TEXAS INSTRUMENTS

Technical Document – Confidential

GSM PROTOCOL STACK

MULTILAYER TEST SPECIFICATION

PHONEBOOK MANAGEMENT

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1.2 Abbreviations

AGCH   Access Grant Channel
BCCH   Broadcast Control Channel
BS   Base Station
BSIC   Base Station Identification Code
CBCH   Cell Broadcast Channel
CBQ   Cell Bar Qualify
CC   Call Control
CCCH   Common Control Channel
CCD   Condat Coder Decoder
CKSN   Ciphering Key Sequence Number
C/R   Command / Response

C1	Path Loss Criterion
C2	Reselection Criterion
DCCH	Dedicated Control Channel
DISC	Disconnect Frame
DL	Data Link Layer
DM	Disconnected Mode Frame
EA	Extension Bit Address Field
EL	Extension Bit Length Field
EMMI	Electrical Man Machine Interface
F	Final Bit
FACCH	Fast Associated Control Channel
FHO	Forced Handover
GP	Guard Period
GSM	Global System for Mobile Communication
HPLMN	Home Public Land Mobile Network
I	Information Frame
IMEI	International Mobile Equipment Identity
IMSI	International Mobile Subscriber Identity
Kc	Authentication Key
L	Length Indicator
LAI	Location Area Information
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
NCC	National Colour Code
NECI	New Establishment Causes included
N(R)	Receive Number
N(S)	Send Number
OTD	Observed Time Difference
P	Poll Bit
PCH	Paging Channel
PDU	Protocol Description Unit
P/F	Poll / Final Bit
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
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
TCH	Traffic Channel
TCH/F	Traffic Channel Full Rate
TCH/H	Traffic Channel Half Rate
TDMA	Time Division Multiple Access
TMSI	Temporary Mobile Subscriber Identity

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UA   Unnumbered Acknowledgement Frame
UI   Unnumbered Information Frame
VPLMN   Visiting Public Land Mobile Network
V(A)   Acknowledgement State Variable
V(R)   Receive State Variable
V(S)   Send State Variable

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 primi-
                           tive 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 base of the Protocol Stack rests on the physical layer.

The Data Link Layer (DL) is used to handle an acknowledged connection between mobile and base station. The LAPDm protocol is used.

Radio Resource (RR) manages the resources of the air-interface. That means configuration of physical layer, cell selection and cell reselection, data transfer, RR-Connection handling.

Mobility Management (MM) handles registration aspects for the mobile station. It detects changes of location areas and updates a mobile station in the new location area.

Call Control (CC) provides the call functionality. This includes call establishment, call maintenance procedures like Hold, Retrieve or Modify, and call disconnection.

Supplementary Services (SS) handles all call independent supplementary services like call forwarding or call barring.

Short Message Services (SMS) is used for sending and receiving point-to-point short messages. Additionally the reception of cell broadcast short messages is included.

The man machine interface (MMI) is the interface to the user. Normally it is connected with a keypad as input device and a display as output device.

Between the several entities data interfaces are defined. These data interfaces are called Service Access Points (SAPs), indicating that an upper layer uses the services of a lower layer.

The GSM specification do not set out any implementation of the Protocol Stack. The following diagrams show the implementation described in all these documents for the mobile station. All entities except the Man Machine Interface and Physical Layer are implemented as part of the Protocol Stack.

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Error! Objects cannot be created from editing field codes.

Figure 1: Mobile-station protocol architecture

This document describes the tests for the whole protocol stack according to GSM 11.10 chapter 26.8.

3 Parameters

```
#define REST_OCTET 0x2b
#define SAPI_0 0x0
/*------------------------------------------------------------------*\
| GSM 11.10
| 10 Generic call set up procedure
| 10.1 Generic call setup-up procedure for mobile terminating speech calls
| 10.1.2 Definition of system information messages
\*------------------------------------------------------------------*/
/*------------------------------------------------------------------*\
| Information Elements
\*------------------------------------------------------------------*/
/*----------------------------------------------------------------*\
| BCCH Frequency list:
| Indicates seven surrounding cells on any ARFCN of the supported
| band, excluding ARFCNs in or immediately adjacent to those
| specified in section 6.2 (GSM 11.10).
| From GSM 11.10, section6.2 the following ARFCN are given :
|     10, 14, 17, 18, 22, 24, 26, 30, 31, 34, 38, 42, 45, 46, 50,
|     52, 54, 58, 59, 62, 66, 70, 73, 74, 78, 80, 82, 86, 87, 90,
|     94, 98, 101, 102, 106, 108, 110, 114
| The following 7 cells are chosen :
|              121,117,        76,        48,   12,7,1
| Thus BA is : 01100000  00000800 00008000 00000841
\*----------------------------------------------------------------*/
IE_BEGIN(bcch_frequency_list)
   BF(32,0x01100000,ACT_CHECK,ANONYMOUS,"bit 128 thru  97")
   BF(32,0x00000800,ACT_CHECK,ANONYMOUS,"bit  96 thru  65")
   BF(32,0x00008000,ACT_CHECK,ANONYMOUS,"bit  64 thru  33")
   BF(32,0x00000841,ACT_CHECK,ANONYMOUS,"bit  32 thru   1")
IE_END(bcch_frequency_list)
IE_BEGIN(cell_channel_description)
   BF(32,0x00000000,ACT_CHECK,ANONYMOUS,"Includes the       ")
   BF(32,0x00000000,ACT_CHECK,ANONYMOUS,"hopping sequence   ")
   BF(32,0x00000000,ACT_CHECK,ANONYMOUS,"ARFCNs, if hopping ")
   BF(32,0x00000000,ACT_CHECK,ANONYMOUS,"is used.           ")
IE_END(cell_channel_description)
IE_BEGIN(cell_identity)
   BF(16,0x0001,ACT_CHECK,ANONYMOUS,"CI VALUE 0001 hex (not relevant)")
IE_END(cell_identity)
IE_BEGIN(cell_identity_B)
   BF(16,0x0002,ACT_CHECK,ANONYMOUS,"CI VALUE 0002 hex (not relevant)")
IE_END(cell_identity_B)
IE_BEGIN(cell_options)
   BF(1,0,ACT_CHECK,ANONYMOUS               ,"spare              ")
   BF(1,0,ACT_CHECK,pwrc                 ,"power control not set")
   BF(2,2,ACT_CHECK,dtx                 ,"MS must not use DTX  ")
   BF(4,1,ACT_CHECK,radio_link_time_out ,"8                    ")
IE_END(cell_options)
IE_BEGIN(cell_selection_parameter)
   BF(3,  0,ACT_CHECK,cell_reselect_hysteresis,"0 dB")
   BF(5,  0,ACT_CHECK,ms_txpwr_max_cch         ,"Max. output power of MS")
   BF(1,  0,ACT_CHECK,acs                      ,"no additional cell params")
   BF(1,  0,ACT_CHECK,neci                     ,"New est. cause not supp.")
   BF(6,-90+111,ACT_CHECK,rxlev_access_min     ,"-90 dBm")
IE_END(cell_selection_parameter)
IE_BEGIN(control_channel_description)
```

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```
     BF(1,0,ACT_CHECK,ANONYMOUS        ,"spare                                    ")
     BF(1,0,ACT_CHECK,att              ,"MS shall not apply (not relevant) ")
     BF(3,0,ACT_CHECK,bs_ag_blks_res,"0 blocks reserved (not relevant)   ")
     BF(3,1,ACT_CHECK,ccch_conf       ,"Combined CCCH/SDCCH (not relevant)")
     BF(5,0,ACT_CHECK,ANONYMOUS        ,"spare                                    ")
     BF(3,3,ACT_CHECK,bs_pa_mfrms    ,"5 multiframes (not relevant)       ")
     BF(8,0,ACT_CHECK,t3212           ,"Infinite                            ")
IE_END(control_channel_description)
IE_BEGIN(l2_pseudo_length_12)
   BF(6,12,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 1,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(l2_pseudo_length_12)
IE_BEGIN(l2_pseudo_length_18)
   BF(6,18,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 1,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(l2_pseudo_length_18)
IE_BEGIN(l2_pseudo_length_21)
   BF(6,21,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 1,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(l2_pseudo_length_21)
IE_BEGIN(l2_pseudo_length_22)
   BF(6,22,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1, 1,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(l2_pseudo_length_22)
#define  MCC   0x262   /* 262  decimal (not relevant)   */
#define  MNC   1       /* 01   decimal (not relevant)   */
#define  LAC   0x0001  /* 0001 hex (not relevant)        */
#define  LAC_B 0x0002  /* 0002 hex (not relevant)        */
IE_BEGIN(location_area_identification)
   BF( 4,6      ,ACT_CHECK,mcc_dig_2,"digit 2 of mobile country code")
   BF( 4,2      ,ACT_CHECK,mcc_dig_1,"digit 1 of mobile country code")
   BF( 4,  0xF,ACT_CHECK,ANONYMOUS   ,"end of MCC                         ")
   BF( 4,2      ,ACT_CHECK,mcc_dig_3,"digit 3 of mobile country code")
   BF( 4,1      ,ACT_CHECK,mnc_dig_2,"digit 2 of mobile network code")
   BF( 4,0      ,ACT_CHECK,mnc_dig_1,"digit 1 of mobile network code")
   BF(16,   LAC,ACT_CHECK,lac       ,"Location area code            ")
IE_END(location_area_identification)
IE_BEGIN(location_area_identification_B)
   BF( 4,6      ,ACT_CHECK,mcc_dig_2,"digit 2 of mobile country code")
   BF( 4,2      ,ACT_CHECK,mcc_dig_1,"digit 1 of mobile country code")
   BF( 4,  0xF,ACT_CHECK,ANONYMOUS   ,"end of MCC                         ")
   BF( 4,2      ,ACT_CHECK,mcc_dig_3,"digit 3 of mobile country code")
   BF( 4,1      ,ACT_CHECK,mnc_dig_2,"digit 2 of mobile network code")
   BF( 4,0      ,ACT_CHECK,mnc_dig_1,"digit 1 of mobile network code")
   BF(16, LAC_B,ACT_CHECK,lac       ,"Location area code            ")
IE_END(location_area_identification_B)
IE_BEGIN(mobile_identity_tmsi)
 BF(8, 5,          ACT_CHECK,length,  "five octets to come")
 BF(4,  M4(1,1,1,1), ACT_CHECK,ANONYMOUS,"bits 5-8 of octet 3 ='1111'")
 BF( 1, 0,          ACT_CHECK,odd_even,   "as applicable for TMSI")
 BF( 3, M3(1,0,0), ACT_CHECK,type,      "TMSI")
 BF( 8, 0x12,       ACT_CHECK,          ANONYMOUS,      SILENT)
 BF( 8, 0x34,       ACT_CHECK,          ANONYMOUS,      SILENT)
 GSM( 8, 0x56,       ACT_CHECK,          ANONYMOUS,      SILENT)
```

```
    BF( 8, 0x78,         ACT_CHECK,              ANONYMOUS,      SILENT)
  IE_END(mobile_identity_tmsi)

  IE_BEGIN(tmsi)
    BF( 8, 0x12,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x34,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x56,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x78,         ACT_CHECK,              ANONYMOUS,      SILENT)
  IE_END(tmsi)

  IE_BEGIN(tmsi_2)
    BF( 8, 0x12,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x79,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x13,         ACT_CHECK,              ANONYMOUS,      SILENT)
    BF( 8, 0x78,         ACT_CHECK,              ANONYMOUS,      SILENT)
  IE_END(tmsi_2)

  IE_BEGIN(ncc_permitted)
     BF(8,0xFF,ACT_CHECK,ncc_permit,"e.g. all NCCs permitted")
  IE_END(ncc_permitted)
  IE_BEGIN(rach_control_parameter)
     BF( 2,0,ACT_CHECK,max_retrans                ,"Any Value  ")
     BF( 4,0,ACT_CHECK,tx_integer                 ,"Any Value  ")
     BF( 1,0,ACT_CHECK,cell_bar_access            ,"Not barred ")
     BF( 1,1,ACT_CHECK,call_re_establishment       ,"Not Allowed")
     BF( 5,0,ACT_CHECK,access_control_class_15_11 ,"None Barred")
     BF( 1,0,ACT_CHECK,emergency_call             ,"Allowed    ")
     BF(10,0,ACT_CHECK,access_control_class_09_00 ,"None Barred")
  IE_END(rach_control_parameter)

