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**Technical Document**

**GSM FAX & DATA SERVICES**

**TEST SPECIFICATION**

**ACIAAA**

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## 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
IWF	Interworking Function
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
MNC	Mobile Network Code

MS	Mobile Station
MSG	Message phase in the GSM 3.45 protocol
N®	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
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/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®	Receive State Variable
V(S)	Send State Variable
VPLMN	Visiting Public Land Mobile Network

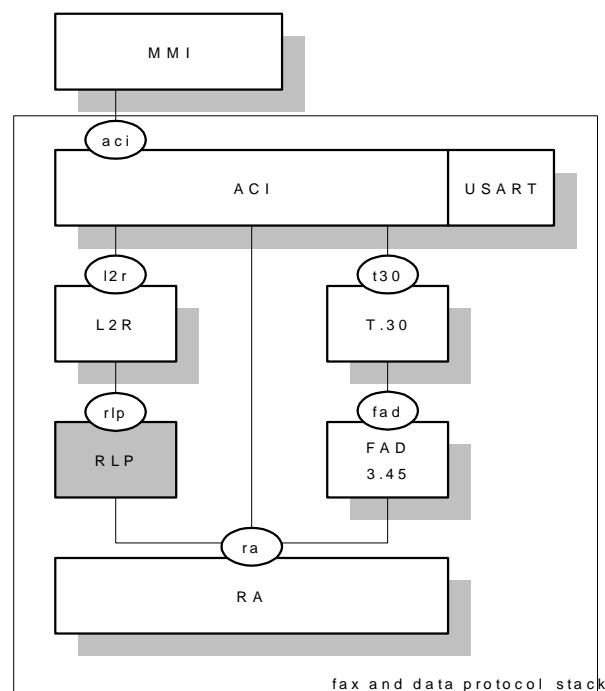
## 1.3 Terms

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 or 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

/\* structure declarations \*/

```
DECLARATION (F_SIM_SRV_4)
DECLARATION (A_ECC_FIELD)
DECLARATION (A_AD_FIELD_CI_DISABLED)
DECLARATION (A_CLD_NUM)
DECLARATION (A_CLG_NUM)
DECLARATION (S_BS_DAT_9600_ASY_NON_TRA)
DECLARATION (S_BS_NOT_PRESENT)
DECLARATION (S_CLD_PARTY)
DECLARATION (S_CLD_PARTY_SUB)
DECLARATION (S_CHN_FULL_9600)
DECLARATION (S_CLG_PARTY)
DECLARATION (S_CLG_PARTY_SUB)
DECLARATION (S_PPP_NAME)
DECLARATION (S_L2R_NAME)
DECLARATION (S_AAA_NAME)
DECLARATION(AAA_CHANNEL)
DECLARATION(L2R_CHANNEL)
DECLARATION(PLMN_1)
DECLARATION(MCC_1)
DECLARATION(MNC_1)
DECLARATION(SMREG_QOS_0)
DECLARATION(PDP_ADDRESS_0_S)
DECLARATION(SMREG_APN_0_S)
DECLARATION(SDU_ACT_REQ)
DECLARATION(SDU_ACT_CNF)
DECLARATION(PDP_ADDRESS_BUF_0)
DECLARATION(PDP_ADDRESS_BUF_NEG)
DECLARATION(PDP_ADDRESS_NEG)
```

/\* Number definitions \*/

```
BYTE NUM_0 0
BYTE NUM_1 1
BYTE NUM_2 2
BYTE NUM_3 3
BYTE NUM_4 4
BYTE NUM_5 5
BYTE NUM_6 6
BYTE NUM_7 7
BYTE NUM_8 8
BYTE NUM_9 9
BYTE NUM_10 10
BYTE NUM_12 12
BYTE NUM_FF 0xFF
SHORT NUM_512 512
```

