Technical Document - Confidential

GSM FAX & DATA SERVICES

ACI SMS

Document Number:	8411.xxx.99.002
Version:	0.3
Status:	Draft
Approval Authority:	
Creation Date:	1999-Nov-08
Last changed:	2015-Mar-08 by XGUTTEFE
File Name:	acisms.doc

Important Notice

Texas Instruments Incorporated and/or its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products, software and services at any time and to discontinue any product, software or service without notice. Customers should obtain the latest relevant information during product design and before placing orders and should verify that such information is current and complete.

All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment. TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI products, software and/or services. To minimize the risks associated with customer products and applications, customers should provide adequate design, testing and operating safeguards.

Any access to and/or use of TI software described in this document is subject to Customers entering into formal license agreements and payment of associated license fees. TI software may solely be used and/or copied subject to and strictly in accordance with all the terms of such license agreements.

Customer acknowledges and agrees that TI products and/or software may be based on or implement industry recognized standards and that certain third parties may claim intellectual property rights therein. The supply of products and/or the licensing of software does not convey a license from TI to any third party intellectual property rights and TI expressly disclaims liability for infringement of third party intellectual property rights.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products, software or services are used.

Information published by TI regarding third–party products, software or services does not constitute a license from TI to use such products, software or services or a warranty, endorsement thereof or statement regarding their availability. Use of such information, products, software or services may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Change History

Date	Changed by	Approved by	Version	Status	Notes
1999-Nov-08	Frank Kaiser		0.1		1
2000-Feb-03	OSE		0.2		2
2003-May-12	XGUTTEFE		0.3	Draft	

Notes:

1. Initial version
2. New Template

Table of Contents

List of Figures and Tables

List of References

[ISO 9000:2000] International Organization for Standardization. Quality management systems - Fundamentals and vocabulary. December 2000

1.1 References

[1] Rec. T.2 Standardisation of group 1 facsimile apparatus for document transmission;
(CCITT-T.2, 1976)

[2] Rec. T.3 Standardisation of group 2 facsimile apparatus for document transmission;
(CCITT-T.3, 1980)

[3] Rec. T.4 Standardisation of group 3 facsimile apparatus for document transmission;
(CCITT-T.4, 1984)

[4] Rec. T.30 Procedures for document facsimile transmission in the general switched telephone network;
(CCITT-T.30, 1984)

[5] European digital cellular telecommunications system (Phase 2);
GSM Public Land Mobile Network (PLMN) connection types;
(GSM 3.10, September 1994, version 4.3.1)

[6] European digital cellular telecommunications system (Phase 2);
Technical realisation of facsimile group 3 transparent;
(GSM 3.45, September 1995, version 4.5.0)

[7] Digital cellular telecommunications system (Phase 2);
Mobile radio interface layer 3 specification;
(GSM 4.08, November 1996, version 4.17.0)

[8] European digital cellular telecommunications system (Phase 2);
Rate adaptation on the Mobile Station - Base Station System (MS - BSS) Interface;
(GSM 4.21, May 1995, version 4.6.0)

[9] European digital cellular telecommunications system (Phase 2);
Radio Link Protocol (RLP) for data and telematic services on the Mobile Station - Base Station System (MS - BSS) interface and the Base Station System - Mobile-service Switching Centre (BSS - MSC) interface
(GSM 4.22, September 1994, version 4.3.0)

[10] European digital cellular telecommunications system (Phase 2);
Radio Link Protocol (RLP) for data and telematic services on the Mobile Station - Base Station System (MS - BSS) interface and the Base Station System - Mobile-service Switching Centre (BSS - MSC) interface
(Amendment prA1 for GSM 4.22, version 4.3.0)
(GSM 4.22, March 1995, version 4.4.0)

[11] European digital cellular telecommunications system (Phase 2);
General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS);
(GSM 7.01, December 1995, version 4.10.0)

[12] European digital cellular telecommunications system (Phase 2);
Terminal Adaptation Functions (TAF) for services using asynchronous bearer capabilities;
(GSM 7.02, September 1994, version 4.5.1)

[13] European digital cellular telecommunications system (Phase 2);
Terminal Adaptation Functions (TAF) for services using synchronous bearer capabilities;
(GSM 7.03, September 1994, version 4.5.1)

[14] Digital cellular telecommunications system (Phase 2);
Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Services (CBS);
(GSM 7.05, November 1996, version 4.8.0)

[15] Digital cellular telecommunications system (Phase 2);
AT command set for GSM Mobile Equipment (ME)
(GSM 7.07, May 1996, version 4.1.0)

[16] Digital cellular telecommunication system (Phase 2);
Mobile Station (MS) conformance specification;
Part 1: Conformance specification
(GSM 11.10-1, November 1996, version 4.17.0)

[17] Digital cellular telecommunications system (Phase 2);
Mobile Station (MS) conformance specification;
Part 2: Protocol Implementation Conformance Statement (PICS) proforma specification
(GSM 11.10-2, May 1996, version 4.15.0)

[18] Digital cellular telecommunications system (Phase 2);
Mobile Station (MS) conformance specification;
Part 3: Layer 3 (L3) Abstract Test Suite (ATS)
(GSM 11.10-3, November 1996, version 4.17.0)
[19] Proposal for Rate Adaptation implemented on a DSP;
(C. Bianconi, Texas Instruments, January 1999, version 1.0)
[20] Service Access Point RA
8411.100.98.100; Condat AG
[21] Service Access Point RLP
8411.101.98.100; Condat AG
[22] Service Access Point L2R
8411.102.98.100; Condat AG
[23] Service Access Point FAD
8411.103.98.100; Condat AG
[24] Service Access Point T30
8411.104.98.100; Condat AG
[25] Service Access Point ACI
8411.105.98.100; Condat AG
[26] Message Sequence Charts RLP
8411.201.98.100; Condat AG
[27] Message Sequence Charts L2R
8411.202.98.100; Condat AG
[28] Message Sequence Charts FAD
8411.203.98.100; Condat AG
[29] Message Sequence Charts T30
8411.204.98.100; Condat AG
[30] Message Sequence Charts ACI
8411.205.98.100; Condat AG
[31] Users Guide
8411.300.98.100; Condat AG
[32] Test Specification RLP
8411.401.98.100; Condat AG
[33] Test Specification L2R
8411.402.98.100; Condat AG
[34] Test Specification FAD
8411.403.98.100; Condat AG
[35] Test Specification T30
8411.404.98.100; Condat AG
[36] Test Specification ACI
8411.405.98.100; Condat AG
[37] SDL Specification RLP
8411.501.98.100; Condat AG
[38] SDL Specification L2R
8411.502.98.100; Condat AG
[39] SDL Specification FAD
8411.503.98.100; Condat AG
[40] SDL Specification T30
8411.504.98.100; Condat AG
[41] SDL Specification ACI
8411.505.98.100; Condat AG
[42] Technical Documentation RLP
8411.701.98.100; Condat AG
[43] Technical Documentation L2R
8411.702.98.100; Condat AG
[44] Technical Documentation FAD
8411.703.98.100; Condat AG
[45] Technical Documentation T30
8411.704.98.100; Condat AG

[46] Technical Documentation ACI
8411.705.98.100; Condat AG

1.2 Abbreviations

ACI	AT command interpreter
AGCH	Access Grant Channel
AT	Attention sequence „AT“ to indicate valid commands of the ACI
BCCH	Broadcast Control Channel
BCS	Binary Coded Signals
BS	Base Station
BSIC	Base Station Identification Code
C/R	Command / Response
C1	Path Loss Criterion
C2	Reselection Criterion
CBCH	Cell Broadcast Channel
CBQ	Cell Bar Qualify
CC	Call Control
CCCH	Common Control Channel
CCD	Condat Coder Decoder
CKSN	Ciphering Key Sequence Number
CRC	Cyclic Redundancy Check
DCCH	Dedicated Control Channel
DISC	Disconnect Frame
DL	Data Link Layer
DM	Disconnected Mode Frame
DTX	Discontinuous Transmission
EA	Extension Bit Address Field
EL	Extension Bit Length Field
EMMI	Electrical Man Machine Interface
EOL	End Of Line
F	Final Bit
F&D	Fax and Data Protocol Stack
FACCH	Fast Associated Control Channel
FHO	Forced Handover
GP	Guard Period
GSM	Global System for Mobile Communication
HDLC	High level Data Link Control
HISR	High level Interrupt Service Routine
HPLMN	Home Public Land Mobile Network
I	Information Frame
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
ITU	International Telecommunication Union
Kc	Authentication Key
L	Length Indicator
LAI	Location Area Information
LISR	Low level Interrupt Service Routine
LPD	Link Protocol Discriminator
M	More Data Bit
MCC	Mobile Country Code
MM	Mobility Management
MMI	Man Machine Interface
MMI	Man Machine Interface
MNC	Mobile Network Code

MS	Mobile Station
MSG	Message phase in the GSM 3.45 protocol
N(R)	Receive Number
N(S)	Send Number
NCC	National Colour Code
NECI	New Establishment Causes included
OTD	Observed Time Difference
P	Poll Bit
P/F	Poll / Final Bit
PCH	Paging Channel
PCO	Point of Control and Observation
PDU	Protocol Description Unit
PL	Physical Layer
PLMN	Public Land Mobile Network
RACH	Random Access Channel
REJ	Reject Frame
RNR	Receive Not Ready Frame
RR	Radio Resource Management
RR	Receive Ready Frame
RTD	Real Time Difference
RTOS	Real Time Operating System
SABM	Set Asynchronous Balanced Mode
SACCH	Slow Associated Control Channel
SAP	Service Access Point
SAP	Service Access Point
SAPI	Service Access Point Identifier
SDCCH	Slow Dedicated Control Channel
SIM	Subscriber Identity Module
SMS	Short Message Service
SMSCB	Short Message Service Cell Broadcast
SS	Supplementary Services
T.4	CCITT Standardisation for Document coding of Group 3 Facsimile Apparatus
TAP	Test Application Program
TCH	Traffic Channel
TCH	Traffic Channel
TCH/F	Traffic Channel Full Rate
TCH/H	Traffic Channel Half Rate
TDMA	Time Division Multiple Access
TE	Terminal Equipment - e. g. a PC
TMSI	Temporary Mobile Subscriber Identity
UA	Unnumbered Acknowledgement Frame
UI	Unnumbered Information Frame
V(A)	Acknowledgement State Variable
V(R)	Receive State Variable
V(S)	Send State Variable
VPLMN	Visiting Public Land Mobile Network

1.3 Terms

Entity:	Program which executes the functions of a layer
Message:	A message is a data unit which is transferred between the entities of the same layer (peer-to-peer) of the mobile and infrastructure side. Message is used as a synonym to protocol data unit (PDU). A message may contain several information elements.
Primitive:	A primitive is a data unit which is transferred between layers on one component (mobile station or infrastructure). The primitive has an operation code which identifies the primitive and its parameters.
Service Access Point:	A Service Access Point is a data interface between two layers on one component (mobile station or infrastructure).

2 Overview

The Protocol Stacks are used to define the functionality of the GSM protocols for interfaces. The GSM specifications are normative when used to describe the functionality of interfaces, but the stacks and the subdivision of protocol layers does not imply or restrict any implementation.