  IE_BEGIN(rach_control_parameter_reest)
     BF( 2,0,ACT_CHECK,max_retrans                ,"Any Value  ")
     BF( 4,0,ACT_CHECK,tx_integer                 ,"Any Value  ")
     BF( 1,0,ACT_CHECK,cell_bar_access            ,"Not barred ")
     BF( 1,0,ACT_CHECK,call_re_establishment       ,"Allowed")
     BF( 5,0,ACT_CHECK,access_control_class_15_11 ,"None Barred")
     BF( 1,0,ACT_CHECK,emergency_call             ,"Allowed    ")
     BF(10,0,ACT_CHECK,access_control_class_09_00 ,"None Barred")
  IE_END(rach_control_parameter_reest)

  IE_BEGIN(rr_management_protocol_discriminator)
     BF(4, 6,ACT_CHECK,ANONYMOUS,SILENT)
  IE_END(rr_management_protocol_discriminator)

  IE_BEGIN(skip_indicator)
     BF(4, 0,ACT_CHECK,ANONYMOUS,SILENT)
  IE_END(skip_indicator)

  IE_BEGIN(si_1_rest_octets)
     BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,"Spare Octets")
  IE_END(si_1_rest_octets)

  IE_BEGIN(si_3_rest_octets) /* optionally contains cell (re)select params */
     BF(1,            0,ACT_CHECK,p1     ,"C2 parameters not present")
     BF(7,REST_OCTET & 0x7F,ACT_CHECK,ANONYMOUS,SILENT                 )
     BF(8,REST_OCTET       ,ACT_CHECK,ANONYMOUS,SILENT                 )
     BF(8,REST_OCTET       ,ACT_CHECK,ANONYMOUS,SILENT                 )
     BF(8,REST_OCTET       ,ACT_CHECK,ANONYMOUS,SILENT                 )
  IE_END(si_3_rest_octets)
  IE_BEGIN(si_4_rest_octets) /* optionally contains cell (re)select params */
     BF(1,            0,ACT_CHECK,p1     ,"C2 parameters not present")
     BF(7,REST_OCTET & 0x7F,ACT_CHECK,ANONYMOUS,SILENT                 )
```

```
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
      BF(8,REST_OCTET              ,ACT_CHECK,ANONYMOUS,SILENT                                    )
IE_END(si_4_rest_octets)
IE_BEGIN(system_information_type_1_message_type)
   BF(8, 0x19,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_1_message_type)
IE_BEGIN(system_information_type_2_message_type)
   BF(8, 0x1A,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_2_message_type)
IE_BEGIN(system_information_type_3_message_type)
   BF(8, 0x1B,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_3_message_type)
IE_BEGIN(system_information_type_4_message_type)
   BF(8, 0x1C,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_4_message_type)
IE_BEGIN(system_information_type_5_message_type)
   BF(8, 0x1D,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_5_message_type)
IE_BEGIN(system_information_type_6_message_type)
   BF(8, 0x1E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(system_information_type_6_message_type)

IE_BEGIN(paging_request_type_1_message_type)
   BF(8, 0x21,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(paging_request_type_1_message_type)

IE_BEGIN(paging_request_type_2_message_type)
   BF(8, 0x22,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(paging_request_type_2_message_type)

IE_BEGIN(paging_request_type_3_message_type)
   BF(8, 0x24,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(paging_request_type_3_message_type)

IE_BEGIN(immediate_assignment_message_type)
   BF(8, 0x3F,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(immediate_assignment_message_type)
IE_BEGIN(paging_response_message_type)
   BF(8, 0x27,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(paging_response_message_type)
IE_BEGIN(ciphering_mode_command_message_type)
   BF(8, 0x35,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(ciphering_mode_command_message_type)
IE_BEGIN(ciphering_mode_complete_message_type)
   BF(8, 0x32,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(ciphering_mode_complete_message_type)

IE_BEGIN(handover_command_message_type)
   BF(8, 0x2B,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(handover_command_message_type)

IE_BEGIN(handover_complete_message_type)
   BF(8, 0x2C,ACT_CHECK,ANONYMOUS,SILENT)
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IE_END(handover_complete_message_type)

IE_BEGIN(handover_failure_message_type)
    BF(8, 0x28,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(handover_failure_message_type)

IE_BEGIN(assignment_failure_message_type)
    BF(8, 0x2F,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(assignment_failure_message_type)

IE_BEGIN(channel_mode_modify_message_type)
    BF(8, 0x10,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(channel_mode_modify_message_type)

IE_BEGIN(channel_mode_modify_acknowledge_message_type)
    BF(8, 0x17,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(channel_mode_modify_acknowledge_message_type)

IE_BEGIN(assignment_command_message_type)
    BF(8, 0x2E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(assignment_command_message_type)

IE_BEGIN(assignment_complete_message_type)
    BF(8, 0x29,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(assignment_complete_message_type)

IE_BEGIN(cm_service_request_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x24,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(cm_service_request_message_type)

IE_BEGIN(cm_service_abort_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x23,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(cm_service_abort_message_type)

IE_BEGIN(cm_service_reject_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x22,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(cm_service_reject_message_type)

IE_BEGIN(cm_service_accept_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x21,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(cm_service_accept_message_type)

IE_BEGIN(call_proceeding_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x02,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(call_proceeding_message_type)

IE_BEGIN(modify_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x17,ACT_CHECK,ANONYMOUS,SILENT)
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    IE_END(modify_message_type)


    IE_BEGIN(modify_reject_message_type)
       BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
       BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
       BF(6, 0x13,ACT_CHECK,ANONYMOUS,SILENT)
    IE_END(modify_reject_message_type)
/*-------------------------------------------------------------------*\
| Messages
\*-------------------------------------------------------------------*/
MSG3_BEGIN(system_information_type_1)
       IE(l2_pseudo_length_21)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
       IE(system_information_type_1_message_type)
       IE(cell_channel_description)
       IE(rach_control_parameter)
       IE(si_1_rest_octets)
MSG3_END(system_information_type_1)
MSG3_BEGIN(system_information_type_2)
       IE(l2_pseudo_length_22)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
       IE(system_information_type_2_message_type)
       IE(bcch_frequency_list)
       IE(ncc_permitted)
       IE(rach_control_parameter)
MSG3_END(system_information_type_2)
MSG3_BEGIN(system_information_type_3)
       IE(l2_pseudo_length_18)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
       IE(system_information_type_3_message_type)
       IE(cell_identity)
       IE(location_area_identification)
       IE(control_channel_description)
       IE(cell_options)
       IE(cell_selection_parameter)
       IE(rach_control_parameter)
       IE(si_3_rest_octets)
MSG3_END(system_information_type_3)
MSG3_BEGIN(system_information_type_4)
       IE(l2_pseudo_length_12)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
       IE(system_information_type_4_message_type)
       IE(location_area_identification)
       IE(cell_selection_parameter)
       IE(rach_control_parameter)
       IE(si_4_rest_octets)
MSG3_END(system_information_type_4)
MSG3_BEGIN(system_information_type_5)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
       IE(system_information_type_5_message_type)
       IE(bcch_frequency_list)
MSG3_END(system_information_type_5)
MSG3_BEGIN(system_information_type_6)
       IE(skip_indicator)
       IE(rr_management_protocol_discriminator)
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    IE(system_information_type_6_message_type)
    IE(cell_identity)
    IE(location_area_identification)
    IE(cell_options)
    IE(ncc_permitted)
MSG3_END(system_information_type_6)
/*-----------------------------------------------------------------*\
| GSM 11.10
| 10 Generic call set up procedure
| 10.1 Generic call setup-up procedure for mobile terminating speech calls
| 10.1.4 Specific message contents
\*-----------------------------------------------------------------*/
/*-----------------------------------------------------------------*\
| Information Elements
\*-----------------------------------------------------------------*/
#define  ARFCN_BCCH      122
#define ARFCN_BCCH_B     48
#define  NCC      0x5
#define  BCC      0x6
#define  BSIC      ((NCC<<3)|(BCC))
#define  RFN      0
IE_BEGIN(handover_reference)
   BF(8,0,ACT_CHECK,reference_value,"used for handover")
IE_END(handover_reference)
IE_BEGIN(authentication_parameter_rand)
   BF(32,0x80000000,ACT_CHECK,rand_127_096,SILENT)
   BF(32,0x00000012,ACT_CHECK,rand_095_064,SILENT)
   BF(32,0x34000000,ACT_CHECK,rand_063_032,SILENT)
   BF(32,0x0000000F,ACT_CHECK,rand_031_000,SILENT)
IE_END(authentication_parameter_rand)
IE_BEGIN(authentication_parameter_sres)
   BF(32,0x0000000F,ACT_NOP,sres_031_000,SILENT)
IE_END(authentication_parameter_sres)
IE_BEGIN(bearer_capability)
   BF(8,1,ACT_CHECK,    length,                    SILENT)
   BF(1,1,ACT_CHECK,    ext3,                      SILENT)
   BF(2,1,ACT_CHECK,    radio_channel_requirement,SILENT)
   BF(1,0,ACT_CHECK,    coding_standard,           SILENT)
   BF(1,0,ACT_CHECK,    transfer_mode,             SILENT)
   BF(3,0,ACT_CHECK,    info_transfer_capability, SILENT)
IE_END(bearer_capability)

IE_BEGIN(bearer_capability_efr)
   BF(8,   3,ACT_CHECK,    length,                    SILENT)
   BF(1,   0,ACT_CHECK,    ext3,                      SILENT)
   BF(2,   1,ACT_CHECK,    radio_channel_requirement,SILENT)
   BF(1,   0,ACT_CHECK,    coding_standard,           SILENT)
   BF(1,   0,ACT_CHECK,    transfer_mode,             SILENT)
   BF(3,   0,ACT_CHECK,    info_transfer_capability, SILENT)
   BF(8,0x00,ACT_CHECK, octet_3a_1,                   SILENT)
   BF(8,0x82,ACT_CHECK, octet_3a_2,                   SILENT)
IE_END(bearer_capability_efr)

IE_BEGIN(bearer_capability_data)
   BF(8,7,ACT_CHECK,    length,                    SILENT)
   BF(1,1,ACT_CHECK,    ext3,                      SILENT)
   BF(2,1,ACT_CHECK,    radio_channel_requirement,SILENT)
   BF(1,0,ACT_CHECK,    coding_standard,           SILENT)
   BF(1,0,ACT_CHECK,    transfer_mode,             SILENT)
   BF(3,2,ACT_CHECK,    info_transfer_capability, SILENT)
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     BF(1,1,ACT_CHECK,     ext4,                          SILENT)
     BF(1,1,ACT_CHECK,     compression,                   SILENT)
     BF(2,0,ACT_CHECK,     structure,                     SILENT)
     BF(1,1,ACT_CHECK,     duplex_mode,                   SILENT)
     BF(1,0,ACT_CHECK,     configuration,                 SILENT)
     BF(1,0,ACT_CHECK,     NIRR,                          SILENT)
     BF(1,0,ACT_CHECK,     establishment,                 SILENT)
     BF(1,1,ACT_CHECK,     ext5,                          SILENT)
     BF(2,1,ACT_CHECK,     access_identifier,             SILENT)
     BF(2,0,ACT_CHECK,     rate_adaption,                 SILENT)
     BF(3,1,ACT_CHECK,     access_protocol,               SILENT)
     BF(1,0,ACT_CHECK,     ext6,                          SILENT)
     BF(2,1,ACT_CHECK,     layer_1,                       SILENT)
     BF(4,0,ACT_CHECK,     default_layer_1,               SILENT)
     BF(1,1,ACT_CHECK,     sync_async,                    SILENT)
     BF(1,0,ACT_CHECK,     ext6a,                         SILENT)
     BF(1,0,ACT_CHECK,     stop_bits,                     SILENT)
     BF(1,0,ACT_CHECK,     negotiation,                   SILENT)
     BF(1,1,ACT_CHECK,     data_bits,                     SILENT)
     BF(4,3,ACT_CHECK,     user_rate,                     SILENT)
     BF(1,0,ACT_CHECK,     ext6b,                         SILENT)
     BF(2,3,ACT_CHECK,     intermediate_rate,             SILENT)
     BF(1,0,ACT_CHECK,     NIC_TX,                        SILENT)
     BF(1,0,ACT_CHECK,     NIC_RX,                        SILENT)
     BF(3,3,ACT_CHECK,     parity,                        SILENT)
     BF(1,1,ACT_CHECK,     ext6c,                         SILENT)
     BF(2,1,ACT_CHECK,     connection_element,            SILENT)
     BF(5,3,ACT_CHECK,     modem_type,                    SILENT)
IE_END(bearer_capability_data)