/\* entity definitions \*/

```
BYTE DTI_ENTITY_SNDP 0
BYTE DTI_ENTITY_ACI 1
BYTE DTI_ENTITY_UART 2
BYTE DTI_ENTITY_PPPS 3
```

```
BYTE DTI_ENTITY_PPPC 4
BYTE DTI_ENTITY_L2R 5
BYTE DTI_ENTITY_T30 6
BYTE DTI_ENTITY_IP 7
BYTE DTI_ENTITY_TRA 8
BYTE DTI_ENTITY_UDP 9
BYTE DTI_ENTITY_WAP 10
BYTE DTI_ENTITY_MTST 11
BYTE DTI_ENTITY_BLUETOOTH 12
BYTE DTI_ENTITY_SIM 13
BYTE DTI_ENTITY_NULL 14
BYTE DTI_ENTITY_AAA 15
BYTE DTI_ENTITY_PKTIO 16
```

```
BYTE DTI_ID_15 0x15
```

```
ULONG SNDCP_DTI_ID = 0x00000200;
SHORT NSAPI_SET_5 0x20 /* bit mask with 2**5 set to 1*/
```

```
#define DEVICE_1 NUM_0
```

```
#define AAA_DTI_ID NUM_1
```

```
#define PPP_DTI_ID NUM_4 /* according to dti_conn_mng.h */
```

```
/* DTI definitions */
```

```
#define AAA_LINK_ID 0x00000100
```

```
#define L2R_LINK_ID 0x00000101
```

```
BYTE TO_LOWER_LAYER 1
```

```
BYTE TO_HIGHER_LAYER 0
```

```
/* AAA data */
```

```
/* AAA capability = CMD and PKT */
```

```
BYTE CAP_CMD_PKT 0x03
```

```
/* AAA capability = CMD and SER */
```

```
BYTE CAP_CMD_SER 0x05
```

```
/* IP addresses for %PPP=? */
```

```
/* Own IP address, 130.149.17.50 */
```

```
LONG IP_ADDRESS_OWN 0x82951132
```

```
/* DNS1 address, 130.149.17.5 */
```

```
LONG IP_ADDRESS_DNS1 0x82951105
```

```
/* DNS1 address, 130.149.17.5 */
```

```
LONG IP_ADDRESS_DNS2 0x8295110D
```

```
LONG DTI_NEIGHBOR 0xFE1234EF
```

```
/* AT commands */
```

```
/*Command: +CFUN set phone functionality*/
STRING(C_PLUS_CFUN_FULL, "AT+CFUN=1" )

/*Message Indication +CME      error result code*/
STRING(M_ERR_PIN_REQ, "+CME ERROR: SIM PIN required" )

/*Message Indication +CMEE extended error report mode*/
STRING(C_PLUS_CMEE_VERB, "AT+CMEE=2 " )

/* Command :   +CBST for selecting of bearer service type */
STRING(C_PERCENT_CBST, "AT+CBST=71,0,1" )

/* Command :   use PPP and with user = testname,  password = testpass */
STRING(C_PERCENT_PPP, "AT%PPP=1,\"testname\", \"testpass\",1" )

/* Command :   query IP addresses after the connection has been established */
STRING(C_PERCENT_PPP_QUERY, "AT%PPP?" )

/* Message :   response to query for IP addresses */
STRING(C_PERCENT_PPP_IPADDR, "%PPP: 130.149.17.50,130.149.17.5,130.149.17.13" )

/*Command: Dial a number */
STRING(C_D_DAT, " ATD:030123")

/*Command %DATA = Set data flow for packet data*/
STRING(C_PERC_DATA_RIV_DEV_1, "AT%DATA=2,\"PKTIO\",0,0,\"PKT\", \"RIV\",0,0,1")

/*Command %DATA? query stored redirected devices */
STRING(C_PERC_DATA_QUERY, "AT%DATA?")

/*Message Indication %DATA output redirected devices */
STRING(C_PERC_DATA_RED, "%DATA:2,\"PKTIO\",0,0,\"PKT\", \"RIV\",0,0,1" )

/*Message Indication %DATA output redirected devices (currently no redirection) */
STRING(C_PERC_DATA_NO_RED, "%DATA:0,,0,0,,0,0,0" )

/*Command %DINF = Show data information of current channel*/
STRING(C_PERC_DINF_CURR_0, "AT%DINF=0")

/*Message Indication %DINF output of current channel */
STRING(C_PERC_DINF_CURR_0_RES, "%DINF:\"RIV\",0,0,\"CMD,PKT\", \"CMD\",0")

/* Command:   Hang up call */
STRING(C_ATH, "ATH0" )

STRING(RIV_STRING, "RIV")

/* Name of SNDTCP entity */
STRING(SNDTCP_NAME, "SND")

/* Command: COPS */
STRING(C_COPS_0, "AT+COPS=0\r")

LONG VAL_T3314 44000
LONG VAL_T3312 3240000
```

```
/* CGDCONT query for available context ids */
STRING(C_CGDCONT_QUERY, "AT+CGDCONT=?")

/* Answer to CGDCONT query */
STRING(C_CGDCONT_ANSW, "+CGDCONT: (1-2),\"IP\",,,(0,1),(0,1)")

/* CGDCONT command to define context */
STRING(C_CGDCONT_CMD, "AT+CGDCONT=1,\"IP\", \"orange.fr\", \"0.0.0.0\",0,0")

/* Set protocol configuration options for context */
STRING(C_CGPCO_CMD, "AT%CGPCO=0,1,\"PAP\",username,password,0.0.0.0,0.0.0.0")

/* Request event reporting */
STRING(C_CGEREP_CMD, "AT+CGEREP=1,0")

/* Command: Activate context */
STRING(C_CGACT_CMD, "AT+CGACT=1,1")

/* Query PDP context IP address */
STRING(C_CGPADDR_CMD, "AT+CGPADDR=1")

/* Answer to IP address query */
STRING(C_CGPADDR_ANSW, "+CGPADDR: 1,\"137.167.238.28\"")

/* Query PCOs */
STRING(C_CGPCO_QUERY, "AT%CGPCO=1,1,,1")

/* Answer to PCO query command */
STRING(C_CGPCO_ANSW, "%CGPCO: \"141.64.24.129,141.64.254.131\",1")

/*Command AT+CGDATA set up packet data connection*/
STRING(C_CGDATA_CMD, "AT+CGDATA=\"M-PKT\",1")

/*Command AT+CGDATA to deactivate PDP context */
STRING(C_CGACT_DEACT_CMD, "AT+CGACT=0,1")


/*Message Indication OK*/
STRING(M_OK, "OK" )

/*Message CONNECT */
STRING(M_CONNECT, "CONNECT" )

/*Message Indication NO CARRIER*/
STRING(M_NO_CARRIER, "NO CARRIER")
BYTE LM_NO_CARRIER 10

/* Message indication network deactivation */
STRING(M_CGEV_DETACH, "+CGEV: NW DETACH")


/* Arrays */

/* used in AAA_DTI_IND to indicate the connection with PPP client */
BEGINARRAY(S_PPP_NAME, 6) 0x50,0x50, 0x50, 0x00, 0x00, 0x00 ENDARRAY
BEGINARRAY(S_L2R_NAME, 6) 0x4C,0x32, 0x52, 0x00, 0x00, 0x00 ENDARRAY
BEGINARRAY(S_AAA_NAME, 6) 0x52,0x49, 0x56, 0x00, 0x00, 0x00 ENDARRAY
```



```
BEGINARRAY ( MCC_1,3 ) 0x00,0x04,0x09
ENDARRAY
```

```
BEGINARRAY ( MNC_1,3 ) 0x00,0x04,0x0F
ENDARRAY
```

```
BEGINARRAY ( PDP_ADDRESS_BUF_0, 20 )
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0
ENDARRAY
```

```
BEGINARRAY ( PDP_ADDRESS_BUF_NEG, 20 )
    0x89, 0xA7, 0xEE, 0x1C,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0,
    0x0, 0x0, 0x0, 0x0
ENDARRAY
```

```
SET_SDU (SDU_ACT_REQ, 360, 0)
    0x80, 0xC0, 0x23, 0x16, 0x01, 0x01, 0x00, 0x16, 0x08, 0x75, 0x73,
    0x65, 0x72, 0x6E, 0x61, 0x6D, 0x65, 0x08, 0x70, 0x61, 0x73, 0x73,
    0x77, 0x6F, 0x72, 0x64, 0x80, 0x21, 0x10, 0x01, 0x01, 0x00, 0x10,
    0x81, 0x06, 0x00, 0x00, 0x00, 0x00, 0x83, 0x06, 0x00, 0x00, 0x00,
    0x00, 0x00
ENDSDU
```

```
SET_SDU (SDU_ACT_CNF, 208, 0)
    0x80, /* Protocol PPP see GSM04.08 page 569 */
    0x80, 0x21, /* Protocol ID1: IPCP */
    0x16, /* Length of ID1: 22 */
    0x03, 0x01, 0x00, 0x16, /* Code, Identifier and Length Field: Configure-NAK */
    0x03, 0x06, 0x8d, 0x40, 0x66, 0x03, /* IP-Address 141.64.102.3 */
    0x81, 0x06, 0x8d, 0x40, 0x18, 0x81, /* Primary DNS Address 141.64.24.129 */
    0x83, 0x06, 0x8d, 0x40, 0xfe, 0x83 /* Secondary DNS Address 141.64.254.131 */
ENDSDU
```

```
BEGIN_PSTRUCT ( "pdp_address", PDP_ADDRESS_0_S )
    SHOW_COMP ( "buff" )
ENDSTRUCT
```

```
BEGIN_PSTRUCT ( "pdp_address", PDP_ADDRESS_NEG )
    SET_COMP ( "buff", PDP_ADDRESS_BUF_NEG )
ENDSTRUCT
```

```
BEGIN_PSTRUCT ( "plmn", PLMN_1 )
    SET_COMP ( "v_plmn", V_PLMN_PRE )
```

```
        SET_COMP ( "mcc", MCC_1 )
        SET_COMP ( "mnc", MNC_1 )
    ENDSTRUCT

    BEGIN_PSTRUCT ( "smreg_qos", SMREG_QOS_0 )
        SET_COMP ( "delay", NUM_0 )
        SET_COMP ( "relclass", NUM_0 )
        SET_COMP ( "peak", NUM_0 )
        SET_COMP ( "preced", NUM_0 )
        SET_COMP ( "mean", NUM_0 )
    ENDSTRUCT

    BEGIN_PSTRUCT ( "smreg_apn", SMREG_APN_0_S )
        SHOW_COMP ( "buffer" ) /* this is an empty APN and mean: use the subscribed
    APN */
    ENDSTRUCT

    BEGIN_PSTRUCT ( "protocol_channel", AAA_CHANNEL )
        SET_COMP ( "protocol_entity", S_AAA_NAME )
    ENDSTRUCT

    BEGIN_PSTRUCT ( "peer_channel", L2R_CHANNEL )
        SET_COMP ( "peer_entity", S_L2R_NAME )
    ENDSTRUCT

    /* SIM service table */
    /* SIM Service Table with Nr. 4 */
    BEGINARRAY ( F_SIM_SRV_4, 10 ) 0xC0, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00
    ENDARRAY

    /* EF ECC field array */
    BEGINARRAY ( A_ECC_FIELD, 12 ) 0x11, 0xF2, 0xFF, 0x99, 0xF9, 0xFF, 0x21, 0x43, 0x65, 0xFF,
    0xFF, 0xFF ENDARRAY

    /* EF AD field array , disable CI */
    BEGINARRAY_PART ( A_AD_FIELD_CI_DISABLED, 4 ) 0x00, 0x00, 0x00, 0x02 ENDARRAY

    /* called number array */
    BEGINARRAY_PART ( A_CLD_NUM, 6 ) 0x0, 0x3, 0x0, 0x1, 0x2, 0x3 ENDARRAY
    BYTE LA_CLD_NUM 6

    /* calling number array */
    BEGINARRAY_PART ( A_CLG_NUM, 6 ) 0x0, 0x3, 0x0, 0x4, 0x5, 0x6 ENDARRAY
    BYTE LA_CLG_NUM 6

    /* Structs */

    /* bearer service non transparent data 9600 */
    BEGIN_PSTRUCT ( "bcpara", S_BS_DAT_9600_ASY_NON_TRA )
        SET_COMP ( "rate", UR_9_6_KBIT )
        SET_COMP ( "bearer_serv", BEARER_SERV_ASYNC )
        SET_COMP ( "conn_elem", CONN_ELEM_NON_TRANS )
```

```
        SET_COMP ( "stop_bits",      STOP_1_BIT )
        SET_COMP ( "data_bits",      DATA_8_BIT )
        SET_COMP ( "parity",    PARITY_NONE )
        SET_COMP ( "flow_control",    NO_FLOW_CONTROL )
        SET_COMP ( "modem_type",    MT_NONE )
    ENDSTRUCT

/* bearer service not present */
    BEGIN_PSTRUCT ("bcpara", S_BS_NOT_PRESENT)
        SET_COMP ("rate",      UR_NOT_PRES)
        SET_COMP ("bearer_serv", BEARER_SERV_NOT_PRES)
        SET_COMP ("conn_elem",  CONN_ELEM_NOT_PRES)
        SET_COMP ("stop_bits",  STOP_1_BIT)
        SET_COMP ("data_bits",  DATA_8_BIT)
        SET_COMP ("parity",    PARITY_NONE)
        SET_COMP ("flow_control", NO_FLOW_CONTROL)
        SET_COMP ("modem_type", MT_NONE)
    ENDSTRUCT

/* called party address national */
    BEGIN_PSTRUCT ( "called_party", S_CLD_PARTY )
        SET_COMP ( "ton",    TON_UNKNOWN )
        SET_COMP ( "npi",    NPI_ISDN_TEL_NUMB_PLAN )
        SET_COMP ( "c_called_num", LA_CLD_NUM )
        SET_COMP ( "called_num",  A_CLD_NUM )
    ENDSTRUCT

/* called party sub address */
    BEGIN_PSTRUCT ("called_party_sub", S_CLD_PARTY_SUB)
        SET_COMP ("tos",      TOS_NOT_PRES)
        SET_COMP ("odd_even", OE_EVEN)
        SET_COMP ("c_subaddr", NUM_0)
        SKIP_COMP ("subaddr")
    ENDSTRUCT

/* data full rate 9600 */
    BEGIN_PSTRUCT ("chm", S_CHN_FULL_9600)
        SET_COMP ("ch_type",    CH_TCH_F)
        SET_COMP ("ch_mode",    CHM_DATA_9_6)
    ENDSTRUCT

/* calling party address */
    BEGIN_PSTRUCT ("calling_party", S_CLG_PARTY)
        SET_COMP ("ton",      TON_UNKNOWN)
        SET_COMP ("npi",      NPI_ISDN_TEL_NUMB_PLAN)
        SET_COMP ("present",  PRES_PRES_ALLOW)
        SET_COMP ("screen",   SCREEN_IND_NOT_PRES)
        SET_COMP ("c_num",    LA_CLG_NUM)
        SET_COMP ("num",      A_CLG_NUM)
    ENDSTRUCT

/* calling party sub address */
    BEGIN_PSTRUCT ("calling_party_sub", S_CLG_PARTY_SUB)
        SET_COMP ("tos",      TOS_NOT_PRES)
        SET_COMP ("odd_even", OE_EVEN)
```

```

        SET_COMP ("c_subaddr",      NUM_0)
        SKIP_COMP ("subaddr")
ENDSTRUCT