The protocol stack for fax and data transmission consists of several entities. Each entity has one ore more service access points, over which the entity provides a service for the upper entity. The entity, which is described in this document, is coloured grey in the following figure :

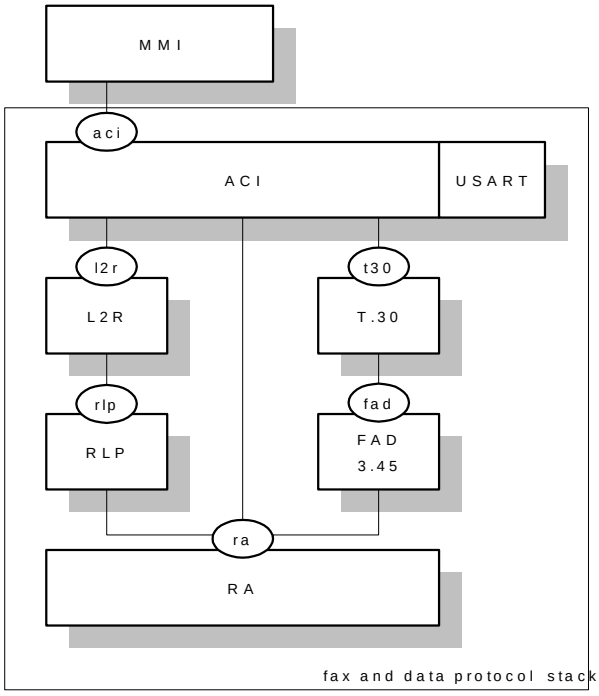


Figure 2-1: Architecture of the fax and data protocol stack

The information units passed via the SAPs are called primitives and consists of an operation code and several parameters. See the Users Guide for details.

The entities of the fax and data protocol stack are:

2.1 RA - Rate Adaptation

This entity performs an adaptation between an asynchronous or synchronous data stream with several bit rates on to the fixed bit rate used at the TCH. This is performed by the rate adaptation functions RA1' and RA0 described in GSM 04.21.

2.2 RLP - Radio Link Protocol

This entity provides a Layer 2 protocol for asynchronous reliable data transfer as specified in GSM 04.22. It includes error correction, sequence numbers and a mechanism for repeating corrupted and lost messages.

2.3 L2R - Layer 2 Relay Functionality

The L2R provides relay functions in order to adapt the character-oriented data received from the TE via USART to the bit-oriented RLP protocol.

2.4 FAD 03.45 - Fax Adaptation Protocol

The fax adaptation protocol, as specified in GSM 03.45, provides synchronisation with the BCS and MSG modems of the peer entity. It uses byte repetition in conjunction with a voting algorithm to handle corruption on the TCH data stream. The non-transparent fax protocol in accordance with GSM 03.46 is not part of this implementation.

The fax adapter enables T.30 to send BCS at 300 BPS and T.4 MSG in 2400, 4800, 7200 and 9600 BPS.

2.5 T.30 - Fax Protocol Entity

The protocol uses binary coded signals packed in HDLC frames to set up and release a connection in the message phase of the FAX transmission. This entity is specified in the ITU-T.30. The main tasks of this unit are:

- Building the HDLC frames with CRC.
- Performing bit stuffing/de-stuffing.
- Executing a sequence of 5 phases: 1.) set up, 2.) pre-message procedures, 3.) transmission/reception, 4.) post message procedures, 5.) waiting for call release.

2.6 ACI - AT Command Interpreter

The ACI is specified in GSM 07.07. It is responsible for call establishment via the GSM voice protocol stack and terminal adaptation for asynchronous transparent character-oriented data transmission. The ACI is able to receive AT commands and send the replies over the USART driver to a remote PC. This makes it possible to control the voice and data protocol stack from a remote application running on a PC. The ACI also provides a unique interface for an internal MMI in the MS.

2.7 USART - Universal Synchronous Asynchronous Receiver Transmitter Driver

The USART is a hardware component that facilitates a connection between the mobile station and terminal equipment (e.g. a PC). This interface uses some of the circuits described in V.24.

The data exchange provided by this unit is serial and asynchronous (synchronous communication is not in the scope of this document). A driver that uses interrupts to manage a circular buffer for the sending and receiving direction is necessary in order to use this component in the F&D. The driver has to be able to perform flow control.