IE_BEGIN(call_control_protocol_discriminator)
   BF(4, 3,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(call_control_protocol_discriminator)


IE_BEGIN(supplementary_services_protocol_discriminator)
   BF(4, M4(1,0,1,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(supplementary_services_protocol_discriminator)


IE_BEGIN(called_party_bcd_number)
   BF( 8,7,ACT_CHECK,length                    ,"length of IE")
   BF( 1,1,ACT_CHECK,ext                       ,"Extension Bit")
   BF( 3,0,ACT_CHECK,type_of_number            ,"Unknown")
   BF( 4,1,ACT_CHECK,numbering_plan            ,"ISDN/telephony")
   BF( 4,3,ACT_CHECK,digit_2                   ,"Digit 2")
   BF( 4,0,ACT_CHECK,digit_1                   ,"Digit 1")
   BF( 4,3,ACT_CHECK,digit_4                   ,"Digit 4")
   BF( 4,0,ACT_CHECK,digit_3                   ,"Digit 3")
   BF( 4,0,ACT_CHECK,digit_6                   ,"Digit 6")
   BF( 4,9,ACT_CHECK,digit_5                   ,"Digit 5")
   BF( 4,4,ACT_CHECK,digit_8                   ,"Digit 8")
   BF( 4,9,ACT_CHECK,digit_7                   ,"Digit 7")
   BF( 4,1,ACT_CHECK,digit_10                  ,"Digit 10")
   BF( 4,1,ACT_CHECK,digit_9                  ,"Digit 9")
   BF( 4,0xF,ACT_CHECK,digit_12                 ,"Digit 12")
   BF( 4,7,ACT_CHECK,digit_11               ,"Digit 11")
IE_END(called_party_bcd_number)


IE_BEGIN(called_party_bcd_number_1)
   BF( 8,4,ACT_CHECK,length                    ,"length of IE")
   BF( 1,1,ACT_CHECK,ext                       ,"Extension Bit")
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    BF( 3,0,ACT_CHECK,type_of_number              ,"Unknown")
    BF( 4,1,ACT_CHECK,numbering_plan              ,"ISDN/telephony")
    BF( 4,2,ACT_CHECK,digit_2                     ,"Digit 2")
    BF( 4,1,ACT_CHECK,digit_1                     ,"Digit 1")
    BF( 4,4,ACT_CHECK,digit_4                     ,"Digit 4")
    BF( 4,3,ACT_CHECK,digit_3                     ,"Digit 3")
    BF( 4,0xF,ACT_CHECK,digit_6                    ,"Digit 6")
    BF( 4,5,ACT_CHECK,digit_5                     ,"Digit 5")
IE_END(called_party_bcd_number_1)

IE_BEGIN(calling_party_bcd_number)
    BF( 8,8,ACT_CHECK,length                      ,"length of IE")
    BF( 1,0,ACT_CHECK,ext                         ,"Extension Bit")
    BF( 3,0,ACT_CHECK,type_of_number              ,"Unknown")
    BF( 4,1,ACT_CHECK,numbering_plan              ,"ISDN/telephony")
    BF( 1,1,ACT_CHECK,ext                         ,"Extension Bit")
    BF( 3,0,ACT_CHECK,presentation_indicator      ,"Presentation allowed")
    BF( 3,0,ACT_CHECK,spare                       ,"Spare")
    BF( 1,0,ACT_CHECK,screening_indicator         ,"Screening indicator")
    BF( 4,3,ACT_CHECK,digit_2                     ,"Digit 2")
    BF( 4,0,ACT_CHECK,digit_1                     ,"Digit 1")
    BF( 4,3,ACT_CHECK,digit_4                     ,"Digit 4")
    BF( 4,0,ACT_CHECK,digit_3                     ,"Digit 3")
    BF( 4,0,ACT_CHECK,digit_6                     ,"Digit 6")
    BF( 4,9,ACT_CHECK,digit_5                     ,"Digit 5")
    BF( 4,4,ACT_CHECK,digit_8                     ,"Digit 8")
    BF( 4,9,ACT_CHECK,digit_7                     ,"Digit 7")
    BF( 4,1,ACT_CHECK,digit_10                    ,"Digit 10")
    BF( 4,1,ACT_CHECK,digit_9                     ,"Digit 9")
    BF( 4,0xF,ACT_CHECK,digit_12                  ,"Digit 12")
    BF( 4,7,ACT_CHECK,digit_11                    ,"Digit 11")
IE_END(calling_party_bcd_number)

IE_BEGIN(channels_needed_for_mobiles_1_and_2)
    BF(2,0,ACT_CHECK,second_channel,"spare, any channel")
    BF(2,0,ACT_CHECK, first_channel,"spare, any channel")
IE_END(channels_needed_for_mobiles_1_and_2)
IE_BEGIN(cc_capabilities)
    BF(8,1,ACT_CHECK, length,        SILENT)
    BF(8,1,ACT_CHECK, dtmf_support, SILENT)
IE_END(cc_capabilities)
IE_BEGIN(channel_description)
    BF( 5,M5(0,0,1,0,1),ACT_CHECK, channel_type,"SDCCH/SACCH 4(1) ")
    BF( 3,            0,ACT_CHECK, time_slot_number,"zero")
    BF( 3,          BCC,ACT_CHECK, training_sequence_code,"same as BCCH")
    BF( 1,            0,ACT_CHECK, hopping,"No")
    BF( 2,            0,ACT_CHECK, spare,SILENT)
    BF(10,   ARFCN_BCCH,ACT_CHECK, arfcn,"ARFCN of the BCCH")
IE_END(channel_description)

IE_BEGIN(channel_description_tch)
    BF( 5,M5(0,0,0,0,1),ACT_CHECK,          channel_type,"TCH Full Rate")
    BF( 3,            0,ACT_CHECK,          time_slot_number,"zero       ")
    BF( 3,          BCC,ACT_CHECK,          tsc    ,"same as BCCH       ")
    BF( 1,            0,ACT_CHECK,          hopping,"No                 ")
    BF( 2,            0,ACT_CHECK,          spare,SILENT              )
    BF(10,   ARFCN_BCCH,ACT_CHECK,          arfcn,"ARFCN of the BCCH  ")
IE_END(channel_description_tch)

IE_BEGIN(channel_mode_speech)
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   BF( 8,              1,ACT_CHECK,        mode,"Speech full rate")
IE_END(channel_mode_speech)


IE_BEGIN(cm_service_type_ss)
   BF(4,M4(1,0,0,0),ACT_CHECK,service_type,"supplementary services")
IE_END(cm_service_type_ss)


IE_BEGIN(cm_service_type_moc)
   BF(4,M4(0,0,0,1),ACT_CHECK,service_type,"mobile originated call")
IE_END(cm_service_type_moc)


IE_BEGIN(ciphering_key_sequence_number)
   BF(1,          0,ACT_CHECK,           spare,SILENT)
   BF(3,M3(0,1,1),ACT_CHECK,key_sequence,"from SIM card (3)")
IE_END(ciphering_key_sequence_number)
IE_BEGIN(ciphering_key_sequence_number_2)
   BF(1,          0,ACT_CHECK,           spare,SILENT)
   BF(3,M3(0,1,0),ACT_CHECK,key_sequence,"sent BS->MS")
IE_END(ciphering_key_sequence_number_2)
IE_BEGIN(ciphering_mode_setting)
   BF(3,M3(0,0,0),ACT_CHECK,algorithm_identifier,"A5/1             ")
   BF(1,          1,ACT_CHECK,     start_ciphering,"Start ciphering")
IE_END(ciphering_mode_setting)
IE_BEGIN(cipher_response)
   BF(3,0,ACT_CHECK,             spare,SILENT                           )
   BF(1,0,ACT_CHECK,cipher_response,"IMEISV shall not be included")
IE_END(cipher_response)
IE_BEGIN(description_of_the_first_channel_after_time)
   BF( 5,M5(0,0,0,0,1),ACT_CHECK,        channel_type,"TCH ")
   BF( 3,              3,ACT_CHECK,      time_slot_number,"three")
   BF( 3,            BCC,ACT_CHECK,training_sequence_code,"same as BCCH")
   BF( 1,              0,ACT_CHECK,      hopping,"No")
   BF( 2,              0,ACT_CHECK,      spare,SILENT)
   BF(10,    ARFCN_BCCH,ACT_CHECK,        arfcn,"ARFCN of the BCCH")
IE_END(description_of_the_first_channel_after_time)


IE_BEGIN(channel_description_ho)
   BF( 5,M5(0,0,0,0,1),ACT_CHECK,    channel_type,"TCH ")
   BF( 3,              2,ACT_CHECK,    time_slot_number,"two")
   BF( 3,            BCC,ACT_CHECK,training_sequence_code,"same as BCCH")
   BF( 1,              0,ACT_CHECK,    hopping,"No")
   BF( 2,              0,ACT_CHECK,    spare,SILENT)
   BF(10,    ARFCN_BCCH,ACT_CHECK,    arfcn,"ARFCN of the BCCH")
IE_END(channel_description_ho)


IE_BEGIN(cell_description)
   BF( 2,ARFCN_BCCH>>8     ,ACT_CHECK,arfcn_hi,"BCCH ARFCN (high part)")
   BF( 3,                 1,ACT_CHECK,ncc,      "network colour code")
   BF( 3,                 5,ACT_CHECK,bcc,      "base station colour code")
   BF( 8,ARFCN_BCCH        ,ACT_CHECK,arfcn_lo,"BCCH ARFCN (low part)")
IE_END(cell_description)


IE_BEGIN(sync_ind_synch)
   BF( 1,   0,ACT_CHECK,nci,"ignore out of range timing advance")
   BF( 1,   0,ACT_CHECK,rot,"shall not be included")
   BF( 2,   1,ACT_CHECK,si ,"synchronized handover")
IE_END(sync_ind_synch)


IE_BEGIN(ia_rest_octets)   /* maximum length (11), no hop, no start time */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  0 */
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    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  1 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  2 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  3 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  4 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  5 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  6 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  7 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  8 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  9 */
    BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /* 10 */
IE_END(ia_rest_octets)

IE_BEGIN(iei_D)
    BF(4,0x0D,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_D)

IE_BEGIN(iei_08)
    BF(8,0x08,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_08)

IE_BEGIN(iei_1C)
    BF(8,0x1C,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_1C)

IE_BEGIN(iei_7E)
    BF(8,0x7E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_7E)

IE_BEGIN(iei_7F)
    BF(8,0x7F,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_7F)

IE_BEGIN(iei_1E)
    BF(8,0x1E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_1E)
IE_BEGIN(iei_63)
    BF(8,0x63,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_63)
IE_BEGIN(iei_5E)
    BF(8,0x5E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_5E)
IE_BEGIN(iei_15)
    BF(8,0x15,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_15)
IE_BEGIN(iei_04)
    BF(8,0x04,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_04)
IE_BEGIN(iei_34)
    BF(8,0x34,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_34)
IE_BEGIN(iei_2C)
    BF(8,0x2C,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_2C)
IE_BEGIN(iei_13)
    BF(8,0x13,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_13)

IE_BEGIN(iei_5C)
    BF(8,0x5C,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(iei_5C)
```

```
IE_BEGIN(keypad_facility_0)
   BF(8, 0x30,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_0)

IE_BEGIN(keypad_facility_1)
   BF(8, 0x31,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_1)

IE_BEGIN(keypad_facility_2)
   BF(8, 0x32,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_2)

IE_BEGIN(keypad_facility_3)
   BF(8, 0x33,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_3)

IE_BEGIN(keypad_facility_4)
   BF(8, 0x34,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_4)

IE_BEGIN(keypad_facility_5)
   BF(8, 0x35,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_5)

IE_BEGIN(keypad_facility_6)
   BF(8, 0x36,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_6)

IE_BEGIN(keypad_facility_7)
   BF(8, 0x37,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_7)

IE_BEGIN(keypad_facility_8)
   BF(8, 0x38,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_8)

IE_BEGIN(keypad_facility_9)
   BF(8, 0x39,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_9)