```

## 4 TEST CASES

### 4.1 Routing (internal) (ACIAAA001 -)

#### 4.1.1 ACIAAA001: Setup the Routing and the PCO view for the ACI test, and set ACI to transparent mode

Description:

Routings for the ACI tests are set.

Preamble:

APL	None	ACI	PS
COMMAND (TAP RESET)			
COMMAND (CC RESET)			
COMMAND (MM RESET)			
COMMAND (SIM RESET)			
COMMAND (SS RESET)			
COMMAND (MMI RESET)			
COMMAND (SMS RESET)			
COMMAND (RR RESET)			
COMMAND (hCommGRR RESET)			
COMMAND (hCommGMM RESET)			
COMMAND (PL RESET)			
COMMAND (AAA RESET)			
COMMAND (UART REDIRECT MMI NULL)			
COMMAND (UART RESET)			
COMMAND (PPP RESET)			
COMMAND (SM 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 (RR REDIRECT CLEAR)			
COMMAND (hCommGRR REDIRECT CLEAR)			
COMMAND (hCommGMM REDIRECT CLEAR)			
COMMAND (PL REDIRECT CLEAR)			
COMMAND (AAA REDIRECT CLEAR)			
COMMAND (UART REDIRECT CLEAR)			
COMMAND (PPP REDIRECT CLEAR)			
COMMAND (SM 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 (MMI REDIRECT RR TAP)  
 COMMAND (MMI REDIRECT hCommGRR TAP)  
 COMMAND (MMI REDIRECT hCommGMM TAP)  
 COMMAND (MMI REDIRECT AAA TAP)  
 COMMAND (MMI REDIRECT UART TAP)  
 COMMAND (MMI REDIRECT PPP TAP)  
 COMMAND (MMI REDIRECT GMM TAP)  
 COMMAND (MMI REDIRECT SM TAP)  
 COMMAND (PL REDIRECT MMI NULL)  
 COMMAND (UART REDIRECT MMI NULL)

COMMAND (TAP REDIRECT TAP MMI)		
COMMAND (MMI REDIRECT MMI TAP)		

#### Parametrization:

Primitive	Parameter	Value
History:	14.01.03	SKA
		Initial

## 4.2 Initialisation (ACIAAA011-)

### 4.2.1 ACIAAA010: Power On

#### Description:

activate SIM card at power on, SIM indicates SAT features

#### Preamble:

ACIAAA001

APL	ACI	PS
(1)	ACI_CMD_REQ (cmd: +CMEE=2)	
	* =====> *	
(2)	ACI_CMD_IND (msg: OK)	
	* <===== *	
(3)	ACI_CMD_REQ (cmd: +CFUN=1)	
	* =====> *	
(4)		SIM_ACTIVATE_REQ
	* =====> *	
(5)		SIM_ACTIVATE_CNF
	* <===== *	
(6)		SIM_MMI_INSERT_IND
	* <===== *	
(7)		SIM_READ_REQ
	* =====> *	
(8)		SIM_READ_CNF
	* <===== *	
(9)		SIM_READ_REQ
	* =====> *	
(10)		SIM_READ_CNF
	* <===== *	
(11)	ACI_CMD_IND (msg: OK)	
	* <===== *	

