51 with TRN 97 was temporarily rejected due to throttling (ec=99). SMT must re-submit the same message not earlier than after **5870** milliseconds.

The throttling treshold (number of messages per seconds in range 0.1 to 200.0 SMS/sec) might be set on SMSC side according your contract.