IE_BEGIN(keypad_facility_A)
   BF(8, 0x41,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_A)

IE_BEGIN(keypad_facility_B)
   BF(8, 0x42,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_B)

IE_BEGIN(keypad_facility_C)
   BF(8, 0x43,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_C)

IE_BEGIN(keypad_facility_D)
   BF(8, 0x44,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_D)

IE_BEGIN(keypad_facility_star)
   BF(8, 0x2A,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_star)
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IE_BEGIN(keypad_facility_hash)
   BF(8, 0x23,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(keypad_facility_hash)


IE_BEGIN(l2_pseudo_length_11)  /* pag req type 1 with TMSI (one mobile)*/
   BF(8, 0,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(l2_pseudo_length_11)
IE_BEGIN(mobile_allocation)
   BF(8,0,ACT_CHECK,length,"length 0 due to hopping disabled")
IE_END(mobile_allocation)
IE_BEGIN(mobile_identity)                 /* has 8 octets */
   BF(8,          7,ACT_CHECK,  length,"seven octets to come")
   BF(4,          2,ACT_CHECK, digit_1,SILENT)
   BF(1,          1,ACT_CHECK,odd_even,SILENT)
   BF(3,  M3(0,0,1),ACT_CHECK,    type,"IMSI")
   BF(4,          2,ACT_CHECK, digit_3,SILENT)
   BF(4,          6,ACT_CHECK, digit_2,SILENT)
   BF(4,          1,ACT_CHECK, digit_4,SILENT)
   BF(4,          0,ACT_CHECK, digit_3,SILENT)
   BF(4,          7,ACT_CHECK, digit_6,SILENT)
   BF(4,          4,ACT_CHECK, digit_5,SILENT)
   BF(4,          1,ACT_CHECK, digit_8,SILENT)
   BF(4,          1,ACT_CHECK, digit_7,SILENT)
   BF(4,          9,ACT_CHECK, digit_10,SILENT)
   BF(4,          4,ACT_CHECK, digit_9,SILENT)
   BF(4,          2,ACT_CHECK, digit_12,SILENT)
   BF(4,          1,ACT_CHECK, digit_11,SILENT)
IE_END(mobile_identity)
IE_BEGIN(mobility_management_protocol_discriminator)
   BF(4, 5,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(mobility_management_protocol_discriminator)


IE_BEGIN(identity_type)
   BF(4,1,ACT_CHECK, type_of_identity,"IMSI")
IE_END(identity_type)


IE_BEGIN(mode_of_the_first_channel)
   BF(8,1,ACT_CHECK,mode,"Speech full rate")
IE_END(mode_of_the_first_channel)


IE_BEGIN(mode_of_the_first_channel_efr)
   BF(8,0x21,ACT_CHECK,mode,"Enhanced full rate")
IE_END(mode_of_the_first_channel_efr)


IE_BEGIN(ms_classmark)
   BF(8,          3,ACT_CHECK, length,SILENT)
   BF(1,          0,ACT_CHECK, spare,SILENT)
   BF(2,  M2(0,1),ACT_CHECK, revision_level,"phase 2 MS")
   BF(1,          1,ACT_CHECK, es_ind,"with 'Contr. Early Classmark Send.'")
   BF(1,          0,ACT_CHECK, a5_1,"encryption algorithm A5/1 available")
   BF(3,M3(0,0,1),ACT_CHECK, rf_power_capability,"class 2")
   BF(1,          0,ACT_CHECK, spare2,SILENT)
   BF(1,          1,ACT_CHECK, ps_capability,SILENT)
   BF(2,  M2(1,1),ACT_CHECK, ss_screening_indicator,SILENT)
   BF(1,          1,ACT_CHECK, sm_capability,"point to point SMS")
   BF(1,          0,ACT_CHECK, vbs,"no VBS cap. or no notific. wanted")
   BF(1,          0,ACT_CHECK, vgcs,"no VGCS cap. or no notific. wanted")
   BF(1,          0,ACT_CHECK, frequency_capability,"no extention band G1")
   BF(1,          0,ACT_CHECK, classmark_3,"add. MS cap. information")
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      BF(4,          0,ACT_CHECK, spare3,SILENT)
      BF(1,          1,ACT_CHECK, cmsp, "CM Service Prompt")
      BF(1,          0,ACT_CHECK, a5_3,"A5/3 not available")
      BF(1,          0,ACT_CHECK, a5_2,"A5/2 not available")
IE_END(ms_classmark)


IE_BEGIN(p1_rest_octets)
/* pag. req. type1 : 22 - 11 (L2 pseud. len) =  11 bytes */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  0 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  1 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  2 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  3 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  4 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  5 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  6 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  7 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  8 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  9 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /* 10 */
IE_END(p1_rest_octets)


IE_BEGIN(p2_rest_octets)
/* pag. req. type1 : 22 - 11 (L2 pseud. len) =  11 bytes */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  0 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  1 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  2 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  3 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  4 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  5 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  6 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  7 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  8 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  9 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /* 10 */
IE_END(p2_rest_octets)


IE_BEGIN(p3_rest_octets)
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  0 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  1 */
   BF(8,REST_OCTET,ACT_CHECK,ANONYMOUS,SILENT) /*  2 */
IE_END(p3_rest_octets)


IE_BEGIN(page_mode)
   BF(2,0,ACT_CHECK,spare,"two spare bits  ")
   BF(2,0,ACT_CHECK,pm   ,"Normal Paging")
IE_END(page_mode)


IE_BEGIN(power_command)
   BF(8,10,ACT_CHECK,power,SILENT)
IE_END(power_command)
IE_BEGIN(rach_111)
   BF(3,M3(1,1,1),ACT_CHECK ,establishment_cause,"SS")
   BF(5,M5(1,1,1,1,1),ACT_NOP,   random_reference,"ignore Random Ref.")
IE_END(rach_111)
IE_BEGIN(rach)
   BF(3,M3(1,0,0),ACT_CHECK ,establishment_cause,"paging ind. any chan'")
   BF(5,M5(1,1,1,1,1),ACT_NOP,   random_reference,"ignore Random Ref.")
IE_END(rach)
IE_BEGIN(rach_moc)
   BF(3,M3(1,1,1),ACT_CHECK ,establishment_cause,"MOC & TCH/F")
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    BF(5,M5(1,1,1,1,1),ACT_NOP,    random_reference,"ignore Random Ref.")
IE_END(rach_moc)
IE_BEGIN(rach_reest_neci_0)
    BF(3,M3(1,1,0),ACT_CHECK ,establishment_cause,"Reest, NECI=0, TCH/F")
    BF(5,M5(1,1,1,1,1),ACT_NOP,    random_reference,"ignore Random Ref.")
IE_END(rach_reest_neci_0)
IE_BEGIN(request_reference)
    BF(3,     M3(1,0,0),ACT_NOP,random_access_info,"As in CHAN REQ")
    BF(5,M5(1,1,1,1,1),ACT_NOP,   random_reference,SILENT)
    BF(5,             0,ACT_NOP,               t1_ ,SILENT)
    BF(6,             0,ACT_NOP,               t3  ,SILENT)
    BF(5,             0,ACT_NOP,               t2  ,SILENT)
IE_END(request_reference)


IE_BEGIN(rr_cause)
    BF(8,0,ACT_CHECK,rr_cause,"normal event")
IE_END(rr_cause)


IE_BEGIN(rr_cause_1)
    BF(8,1,ACT_CHECK,rr_cause,"abnormal event, unspecified")
IE_END(rr_cause_1)


IE_BEGIN(rr_cause_6F)
    BF(8,0x6F,ACT_CHECK,rr_cause,"protocol error unspecified")
IE_END(rr_cause_6F)


IE_BEGIN(reject_cause)
    BF(8,0x20,ACT_CHECK,reject_cause,"service not available")
IE_END(reject_cause)


IE_BEGIN(progress_indicator_32)
    BF(8,  2,ACT_CHECK, length,"two octets")
    BF(1,  1,ACT_CHECK, ext_1,SILENT)
    BF(2,  3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(1,  0,ACT_SHOW,  spare,SILENT)
    BF(4,  0,ACT_CHECK, location,"User")
    BF(1,  1,ACT_CHECK, ext_2,SILENT)
    BF(7, 32,ACT_CHECK, progress_description,"call is end-to-end PLMN/ISDN")
IE_END(progress_indicator_32)


IE_BEGIN(progress_indicator_8)
    BF(8,  2,ACT_CHECK, length,"two octets")
    BF(1,  1,ACT_CHECK, ext_1,SILENT)
    BF(2,  3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(1,  0,ACT_SHOW,  spare,SILENT)
    BF(4,  0,ACT_CHECK, location,"User")
    BF(1,  1,ACT_CHECK, ext_2,SILENT)
    BF(7,  8,ACT_CHECK, progress_description,"in band tones available")
IE_END(progress_indicator_8)


IE_BEGIN(ss_version)
    BF(8,    1,ACT_CHECK,length,SILENT)
    BF(8,    0,ACT_SHOW, version,SILENT)
IE_END(ss_version)


IE_BEGIN(cause_03)
    BF(8,           2,ACT_CHECK, length,"two octets")
    BF(1,           1,ACT_CHECK, ext_1,SILENT)
    BF(2,           3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(1,           0,ACT_SHOW,  spare,SILENT)
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   BF(4,             0,ACT_CHECK, locriation,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,             3,ACT_CHECK, cause,"no route to destination")
IE_END(cause_03)


IE_BEGIN(cause_17)
   BF(8,             2,ACT_CHECK, length,"two octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,             0,ACT_SHOW,  spare,SILENT)
   BF(4,             0,ACT_CHECK, location,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,            17,ACT_CHECK, cause,"user busy")
IE_END(cause_17)


IE_BEGIN(cause_31)
   BF(8,             2,ACT_CHECK, length,"two octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,             0,ACT_SHOW,  spare,SILENT)
   BF(4,             0,ACT_CHECK, location,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,            31,ACT_CHECK, cause,"normal, unspecified")
IE_END(cause_31)


IE_BEGIN(cause_57)
   BF(8,             2,ACT_CHECK, length,"two octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,             0,ACT_SHOW,  spare,SILENT)
   BF(4,             0,ACT_CHECK, location,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,            57,ACT_CHECK, cause,"bearer cap not authorized")
IE_END(cause_57)


IE_BEGIN(cause_81)
   BF(8,             2,ACT_CHECK, length,"two octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,             0,ACT_SHOW,  spare,SILENT)
   BF(4,             0,ACT_CHECK, location,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,            81,ACT_CHECK, cause,"invalid transaction identifier")
IE_END(cause_81)


IE_BEGIN(cause_88)
   BF(8,             2,ACT_CHECK, length,"two octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,             0,ACT_SHOW,  spare,SILENT)
   BF(4,             0,ACT_CHECK, location,"User")
   BF(1,             1,ACT_CHECK, ext_2,SILENT)
   BF(7,            88,ACT_CHECK, cause,"incompatible destination")
IE_END(cause_88)


IE_BEGIN(cause_102_303)
   BF(8,             5,ACT_CHECK, length,"five octets")
   BF(1,             1,ACT_CHECK, ext_1,SILENT)
   BF(2,             3,ACT_CHECK, coding_standard, "GSM Standard")
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   BF(1,            0,ACT_SHOW,   spare,SILENT)
   BF(4,            0,ACT_CHECK, location,"User")
   BF(1,            1,ACT_CHECK, ext_2,SILENT)
   BF(7,          102,ACT_CHECK, cause,"recovery on timer expiry")
   BF(8,         0x33,ACT_CHECK, diag_0,"3")
   BF(8,         0x30,ACT_CHECK, diag_1,"0")
   BF(8,         0x33,ACT_CHECK, diag_2,"3")
IE_END(cause_102_303)

IE_BEGIN(cause_102_310)
   BF(8,            5,ACT_CHECK, length,"five octets")
   BF(1,            1,ACT_CHECK, ext_1,SILENT)
   BF(2,            3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,            0,ACT_SHOW,  spare,SILENT)
   BF(4,            0,ACT_CHECK, location,"User")
   BF(1,            1,ACT_CHECK, ext_2,SILENT)
   BF(7,          102,ACT_CHECK, cause,"recovery on timer expiry")
   BF(8,         0x33,ACT_CHECK, diag_0,"3")
   BF(8,         0x31,ACT_CHECK, diag_1,"1")
   BF(8,         0x30,ACT_CHECK, diag_2,"0")
IE_END(cause_102_310)