**Parametrization:**

Primitive	Parameter	Value
(1) ACI_CMD_REQ	cmd_src cmd_len NUM_ELEMENTS(C_PLUS_CMEE_VERB) cmd_seq	CMD_SRC_EXT   C_PLUS_CMEE_VERB
(2) ACI_CMD_IND	cmd_len NUM_ELEMENTS(M_OK) cmd_seq	  M_OK
(3) ACI_CMD_REQ	cmd_src cmd_len NUM_ELEMENTS(C_PLUS_CFUN_FULL) cmd_seq	CMD_SRC_EXT  C_PLUS_CFUN_FULL
(4) SIM_ACTIVATE_REQ	proc mmi_pro_file stk_pro_file	SIM_INITIALISATION NOT_USED NOT_USED
(5) SIM_ACTIVATE_CNF	cause pin_cnt	SIM_NO_ERROR NUM_3

	puk_cnt	NUM_10
	pin2_cnt	NUM_3
	puk2_cnt	NUM_10
	ec_code	NOT_USED
	pref_lang	NOT_USED
(6) SIM_MMI_INSERT_IND		
	func	SIM_ADN_ENABLED
	sim_serv	F_SIM_SRV_4
	imsi_field	NOT_USED
	pref_plmn	NOT_USED
	phase	PHASE_2PLUS_SIM
	access_acm	NOT_USED
	access_acmmmax	NOT_USED
	access_puct	NOT_USED
(7) SIM_READ_REQ		
	source	SRC_MMI
	offset	NUM_0
	datafield	SIM_ECC
	length	NOT_PRESENT_8BIT
	max_length	NUM_0
(8) SIM_READ_CNF		
	datafield	SIM_ECC
	cause	SIM_NO_ERROR
	length	NUM_12
	trans_data	A_ECC_FIELD
(9) SIM_READ_REQ		
	source	SRC_MMI
	offset	NOT_USED
	datafield	SIM_AD
	length	NOT_PRESENT_8BIT
	max_length	NOT_USED
(10) SIM_READ_CNF		
	datafield	SIM_AD
	cause	SIM_NO_ERROR
	length	NOT_USED
	trans_data	NOT_USED
(11) ACI_CMD_IND		
	cmd_len	
	NUM_ELEMENTS ( M_OK )	
	cmd_seq	M_OK

### 0.1.1 ACIAAA011: Select Bearer Service Type

Description: Select bearer service type

Preamble: ACIAAA010

	APL	ACI	PS
(1)			
	ACI_CMD_REQ		
	(cmd: AT+CBST=71,0,1)		
	*=====>*		
(2)			
	ACI_CMD_IND		
	(msg: OK)		
	*<=====*		

### Parametrization:

Primitive	Parameter	Value
(1) ACI_CMD_REQ	cmd_src	CMD_SRC_EXT
	cmd_len	
	NUM_ELEMENTS ( C_PERCENT_CBST )	
	cmd_seq	C_PERCENT_CBST
(2) ACI_CMD_IND	cmd_len	
	NUM_ELEMENTS ( M_OK )	
	cmd_seq	M_OK

History: 14.01.03      SKA      Initial

### 4.3 Open port (ACIAAA015- ACIAAA016)

#### 4.3.1 ACIAAA015: Open port first instance

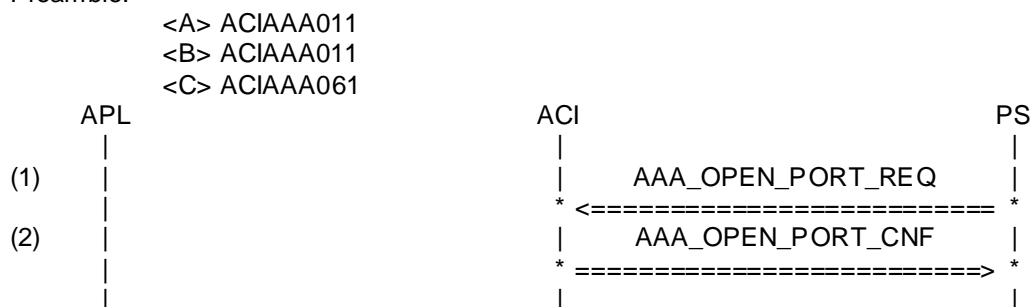
Description:

Variants:

<A>...<C>



Preamble:



Parametrization:

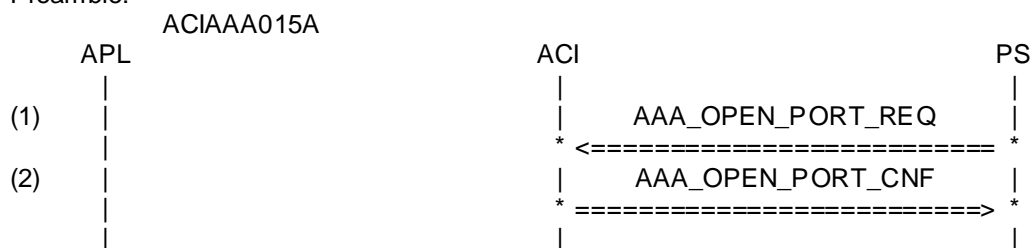
Primitive	Parameter	Value
(1) AAA_OPEN_PORT_REQ	port_number	NUM_0
	sub_no	NUM_0
<A>	capability	CAP_CMD_PKT
<B>	capability	CAP_CMD_SER
<C>	capability	CAP_CMD_PKT
(2) AAA_OPEN_PORT_CNF	port_number	NUM_0
	sub_no	NUM_0
	dti_id	NUM_1

History: 14.01.03 SKA Initial

### 4.3.2 ACIAAA016: Open port second instance

Description:

Preamble:



Parametrization:

Primitive	Parameter	Value
(1) AAA_OPEN_PORT_REQ	port_number	NUM_1
	sub_no	NUM_0
	capability	CAP_CMD_PKT
(2) AAA_OPEN_PORT_CNF	port_number	NUM_1
	sub_no	NUM_0
	dti_id	NUM_2

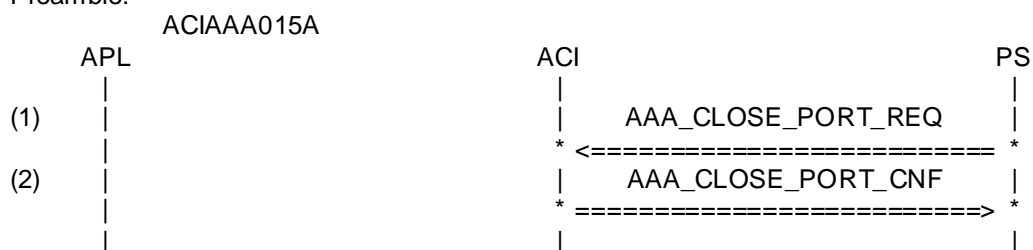
History: 14.01.03 SKA Initial

## 4.4 Close port (ACIAAA020- ACIAAA021)

### 4.4.1 ACIAAA020: Close first instance

Description: close first instance

Preamble:



Parametrization:

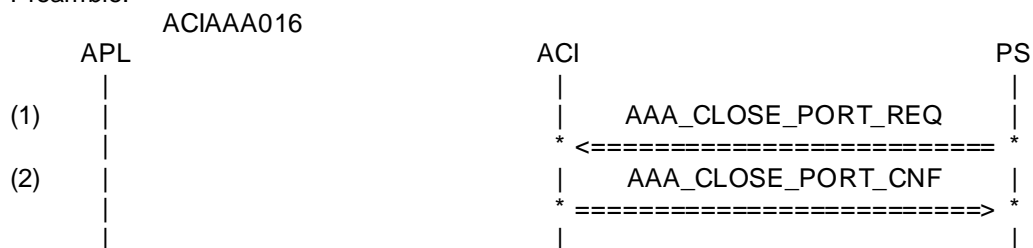
Primitive	Parameter	Value
(1) AAA_CLOSE_PORT_REQ	port_number	NUM_0
	sub_no	NUM_0
(2) AAA_CLOSE_PORT_CNF	port_number	NUM_0
	sub_no	NUM_0