3 Parameters

```
/* --- Declarations --- */

DECLARATION(SM7_ABCDEFGHI)
DECLARATION(SM7_0123456789_RPT)

/* --- Constants --- */

BYTE        DUMMY           0
BYTE        MAX_SIM_DEF     10
BYTE        USED_SIM_DEF    0
```

```
BYTE            USED_SIM_2          2
BYTE            MAX_ME_DEF          10
BYTE            USED_ME_DEF         0

/* sim record */
SHORT           SIM_RECORD_0        0
SHORT           SIM_RECORD_1        1
SHORT           SIM_RECORD_2        2
SHORT           SIM_RECORD_3        3
SHORT           SIM_RECORD_4        4
SHORT           SIM_RECORD_5        5

/* message reference */
SHORT           MSG_REF_1           1
SHORT           MSG_REF_2           2
SHORT           MSG_REF_3           3

/* sim status */
BYTE            SIM_MT_STATUS           3
BYTE            SIM_MT_STATUS_READ      1
BYTE            SIM_MO_STATUS           7
BYTE            SIM_MO_STATUS_READ      5

/* message types */
BYTE            MSG_MO_1            0x01
BYTE            MSG_MT_1            0x04
BYTE            MSG_TYPE_02         0x02
BYTE            MSG_TYPE_04         0x04
BYTE            MSG_TYPE_06         0x06
BYTE            MSG_TYPE_SUBMIT_DEF             0x1D
BYTE            MSG_TYPE_SUBMIT_REPLY           0x9D
BYTE            MSG_TYPE_44         0x44

/* protocol identifiers */
BYTE PID_SM_TYPE_0 0x40

/* data coding schemes */
BYTE DCS_DEF 0x00
BYTE DCS_1 0xF2
BYTE DCS_2 0xF4
BYTE DCS_8_BIT 0xF4

/* --- AT Commands / Responses --- */

/*
Message:    OK
            successful operation
*/
STRING(M_OK, "^OK" )
BYTE LM_OK 2

/*
Message:    ERROR
            error result code
*/
STRING(M_ERROR, "^ERROR" )
BYTE LM_ERROR 5
```

```
/*
Message:        BUSY
                busy result code
*/
STRING(M_BUSY, "^BUSY" )
BYTE LM_BUSY 4

/*
Message:        >
                start editing
*/
STRING(M_EDIT, "\136\r\n> ")
BYTE LM_EDIT 4

/*
Command:        +CMGF
                set message format: text mode
*/
STRING(C_PLUS_CMGF_FULL, "AT+CMGF=1" )
BYTE LC_PLUS_CMGF_FULL 9

/*
Command:        +CSMS
                select message service: phase 2+
*/
STRING(C_PLUS_CSMS_FULL, "AT+CSMS=1" )
BYTE LC_PLUS_CSMS_FULL 9

/*
Command:        +CPMS
                select message storage memory
*/
STRING(C_PLUS_CPMS_SM3X, "AT+CPMS=\"SM\",\"SM\",\"SM\"" )
BYTE LC_PLUS_CPMS_SM3X 22

/*
Result:         +CPMS
                response to select message storage memory
*/
STRING(C_PLUS_CPMS_SM3X_DEF, "^+CPMS: 0,10,0,10,0,10")
BYTE LC_PLUS_CPMS_SM3X_DEF 21

/*
Command:        +CSCA
                set service center address
*/
STRING(C_PLUS_CSCA_DEF, "AT+CSCA=\"017211963852\"")
BYTE LC_PLUS_CSCA_DEF 22

/*
Command:        +CSMP
                set text mode parameters
*/
STRING(C_PLUS_CSMP_DEF, "AT+CSMP=17,167,0,0")
BYTE LC_PLUS_CSMP_DEF 18
```

```
STRING(C_PLUS_CSMP_SPEC1, "AT+CSMP=29,\"98/01/07,12:34:56+04\",64,0")
BYTE LC_PLUS_CSMP_SPEC1 38

/*
Command:    +CNMI
            new message indication to TE
*/
STRING(C_PLUS_CNMI_CMTI, "AT+CNMI=1,1,0,0,0" )
BYTE LC_PLUS_CNMI_CMTI 17

/*
Command:    +CNMA
            acknowledge new message
*/
STRING(C_PLUS_CNMA, "AT+CNMA" )
BYTE LC_PLUS_CNMA 7

/*
Indication: +CMTI
            indicate record number of new MT-SM
*/
STRING(C_PLUS_CMTI_SIM_REC1, "^+CMTI: \"SM\",1")
BYTE LC_PLUS_CMTI_SIM_REC1 13

/*
Indication: +CMTI
            indicate record number of new MT-SM
*/
STRING(C_PLUS_CMTI_SIM_REC2, "^+CMTI: \"SM\",2")
BYTE LC_PLUS_CMTI_SIM_REC2 13

/*
Command:    +CMGR
            read SMS record 1: default mode
*/
STRING(C_PLUS_CMGR_REC1_DEF, "AT+CMGR=1" )
BYTE LC_PLUS_CMGR_REC1_DEF 9

/*
Command:    +CMGR
            read SMS record 1: read mode = normal
*/
STRING(C_PLUS_CMGR_REC1_NORM, "AT+CMGR=1,0" )
BYTE LC_PLUS_CMGR_REC1_NORM 11

/*
Command:    +CMGR
            read SMS record 1: read mode = preview
*/
STRING(C_PLUS_CMGR_REC1_PREV, "AT+CMGR=1,1" )
BYTE LC_PLUS_CMGR_REC1_PREV 11

/*
Command:    +CMGR
            read SMS record 1: read mode = status change
```

```
*/
STRING(C_PLUS_CMGR_REC1_CHG, "AT+CMGR=1,2" )
BYTE LC_PLUS_CMGR_REC1_CHG 11

/*
Command:    +CMGR
            read SMS record 1: read mode = undefined
*/
STRING(C_PLUS_CMGR_REC1_ERR, "AT+CMGR=1,11" )
BYTE LC_PLUS_CMGR_REC1_ERR 12

/*
Command:    +CMGL
            list SMS records: status = default, read mode = default
*/
STRING(C_PLUS_CMGL_DEF, "AT+CMGL" )
BYTE LC_PLUS_CMGL_DEF 7

/*
Command:    +CMGL
            list SMS records: status = default, read mode = NORMAL
*/
STRING(C_PLUS_CMGL_NORM, "AT+CMGL=,0" )
BYTE LC_PLUS_CMGL_NORM 10

/*
Command:    +CMGL
            list SMS records: status = default, read mode = PREVIEW
*/
STRING(C_PLUS_CMGL_PREV, "AT+CMGL=,1" )
BYTE LC_PLUS_CMGL_PREV 10

/*
Command:    +CMGL
            list SMS records: status = default, read mode = STATUS_CHANGED
*/
STRING(C_PLUS_CMGL_CHG, "AT+CMGL=,2" )
BYTE LC_PLUS_CMGL_CHG 10

/*
Command:    +CMGL
            list SMS records: status = default, read mode = undefined
*/
STRING(C_PLUS_CMGL_ERR, "AT+CMGL=,11" )
BYTE LC_PLUS_CMGL_ERR 11

STRING(M_CMGL_ENTRY_1, "\136+CMGL: 1,\"REC
READ\",\"987654\",,\"98/01/07,12:34:56+04\",129,9")
BYTE LM_CMGL_ENTRY_1 58

STRING(M_CMGL_ENTRY_2, "\136+CMGL: 2,\"REC
READ\",\"98765\",,\"98/01/07,12:34:56+04\",129,160")
BYTE LM_CMGL_ENTRY_2 59

STRING(M_CMGL_ENTRY_1_UNR, "\136+CMGL: 1,\"REC
UNREAD\",\"987654\",,\"98/01/07,12:34:56+04\",129,9")
```

```
BYTE LM_CMGL_ENTRY_1_UNR 60

STRING(M_CMGL_ENTRY_2_UNR, "\136+CMGL: 2,\"REC
UNREAD\",\"98765\",,\"98/01/07,12:34:56+04\",129,160")
BYTE LM_CMGL_ENTRY_2_UNR 61

STRING(M_CMGL1_ABCDEFGHI, "\136ABCDEFGHI")
BYTE LM_CMGL1_ABCDEFGHI 9

BYTE LM_CMGL2_0123456789_RPT 160
FIELD(M_CMGL2_0123456789_RPT)
        0x15E, /* \136 bzw. 350 mod 0x100 */
        /*0x0D, 0x0A, /* \r\n */
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39,
        0x30, 0x31, 0x32, 0x33, 0x34, 0x35, 0x36, 0x37, 0x38, 0x39
ENDFIELD(M_CMGL2_0123456789_RPT, (LM_CMGL2_0123456789_RPT + 1))

/* command: CMGW */
STRING(C_CMGW_WRITE_DEF, "AT+CMGW=\"654321\"")
BYTE LC_CMGW_WRITE_DEF 16

STRING(C_CMGW_WRITE_DA_DEF, "AT+CMGW=\"030654321\"")
BYTE LC_CMGW_WRITE_DA_DEF 19

STRING(C_CMGW_WRITE_SCA_DEF, "AT+CMGW=\"654321\",,,\"12345\"")
BYTE LC_CMGW_WRITE_SCA_DEF 26

STRING(C_CMGW_WRITE_SCA_NORPL, "AT+CMGW=\"654321\",,,\"12345\",,0")
BYTE LC_CMGW_WRITE_SCA_NORPL 29

STRING(C_CMGW_WRITE_SCA_ISRPL, "AT+CMGW=\"654321\",,,\"12345\",,1")
BYTE LC_CMGW_WRITE_SCA_ISRPL 29

STRING(C_CMGW_WRITE_UNR, "AT+CMGW=\"654321\",,\"REC UNREAD\"")
BYTE LC_CMGW_WRITE_UNR 30

STRING(C_CMGW_ABCDEFGHI, "ABCDEFGHI")
BYTE LC_CMGW_ABCDEFGHI 9

/* message: CMGW */
STRING(M_CMGW_REC_NUM_1, "\136+CMGW: 1")
BYTE LM_CMGW_REC_NUM_1 8

STRING(M_CMGW_REC_NUM_2, "\136+CMGW: 2")
BYTE LM_CMGW_REC_NUM_2 8
```

```
STRING(M_CMGW_REC_NUM_3, "\136+CMGW: 3")
BYTE LM_CMGW_REC_NUM_3 8

/* command: CMGS */
STRING(C_CMGS_SEND_DEF, "AT+CMGS=\"654321\"")
BYTE LC_CMGS_SEND_DEF 16

STRING(C_CMGS_SEND_DA_DEF, "AT+CMGS=\"030654321\"")
BYTE LC_CMGS_SEND_DA_DEF 19

STRING(C_CMGS_SEND_SCA_DEF, "AT+CMGS=\"654321\",,\"12345\"")
BYTE LC_CMGS_SEND_SCA_DEF 25

STRING(C_CMGS_SEND_SCA_NORPL, "AT+CMGS=\"654321\",,\"12345\",,0")
BYTE LC_CMGS_SEND_SCA_NORPL 28

STRING(C_CMGS_SEND_SCA_ISRPL, "AT+CMGS=\"654321\",,\"12345\",,1")
BYTE LC_CMGS_SEND_SCA_ISRPL 28

/* message: CMGS */
STRING(M_CMGS_MSG_REF_1, "\136+CMGS: 1")
BYTE LM_CMGS_MSG_REF_1 8

STRING(M_CMGS_MSG_REF_2, "\136+CMGS: 2")
BYTE LM_CMGS_MSG_REF_2 8

STRING(M_CMGS_MSG_REF_3, "\136+CMGS: 3")
BYTE LM_CMGS_MSG_REF_3 8

/* --- Primitive Parameters --- */

FIELD (SIM_STATUS_DEF) /*128,*/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
ENDFIELD (SIM_STATUS_DEF, 10)

FIELD (ME_STATUS_DEF) /*128,*/ 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
ENDFIELD (ME_STATUS_DEF, 10)

FIELD (SIM_STATUS_2REC_UNREAD) /*128,*/ 0x33, 0, 0, 0, 0, 0, 0, 0, 0, 0
ENDFIELD (SIM_STATUS_2REC_UNREAD, 10)

/* originator addresses */
FIELD (OA_987654)
        0x00, 0x01, 0x06, 0x09, 0x08, 0x07, 0x06, 0x05, 0x04
ENDFIELD (OA_987654, 9)

FIELD (OA_98765)
        0x00, 0x01, 0x05, 0x09, 0x08, 0x07, 0x06, 0x05
ENDFIELD (OA_98765, 8)

FIELD(DA_654321)
        0x00,0x01,0x06,0x06,0x05,0x04,0x03,0x02,0x01
ENDFIELD(DA_654321, 9)

FIELD(DA_030654321)
        0x00,0x01,0x09,0x00,0x03,0x00,0x06,0x05,0x04,0x03,0x02,0x01
ENDFIELD(DA_030654321, 12)

/* service center addresses */
```

```
FIELD (SA_12345)
        NTYPE_UNKNW,
        NPLAN_ISDN_TEL,
        0x05, 0x01, 0x02, 0x03, 0x04, 0x05
ENDFIELD (SA_12345, 8)

FIELD (SA_017211963852)
        NTYPE_UNKNW /*NTYPE_NAT_NO*/,
        NPLAN_ISDN_TEL,
        0x0C, 0x00, 0x01, 0x07, 0x02, 0x01, 0x01, 0x09, 0x06, 0x03, 0x08, 0x05, 0x02
ENDFIELD (SA_017211963852, 15)

/* absolute validity periods */
FIELD (VP_A9801071234564)
        0x09, 0x08, 0x00, 0x01, 0x00, 0x07, 0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x40
ENDFIELD (VP_A9801071234564, 13)

/* short messages length */
BYTE L_SM7_ABCDEFGHI 0x09
BYTE L_SM8_ABCDEFGHI 0x09
BYTE L_SM7_SPECIAL_SIGNS 0x15
BYTE L_SM8_HEX_SPECIAL_SIGNS 0x16
BYTE L_SM7_0123456789_RPT 0xA0
BYTE L_SM7_UDH_ABCDEFGHI 0x10

/* short messages data */
FIELD (D_SM7_ABCDEFGHI)
        0x41, 0xE1, 0x90, 0x58, 0x34, 0x1E, 0x91, 0x49, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
        0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00
ENDFIELD (D_SM7_ABCDEFGHI, SMS_MSG_LEN)

FIELD (D_SM7_0123456789_RPT)
        0xB0, 0x98, 0x6C, 0x46, 0xAB, 0xD9, 0x6E, 0xB8, 0x1C, 0x2C, 0x26, 0x9B, 0xD1, 0x6A,
        0xB6, 0x1B, 0x2E, 0x07, 0x8B, 0xC9, 0x66, 0xB4, 0x9A, 0xED, 0x86, 0xCB, 0xC1, 0x62,
        0xB2, 0x19, 0xAD, 0x66, 0xBB, 0xE1, 0x72, 0xB0, 0x98, 0x6C, 0x46, 0xAB, 0xD9, 0x6E,
        0xB8, 0x1C, 0x2C, 0x26, 0x9B, 0xD1, 0x6A, 0xB6, 0x1B, 0x2E, 0x07, 0x8B, 0xC9, 0x66,
        0xB4, 0x9A, 0xED, 0x86, 0xCB, 0xC1, 0x62, 0xB2, 0x19, 0xAD, 0x66, 0xBB, 0xE1, 0x72,
        0xB0, 0x98, 0x6C, 0x46, 0xAB, 0xD9, 0x6E, 0xB8, 0x1C, 0x2C, 0x26, 0x9B, 0xD1, 0x6A,
        0xB6, 0x1B, 0x2E, 0x07, 0x8B, 0xC9, 0x66, 0xB4, 0x9A, 0xED, 0x86, 0xCB, 0xC1, 0x62,
        0xB2, 0x19, 0xAD, 0x66, 0xBB, 0xE1, 0x72, 0xB0, 0x98, 0x6C, 0x46, 0xAB, 0xD9, 0x6E,
        0xB8, 0x1C, 0x2C, 0x26, 0x9B, 0xD1, 0x6A, 0xB6, 0x1B, 0x2E, 0x07, 0x8B, 0xC9, 0x66,
        0xB4, 0x9A, 0xED, 0x86, 0xCB, 0xC1, 0x62, 0xB2, 0x19, 0xAD, 0x66, 0xBB, 0xE1, 0x72
ENDFIELD (D_SM7_0123456789_RPT, SMS_MSG_LEN)

/* short messages */
BEGIN_PSTRUCT ("sms_msg", SM7_ABCDEFGHI)
        SET_COMP ("c_msg",  L_SM7_ABCDEFGHI)
        SET_COMP ("s_msg",  D_SM7_ABCDEFGHI)
ENDSTRUCT
```

```
BEGIN_PSTRUCT ("sms_msg", SM7_0123456789_RPT)
        SET_COMP ("c_msg",  L_SM7_0123456789_RPT)
        SET_COMP ("s_msg",  D_SM7_0123456789_RPT)
ENDSTRUCT
```

4 TEST CASES

4.1 Routing (internal) (ACISMS000 - ACISMS009)

4.1.1 ACISMS000: Setup the Routing and the PCO View for the ACI SMS Test

Description:

Routings for the ACI SMS tests are set.

Preamble:

None

```
     APL                          ACI                          PS
      |                            |                           |
COMMAND (TAP RESET)
COMMAND (CC RESET)
COMMAND (MM RESET)
COMMAND (SIM RESET)
COMMAND (SS RESET)
COMMAND (MMI RESET)
COMMAND (SMS RESET)
COMMAND (PL RESET)
      |                            |                           |
COMMAND (TAP REDIRECT CLEAR)
COMMAND (CC REDIRECT CLEAR)
COMMAND (MM REDIRECT CLEAR)
COMMAND (SIM REDIRECT CLEAR)
COMMAND (SS REDIRECT CLEAR)
COMMAND (MMI REDIRECT CLEAR)
COMMAND (SMS REDIRECT CLEAR)
COMMAND (PL REDIRECT CLEAR)
      |                            |                           |
COMMAND (MMI REDIRECT CC TAP)
COMMAND (MMI REDIRECT MM TAP)
COMMAND (MMI REDIRECT SIM TAP)
COMMAND (MMI REDIRECT SS TAP)
COMMAND (MMI REDIRECT MMI TAP)
COMMAND (MMI REDIRECT SMS TAP)
COMMAND (MMI REDIRECT T30 TAP)
COMMAND (MMI REDIRECT L2R TAP)
COMMAND (MMI REDIRECT RA TAP)
COMMAND (PL REDIRECT MMI NULL)
      |                            |                           |
COMMAND (TAP REDIRECT TAP MMI)
COMMAND (MMI REDIRECT MMI TAP)
      |                            |                           |
```

Parametrization:

Primitive	Parameter	Value

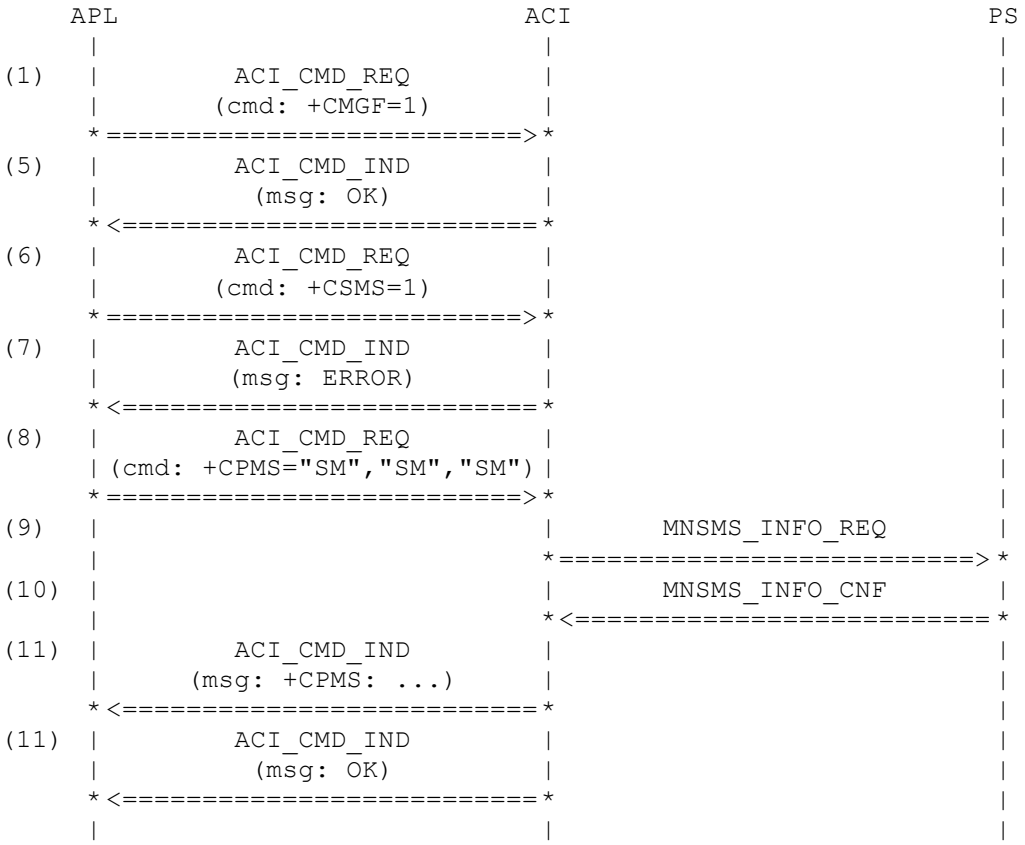
History: 05-Nov-99 FK Initial

4.2 Initialisation (ACISMS010 - ACISMS019)

4.2.1 ACISMS010: Set Interface, Service and Memory

Description:
set initial configuration for SMS

Preamble:
ACISMS000



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CMGF_FULL
	cmd_seq	C_PLUS_CMGF_FULL
(2) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CSMS_FULL
	cmd_seq	C_PLUS_CSMS_FULL

(4) ACI_CMD_IND		
	cmd_len	LM_ERROR
	cmd_seq	M_ERROR
(5) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CPMS_SM3X
	cmd_seq	C_PLUS_CPMS_SM3X
(6) MNSMS_INFO_REQ		
	param	DUMMY
(7) MNSMS_INFO_CNF		
	total_sim	MAX_SIM_DEF
	used_sim	USED_SIM_DEF
	status_sim	SIM_STATUS_DEF
	total_me	MAX_ME_DEF
	used_me	USED_ME_DEF
	status_me	ME_STATUS_DEF
(8) ACI_CMD_IND		
	cmd_len	LC_PLUS_CPMS_SM3X_DEF
	cmd_seq	C_PLUS_CPMS_SM3X_DEF
(9) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History: 08-Nov-99 FK Initial

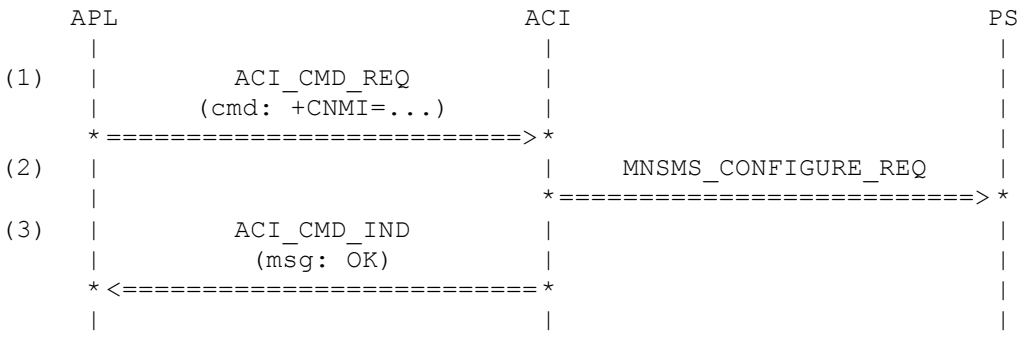
4.2.2 ACISMS011: Set Default Handling of Unsolicited Responses

Description:

MT_SMs are indicates with unsolicited response +CMT

Preamble:

ACISMS010



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CNMI_CMTI
	cmd_seq	C_PLUS_CNMI_CMTI
(2) MNSMS_CONFIGURE_REQ		
	pref_mem_3	MEM_SM

	mt	MT1
	ds	DS0
(3) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History: 08-Nov-99 FK Initial

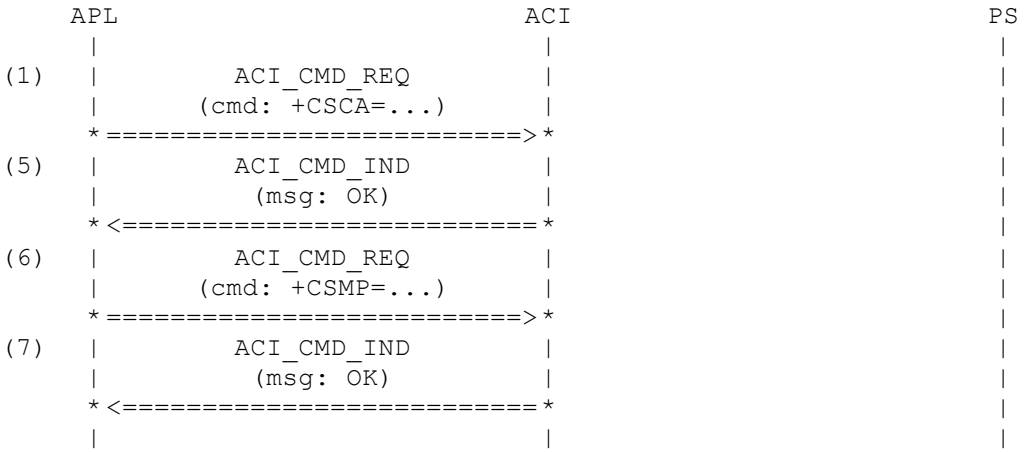
4.2.3 ACISMS012: Set Service Center Address and Text Mode Parameters

Description:

set general parameters for MO_SM

Preamble:

ACISMS011



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CSCA_DEF
	cmd_seq	C_PLUS_CSCA_DEF
(2) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CSMP_DEF
	cmd_seq	C_PLUS_CSMP_DEF
(4) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History: 08-Nov-99 FK Initial

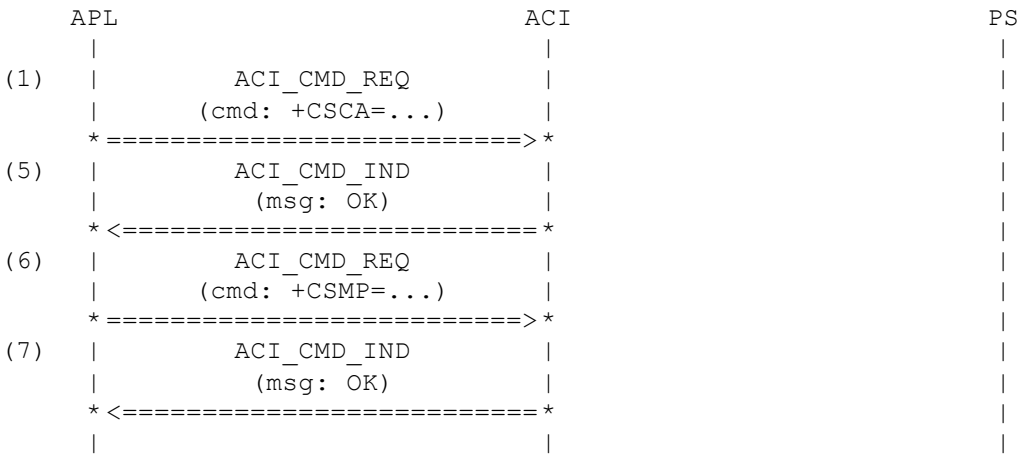
4.2.4 ACISMS013: Set Service Center Address and Special Text Mode Parameters

Description:

set general parameters for MO_SM with absolut VP

Preamble:

ACISMS011



Parametrization:

Primitive	Parameter	Value
(5) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CSCA_DEF
	cmd_seq	C_PLUS_CSCA_DEF
(6) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK
(7) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CSMP_SPEC1
	cmd_seq	C_PLUS_CSMP_SPEC1
(8) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History: 10-Nov-99 FK Initial

4.3 Single Mobile Terminated Message (ACISMS100 - ACISMS109)

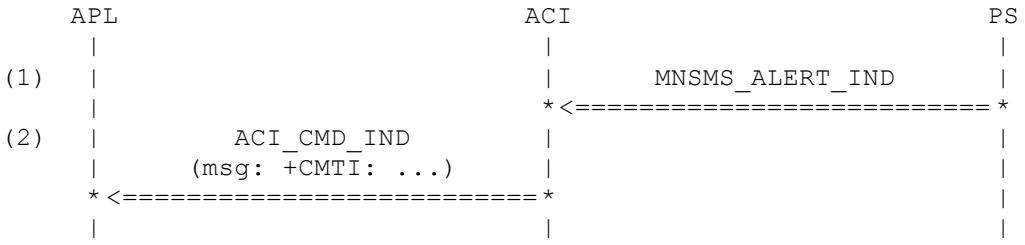
4.3.1 ACISMS100: Reception of a MT-SM

Description:

indicate reception of a MT-SM, which is stored in SIM record 1

Preamble:

ACISMS011



Parametrization:

Primitive	Parameter	Value
(1) MNSMS_ALERT_IND		
	mem_type	MEM_SM
	rec_num	SIM_RECORD_1
	status	SIM_MT_STATUS
(2) ACI_CMD_IND		
	cmd_len	LC_PLUS_CMTI_SIM_REC1
	cmd_seq	C_PLUS_CMTI_SIM_REC1

History: 08-Nov-99 FK Initial

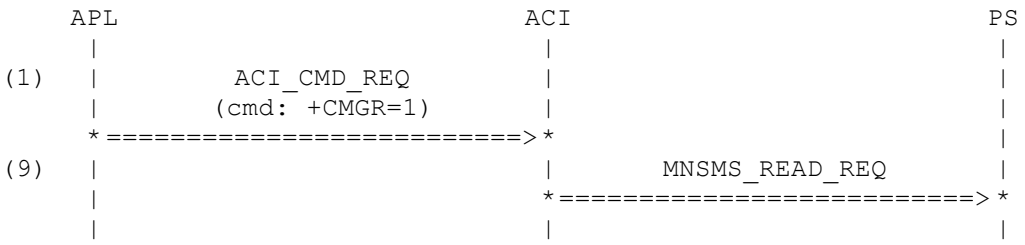
4.3.2 ACISMS101: Read of a SM-MT, default Read Mode

Description:

read MT-SM in record 1 with standard AT command, read mode is NORMAL by default

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	

	LC_PLUS_CMGR_REC1_DEF cmd_seq	 C_PLUS_CMGR_REC1_DEF
(2) MNSMS_READ_REQ	mem_type read_mode rec_num	MEM_SM READ_NORMAL SIM_RECORD_1

History: 08-Nov-99 FK Initial

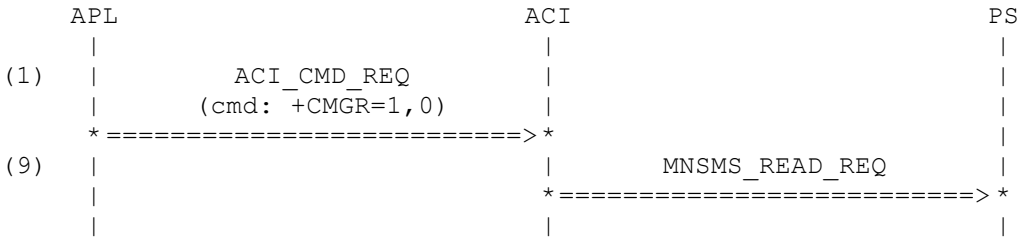
4.3.3 ACISMS102: Read of a SM-MT, Read Mode = NORMAL