IE_BEGIN(cause_102_313)
   BF(8,            5,ACT_CHECK, length,"five octets")
   BF(1,            1,ACT_CHECK, ext_1,SILENT)
   BF(2,            3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,            0,ACT_SHOW,  spare,SILENT)
   BF(4,            0,ACT_CHECK, location,"User")
   BF(1,            1,ACT_CHECK, ext_2,SILENT)
   BF(7,          102,ACT_CHECK, cause,"recovery on timer expiry")
   BF(8,         0x33,ACT_CHECK, diag_0,"3")
   BF(8,         0x31,ACT_CHECK, diag_1,"1")
   BF(8,         0x33,ACT_CHECK, diag_2,"3")
IE_END(cause_102_313)

IE_BEGIN(cause_97_20)
   BF(8,            3,ACT_CHECK, length,"three octets")
   BF(1,            1,ACT_CHECK, ext_1,SILENT)
   BF(2,            3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,            0,ACT_SHOW,  spare,SILENT)
   BF(4,            0,ACT_CHECK, location,"User")
   BF(1,            1,ACT_CHECK, ext_2,SILENT)
   BF(7,           97,ACT_CHECK, cause,"message not implemented")
   BF(8,         0x20,ACT_CHECK, diag_0,"message type 0x20")
IE_END(cause_97_20)

IE_BEGIN(cause_16)
   BF(8,            2,ACT_CHECK, length,"two octets")
   BF(1,            1,ACT_CHECK, ext_1,SILENT)
   BF(2,            3,ACT_CHECK, coding_standard, "GSM Standard")
   BF(1,            0,ACT_SHOW,  spare,SILENT)
   BF(4,            0,ACT_CHECK, location,"User")
   BF(1,            1,ACT_CHECK, ext_2,SILENT)
   BF(7,           16,ACT_CHECK, cause,"normal clearing")
IE_END(cause_16)

IE_BEGIN(cause_30)
   BF(8,            2,ACT_CHECK, length,"two octets")
   BF(1,            1,ACT_CHECK, ext_1,SILENT)
   BF(2,            3,ACT_CHECK, coding_standard, "GSM Standard")
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    BF(1,              0,ACT_SHOW,   spare,SILENT)
    BF(4,              0,ACT_CHECK, location,"User")
    BF(1,              1,ACT_CHECK, ext_2,SILENT)
    BF(7,             30,ACT_CHECK, cause,"response to enquiry")
IE_END(cause_30)

IE_BEGIN(call_state_1)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              1,ACT_CHECK, call_state_value,"U1 Call Initiated")
IE_END(call_state_1)

IE_BEGIN(call_state_3)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              3,ACT_CHECK, call_state_value,"U3 Call Proceeding")
IE_END(call_state_3)

IE_BEGIN(call_state_4)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              4,ACT_CHECK, call_state_value,"U4 Call Delivered")
IE_END(call_state_4)

IE_BEGIN(call_state_7)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              7,ACT_CHECK, call_state_value,"U7 Call Receiving")
IE_END(call_state_7)

IE_BEGIN(call_state_8)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              8,ACT_CHECK, call_state_value,"U8 Connect Request")
IE_END(call_state_8)

IE_BEGIN(call_state_9)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,              9,ACT_CHECK, call_state_value,"U9 Call Confirmed")
IE_END(call_state_9)

IE_BEGIN(call_state_10)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,             10,ACT_CHECK, call_state_value,"U10 Call Active")
IE_END(call_state_10)

IE_BEGIN(call_state_11)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,             11,ACT_CHECK, call_state_value,"U11 Disconnect Request")
IE_END(call_state_11)

IE_BEGIN(call_state_12)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,             12,ACT_CHECK, call_state_value,"U12 Disconnect Ind")
IE_END(call_state_12)

IE_BEGIN(call_state_19)
    BF(2,              3,ACT_CHECK, coding_standard, "GSM Standard")
    BF(6,             19,ACT_CHECK, call_state_value,"U19 Release Request")
IE_END(call_state_19)


IE_BEGIN(signal_call_waiting)
    BF(8,M8(0,0,0,0,0,1,1,1),ACT_CHECK,signal_value,"(Any non-res. value)")
IE_END(signal_call_waiting)
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IE_BEGIN(spare_half_octet)
   BF(4, 0,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(spare_half_octet)

IE_BEGIN(facility_unstructured_data)
   BF(8,    35 ,ACT_CHECK,length_of_fac_ie_content,SILENT)
   BF(8,    0xA1,ACT_CHECK,component_type_tag,"INVOKE")
   BF(8,    0x21,ACT_CHECK,component_length, SILENT)
   BF(8,    0x02,ACT_CHECK,invoke_id_tag, SILENT)
   BF(8,    0x01,ACT_CHECK,invoke_id_length, SILENT)
   BF(8,    0x00,ACT_CHECK,invoke_id, SILENT)
   BF(8,    0x02,ACT_CHECK,operation_code_tag, SILENT)
   BF(8,    0x01,ACT_CHECK,operation_code_length, SILENT)
   BF(8,    19 ,ACT_CHECK,operation_code, "Process unstructured SS data")
   BF(8,    0x30,ACT_CHECK,Process_SS_Arg, SILENT)
   BF(8,    25 ,ACT_CHECK,Process_SS_Arg_length, SILENT)
   BF(8,    0xF0,ACT_CHECK,dcs, SILENT)
   BF(8,    0x2A,ACT_CHECK,dig_1, "*")
   BF(8,    0x30,ACT_CHECK,dig_2, "0")
   BF(8,    0x30,ACT_CHECK,dig_3, "0")
   BF(8,    0x2A,ACT_CHECK,dig_4, "*")
   BF(8,    0x30,ACT_CHECK,dig_5, "0")
   BF(8,    0x31,ACT_CHECK,dig_6, "1")
   BF(8,    0x32,ACT_CHECK,dig_7, "2")
   BF(8,    0x33,ACT_CHECK,dig_8, "3")
   BF(8,    0x34,ACT_CHECK,dig_9, "4")
   BF(8,    0x35,ACT_CHECK,dig_10,"5")
   BF(8,    0x36,ACT_CHECK,dig_11,"6")
   BF(8,    0x37,ACT_CHECK,dig_12,"7")
   BF(8,    0x38,ACT_CHECK,dig_13,"8")
   BF(8,    0x39,ACT_CHECK,dig_14,"9")
   BF(8,    0x30,ACT_CHECK,dig_15,"0")
   BF(8,    0x31,ACT_CHECK,dig_16,"1")
   BF(8,    0x32,ACT_CHECK,dig_17,"2")
   BF(8,    0x33,ACT_CHECK,dig_18,"3")
   BF(8,    0x34,ACT_CHECK,dig_19,"4")
   BF(8,    0x35,ACT_CHECK,dig_20,"5")
   BF(8,    0x36,ACT_CHECK,dig_21,"6")
   BF(8,    0x37,ACT_CHECK,dig_22,"7")
   BF(8,    0x38,ACT_CHECK,dig_23,"8")
   BF(8,    0x23,ACT_CHECK,dig_24,"#")
IE_END(facility_unstructured_data)

IE_BEGIN(timing_advance)
   BF(2,0,ACT_CHECK,          spare,SILENT)
   BF(6,0,ACT_CHECK,timing_advance,"0"   )
IE_END(timing_advance)
IE_BEGIN(transaction_identifier_source)
   BF(4,M4(0,0,0,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source)

IE_BEGIN(transaction_identifier_source_1)
   BF(4,M4(0,0,0,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_1)

IE_BEGIN(transaction_identifier_source_2)
   BF(4,M4(0,0,1,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_2)
```

```
IE_BEGIN(transaction_identifier_source_3)
   BF(4,M4(0,0,1,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_3)

IE_BEGIN(transaction_identifier_source_4)
   BF(4,M4(0,1,0,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_4)

IE_BEGIN(transaction_identifier_source_5)
   BF(4,M4(0,1,0,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_5)

IE_BEGIN(transaction_identifier_source_6)
   BF(4,M4(0,1,1,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_source_6)

IE_BEGIN(transaction_identifier_dest)
   BF(4,M4(1,0,0,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest)

IE_BEGIN(transaction_identifier_dest_1)
   BF(4,M4(1,0,0,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_1)

IE_BEGIN(transaction_identifier_dest_2)
   BF(4,M4(1,0,1,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_2)

IE_BEGIN(transaction_identifier_dest_3)
   BF(4,M4(1,0,1,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_3)

IE_BEGIN(transaction_identifier_dest_4)
   BF(4,M4(1,1,0,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_4)

IE_BEGIN(transaction_identifier_dest_5)
   BF(4,M4(1,1,0,1),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_5)

IE_BEGIN(transaction_identifier_dest_6)
   BF(4,M4(1,1,1,0),ACT_CHECK,ANONYMOUS,SILENT)
IE_END(transaction_identifier_dest_6)

IE_BEGIN(authentication_request_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x12,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(authentication_request_message_type)

IE_BEGIN(identity_request_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x18,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(identity_request_message_type)

IE_BEGIN(identity_response_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x19,ACT_CHECK,ANONYMOUS,SILENT)
```

```
IE_END(identity_response_message_type)

IE_BEGIN(tmsi_reallocation_command_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x1A,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(tmsi_reallocation_command_message_type)

IE_BEGIN(tmsi_reallocation_complete_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x1B,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(tmsi_reallocation_complete_message_type)

IE_BEGIN(cm_reestablish_request_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x28,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(cm_reestablish_request_message_type)

IE_BEGIN(authentication_response_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x14,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(authentication_response_message_type)

IE_BEGIN(ss_register_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x3B,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(ss_register_message_type)

IE_BEGIN(setup_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x05,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(setup_message_type)

IE_BEGIN(call_confirmed_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x08,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(call_confirmed_message_type)

IE_BEGIN(connect_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x07,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(connect_message_type)

IE_BEGIN(connect_acknowledge_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x0F,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(connect_acknowledge_message_type)

IE_BEGIN(alerting_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x01,ACT_CHECK,ANONYMOUS,SILENT)
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IE_END(alerting_message_type)

IE_BEGIN(progress_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x03,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(progress_message_type)

IE_BEGIN(status_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x3D,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(status_message_type)

IE_BEGIN(status_enquiry_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x34,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(status_enquiry_message_type)

IE_BEGIN(notify_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x3E,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(notify_message_type)

IE_BEGIN(unknown_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x20,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(unknown_message_type)

IE_BEGIN(disconnect_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x25,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(disconnect_message_type)

IE_BEGIN(release_complete_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x2A,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(release_complete_message_type)

IE_BEGIN(release_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x2D,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(release_message_type)

IE_BEGIN(channel_release_message_type)
   BF(8, 0x0D,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(channel_release_message_type)

IE_BEGIN(start_dtmf_message_type)
   BF(1,    0,ACT_CHECK,ANONYMOUS,SILENT)
   BF(1,    0,ACT_SHOW, ANONYMOUS,SILENT)
   BF(6, 0x35,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(start_dtmf_message_type)
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IE_BEGIN(start_dtmf_acknowledge_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x36,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(start_dtmf_acknowledge_message_type)


IE_BEGIN(stop_dtmf_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x31,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(stop_dtmf_message_type)


IE_BEGIN(stop_dtmf_acknowledge_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x32,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(stop_dtmf_acknowledge_message_type)


IE_BEGIN(start_dtmf_reject_message_type)
    BF(1,     0,ACT_CHECK,ANONYMOUS,SILENT)
    BF(1,     0,ACT_SHOW, ANONYMOUS,SILENT)
    BF(6, 0x37,ACT_CHECK,ANONYMOUS,SILENT)
IE_END(start_dtmf_reject_message_type)


IE_BEGIN(user_user_disconnect)
    BF(8,     5,ACT_CHECK,length,SILENT)
    BF(8,     1,ACT_CHECK,pd,    SILENT)
    BF(8, 0x30,ACT_CHECK,octet1,SILENT)
    BF(8, 0x34,ACT_CHECK,octet2,SILENT)
    BF(8, 0x35,ACT_CHECK,octet3,SILENT)
    BF(8, 0x36,ACT_CHECK,octet4,SILENT)
IE_END(user_user_disconnect)