History: 14.01.03 SKA Initial

### 4.4.2 ACIAAA021: Close second instance

Description: close second instance

Preamble:



Parametrization:

Primitive	Parameter	Value
-----------	-----------	-------

(1) AAA_CLOSE_PORT_REQ	port_number	NUM_1
	sub_no	NUM_0
(2) AAA_CLOSE_PORT_CNF	port_number	NUM_1
	sub_no	NUM_0

History: 14.01.03 SKA Initial

## 4.5 AT%PPP (ACIAAA030-)

### 4.5.1 ACIAAA030: AT%PPP

Description: AT%PPP with new parameter con\_type = 1 means connect AAA with PPP (and L2R)

Preamble:

ACIAAA015A			
APL		ACI	PS
(1)	AAA_CMD_REQ (AT%PPP=1,"toto","tb",1)		
	*=====>*		
(2)	AAA_CMD_CNF (msg: OK)		
	*<=====*		

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_PERCENT_PPP )	
	cmd_seq	C_PERCENT_PPP
(2) AAA_CMD_CNF	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS ( M_OK )	
	cmd_result	M_OK

History: 14.01.03 SKA Initial  
24.01.03 TLU +CBST added

## 4.5.2 ACIAAA031: Data call of Riviera with PPP

Description: atd

Preamble: ACIAAA030

APL	ACI	PS
(1)		
	AAA_CMD_REQ	
	(cmd: ATDXXX)	
	*=====>*	
(2)		
	MNCC_SETUP_REQ	
	*=====>*	
(3)		
	SIM_SYNC_REQ	
	*=====>*	
(4)		
	MNCC_CALL_PROCEED_IND	
	*<=====*	
(5)		
	MNCC_SYNC_IND	
	*<=====*	
(6)		
	MNCC_SETUP_CNF	
	*<=====*	
(7)		
	RA_ACTIVATE_REQ	
	*=====>*	
(8)		
	RA_ACTIVATE_CNF	
	*<=====*	
(9)		
	L2R_ACTIVATE_REQ	
	*=====>*	
(10)		
	L2R_XID_IND	
	*<=====*	
(11)		
	L2R_ACTIVATE_CNF	
	*<=====*	
(12)		
	L2R_CONNECT_REQ	
	*=====>*	
(13)		
	L2R_CONNECT_CNF	
	*<=====*	
(14)		
	AAA_DTI_IND	
	*=====>*	
(15)		
	AAA_DTI_RES	
	*<=====*	
(16)		
	L2R_DTI_REQ	
	*=====>*	
(17)		
	PPP_ESTABLISH_REQ	
	*=====>*	
(18)		
	PPP_DTI_CONNECTED_IND	
	*<=====*	
(19)		
	PPP_DTI_CONNECTED_IND	
	*<=====*	
(20)		
	L2R_DTI_CNF	
	*<=====*	
(21)		
	PPP_ESTABLISH_CNF	
	*<=====*	
(22)		
	AAA_CMD_CNF	
	(msg: CONNECT)	
	*<=====*	

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_D_DAT )	
	cmd_seq	C_D_DAT
(2) MNCC_SETUP_REQ	ti	NUM_0
	prio	PRIO_NORM_CALL
	ri	NOT_PRESENT_8BIT
	bcpa	
	S_BS_DAT_9600_ASY_NON_TRA	
	bcpa2	S_BS_NOT_PRESENT
	called_party	S_CLD_PARTY
	called_party_sub	S_CLD_PARTY_SUB
	clir_sup	NOT_PRESENT_8BIT
	fac_inf	NOT_USED
(3) SIM_SYNC_REQ		
	syncs	SYNC_START_CALL
(4) MNCC_CALL_PROCEED_IND	ti	NUM_0
	progress_desc	PROG_NOT_PRES
	ri	NOT_PRESENT_8BIT
	bcpa	
	S_BS_DAT_9600_ASY_NON_TRA	
	bcpa2	S_BS_NOT_PRESENT
(5) MNCC_SYNC_IND	ti	NOT_PRESENT_8BIT
	cause	
	MNCC_CAUSE_CHANNEL_SYNC	
	chm	S_CHN_FULL_9600
(6) MNCC_SETUP_CNF	ti	NUM_0
	cause	MNCC_CAUSE_SUCCESS
	progress_desc	PROG_NOT_PRES
	connected_number	S_CLG_PARTY
	connected_number_sub	S_CLG_PARTY_SUB
(7) RA_ACTIVATE_REQ	model	RA_MODEL_RLP
	tra_rate	TRA_FULLRATE_9600
	user_rate	URA_9600
	ndb	NUM_8
	nsb	NUM_1

(8) RA_ACTIVATE_CNF	ack_flg	RA_ACK
(9) L2R_ACTIVATE_REQ	k_ms_iwf	NOT_USED
	k_iwf_ms	NOT_USED
	t1	NOT_USED
	t2	NOT_USED
	n2	NOT_USED
	pt	
	L2R_COMPR_TYPE_V42BIS	
	p0	L2R_COMP_DIR_NONE
	p1	NUM_512
	p2	NUM_6
	uil2p	L2R_ISO6429
	bytes_per_prim	NOT_USED
	buffer_size	NOT_USED
	rate	L2R_FULLRATE_9600
(10) L2R_XID_IND	rlp_vers	NUM_1
	k_ms_iwf	NOT_USED
	k_iwf_ms	NOT_USED
	t1	NOT_USED
	t2	NOT_USED
	n2	NOT_USED
	pt	
	L2R_COMPR_TYPE_V42BIS	
	p0	L2R_COMP_DIR_NONE
	p1	NUM_512
	p2	NUM_6
(11) L2R_ACTIVATE_CNF	ack_flg	L2R_ACK
(12) L2R_CONNECT_REQ		
(13) L2R_CONNECT_CNF	ack_flg	L2R_ACK
(14) AAA_DTI_IND	port_number	NUM_0
	sub_no	NUM_0
	entity_name	S_PPP_NAME
	link_id	AAA_LINK_ID
(15) AAA_DTI_RES	port_number	NUM_0
	sub_no	NUM_0
(16) L2R_DTI_REQ	dti_conn	L2R_CONNECT_DTI
	entity_name	S_PPP_NAME

	link_id	L2R_LINK_ID
	dti_direction	L2R_DTI_NORMAL
(17) PPP_ESTABLISH_REQ		
	mode	PPP_CLIENT
	mru	PPP_MRU_DEFAULT
	ap	PPP_AP_PAP
	login	NOT_USED
	accm	PPP_ACCM_DEFAULT
	rt	PPP_RT_DEFAULT
	mc	PPP_MC_DEFAULT
	mt	PPP_MT_DEFAULT
	mf	PPP_MF_DEFAULT
	ppp_hc	PPP_HC_OFF
	ip	PPP_IP_DYNAMIC
	dns1	PPP_DNS1_DYNAMIC
	dns2	PPP_DNS2_DYNAMIC
	peer_channel	L2R_CHANNEL
	protocol_channel	AAA_CHANNEL
	peer_direction	TO_LOWER_LAYER
	prot_direction	TO_HIGHER_LAYER
	peer_link_id	L2R_LINK_ID
	prot_link_id	AAA_LINK_ID
(18) PPP_DTI_CONNECTED_IND		
	connected_direction	PPP_DTI_CONN_PEER
(19) PPP_DTI_CONNECTED_IND		
	connected_direction	PPP_DTI_CONN_PROT
(20) L2R_DTI_CNF		
	dti_conn	L2R_CONNECT_DTI
	link_id	L2R_LINK_ID
(21) PPP_ESTABLISH_CNF		
	mru	PPP_MRU_DEFAULT
	ppp_hc	PPP_HC_OFF
	msid	NOT_USED
	ip	IP_ADDRESS_OWN
	dns1	IP_ADDRESS_DNS1
	dns2	IP_ADDRESS_DNS2
(22) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS ( M_CONNECT )	
	cmd_result	M_CONNECT
History:	14.01.03	SKA Initial