Description:

read MT-SM in record 1 with extended AT command, read mode set to NORMAL

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	
	LC_PLUS_CMGR_REC1_NORM	
	cmd_seq	
	C_PLUS_CMGR_REC1_NORM	
(2) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_NORMAL
	rec_num	SIM_RECORD_1

History: 08-Nov-99 FK Initial

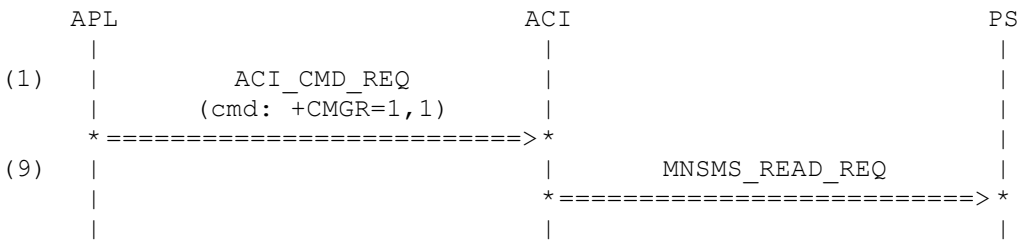
4.3.4 ACISMS103: Read of a SM-MT, Read Mode = PREVIEW

Description:

read MT-SM in record 1 with extended AT command, read mode set to PREVIEW

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	
	LC_PLUS_CMGR_REC1_PREV	
	cmd_seq	
	C_PLUS_CMGR_REC1_PREV	
(2) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_PREVIEW
	rec_num	SIM_RECORD_1

History: 08-Nov-99 FK Initial

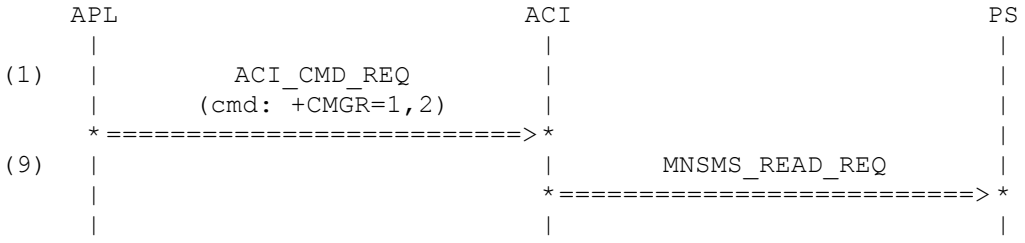
4.3.5 ACISMS104: Read of a SM-MT, Read Mode = STATUS_CHANGE

Description:

read MT-SM in record 1 with extended AT command, read mode set to STATUS_CHANGE

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	
	LC_PLUS_CMGR_REC1_CHG	
	cmd_seq	C_PLUS_CMGR_REC1_CHG
(2) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_STATUS_CHANGE
	rec_num	SIM_RECORD_1

History: 08-Nov-99 FK Initial

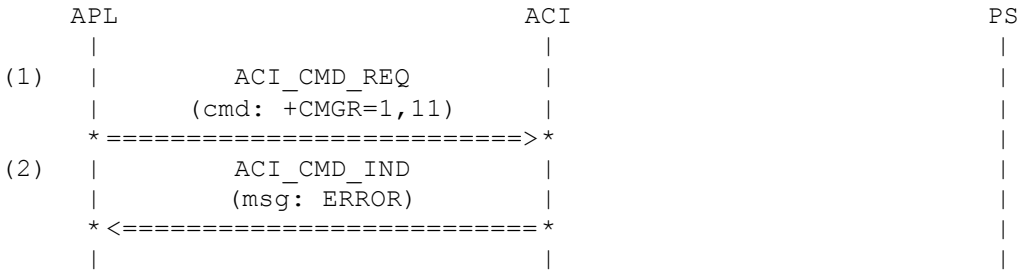
4.3.6 ACISMS105: Read of a SM-MT, Read Mode is mistyped

Description:

read MT-SM in record 1 with extended AT command, read mode is mistyped, which shall lead to an error result

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	
	LC_PLUS_CMGR_REC1_ERR	
	cmd_seq	C_PLUS_CMGR_REC1_ERR
(1) ACI_CMD_IND		
	cmd_len	LM_ERROR
	cmd_seq	M_ERROR

History: 08-Nov-99 FK Initial

4.4 Additional Mobile Terminated Message (ACISMS110 - ACISMS119)

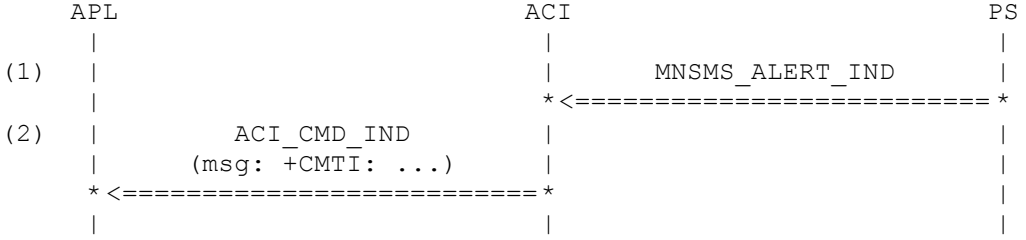
4.4.1 ACISMS110: Reception of a second MT-SM

Description:

indicate reception of a second MT-SM, which is stored in SIM record 1. This is to provide some stuff for AT command +CMGL

Preamble:

ACISMS100



Parametrization:

Primitive	Parameter	Value
(1) MNSMS_ALERT_IND		
	mem_type	MEM_SM
	rec_num	SIM_RECORD_2
	status	SIM_MT_STATUS
(2) ACI_CMD_IND		
	cmd_len	LC_PLUS_CMTI_SIM_REC2
	cmd_seq	C_PLUS_CMTI_SIM_REC2

History: 08-Nov-99 FK Initial

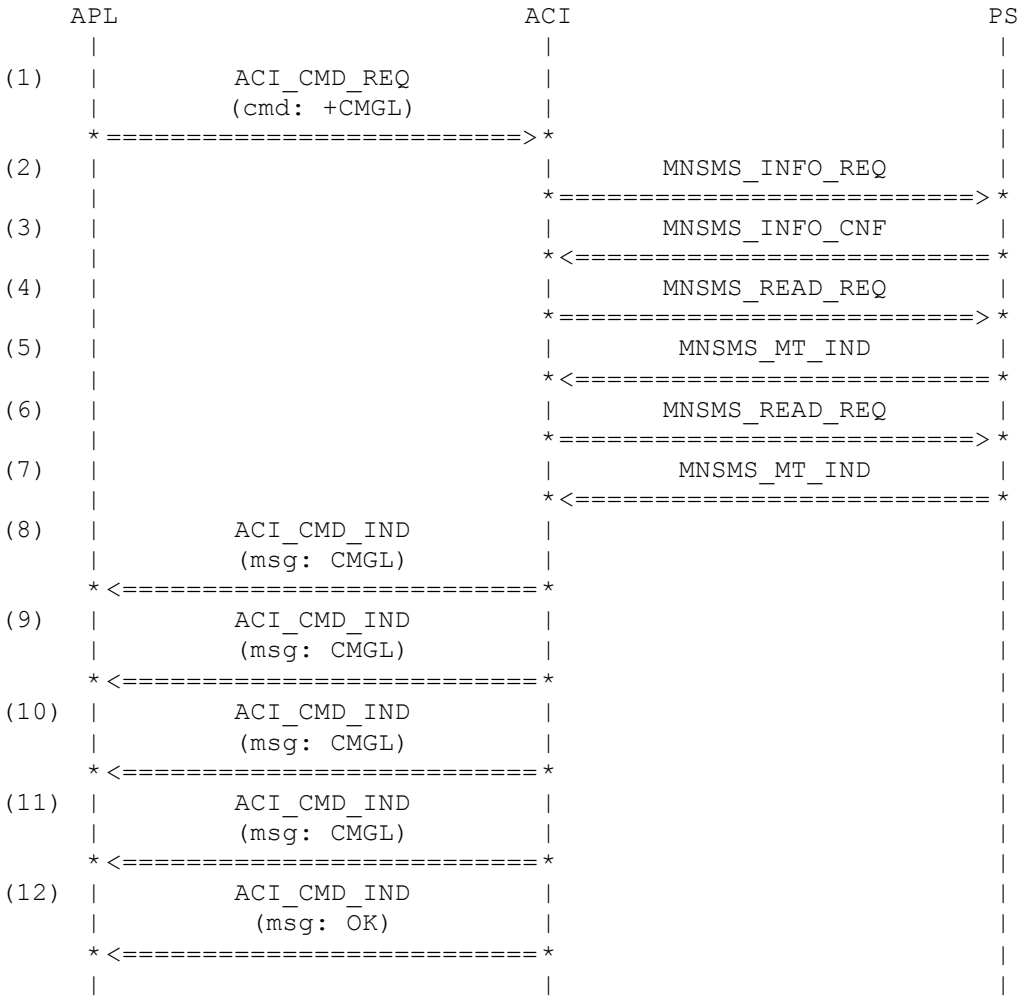
4.4.2 ACISMS111: List Messages, default Status, default Read Mode

Description:

list all messages with standard AT command +CMGL, all records. First an NMSMS_INFO_REQ is send to get information about stored records. The following MNSMS_READ_REQs have to be coded as READ_NORMAL.

Preamble:

ACISMS110



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CMGL_DEF
	cmd_seq	C_PLUS_CMGL_DEF
(2) MNSMS_INFO_REQ		
	param	DUMMY
(3) MNSMS_INFO_CNF		
	total_sim	MAX_SIM_DEF
	used_sim	USED_SIM_2
	status_sim	SIM_STATUS_2REC_UNREAD
	total_me	MAX_ME_DEF
	used_me	USED_ME_DEF
	status_me	ME_STATUS_DEF
(4) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_NORMAL
	rec_num	SIM_RECORD_1
(5) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_987654
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_ABCDEFGHI
(6) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_NORMAL
	rec_num	SIM_RECORD_2
(7) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_98765
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_0123456789_RPT
(8) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_1_UNR
	cmd_seq	M_CMGL_ENTRY_1_UNR
(9) ACI_CMD_IND		
	cmd_len	LM_CMGL1_ABCDEFGHI
	cmd_seq	M_CMGL1_ABCDEFGHI
(10) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_2_UNR
	cmd_seq	M_CMGL_ENTRY_2_UNR
(11) ACI_CMD_IND		
	cmd_len	LM_CMGL2_0123456789_RPT
	cmd_seq	M_CMGL2_0123456789_RPT