IE_BEGIN(user_user_setup)
    BF(8,     5,ACT_CHECK,length,SILENT)
    BF(8,     1,ACT_CHECK,pd,    SILENT)
    BF(8, 0x30,ACT_CHECK,octet1,SILENT)
    BF(8, 0x31,ACT_CHECK,octet2,SILENT)
    BF(8, 0x32,ACT_CHECK,octet3,SILENT)
    BF(8, 0x33,ACT_CHECK,octet4,SILENT)
IE_END(user_user_setup)


IE_BEGIN(notify_user_resumed)
    BF(8,     1,ACT_CHECK,notific,SILENT)
IE_END(notify_user_resumed)


MSG3_BEGIN(paging_request_type_1)
    IE(l2_pseudo_length_11)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_request_type_1_message_type)
    IE(channels_needed_for_mobiles_1_and_2)
    IE(page_mode)
    IE(mobile_identity)
    IE(p1_rest_octets)
MSG3_END(paging_request_type_1)


MSG3_BEGIN(paging_request_type_1_tmsi)
    IE(l2_pseudo_length_11)
    IE(skip_indicator)
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    IE(rr_management_protocol_discriminator)
    IE(paging_request_type_1_message_type)
    IE(channels_needed_for_mobiles_1_and_2)
    IE(page_mode)
    IE(mobile_identity_tmsi)
    IE(p1_rest_octets)
MSG3_END(paging_request_type_1_tmsi)

MSG3_BEGIN(paging_request_type_2_tmsi)
    IE(l2_pseudo_length_11)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_request_type_2_message_type)
    IE(channels_needed_for_mobiles_1_and_2)
    IE(page_mode)
    IE(tmsi)
    IE(tmsi_2)
    IE(p2_rest_octets)
MSG3_END(paging_request_type_2_tmsi)

MSG3_BEGIN(paging_request_type_3_tmsi)
    IE(l2_pseudo_length_11)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_request_type_3_message_type)
    IE(channels_needed_for_mobiles_1_and_2)
    IE(page_mode)
    IE(tmsi)
    IE(tmsi_2)
    IE(tmsi_2)
    IE(tmsi_2)
    IE(p3_rest_octets)
MSG3_END(paging_request_type_3_tmsi)

MSG3_BEGIN(channel_request)
    IE(rach)
MSG3_END(channel_request)
MSG3_BEGIN(channel_request_ss)
    IE(rach_111)
MSG3_END(channel_request_ss)
MSG3_BEGIN(channel_request_moc)
    IE(rach_moc)
MSG3_END(channel_request_moc)
MSG3_BEGIN(channel_request_reest_neci_0)
    IE(rach_reest_neci_0)
MSG3_END(channel_request_reest_neci_0)
MSG3_BEGIN(immediate_assignment)
    IE(l2_pseudo_length_21)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(immediate_assignment_message_type)
    IE(spare_half_octet)
    IE(page_mode)
    IE(channel_description)
    IE(request_reference)
    IE(timing_advance)
    IE(mobile_allocation)
    IE(ia_rest_octets)
MSG3_END(immediate_assignment)
MSG3_BEGIN(immediate_assignment_tch)
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    IE(l2_pseudo_length_21)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(immediate_assignment_message_type)
    IE(spare_half_octet)
    IE(page_mode)
    IE(channel_description_tch)
    IE(request_reference)
    IE(timing_advance)
    IE(mobile_allocation)
    IE(ia_rest_octets)
MSG3_END(immediate_assignment_tch)
MSG3_BEGIN(paging_response)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_response_message_type)
    IE(spare_half_octet)
    IE(ciphering_key_sequence_number)
    IE(ms_classmark)
    IE(mobile_identity)
MSG3_END(paging_response)

MSG3_BEGIN(paging_response_tmsi)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_response_message_type)
    IE(spare_half_octet)
    IE(ciphering_key_sequence_number)
    IE(ms_classmark)
    IE(mobile_identity_tmsi)
MSG3_END(paging_response_tmsi)

MSG3_BEGIN(paging_response_cksn_2)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(paging_response_message_type)
    IE(spare_half_octet)
    IE(ciphering_key_sequence_number_2)
    IE(ms_classmark)
    IE(mobile_identity)
MSG3_END(paging_response_cksn_2)

MSG3_BEGIN(authentication_request)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(authentication_request_message_type)
    IE(spare_half_octet)
    IE(ciphering_key_sequence_number_2)
    IE(authentication_parameter_rand)
MSG3_END(authentication_request)
MSG3_BEGIN(authentication_response)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(authentication_response_message_type)
    IE(authentication_parameter_sres)
MSG3_END(authentication_response)

MSG3_BEGIN(identity_request)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
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    IE(identity_request_message_type)
    IE(spare_half_octet)
    IE(identity_type)
MSG3_END(identity_request)
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MSG3_BEGIN(identity_response)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(identity_response_message_type)
    IE(mobile_identity)
MSG3_END(identity_response)

MSG3_BEGIN(cm_service_request)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_service_request_message_type)
    IE(ciphering_key_sequence_number)
    IE(cm_service_type_moc)
    IE(ms_classmark)
    IE(mobile_identity)
MSG3_END(cm_service_request)

MSG3_BEGIN(cm_service_request_ss)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_service_request_message_type)
    IE(ciphering_key_sequence_number)
    IE(cm_service_type_ss)
    IE(ms_classmark)
    IE(mobile_identity)
MSG3_END(cm_service_request_ss)

MSG3_BEGIN(cm_reestablish_request)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_reestablish_request_message_type)
    IE(spare_half_octet)
    IE(ciphering_key_sequence_number_2)
    IE(ms_classmark)
    IE(mobile_identity_tmsi)
    IE(iei_13)
    IE(location_area_identification)
MSG3_END(cm_reestablish_request)

MSG3_BEGIN(cm_service_abort)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_service_abort_message_type)
MSG3_END(cm_service_abort)

MSG3_BEGIN(cm_service_reject)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_service_reject_message_type)
    IE(reject_cause)
MSG3_END(cm_service_reject)

MSG3_BEGIN(cm_service_accept)
    IE(skip_indicator)
    IE(mobility_management_protocol_discriminator)
    IE(cm_service_accept_message_type)
MSG3_END(cm_service_accept)

MSG3_BEGIN(ciphering_mode_command)
    IE(skip_indicator)
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   IE(rr_management_protocol_discriminator)
   IE(ciphering_mode_command_message_type)
   IE(cipher_response)
   IE(ciphering_mode_setting)
MSG3_END(ciphering_mode_command)


MSG3_BEGIN(ciphering_mode_complete)
   IE(skip_indicator)
   IE(rr_management_protocol_discriminator)
   IE(ciphering_mode_complete_message_type)
MSG3_END(ciphering_mode_complete)


MSG3_BEGIN(channel_mode_modify)
   IE(skip_indicator)
   IE(rr_management_protocol_discriminator)
   IE(channel_mode_modify_message_type)
   IE(channel_description_tch)
   IE(channel_mode_speech)
MSG3_END(channel_mode_modify)


MSG3_BEGIN(channel_mode_modify_acknowledge)
   IE(skip_indicator)
   IE(rr_management_protocol_discriminator)
   IE(channel_mode_modify_acknowledge_message_type)
   IE(channel_description_tch)
   IE(channel_mode_speech)
MSG3_END(channel_mode_modify_acknowledge)


MSG3_BEGIN(setup)                  /* contains 'signal' but no 'Bearer Cap' */
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_34)
   IE(signal_call_waiting)
   IE(iei_5C)
   IE(calling_party_bcd_number)
MSG3_END(setup)


MSG3_BEGIN(setup_user_to_user)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_34)
   IE(signal_call_waiting)
   IE(iei_7E)
   IE(user_user_setup)
MSG3_END(setup_user_to_user)


MSG3_BEGIN(setup_no_signal)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
MSG3_END(setup_no_signal)


MSG3_BEGIN(setup_moc)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_04)
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   IE(bearer_capability)
   IE(iei_5E)
   IE(called_party_bcd_number)
MSG3_END(setup_moc)


MSG3_BEGIN(setup_moc_1)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_04)
   IE(bearer_capability)
   IE(iei_5E)
   IE(called_party_bcd_number_1)
MSG3_END(setup_moc_1)


MSG3_BEGIN(setup_moc_efr)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_04)
   IE(bearer_capability_efr)
   IE(iei_5E)
   IE(called_party_bcd_number)
MSG3_END(setup_moc_efr)


MSG3_BEGIN(setup_data)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(setup_message_type)
   IE(iei_04)
   IE(bearer_capability_data)
   IE(iei_5E)
   IE(called_party_bcd_number)
MSG3_END(setup_data)


MSG3_BEGIN(call_confirmed)            /* contains bearer capability */
   IE(transaction_identifier_dest)
   IE(call_control_protocol_discriminator)
   IE(call_confirmed_message_type)
   IE(iei_04)
   IE(bearer_capability)
   IE(iei_15)
   IE(cc_capabilities)
MSG3_END(call_confirmed)


MSG3_BEGIN(call_confirmed_user_busy) /* contains cause user busy */
   IE(transaction_identifier_dest)
   IE(call_control_protocol_discriminator)
   IE(call_confirmed_message_type)
   IE(iei_04)
   IE(bearer_capability)
   IE(iei_08)
   IE(cause_17)
   IE(iei_15)
   IE(cc_capabilities)
MSG3_END(call_confirmed_user_busy)


MSG3_BEGIN(call_proceeding)
   IE(transaction_identifier_dest)
   IE(call_control_protocol_discriminator)
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    IE(call_proceeding_message_type)
MSG3_END(call_proceeding)


MSG3_BEGIN(connect)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(connect_message_type)
MSG3_END(connect)


MSG3_BEGIN(unknown_message)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(unknown_message_type)
MSG3_END(unknown_message)


MSG3_BEGIN(unknown_message_mtc)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(unknown_message_type)
MSG3_END(unknown_message_mtc)


MSG3_BEGIN(alerting)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(alerting_message_type)
MSG3_END(alerting)



MSG3_BEGIN(progress)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(progress_message_type)
    IE(progress_indicator_32)
MSG3_END(progress)


MSG3_BEGIN(progress_1)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(progress_message_type)
    IE(progress_indicator_8)
MSG3_END(progress_1)


MSG3_BEGIN(assignment_command)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(assignment_command_message_type)
    IE(description_of_the_first_channel_after_time)
    IE(power_command)
    IE(iei_63)
    IE(mode_of_the_first_channel)
MSG3_END(assignment_command)


MSG3_BEGIN(assignment_command_efr)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(assignment_command_message_type)
    IE(description_of_the_first_channel_after_time)
    IE(power_command)
    IE(iei_63)
    IE(mode_of_the_first_channel_efr)
```

```
MSG3_END(assignment_command_efr)

MSG3_BEGIN(assignment_complete)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(assignment_complete_message_type)
    IE(rr_cause)
MSG3_END(assignment_complete)

MSG3_BEGIN(handover_complete)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(handover_complete_message_type)
    IE(rr_cause)
MSG3_END(handover_complete)

MSG3_BEGIN(connect_acknowledge)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(connect_acknowledge_message_type)
MSG3_END(connect_acknowledge)

MSG3_BEGIN(status_enquiry_0)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_0)

MSG3_BEGIN(status_enquiry_1)
    IE(transaction_identifier_dest_1)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_1)

MSG3_BEGIN(status_enquiry_2)
    IE(transaction_identifier_dest_2)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_2)

MSG3_BEGIN(status_enquiry_3)
    IE(transaction_identifier_dest_3)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_3)

MSG3_BEGIN(status_enquiry_4)
    IE(transaction_identifier_dest_4)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_4)

MSG3_BEGIN(status_enquiry_5)
    IE(transaction_identifier_dest_5)
    IE(call_control_protocol_discriminator)
    IE(status_enquiry_message_type)
MSG3_END(status_enquiry_5)

MSG3_BEGIN(status_enquiry_6)
    IE(transaction_identifier_dest_6)
```

TEXAS INSTRUMENTS

```
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_6)


MSG3_BEGIN(status_enquiry_0_mtc)
      IE(transaction_identifier_source)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_0_mtc)


MSG3_BEGIN(status_enquiry_1_mtc)
      IE(transaction_identifier_source_1)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_1_mtc)


MSG3_BEGIN(status_enquiry_2_mtc)
      IE(transaction_identifier_source_2)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_2_mtc)


MSG3_BEGIN(status_enquiry_3_mtc)
      IE(transaction_identifier_source_3)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_3_mtc)