## 4.6 Data call without PPP

### 4.6.1 ACIAAA040: Data call of a Riviera without PPP

Description: atd

Preamble: ACIAAA015B

APL	ACI	PS
(1)	AAA_CMD_REQ (cmd: ATDXXX)	
	*=====>*	
(2)	MNCC_SETUP_REQ	
	*=====>*	
(3)	SIM_SYNC_REQ	
	*=====>*	
(4)	MNCC_CALL_PROCEED_IND	
	*<=====*	
(5)	MNCC_SYNC_IND	
	*<=====*	
(6)	MNCC_SETUP_CNF	
	*<=====*	
(7)	RA_ACTIVATE_REQ	
	*=====>*	
(8)	RA_ACTIVATE_CNF	
	*<=====*	
(9)	L2R_ACTIVATE_REQ	
	*=====>*	
(10)	L2R_XID_IND	
	*<=====*	
(11)	L2R_ACTIVATE_CNF	
	*<=====*	
(12)	L2R_CONNECT_REQ	
	*=====>*	
(13)	L2R_CONNECT_CNF	
	*<=====*	
(14)	AAA_CMD_CNF (msg: CONNECT)	
	*<=====*	
(15)	AAA_DTI_IND	
	*=====>*	
(16)	AAA_DTI_RES	
	*<=====*	
(17)	L2R_DTI_REQ	
	*=====>*	
(18)	L2R_DTI_CNF	
	*<=====*	

#### Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0

	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_D_DAT )	
	cmd_seq	C_D_DAT
(2) MNCC_SETUP_REQ		
	ti	NUM_0
	prio	PRIO_NORM_CALL
	ri	NOT_PRESENT_8BIT
	bcpara	
	S_BS_DAT_9600_ASY_NON_TRA	
	bcpara2	S_BS_NOT_PRESENT
	called_party	S_CLD_PARTY
	called_party_sub	S_CLD_PARTY_SUB
	clir_sup	NOT_PRESENT_8BIT
	fac_inf	NOT_USED
(3) SIM_SYNC_REQ		
	synccs	SYNC_START_CALL
(4) MNCC_CALL_PROCEED_IND		
	ti	NUM_0
	progress_desc	PROG_NOT_PRES
	ri	NOT_PRESENT_8BIT
	bcpara	
	S_BS_DAT_9600_ASY_NON_TRA	
	bcpara2	S_BS_NOT_PRESENT
(5) MNCC_SYNC_IND		
	ti	NOT_PRESENT_8BIT
	cause	
	MNCC_CAUSE_CHANNEL_SYNC	
	chm	S_CHN_FULL_9600
(6) MNCC_SETUP_CNF		
	ti	NUM_0
	cause	MNCC_CAUSE_SUCCESS
	progress_desc	PROG_NOT_PRES
	connected_number	S_CLG_PARTY
	connected_number_sub	S_CLG_PARTY_SUB
(7) RA_ACTIVATE_REQ		
	model	RA_MODEL_RLP
	tra_rate	TRA_FULLRATE_9600
	user_rate	URA_9600
	ndb	NUM_8
	nsb	NUM_1
(8) RA_ACTIVATE_CNF		
	ack_flg	RA_ACK
(9) L2R_ACTIVATE_REQ		
	k_ms_iwf	NOT_USED

	k_iwf_ms	NOT_USED
	t1	NOT_USED
	t2	NOT_USED
	n2	NOT_USED
	pt	
	L2R_COMPR_TYPE_V42BIS	
	p0	L2R_COMP_DIR_NONE
	p1	NUM_512
	p2	NUM_6
	uil2p	L2R_ISO6429
	bytes_per_prim	NOT_USED
	buffer_size	NOT_USED
	rate	L2R_FULLRATE_9600
(10) L2R_XID_IND		
	rlp_vers	NUM_1
	k_ms_iwf	NOT_USED
	k_iwf_ms	NOT_USED
	t1	NOT_USED
	t2	NOT_USED
	n2	NOT_USED
	pt	
	L2R_COMPR_TYPE_V42BIS	
	p0	L2R_COMP_DIR_NONE
	p1	NUM_512
	p2	NUM_6
(11) L2R_ACTIVATE_CNF		
	ack_flg	L2R_ACK
(12) L2R_CONNECT_REQ		
(13) L2R_CONNECT_CNF		
	ack_flg	L2R_ACK
(14) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS ( M_CONNECT )	
	cmd_result	M_CONNECT
(15) AAA_DTI_IND		
	port_number	NUM_0
	sub_no	NUM_0
	entity_name	S_L2R_NAME
	link_id	AAA_LINK_ID
(16) AAA_DTI_RES		
	port_number	NUM_0
	sub_no	NUM_0

(17) L2R\_DTI\_REQ

dti_conn	L2R_CONNECT_DTI
entity_name	S_AAA_NAME
link_id	AAA_LINK_ID
dti_direction	L2R_DTI_NORMAL

(18) L2R\_DTI\_CNF

dti_conn	L2R_CONNECT_DTI
link_id	AAA_LINK_ID

History: 14.01.03 SKA Initial

## 4.7 Hang up

### 4.7.1 ACIAAA050: MMI hang up phone (ATH) (AAA-PPP-L2R)

Description: hang up and disconnect AAA from PPP and PPP from L2R

Preamble: ACIAAA031

	MMI	ACI	PS
(1)	AAA_CMD_REQ (cmd: ATH)		
	*=====>*		
(2)		AAA_DISCONNECT_IND	
		*=====>*	
(3)		PPP_TERMINATE_REQ	
		*=====>*	
(4)		L2R_DTI_REQ	
		*=====>*	
(5)		AAA_DISCONNECT_RES	
		*<=====*	
(6)		PPP_TERMINATE_IND	
		*<=====*	
(7)		L2R_DTI_CNF	
		*<=====*	
(8)		L2R_DEACTIVATE_REQ	
		*=====>*	
(9)		L2R_DEACTIVATE_CNF	
		*<=====*	
(10)		RA_DEACTIVATE_REQ	
		*=====>*	
(11)		RA_DEACTIVATE_CNF	
		*<=====*	
(12)		SIM_SYNC_REQ	
		*=====>*	
(13)		MNCC_DISCONNECT_REQ	
		*=====>*	
(14)		MNCC_RELEASE_IND	
		*<=====*	
(15)	AAA_CMD_CNF (msg: OK)		
	*<=====*		

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_ATH )	
	cmd_seq	C_ATH
(2) AAA_DISCONNECT_IND	port_number	NUM_0
	sub_no	NUM_0
	link_id	AAA_LINK_ID
(3) PPP_TERMINATE_REQ	lower_layer	PPP_LOWER_LAYER_UP
(4) L2R_DTI_REQ	dti_conn	L2R_DISCONNECT_DTI
	entity_name	NOT_USED
	link_id	L2R_LINK_ID
	dti_direction	L2R_DTI_NORMAL
(5) AAA_DISCONNECT_RES	port_number	NUM_0
	sub_no	NUM_0
(6) PPP_TERMINATE_IND	ppp_cause	
	PPP_TERM_NO_CHANNEL	
(7) L2R_DTI_CNF	dti_conn	L2R_DISCONNECT_DTI
	link_id	L2R_LINK_ID
(8) L2R_DEACTIVATE_REQ		
(9) L2R_DEACTIVATE_CNF		
(10) RA_DEACTIVATE_REQ		
(11) RA_DEACTIVATE_CNF		
(12) SIM_SYNC_REQ	synccts	SYNC_STOP_CALL
(13) MNCC_DISCONNECT_REQ	ti	NUM_0
	cause	
	MNCC_CAUSE_CALL_CLEAR	
	fac_inf	NOT_USED
	ss_version	NOT_USED
(14) MNCC_RELEASE_IND		
	ti	NUM_0

	cause		
	MNCC_CAUSE_CALL_CLEAR		
(15) AAA_CMD_CNF			
	port_number	NUM_0	
	sub_no	NUM_0	
	result_len		
	NUM_ELEMENTS ( M_OK )		
	cmd_result	M_OK	
History:	14.01.03	SKA	Initial