(12) ACI_CMD_IND

cmd_len	LM_OK
cmd_seq	M_OK

History: 08-Nov-99 FK Initial

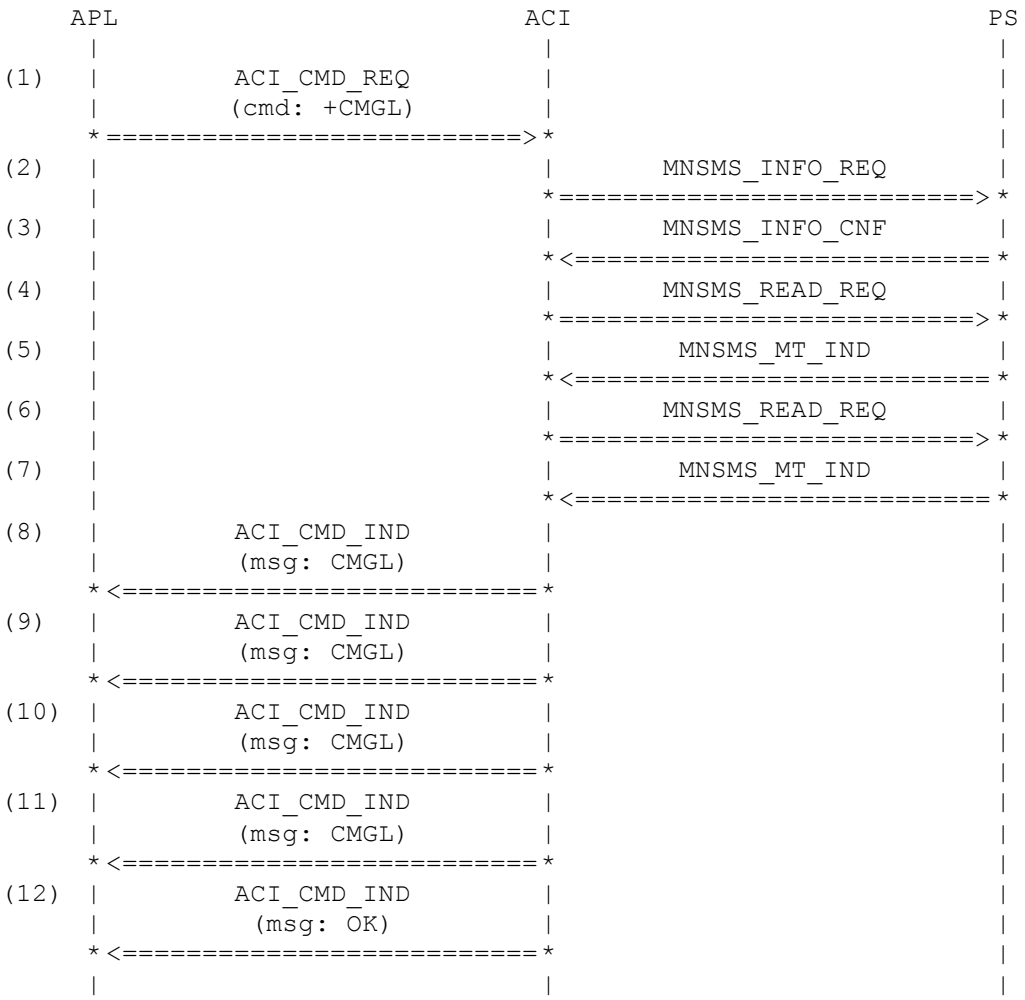
4.4.3 ACISMS112: List Messages, default Status, Read Mode = NORMAL

Description:

list all messages with extended AT command +CMGL, all records. First an NMSMS_INFO_REQ is send to get information about stored records. The following MNSMS_READ_REQs have to be coded as READ_NORMAL.

Preamble:

ACISMS110



Parametrization:

Primitive	Parameter	Value

(1) ACI_CMD_REQ

cmd_src	CMD_SRC_EXT
cmd_len	LC_PLUS_CMGL_NORM
cmd_seq	C_PLUS_CMGL_NORM

(2) MNSMS_INFO_REQ		
	param	DUMMY
(3) MNSMS_INFO_CNF		
	total_sim	MAX_SIM_DEF
	used_sim	USED_SIM_DEF
	status_sim	SIM_STATUS_2REC_UNREAD
	total_me	MAX_ME_DEF
	used_me	USED_ME_DEF
	status_me	ME_STATUS_DEF
(4) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_NORMAL
	rec_num	SIM_RECORD_1
(5) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_987654
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_ABCDEFGHI
(6) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_NORMAL
	rec_num	SIM_RECORD_2
(7) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_98765
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_0123456789_RPT
(8) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_1_UNR
	cmd_seq	M_CMGL_ENTRY_1_UNR
(9) ACI_CMD_IND		
	cmd_len	LM_CMGL1_ABCDEFGHI
	cmd_seq	M_CMGL1_ABCDEFGHI
(10) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_2_UNR
	cmd_seq	M_CMGL_ENTRY_2_UNR
(11) ACI_CMD_IND		
	cmd_len	LM_CMGL2_0123456789_RPT
	cmd_seq	M_CMGL2_0123456789_RPT
(12) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History:	10-Nov-99	FK	Initial

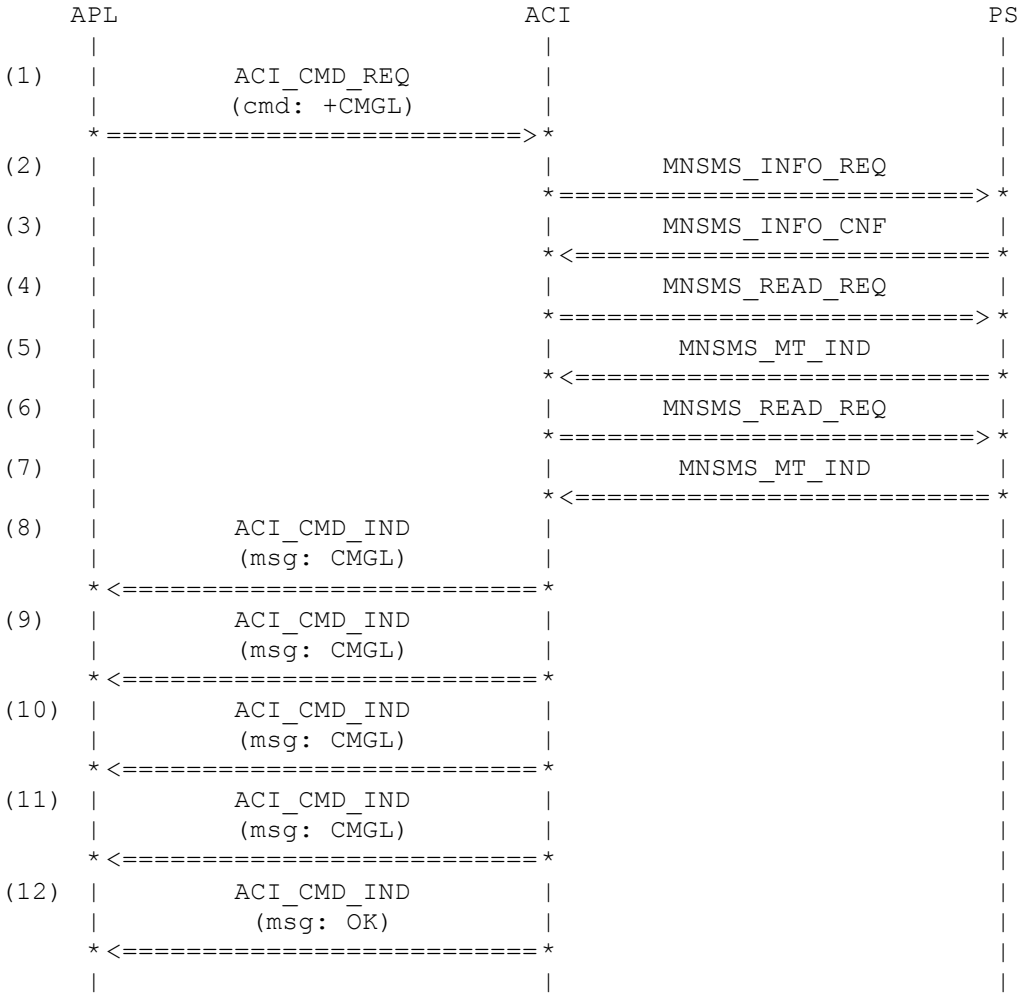
4.4.4 ACISMS113: List Messages, default Status, Read Mode = PREVIEW

Description:

list all messages with extended AT command +CMGL, all records. First an NMSMS_INFO_REQ is send to get information about stored records. The following MNSMS_READ_REQs have to be coded as READ_PREVIEW.

Preamble:

ACISMS110



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CMGL_PREV
	cmd_seq	C_PLUS_CMGL_PREV
(2) MNSMS_INFO_REQ		
	param	DUMMY
(3) MNSMS_INFO_CNF		
	total_sim	MAX_SIM_DEF
	used_sim	USED_SIM_DEF
	status_sim	

	SIM_STATUS_2REC_UNREAD	
	total_me	MAX_ME_DEF
	used_me	USED_ME_DEF
	status_me	ME_STATUS_DEF
(4) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_PREVIEW
	rec_num	SIM_RECORD_1
(5) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_987654
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_ABCDEFGHI
(6) MNSMS_READ_REQ	mem_type	MEM_SM
	read_mode	READ_PREVIEW
	rec_num	SIM_RECORD_2
(7) MNSMS_MT_IND		
	status	SIM_MT_STATUS
	orig_addr	OA_98765
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_04
	sct	VP_A9801071234564
	sms_msg	SM7_0123456789_RPT
(8) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_1_UNR
	cmd_seq	M_CMGL_ENTRY_1_UNR
(9) ACI_CMD_IND		
	cmd_len	LM_CMGL1_ABCDEFGHI
	cmd_seq	M_CMGL1_ABCDEFGHI
(10) ACI_CMD_IND		
	cmd_len	LM_CMGL_ENTRY_2_UNR
	cmd_seq	M_CMGL_ENTRY_2_UNR
(11) ACI_CMD_IND		
	cmd_len	
	LM_CMGL2_0123456789_RPT	
	cmd_seq	M_CMGL2_0123456789_RPT
(12) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History:	10-Nov-99	FK	Initial

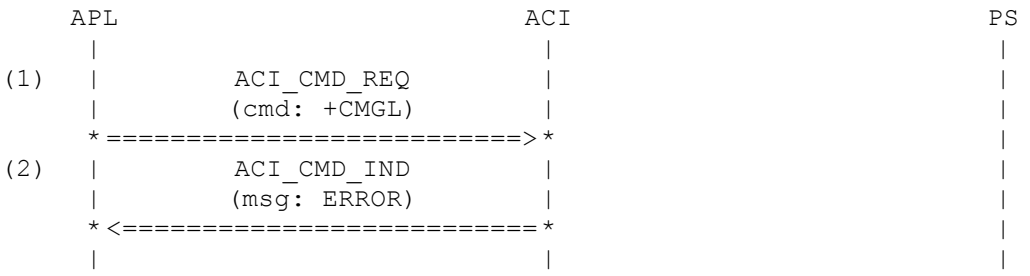
4.4.5 ACISMS114: List Messages, default Status, Read Mode = STATUS_CHANGE

Description:

list all messages with extended AT command +CMGL, all records. READ_STATUS_CHANGE is not allowed, therefore an error result has to be given.

Preamble:

ACISMS110



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CMGL_CHG
	cmd_seq	C_PLUS_CMGL_CHG
(2) ACI_CMD_IND		
	cmd_len	LM_ERROR
	cmd_seq	M_ERROR

History: 10-Nov-99 FK Initial

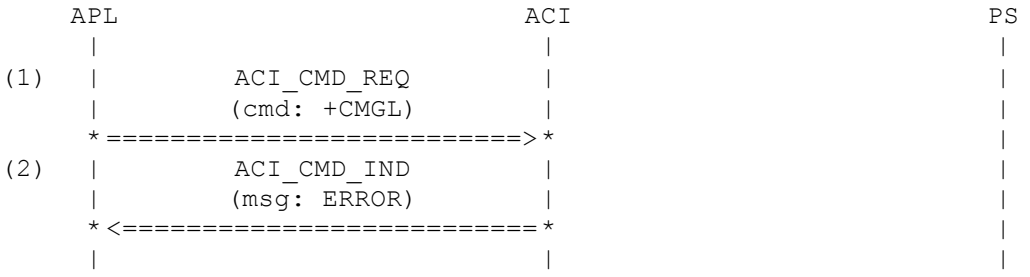
4.4.6 ACISMS115: List Messages, default Status, Read Mode is mistyped

Description:

list all messages with extended AT command +CMGL, all records. Parameter READ_MODE is out of range, therefore an error result has to be given.