MSG3_BEGIN(status_enquiry_4_mtc)
      IE(transaction_identifier_source_4)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_4_mtc)


MSG3_BEGIN(status_enquiry_5_mtc)
      IE(transaction_identifier_source_5)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_5_mtc)


MSG3_BEGIN(status_enquiry_6_mtc)
      IE(transaction_identifier_source_6)
      IE(call_control_protocol_discriminator)
      IE(status_enquiry_message_type)
MSG3_END(status_enquiry_6_mtc)


MSG3_BEGIN(notify)
      IE(transaction_identifier_source)
      IE(call_control_protocol_discriminator)
      IE(notify_message_type)
      IE(notify_user_resumed)
MSG3_END(notify)



MSG3_BEGIN(disconnect_t303)
      IE(transaction_identifier_source)
      IE(call_control_protocol_discriminator)
      IE(disconnect_message_type)
      IE(cause_102_303)
MSG3_END(disconnect_t303)
```

Texas Instruments

```
MSG3_BEGIN(disconnect_t310)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_102_310)
MSG3_END(disconnect_t310)


MSG3_BEGIN(disconnect_t313)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_102_313)
MSG3_END(disconnect_t313)


MSG3_BEGIN(disconnect_8)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_16)
    IE(iei_1E)
    IE(progress_indicator_8)
MSG3_END(disconnect_8)


MSG3_BEGIN(disconnect_8_mtc)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_16)
    IE(iei_1E)
    IE(progress_indicator_8)
MSG3_END(disconnect_8_mtc)


MSG3_BEGIN(disconnect_ms)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_16)
MSG3_END(disconnect_ms)


MSG3_BEGIN(disconnect_user_to_user)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_16)
    IE(iei_7E)
    IE(user_user_disconnect)
MSG3_END(disconnect_user_to_user)


MSG3_BEGIN(disconnect)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(disconnect_message_type)
    IE(cause_16)
MSG3_END(disconnect)


MSG3_BEGIN(release_complete)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
```

```
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_03)
MSG3_END(release_complete)


MSG3_BEGIN(release_complete_empty)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
MSG3_END(release_complete_empty)


MSG3_BEGIN(release)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(release_message_type)
MSG3_END(release)


MSG3_BEGIN(release_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(release_message_type)
MSG3_END(release_mtc)


MSG3_BEGIN(release_t305)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(release_message_type)
    IE(iei_08)
    IE(cause_16)
MSG3_END(release_t305)


MSG3_BEGIN(release_bs)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(release_message_type)
    IE(iei_08)
    IE(cause_31)
MSG3_END(release_bs)


MSG3_BEGIN(release_complete_88)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_88)
MSG3_END(release_complete_88)


MSG3_BEGIN(release_complete_bs)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
MSG3_END(release_complete_bs)


MSG3_BEGIN(release_complete_0)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_0)
```

```
MSG3_BEGIN(release_complete_1)
    IE(transaction_identifier_source_1)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_1)

MSG3_BEGIN(release_complete_2)
    IE(transaction_identifier_source_2)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_2)

MSG3_BEGIN(release_complete_3)
    IE(transaction_identifier_source_3)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_3)

MSG3_BEGIN(release_complete_4)
    IE(transaction_identifier_source_4)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_4)

MSG3_BEGIN(release_complete_5)
    IE(transaction_identifier_source_5)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_5)

MSG3_BEGIN(release_complete_6)
    IE(transaction_identifier_source_6)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_6)

MSG3_BEGIN(release_complete_0_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_0_mtc)

MSG3_BEGIN(release_complete_1_mtc)
    IE(transaction_identifier_dest_1)
    IE(call_control_protocol_discriminator)
```

```
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_1_mtc)


MSG3_BEGIN(release_complete_2_mtc)
    IE(transaction_identifier_dest_2)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_2_mtc)


MSG3_BEGIN(release_complete_3_mtc)
    IE(transaction_identifier_dest_3)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_3_mtc)


MSG3_BEGIN(release_complete_4_mtc)
    IE(transaction_identifier_dest_4)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_4_mtc)


MSG3_BEGIN(release_complete_5_mtc)
    IE(transaction_identifier_dest_5)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_5_mtc)

MSG3_BEGIN(release_complete_6_mtc)
    IE(transaction_identifier_dest_6)
    IE(call_control_protocol_discriminator)
    IE(release_complete_message_type)
    IE(iei_08)
    IE(cause_81)
MSG3_END(release_complete_6_mtc)


MSG3_BEGIN(channel_release)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(channel_release_message_type)
    IE(rr_cause)
MSG3_END(channel_release)

MSG3_BEGIN(status_30_1)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_1)
MSG3_END(status_30_1)
```

```
MSG3_BEGIN(status_30_3)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_3)
MSG3_END(status_30_3)

MSG3_BEGIN(status_30_4)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_4)
MSG3_END(status_30_4)

MSG3_BEGIN(status_30_7)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_7)
MSG3_END(status_30_7)

MSG3_BEGIN(status_30_8)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_8)
MSG3_END(status_30_8)

MSG3_BEGIN(status_30_9)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_9)
MSG3_END(status_30_9)

MSG3_BEGIN(status_30_10)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_10)
MSG3_END(status_30_10)

MSG3_BEGIN(status_30_10_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_10)
MSG3_END(status_30_10_mtc)

MSG3_BEGIN(status_30_11)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
```

```
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_11)
MSG3_END(status_30_11)


MSG3_BEGIN(status_30_11_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_11)
MSG3_END(status_30_11_mtc)


MSG3_BEGIN(status_30_12)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_12)
MSG3_END(status_30_12)


MSG3_BEGIN(status_30_12_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_12)
MSG3_END(status_30_12_mtc)


MSG3_BEGIN(status_30_19)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_19)
MSG3_END(status_30_19)


MSG3_BEGIN(status_30_19_mtc)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_30)
    IE(call_state_19)
MSG3_END(status_30_19_mtc)


MSG3_BEGIN(status_97_1)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_1)
MSG3_END(status_97_1)


MSG3_BEGIN(status_97_3)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_3)
MSG3_END(status_97_3)
```

```
MSG3_BEGIN(status_97_4)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_4)
MSG3_END(status_97_4)

MSG3_BEGIN(status_97_7)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_7)
MSG3_END(status_97_7)

MSG3_BEGIN(status_97_8)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_8)
MSG3_END(status_97_8)

MSG3_BEGIN(status_97_9)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_9)
MSG3_END(status_97_9)

MSG3_BEGIN(status_97_11)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_11)
MSG3_END(status_97_11)

MSG3_BEGIN(status_97_12)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(status_message_type)
    IE(cause_97_20)
    IE(call_state_12)
MSG3_END(status_97_12)

MSG3_BEGIN(stop_dtmf)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(stop_dtmf_message_type)
MSG3_END(stop_dtmf)

MSG3_BEGIN(stop_dtmf_acknowledge)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(stop_dtmf_acknowledge_message_type)
MSG3_END(stop_dtmf_acknowledge)
```

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```
MSG3_BEGIN(start_dtmf_reject)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_reject_message_type)
    IE(cause_03)
MSG3_END(start_dtmf_reject)

MSG3_BEGIN(start_dtmf_0)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_0)
MSG3_END(start_dtmf_0)

MSG3_BEGIN(start_dtmf_1)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_1)
MSG3_END(start_dtmf_1)

MSG3_BEGIN(start_dtmf_2)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_2)
MSG3_END(start_dtmf_2)

MSG3_BEGIN(start_dtmf_3)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_3)
MSG3_END(start_dtmf_3)

MSG3_BEGIN(start_dtmf_4)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_4)
MSG3_END(start_dtmf_4)

MSG3_BEGIN(start_dtmf_5)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_5)
MSG3_END(start_dtmf_5)

MSG3_BEGIN(start_dtmf_6)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
```

TEXAS INSTRUMENTS

```
   IE(iei_2C)
   IE(keypad_facility_6)
MSG3_END(start_dtmf_6)


MSG3_BEGIN(start_dtmf_7)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_7)
MSG3_END(start_dtmf_7)


MSG3_BEGIN(start_dtmf_8)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_8)
MSG3_END(start_dtmf_8)


MSG3_BEGIN(start_dtmf_9)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_9)
MSG3_END(start_dtmf_9)


MSG3_BEGIN(start_dtmf_A)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_A)
MSG3_END(start_dtmf_A)


MSG3_BEGIN(start_dtmf_B)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_B)
MSG3_END(start_dtmf_B)


MSG3_BEGIN(start_dtmf_C)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_C)
MSG3_END(start_dtmf_C)


MSG3_BEGIN(start_dtmf_D)
   IE(transaction_identifier_source)
   IE(call_control_protocol_discriminator)
   IE(start_dtmf_message_type)
   IE(iei_2C)
   IE(keypad_facility_D)
MSG3_END(start_dtmf_D)
```

TEXAS
INSTRUMENTS

```
MSG3_BEGIN(start_dtmf_star)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_star)
MSG3_END(start_dtmf_star)


MSG3_BEGIN(start_dtmf_hash)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_message_type)
    IE(iei_2C)
    IE(keypad_facility_hash)
MSG3_END(start_dtmf_hash)


MSG3_BEGIN(start_dtmf_acknowledge_0)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_0)
MSG3_END(start_dtmf_acknowledge_0)


MSG3_BEGIN(start_dtmf_acknowledge_1)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_1)
MSG3_END(start_dtmf_acknowledge_1)


MSG3_BEGIN(start_dtmf_acknowledge_2)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_2)
MSG3_END(start_dtmf_acknowledge_2)


MSG3_BEGIN(start_dtmf_acknowledge_3)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_3)
MSG3_END(start_dtmf_acknowledge_3)


MSG3_BEGIN(start_dtmf_acknowledge_4)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_4)
MSG3_END(start_dtmf_acknowledge_4)


MSG3_BEGIN(start_dtmf_acknowledge_5)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
```

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```
      IE(iei_2C)
      IE(keypad_facility_5)
MSG3_END(start_dtmf_acknowledge_5)


MSG3_BEGIN(start_dtmf_acknowledge_6)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_6)
MSG3_END(start_dtmf_acknowledge_6)


MSG3_BEGIN(start_dtmf_acknowledge_7)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_7)
MSG3_END(start_dtmf_acknowledge_7)


MSG3_BEGIN(start_dtmf_acknowledge_8)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_8)
MSG3_END(start_dtmf_acknowledge_8)


MSG3_BEGIN(start_dtmf_acknowledge_9)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_9)
MSG3_END(start_dtmf_acknowledge_9)


MSG3_BEGIN(start_dtmf_acknowledge_A)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_A)
MSG3_END(start_dtmf_acknowledge_A)


MSG3_BEGIN(start_dtmf_acknowledge_B)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_B)
MSG3_END(start_dtmf_acknowledge_B)