## 4.7.2 ACIAAA051: MMI hang up phone (ATH) (AAA-L2R)

Description: hang up and disconnect AAA from L2R

Preamble: ACIAAA040

MMI	ACI	PS
(1)	AAA_CMD_REQ (cmd: ATH)	
	*=====>*	
(2)	AAA_DISCONNECT_IND	
	*=====>*	
(3)	L2R_DTI_REQ	
	*=====>*	
(4)	AAA_DISCONNECT_RES	
	*<=====*	
(5)	L2R_DTI_CNF	
	*<=====*	
(6)	L2R_DEACTIVATE_REQ	
	*=====>*	
(7)	L2R_DEACTIVATE_CNF	
	*<=====*	
(8)	RA_DEACTIVATE_REQ	
	*=====>*	
(9)	RA_DEACTIVATE_CNF	
	*<=====*	
(10)	SIM_SYNC_REQ	
	*=====>*	
(11)	MNCC_DISCONNECT_REQ	
	*=====>*	
(12)	MNCC_RELEASE_IND	
	*<=====*	
(13)	AAA_CMD_CNF (msg: OK)	
	*<=====*	

### Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0

	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_ATH )	
	cmd_seq	C_ATH
(2) AAA_DISCONNECT_IND		
	port_number	NUM_0
	sub_no	NUM_0
	link_id	AAA_LINK_ID
(3) L2R_DTI_REQ		
	dti_conn	L2R_DISCONNECT_DTI
	entity_name	NOT_USED
	link_id	AAA_LINK_ID
	dti_direction	L2R_DTI_NORMAL
(4) AAA_DISCONNECT_RES		
	port_number	NUM_0
	sub_no	NUM_0
(5) L2R_DTI_CNF		
	dti_conn	L2R_DISCONNECT_DTI
	link_id	AAA_LINK_ID
(6) L2R_DEACTIVATE_REQ		
(7) L2R_DEACTIVATE_CNF		
(8) RA_DEACTIVATE_REQ		
(9) RA_DEACTIVATE_CNF		
(10) SIM_SYNC_REQ		
	syncccs	SYNC_STOP_CALL
(11) MNCC_DISCONNECT_REQ		
	ti	NUM_0
	cause	
	MNCC_CAUSE_CALL_CLEAR	
	fac_inf	NOT_USED
	ss_version	NOT_USED
(12) MNCC_RELEASE_IND		
	ti	NUM_0
	cause	
	MNCC_CAUSE_CALL_CLEAR	
(13) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS ( M_OK )	
	cmd_result	M_OK
History:	14.01.03	SKA Initial

## 4.8 Set up and shut down GPRS context

Description:

Preamble:

APL	ACI	PS
COMMAND (MMI CONFIG AUTO_ATTACH)		
COMMAND (MMI CONFIG MAN_DETACH)		
(1)	ACI_CMD_REQ (cmd: +COPS=0)	
	*=====>*	
(2)		GMMREG_PLMN_MODE_REQ
		*=====>*
(3)		GMMREG_ATTACH_REQ
		*=====>*
(4)		GMMREG_ATTACH_CNF
		*<=====*
(5)		GMMREG_PLMN_MODE_REQ
		*=====>*
(6)	ACI_CMD_IND (msg: OK)	
	*<=====*	
(7)		GMMREG_ATTACH_CNF
		*<=====*

Primitive	Parameter	Value
) ACI_CMD_REQ	cmd_src	CMD_SRC_EXT
	cmd_len	
	NUM_ELEMENTS ( C_COPS_0 )	
	cmd_seq	C_COPS_0
) GMMREG_PLMN_MODE_REQ	net_selection_mode	
	GMMREG_NET_SEL_MODE_AUTO	
) GMMREG_ATTACH_REQ	mobile_class	GMMREG_CLASS_BG
	attach_type	GMMREG_AT_COMB
	service_mode	SERVICE_MODE_FULL
	t3314_ready_val	VAL_T3314
	t3312_standby_rau_val	VAL_T3312



(4) GMMREG\_ATTACH\_CNF

attach_type	GMMREG_AT_IMSI
plmn	PLMN_1
lac	NUM_1
rac	NUM_1
cid	NUM_1
gprs_indicator	GMM_GPRS_SUPP_YES
search_running	
GMMREG_SEARCH_NOT_RUNNING	

(5) GMMREG\_PLMN\_MODE\_REQ

net_selection_mode	
GMMREG_NET_SEL_MODE_AUTO	

(6) ACI\_CMD\_IND

cmd_len	
NUM_ELEMENTS ( M_OK )	
cmd_seq	M_OK

(7) GMMREG\_ATTACH\_CNF

attach_type	GMMREG_AT_COMB
plmn	PLMN_1
lac	NUM_1
rac	NUM_1
cid	NUM_1
gprs_indicator	GMM_GPRS_SUPP_YES
search_running	
GMMREG_SEARCH_NOT_RUNNING	

History:

10-07-2003	ni	copied from GACI document and adapted
07-07-2001	brz	add primitive
01-03-2001	brz	Initial

## 4.8.2 ACIAAA062: One PDP context defined

Description:

One PDP context will be defined.

Preamble:

ACIAAA015c

APL	ACI	PS
(1)	AAA_CMD_REQ (cmd: +CGDCONT=?)	
	*=====>*	
(2)	AAA_PRES_IND (msg: +CGDCONT=...)	
	*<=====*	
(3)	AAA_CMD_CNF (msg: OK)	
	*<=====*	
(4)	AAA_CMD_REQ (cmd: +CGDCONT=...)	
	*=====>*	
(5)	AAA_CMD_CNF (msg: OK)	
	*<=====*	

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_CGDCONT_QUERY )	
	cmd_seq	C_CGDCONT_QUERY
(2) AAA_PRES_IND	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS(C_CGDCONT_ANSW)	
	cmd_result	C_CGDCONT_ANSW
(3) AAA_CMD_CNF	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)

	cmd_result	M_OK
(4) AAA_CMD_REQ		
	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS ( C_CGDCONT_CMD )	
	cmd_seq	C_CGDCONT_CMD
(5) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)
	cmd_result	M_OK

History:

10-07-2003	ni	delete variants, change to AAA primitives
01-03-2001	brz	add variants
24-02-2001	brz	add variants
01-08-2000	brz	Initial

### 4.8.3 ACIAAA063: Set PCOs and activate PDP context

Description:

Preamble:

ACIAAA062

APL	ACI	PS
(1)	AAA_CMD_REQ (cmd: %CGPCO=)	
	*=====>*	
(2)	AAA_CMD_CNF (msg: OK)	
	*<=====*	
(3)	AAA_CMD_REQ (cmd: +CGEREP=)	
	*=====>*	
(4)	AAA_CMD_CNF (msg: OK)	
	*<=====*	
(5)	AAA_CMD_REQ (cmd: +CGACT=...)	
	*=====>*	
(6)		SMREG_PDP_ACTIVATE_REQ *=====>*
(7)		SMREG_PDP_ACTIVATE_CNF *<=====*
(8)	AAA_CMD_CNF (msg: OK)	
	*<=====*	