Preamble:

ACISMS110



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_PLUS_CMGL_ERR
	cmd_seq	C_PLUS_CMGL_ERR
(2) ACI_CMD_IND		
	cmd_len	LM_ERROR
	cmd_seq	M_ERROR

History: 10-Nov-99 FK Initial

4.5 Storing of Messages (ACISMS120 - ACISMS129)

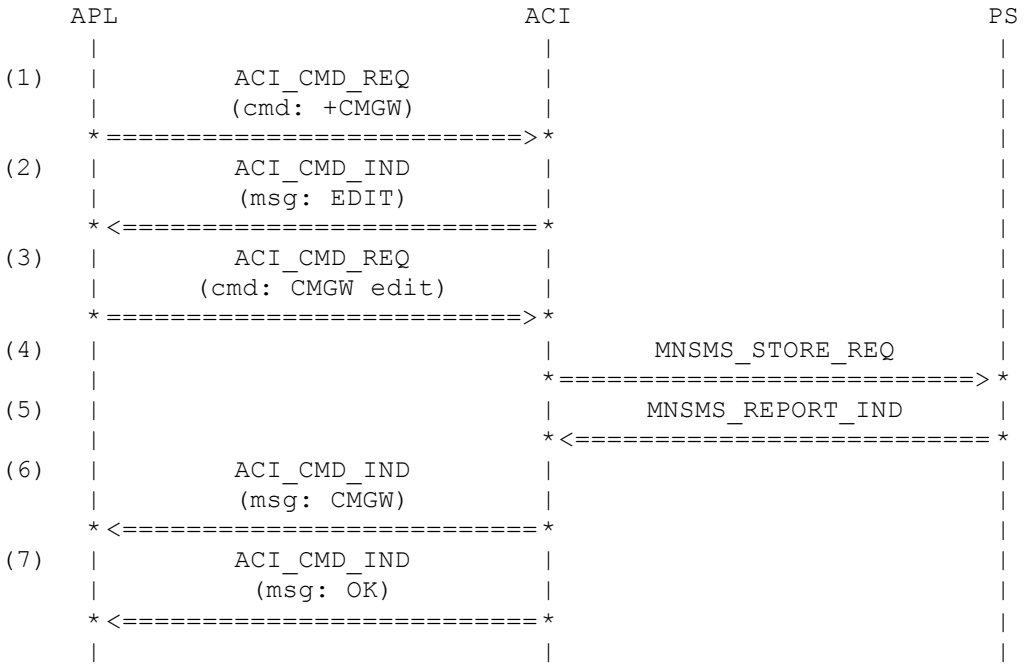
4.5.1 ACISMS120: Writing of a Message, default Parameters

Description:

write a message with standard AT command +CMGW, which leads to NMSMS_STORE_REQ with default parameters set by commands +CSCA and +CSMP.

Preamble:

ACISMS013



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_WRITE_DEF
	cmd_seq	C_CMGW_WRITE_DEF

(2)	ACI_CMD_IND		
		cmd_len	LM_EDIT
		cmd_seq	M_EDIT
(3)	ACI_CMD_REQ		
		cmd_src	CMD_SRC_EXT
		cmd_len	LC_CMGW_ABCDEFGHI
		cmd_seq	C_CMGW_ABCDEFGHI
(4)	MNSMS_STORE_REQ		
		mem_type	MEM_SM
		rec_num	SIM_RECORD_0
		dest_addr	DA_654321
		sc_addr	SA_017211963852
		prot_id	PID_SM_TYPE_0
		dcs	DCS_DEF_ALPH
		msg_type	MSG_TYPE_SUBMIT_DEF
		vp_rel	NOT_USED
		vp_abs	VP_A9801071234564
		sms_msg	SM7_ABCDEFGHI
		status	SIM_MO_STATUS
(5)	MNSMS_REPORT_IND		
		cause	CS_OK
		msg_ref	SIM_RECORD_1
(6)	ACI_CMD_IND		
		cmd_len	LM_CMGW_REC_NUM_1
		cmd_seq	M_CMGW_REC_NUM_1
(7)	ACI_CMD_IND		
		cmd_len	LM_OK
		cmd_seq	M_OK

History:	10-Nov-99	FK	Initial

4.5.2 ACISMS121: Writing of a Message with explicit SCA, REPLY-Flag as Variant

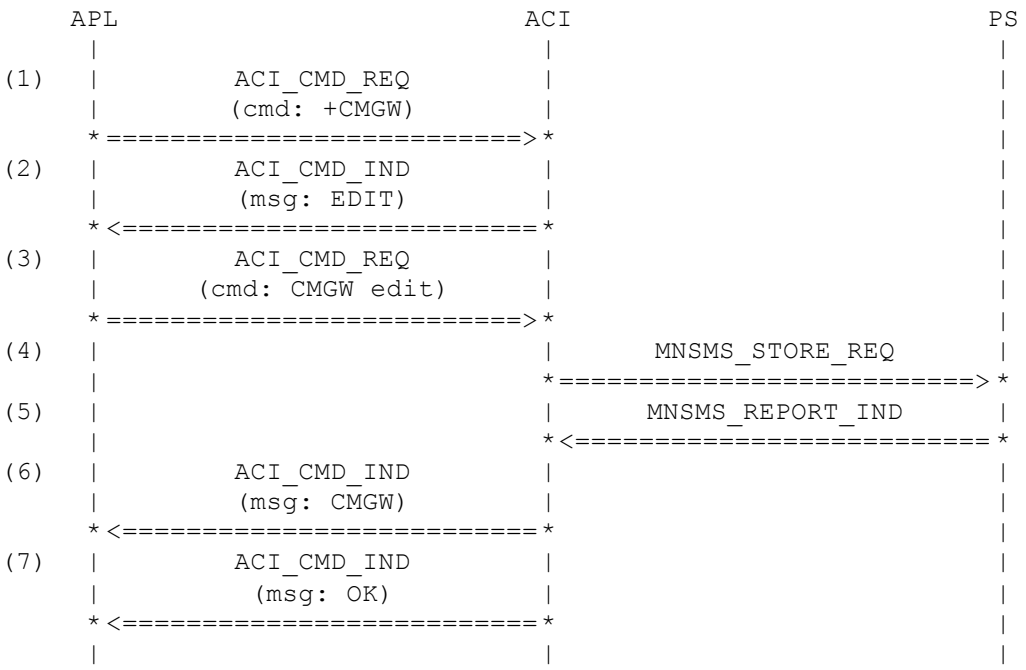
Description:

write a message with extended AT command +CMGW, additional parameter SCA, which leads to NMSMS_STORE_REQ with actual SCA and actual REPLY-Flag which overwrites adjacent flag in <fo>.
The preamble garantees, that the standard AT command with default paramters works

Preamble:

ACISMS120

Variants: <A>...<C>



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
<A>	cmd_len LC_CMGW_WRITE_SCA_DEF	
<B>	cmd_len LC_CMGW_WRITE_SCA_NORPL	
<C>	cmd_len LC_CMGW_WRITE_SCA_ISRPL	
<A>	cmd_seq	C_CMGW_WRITE_SCA_DEF
<B>	cmd_seq C_CMGW_WRITE_SCA_NORPL	
<C>	cmd_seq C_CMGW_WRITE_SCA_ISRPL	
(2) ACI_CMD_IND		
	cmd_len	LM_EDIT
	cmd_seq	M_EDIT
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_ABCDEFGHI
	cmd_seq	C_CMGW_ABCDEFGHI
(4) MNSMS_STORE_REQ		
	mem_type	MEM_SM
	rec_num	SIM_RECORD_0
	dest_addr	DA_654321
	sc_addr	SA_12345
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
<A>	msg_type	MSG_TYPE_SUBMIT_DEF
<B>	msg_type	MSG_TYPE_SUBMIT_DEF
<C>	msg_type	MSG_TYPE_SUBMIT_REPLY
	vp_rel	NOT_USED
	vp_abs	VP_A9801071234564

		sms_msg	SM7_ABCDEFGHI
		status	SIM_MO_STATUS
(5)	MNSMS_REPORT_IND		
		cause	CS_OK
		msg_ref	SIM_RECORD_2
(6)	ACI_CMD_IND		
		cmd_len	LM_CMGW_REC_NUM_2
		cmd_seq	M_CMGW_REC_NUM_2
(7)	ACI_CMD_IND		
		cmd_len	LM_OK
		cmd_seq	M_OK

History: 11-Nov-99 FK Initial

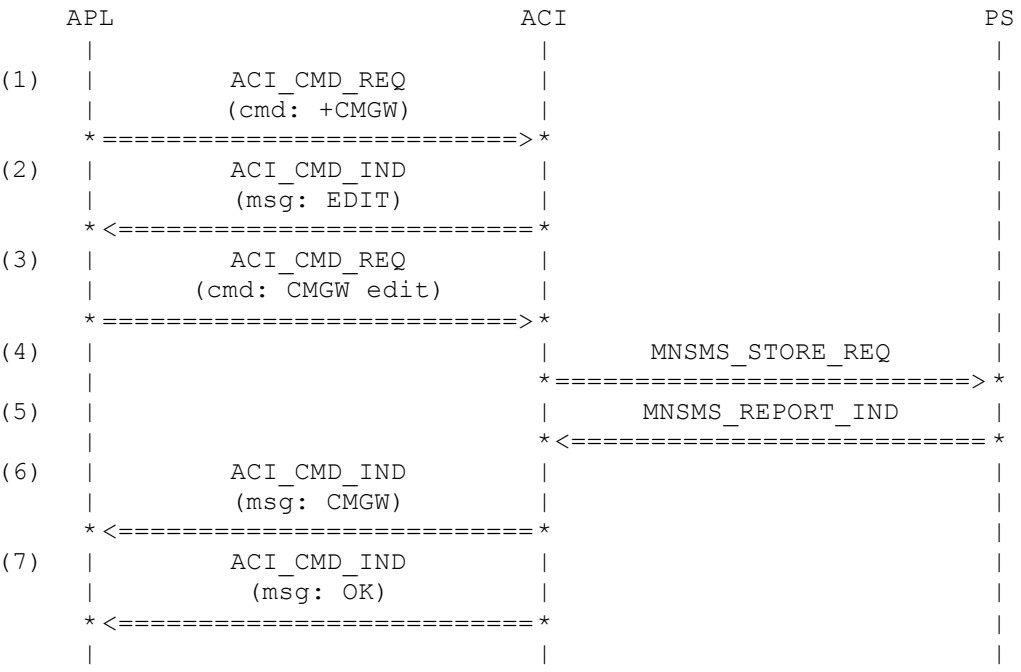
4.5.3 ACISMS122: Writing of a Message, default Parameters

Description:

after writing a message with extended AT Command +CMGW (testcase ACISSMS121C) write a message with standard AT command +CMGW, which leads to NMSMS_STORE_REQ with default parameters set by commands +CSCA and +CSMP. This is to assure that the special parameters of the previous extended command are not stored and used further on.