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	NUM_ELEMENTS(C_CGPCO_CMD)
	cmd_seq	C_CGPCO_CMD
(2) AAA_CMD_CNF	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)
	cmd_result	M_OK

(3) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS(C_CGEREP_CMD)	
	cmd_seq	C_CGEREP_CMD
(4) AAA_CMD_CNF	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)
	cmd_result	M_OK
(5) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS(C_CGACT_CMD)	
	cmd_seq	C_CGACT_CMD
(6) SMREG_PDP_ACTIVATE_REQ	direc	DIREC_MO
	ppp_hc	SMREG_VAN_NOT_USED
	msid	NUM_0
	dcomp	
	SMREG_COMP_NEITHER_DIRECT	
	hcomp	
	SMREG_COMP_NEITHER_DIRECT	
	pdp_type	IP_V_4
	smreg_qos	SMREG_QOS_0
	smreg_min_qos	SMREG_QOS_0
	smreg_nsapi	SMREG_NSAPI_5
	smreg_ti	NUM_FF
	pdp_address	PDP_ADDRESS_0_S
	smreg_apn	SMREG_APN_0_S
	dti_linkid	SNDPDTI_ID
	dti_neighbor	DTI_NEIGHBOR
	dti_direction	SMREG_NEIGHBOR
	sdu	SDU_ACT_REQ
(7) SMREG_PDP_ACTIVATE_CNF	ppp_hc	SMREG_VAN_NOT_USED
	msid	NUM_0
	dcomp	
	SMREG_COMP_NEITHER_DIRECT	
	hcomp	
	SMREG_COMP_NEITHER_DIRECT	
	pdp_type	IP_V_4
	smreg_qos	SMREG_QOS_0
	smreg_nsapi	SMREG_NSAPI_5
	pdp_address	PDP_ADDRESS_NEG

	sdu	SDU_ACT_CNF
(8) AAA_CMD_CNF	port_number sub_no result_len cmd_result	NUM_0 NUM_0 NUM_ELEMENTS(M_OK) M_OK

History:

15-07-2003 ni initial

#### 4.8.4 ACIAAA064: Query PDP context IP address and PCOs

Description:

One PDP context will be defined.

Preamble:

ACIAAA063

APL	ACI	PS
(1)   AAA_CMD_REQ   (cmd: +CGPADDR=1)   *=====>*	   	   
(2)   AAA_PRES_IND   (msg: +CGPADDR: ...)   *<=====*	   	   
(3)   AAA_CMD_CNF   (msg: OK)   *<=====*	   	   
(4)   AAA_CMD_REQ   (cmd: %CGPCO=...)   *=====>*	   	   
(5)   AAA_PRES_IND   (msg: %CGPCO: ...)   *<=====*	   	   
(6)   AAA_CMD_CNF   (msg: OK)   *<=====*	   	   

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number sub_no cmd_len NUM_ELEMENTS(C_CGPADDR_CMD) cmd_seq	NUM_0 NUM_0  C_CGPADDR_CMD
(2) AAA_PRES_IND	port_number sub_no	NUM_0 NUM_0

	result_len	
	NUM_ELEMENTS(C_CGPADDR_ANSW)	
	cmd_result	C_CGPADDR_ANSW
(3) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)
	cmd_result	M_OK
(4) AAA_CMD_REQ		
	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	
	NUM_ELEMENTS(C_CGPCO_QUERY)	
	cmd_seq	C_CGPCO_QUERY
(5) AAA_PRES_IND		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	
	NUM_ELEMENTS(C_CGPCO_ANSW)	
	cmd_result	C_CGPCO_ANSW
(6) AAA_CMD_CNF		
	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_OK)
	cmd_result	M_OK

History:

15-07-2003	ni	initial
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## 4.8.5 ACIAAA065: Enter data state

Description:

Preamble:

ACIAAA064

APL	ACI	PS
(1)	AAA_CMD_REQ (cmd: +CGDATA)	
	*=====>*	
(2)	AAA_CMD_CNF (msg: OK)	
	*<=====*	
(3)	AAA_DTI_IND	
	*<=====*	
(4)	AAA_DTI_RES (cmd: +CGDATA)	
	*=====>*	

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number sub_no cmd_len NUM_ELEMENTS(C_CGDATA_CMD) cmd_seq	NUM_0 NUM_0  C_CGDATA_CMD
(2) AAA_CMD_CNF	port_number sub_no result_len NUM_ELEMENTS(M_CONNECT) cmd_result	NUM_0 NUM_0  M_CONNECT
(3) AAA_DTI_IND	port_number sub_no entity_name link_id	NUM_0 NUM_0 SND CP_NAME AAA_LINK_ID
(4) AAA_DTI_RES	port_number sub_no	NUM_0 NUM_0

History:

15-07-2003	ni	initial
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## 4.8.6 ACIAAA066: Deactivate PDP context

Description:

Preamble:

ACIAAA065

APL	ACI	PS
(1)		
AAA_CMD_REQ		
(cmd: +CGDATA)		
*=====>*		
(2)		
AAA_DISCONNECT_IND		
*<=====*		
(3)	SMREG_PDP_DEACTIVATE_REQ	
	*=====>*	
(4)		
AAA_DISCONNECT_RES		
*=====>*		
(5)	SMREG_PDP_DEACTIVATE_CNF	
	*<=====*	
(6)		
AAA_CMD_CNF		
(msg: OK)		
*<=====*		

Parametrization:

Primitive	Parameter	Value
(1) AAA_CMD_REQ	port_number	NUM_0
	sub_no	NUM_0
	cmd_len	NUM_ELEMENTS(C_CGACT_DEACT_CMD)
	cmd_seq	C_CGACT_DEACT_CMD
(2) AAA_DISCONNECT_IND	port_number	NUM_0
	sub_no	NUM_0
	link_id	AAA_LINK_ID
(3) SMREG_PDP_DEACTIVATE_REQ	nsapi_set	NSAPI_SET_5
	smreg_local	SMREG_NONLOCAL
(4) AAA_DISCONNECT_RES	port_number	NUM_0
	sub_no	NUM_0
(5) SMREG_PDP_DEACTIVATE_CNF	nsapi_set	NSAPI_SET_5
(6) AAA_CMD_CNF	port_number	NUM_0

sub_no	NUM_0
result_len	NUM_ELEMENTS(M_OK)
cmd_result	M_OK

History:

15-07-2003	ni	initial
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#### 4.8.7 ACIAAA067: PDP context deactivated by network

Description:

Preamble:

ACIAAA065

APL	ACI	PS
(1)	SMREG_PDP_DEACTIVATE_IND	
	* <=====	*
(2)	AAA_URES_IND	
	(msg: +CGEV: ...)	
	* <=====	

Parametrization:

Primitive	Parameter	Value
(1) SMREG_PDP_DEACTIVATE_IND	nsapi_set	NSAPI_SET_5
(2) AAA_URES_IND	port_number	NUM_0
	sub_no	NUM_0
	result_len	NUM_ELEMENTS(M_CGEV_DETACH)
	cmd_result	M_CGEV_DETACH

History:

15-07-2003	ni	initial
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## Appendices

### A. Acronyms

<b>DS-WCDMA</b>	Direct Sequence/Spread Wideband Code Division Multiple Access
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### B. Glossary

<b>International Mobile Telecommunication 2000 (IMT-2000/ITU-2000)</b>	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: <a href="http://www.imt-2000.org/">http://www.imt-2000.org/</a> >
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