Preamble:

ACISMS121C



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_WRITE_DA_DEF
	cmd_seq	C_CMGW_WRITE_DA_DEF

(2)	ACI_CMD_IND		
		cmd_len	LM_EDIT
		cmd_seq	M_EDIT
(3)	ACI_CMD_REQ		
		cmd_src	CMD_SRC_EXT
		cmd_len	LC_CMGW_ABCDEFGHI
		cmd_seq	C_CMGW_ABCDEFGHI
(4)	MNSMS_STORE_REQ		
		mem_type	MEM_SM
		rec_num	SIM_RECORD_0
		dest_addr	DA_030654321
		sc_addr	SA_017211963852
		prot_id	PID_SM_TYPE_0
		dcs	DCS_DEF_ALPH
		msg_type	MSG_TYPE_SUBMIT_DEF
		vp_rel	NOT_USED
		vp_abs	VP_A9801071234564
		sms_msg	SM7_ABCDEFGHI
		status	SIM_MO_STATUS
(5)	MNSMS_REPORT_IND		
		cause	CS_OK
		msg_ref	SIM_RECORD_3
(6)	ACI_CMD_IND		
		cmd_len	LM_CMGW_REC_NUM_3
		cmd_seq	M_CMGW_REC_NUM_3
(7)	ACI_CMD_IND		
		cmd_len	LM_OK
		cmd_seq	M_OK

History:	11-Nov-99	FK	Initial

4.6 Sending of Messages (ACISMS130 - ACISMS139)

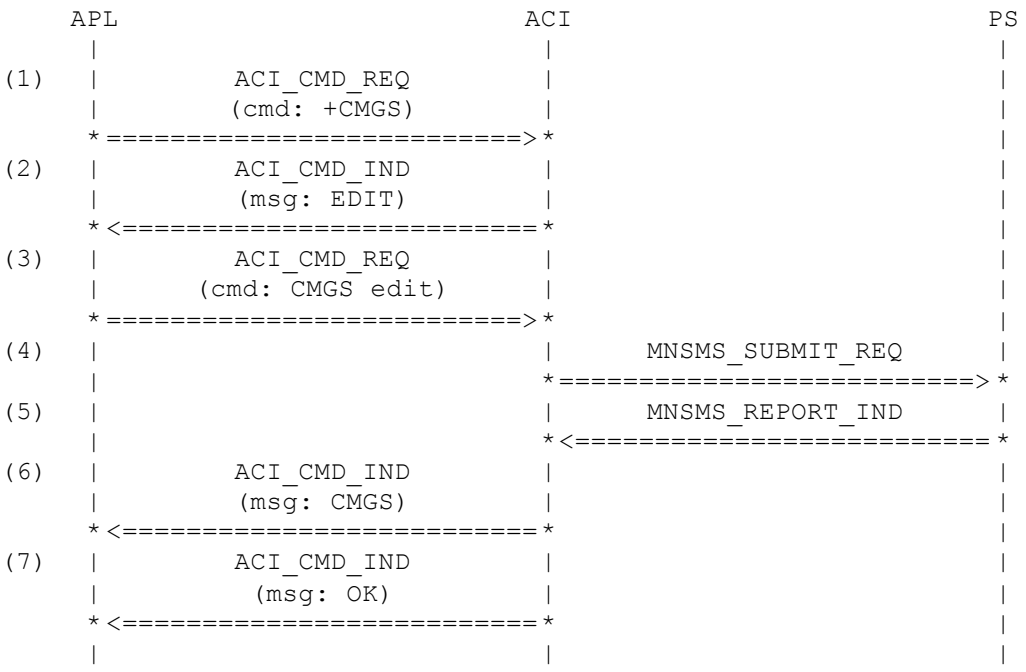
4.6.1 ACISMS130: Send a Message, default Parameters

Description:

send a message with standard AT command +CMGS, which leads to NMSMS_SUBMIT_REQ with default parameters set by commands +CSCA and + CSMP.

Preamble:

ACISMS013



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGS_SEND_DEF
	cmd_seq	C_CMGS_SEND_DEF
(2) ACI_CMD_IND		
	cmd_len	LM_EDIT
	cmd_seq	M_EDIT
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_ABCDEFGHI
	cmd_seq	C_CMGW_ABCDEFGHI
(4) MNSMS_SUBMIT_REQ		
	dest_addr	DA_654321
	sc_addr	SA_017211963852
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_SUBMIT_DEF
	vp_rel	NOT_USED
	vp_abs	VP_A9801071234564
	sms_msg	SM7_ABCDEFGHI
(5) MNSMS_REPORT_IND		
	cause	CS_OK
	msg_ref	MSG_REF_1
(6) ACI_CMD_IND		
	cmd_len	LM_CMGS_MSG_REF_1
	cmd_seq	M_CMGS_MSG_REF_1
(7) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History: 10-Nov-99 FK Initial

4.6.2 ACISMS131: Send a Message with explicit SCA, REPLY-Flag as Variant

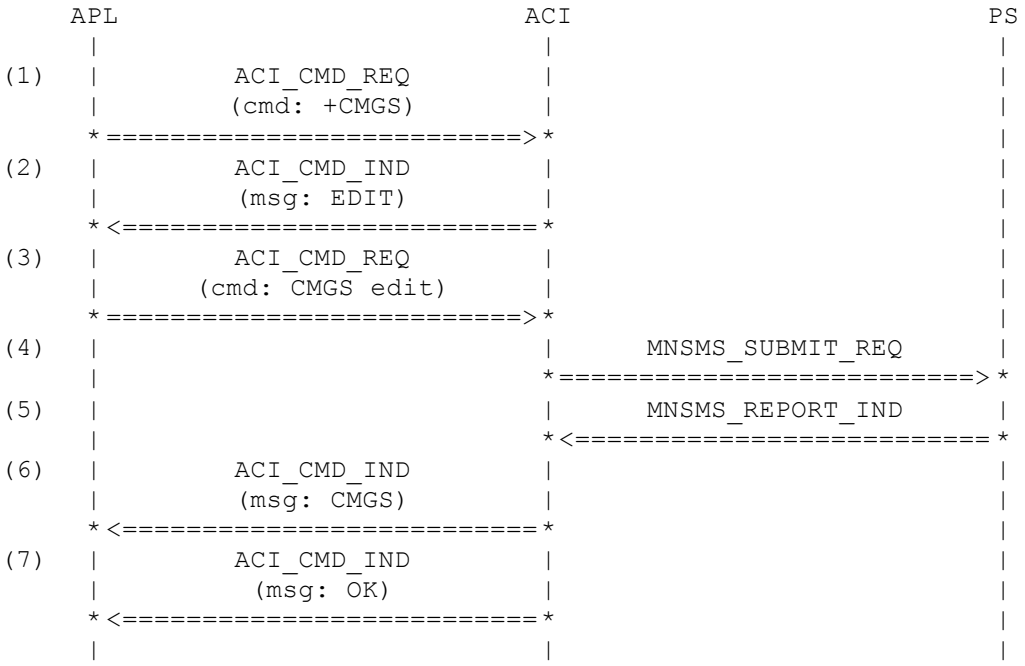
Description:

send a message with extended AT command +CMGS, additional parameter SCA, which leads to NMSMS_SUBMIT_REQ with actual SCA and actual REPLY-Flag which overwrites adjacent flag in <fo>.
The preamble garantees, that the standard AT command with default paramters works

Preamble:

ACISMS130

Variants: <A>...<C>



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
<A>	cmd_len	LC_CMGS_SEND_SCA_DEF
<B>	cmd_len	LC_CMGS_SEND_SCA_NORPL
<C>	cmd_len	LC_CMGS_SEND_SCA_ISRPL
<A>	cmd_seq	C_CMGS_SEND_SCA_DEF
<B>	cmd_seq	C_CMGS_SEND_SCA_NORPL
<C>	cmd_seq	C_CMGS_SEND_SCA_ISRPL
(2) ACI_CMD_IND		
	cmd_len	LM_EDIT
	cmd_seq	M_EDIT
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_ABCDEFGHI
	cmd_seq	C_CMGW_ABCDEFGHI

(4)	MNSMS_SUBMIT_REQ		
		dest_addr	DA_654321
		sc_addr	SA_12345
		prot_id	PID_SM_TYPE_0
		dcs	DCS_DEF_ALPH
	<A>	msg_type	MSG_TYPE_SUBMIT_DEF
	<B>	msg_type	MSG_TYPE_SUBMIT_DEF
	<C>	msg_type	MSG_TYPE_SUBMIT_REPLY
		vp_rel	NOT_USED
		vp_abs	VP_A9801071234564
		sms_msg	SM7_ABCDEFGHI
(5)	MNSMS_REPORT_IND		
		cause	CS_OK
		msg_ref	MSG_REF_2
(6)	ACI_CMD_IND		
		cmd_len	LM_CMGS_MSG_REF_2
		cmd_seq	M_CMGS_MSG_REF_2
(7)	ACI_CMD_IND		
		cmd_len	LM_OK
		cmd_seq	M_OK

History: 11-Nov-99 FK Initial

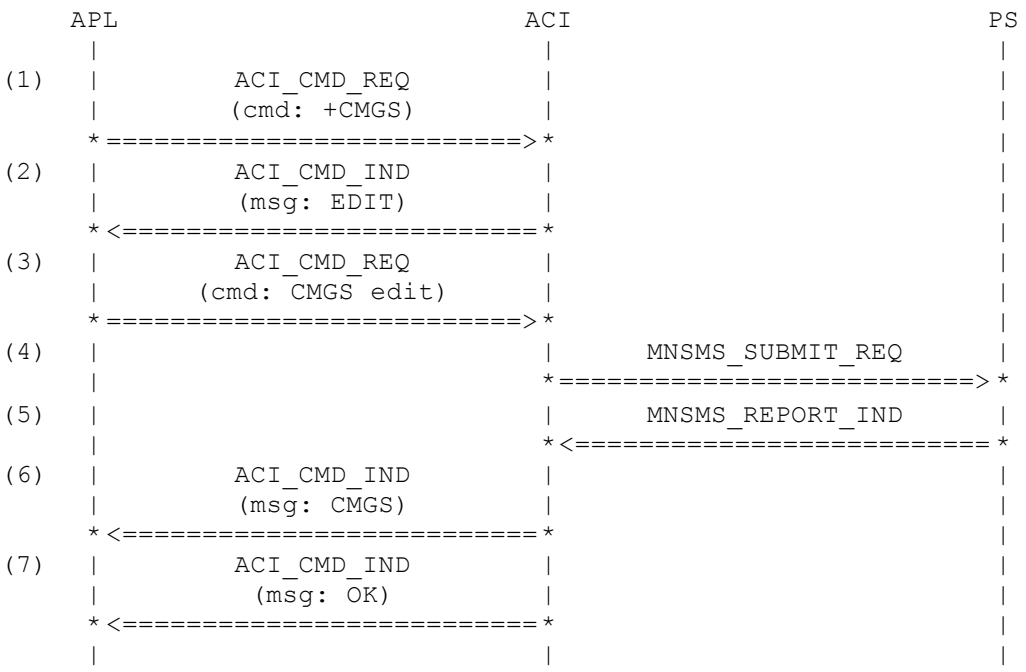
4.6.3 ACISMS132: Send a Message, default Parameters

Description:

after sending a message with extended AT Command +CMGS (testcase ACISSMS131C) send a message with standard AT command +CMGS, which leads to NMSMS_SUBMIT_REQ with default parameters set by commands +CSCA and +CSMP. This is to assure that the special parameters of the previous extended command are not stored and used further on.

Preamble:

ACISMS131C



Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGS_SEND_DA_DEF
	cmd_seq	C_CMGS_SEND_DA_DEF
(2) ACI_CMD_IND		
	cmd_len	LM_EDIT
	cmd_seq	M_EDIT
(3) ACI_CMD_REQ		
	cmd_src	CMD_SRC_EXT
	cmd_len	LC_CMGW_ABCDEFGHI
	cmd_seq	C_CMGW_ABCDEFGHI
(4) MNSMS_SUBMIT_REQ		
	dest_addr	DA_030654321
	sc_addr	SA_017211963852
	prot_id	PID_SM_TYPE_0
	dcs	DCS_DEF_ALPH
	msg_type	MSG_TYPE_SUBMIT_DEF
	vp_rel	NOT_USED
	vp_abs	VP_A9801071234564
	sms_msg	SM7_ABCDEFGHI
(5) MNSMS_REPORT_IND		
	cause	CS_OK
	msg_ref	MSG_REF_3
(6) ACI_CMD_IND		
	cmd_len	LM_CMGS_MSG_REF_3
	cmd_seq	M_CMGS_MSG_REF_3
(7) ACI_CMD_IND		
	cmd_len	LM_OK
	cmd_seq	M_OK

History:	10-Nov-99	FK	Initial

Appendices

A. Acronyms

DS-WCDMA	Direct Sequence/Spread Wideband Code Division Multiple Access

B. Glossary

International Mobile Telecommunication 2000 (IMT-2000/ITU-2000)	Formerly referred to as FPLMTS (Future Public Land-Mobile Telephone System), this is the ITU's specification/family of standards for 3G. This initiative provides a global infrastructure through both satellite and terrestrial systems, for fixed and mobile phone users. The family of standards is a framework comprising a mix/blend of systems providing global roaming. <URL: http://www.imt-2000.org/>