MSG3_BEGIN(start_dtmf_acknowledge_C)
      IE(transaction_identifier_dest)
      IE(call_control_protocol_discriminator)
      IE(start_dtmf_acknowledge_message_type)
      IE(iei_2C)
      IE(keypad_facility_C)
MSG3_END(start_dtmf_acknowledge_C)
```

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```
MSG3_BEGIN(start_dtmf_acknowledge_D)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_D)
MSG3_END(start_dtmf_acknowledge_D)

MSG3_BEGIN(start_dtmf_acknowledge_star)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_star)
MSG3_END(start_dtmf_acknowledge_star)

MSG3_BEGIN(start_dtmf_acknowledge_hash)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(start_dtmf_acknowledge_message_type)
    IE(iei_2C)
    IE(keypad_facility_hash)
MSG3_END(start_dtmf_acknowledge_hash)

MSG3_BEGIN(handover_command)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(handover_command_message_type)
    IE(cell_description)
    IE(channel_description_ho)
    IE(handover_reference)
    IE(power_command)
    IE(iei_D)
    IE(sync_ind_synch)
MSG3_END(handover_command)

MSG3_BEGIN(handover_access)
    IE(handover_reference)
MSG3_END(handover_access)

MSG3_BEGIN(handover_failure)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(handover_failure_message_type)
    IE(rr_cause_1)
MSG3_END(handover_failure)

MSG3_BEGIN(assignment_failure)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(assignment_failure_message_type)
    IE(rr_cause_6F)
MSG3_END(assignment_failure)

MSG3_BEGIN(modify_data)
    IE(transaction_identifier_source)
    IE(call_control_protocol_discriminator)
    IE(modify_message_type)
    IE(bearer_capability_data)
MSG3_END(modify_data)
```

```
MSG3_BEGIN(modify_reject)
    IE(transaction_identifier_dest)
    IE(call_control_protocol_discriminator)
    IE(modify_reject_message_type)
    IE(bearer_capability)
    IE(cause_57)
MSG3_END(modify_reject)

MSG3_BEGIN(system_information_type_1_A)
    IE(l2_pseudo_length_21)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_1_message_type)
    IE(cell_channel_description)
    IE(rach_control_parameter_reest)
    IE(si_1_rest_octets)
MSG3_END(system_information_type_1_A)
MSG3_BEGIN(system_information_type_2_A)
    IE(l2_pseudo_length_22)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_2_message_type)
    IE(bcch_frequency_list)
    IE(ncc_permitted)
    IE(rach_control_parameter_reest)
MSG3_END(system_information_type_2_A)
MSG3_BEGIN(system_information_type_3_A)
    IE(l2_pseudo_length_18)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_3_message_type)
    IE(cell_identity)
    IE(location_area_identification)
    IE(control_channel_description)
    IE(cell_options)
    IE(cell_selection_parameter)
    IE(rach_control_parameter_reest)
    IE(si_3_rest_octets)
MSG3_END(system_information_type_3_A)
MSG3_BEGIN(system_information_type_4_A)
    IE(l2_pseudo_length_12)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_4_message_type)
    IE(location_area_identification)
    IE(cell_selection_parameter)
    IE(rach_control_parameter_reest)
    IE(si_4_rest_octets)
MSG3_END(system_information_type_4_A)

MSG3_BEGIN(system_information_type_1_B)
    IE(l2_pseudo_length_21)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_1_message_type)
    IE(cell_channel_description)
    IE(rach_control_parameter_reest)
    IE(si_1_rest_octets)
MSG3_END(system_information_type_1_B)
```

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```
MSG3_BEGIN(system_information_type_2_B)
    IE(l2_pseudo_length_22)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_2_message_type)
    IE(bcch_frequency_list)
    IE(ncc_permitted)
    IE(rach_control_parameter_reest)
MSG3_END(system_information_type_2_B)
MSG3_BEGIN(system_information_type_3_B)
    IE(l2_pseudo_length_18)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_3_message_type)
    IE(cell_identity_B)
    IE(location_area_identification_B)
    IE(control_channel_description)
    IE(cell_options)
    IE(cell_selection_parameter)
    IE(rach_control_parameter_reest)
    IE(si_3_rest_octets)
MSG3_END(system_information_type_3_B)
MSG3_BEGIN(system_information_type_4_B)
    IE(l2_pseudo_length_12)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_4_message_type)
    IE(location_area_identification_B)
    IE(cell_selection_parameter)
    IE(rach_control_parameter_reest)
    IE(si_4_rest_octets)
MSG3_END(system_information_type_4_B)
MSG3_BEGIN(system_information_type_5_B)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_5_message_type)
    IE(bcch_frequency_list)
MSG3_END(system_information_type_5_B)
MSG3_BEGIN(system_information_type_6_B)
    IE(skip_indicator)
    IE(rr_management_protocol_discriminator)
    IE(system_information_type_6_message_type)
    IE(cell_identity)
    IE(location_area_identification_B)
    IE(cell_options)
    IE(ncc_permitted)
MSG3_END(system_information_type_6_B)


MSG3_BEGIN( tmsi_reallocation_command)
   IE( skip_indicator )
   IE( mobility_management_protocol_discriminator )
   IE( tmsi_reallocation_command_message_type )
   IE( location_area_identification)
   IE( mobile_identity_tmsi)
MSG3_END( tmsi_reallocation_command)

MSG3_BEGIN( tmsi_reallocation_complete)
   IE( skip_indicator )
   IE( mobility_management_protocol_discriminator )
```

```
   IE( tmsi_reallocation_complete_message_type )
MSG3_END( tmsi_reallocation_complete)

MSG3_BEGIN(ss_register_unstructured_data)
   IE(transaction_identifier_source)
   IE(supplementary_services_protocol_discriminator)
   IE(ss_register_message_type)
   IE(iei_1C)
   IE(facility_unstructured_data)
   IE(iei_7F)
   IE(ss_version)
MSG3_END(ss_register_unstructured_data)
```

4 TEST CASES

4.1 Preambles

4.1.1 PHB001: Power On

Description: This test describes the initialization of environment
Preamble: None
Script:

```
ISS_INIT (4);

BS_SET_SYS_INFO ( 0 , system_information_type_1 );
BS_SET_SYS_INFO ( 0 , system_information_type_2 );
BS_SET_SYS_INFO ( 0 , system_information_type_3 );
BS_SET_SYS_INFO ( 0 , system_information_type_4 );
BS_SET_SYS_INFO_SACCH ( 0 , system_information_type_5 );
BS_SET_SYS_INFO_SACCH ( 0 , system_information_type_6 );

BS_SET_SCH ( 0 , BSIC , RFN );
BS_SET_ARFCN ( 0 , ARFCN_BCCH );
BS_SET_POWER ( 0 , -50 );
BS_ON_OFF  ( 0 , TRUE );
```

History: 01.02.99   AK   Initial
**   15.05.00   SAB   Split old PHB001 into new**
PHB001 and

**   PHB002.**

4.1.2 PHB002: Power On

Description: This test describes the activation of the Mobile Station.
Preamble: PHB001
Script:

```
AT_SEND("AT+CFUN=1;+COPS=0\r\n",SILENT);
AT_RECEIVE("OK",SILENT);

ISS_DELAY (20000);
```

History: 01.02.99   AK   Initial
                 15.05.00   SAB   Split old PHB001 into new PHB001
and

                                                       PHB002.

4.1.3 PHB010: Select Phonebook Memory Storage

Description: This command selects phonebook memory storage.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBS=\"AD\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                    15.05.00   SAB   Set new preamble.

4.1.4 PHB011: Select Phonebook Memory Storage

Description: This read command returns currently selected memory, and when supported by
                    manufacturer, number of used locations and total number of locations in the memory.
Preamble: PHB010
Script:

```
AT_SEND ("AT+CPBS?\r\n",SILENT);

AT_RECEIVE("+CPBS: \"AD\",12,20",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.5 PHB012: Select Phonebook Memory Storage

Description: This test command returns the supported storages as a compound value.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBS=?\r\n",SILENT);

AT_RECEIVE ("+CPBS: (\"EN\",\"BD\",\"FD\",\"LD\",\"LR\",\"AD\",\"SD\",\"IM\",\"AF\")",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                    15.05.00   SAB   Set new preamble.

4.1.6 PHB013: Read List of Phonebook Entries SIM

Description: This test is used to read all SIM phonebook entries.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBR=1,20\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"03039094103\",129,\"JIE\"",SILENT);
AT_RECEIVE("+CPBR: 2,\"01723838999\",129,\"ERWIN\"",SILENT);
AT_RECEIVE("+CPBR: 3,\"01711124\",129,\"ANDREAS\"",SILENT);
AT_RECEIVE("+CPBR: 4,\"4939094116\",129,\"BERND\"",SILENT);
AT_RECEIVE("+CPBR: 7,\"004939091401\",129,\"MANFREDO\"",SILENT);
AT_RECEIVE("+CPBR: 8,\"03039094117\",129,\"Stefan\"",SILENT);
AT_RECEIVE("+CPBR: 10,\"112\",129,\"EC\"",SILENT);
AT_RECEIVE("+CPBR: 11,\"1\",129,\"KURZ1\"",SILENT);
AT_RECEIVE("+CPBR: 17,\"1\",129,\"Erasmus\"",SILENT);
```

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```
AT_RECEIVE("+CPBR: 18,\"01234567890123456789\",129,\"Edith\"",SILENT);
AT_RECEIVE("+CPBR: 19,\"03039094205\",129,\"e\"",SILENT);
AT_RECEIVE("+CPBR: 20,\"12345\",129,\"Eduard\"",SILENT);


AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.7 PHB014: Read List of Phonebook Entries SIM

Description: This test is used to read a subset of all SIM phonebook entries.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBR=3,13\r\n",SILENT);

AT_RECEIVE("+CPBR: 3,\"01711124\",129,\"ANDREAS\"",SILENT);
AT_RECEIVE("+CPBR: 4,\"4939094116\",129,\"BERND\"",SILENT);
AT_RECEIVE("+CPBR: 7,\"004939091401\",129,\"MANFREDO\"",SILENT);
AT_RECEIVE("+CPBR: 8,\"03039094117\",129,\"Stefan\"",SILENT);
AT_RECEIVE("+CPBR: 10,\"112\",129,\"EC\"",SILENT);
AT_RECEIVE("+CPBR: 11,\"1\",129,\"KURZ1\"",SILENT);


AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                  15.05.00   SAB   Set new preamble.

4.1.8 PHB015: Read Single Phonebook Entry SIM

Description: This test is used to read a single phonebook entry.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"03039094103\",129,\"JIE\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.9 PHB016: Test Command for Reading Phonebook Entries

Description: This test command returns location range supported by the current storage as a compound value and the maximum lengths of <number> and <text> fields.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBR=?\r\n",SILENT);

AT_RECEIVE ("+CPBR: (1-20),20,8",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                  15.05.00   SAB   Set new preamble.

4.1.10 PHB017: Find Phonebook Entry SIM

Description: This test is used to find more than one phonebook entries.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBF=\"E\"\r\n",SILENT);

AT_RECEIVE("+CPBF: 10,\"112\",129,\"EC\"",SILENT);
AT_RECEIVE("+CPBF: 18,\"01234567890123456789\",129,\"Edith\"",SILENT);
AT_RECEIVE("+CPBF: 20,\"12345\",129,\"Eduard\"",SILENT);
AT_RECEIVE("+CPBF: 17,\"1\",129,\"Erasmus\"",SILENT);
AT_RECEIVE("+CPBF: 2,\"01723838999\",129,\"ERWIN\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:	01.02.99	AK	Initial
	15.05.00	SAB	Set new preamble.

4.1.11 PHB018: Test Command for Finding Phonebook Entries

Description: This test command returns the maximum lengths of <number> and <text> fields.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBF=?\r\n",SILENT);

AT_RECEIVE ("+CPBF: 20,8",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:	01.02.99	SAB	Initial
	15.05.00	SAB	Set new preamble.

4.1.12 PHB019: Overwrite Phonebook Entry SIM

Description: This test is used to overwrite an existing phonebook entry.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBW=1,\"03039094444\",129,\"C FAX\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"03039094444\",129,\"C FAX\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:	01.02.99	AK	Initial
	15.05.00	SAB	Set new preamble.

4.1.13 PHB020: Write New Phonebook Entry SIM

Description: This test is used to write a new phonebook entry.
Preamble: PHB010
Script:

```
AT_SEND ("AT+CPBW= ,\"03039094169\",129,\"JOACHIM\"\r\n",SILENT);
```

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```
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1,20\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"03039094103\",129,\"JIE\"",SILENT);
AT_RECEIVE("+CPBR: 2,\"01723838999\",129,\"ERWIN\"",SILENT);
AT_RECEIVE("+CPBR: 3,\"01711124\",129,\"ANDREAS\"",SILENT);
AT_RECEIVE("+CPBR: 4,\"4939094116\",129,\"BERND\"",SILENT);
AT_RECEIVE("+CPBR: 5,\"03039094169\",129,\"JOACHIM\"",SILENT);
AT_RECEIVE("+CPBR: 7,\"004939091401\",129,\"MANFREDO\"",SILENT);
AT_RECEIVE("+CPBR: 8,\"03039094117\",129,\"Stefan\"",SILENT);
AT_RECEIVE("+CPBR: 10,\"112\",129,\"EC\"",SILENT);
AT_RECEIVE("+CPBR: 11,\"1\",129,\"KURZ1\"",SILENT);
AT_RECEIVE("+CPBR: 17,\"1\",129,\"Erasmus\"",SILENT);
AT_RECEIVE("+CPBR: 18,\"01234567890123456789\",129,\"Edith\"",SILENT);
AT_RECEIVE("+CPBR: 19,\"03039094205\",129,\"e\"",SILENT);
AT_RECEIVE("+CPBR: 20,\"12345\",129,\"Eduard\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 02.02.99   AK   Initial

4.1.14 PHB021: Delete Phonebook Entry

Description: This test is used to delete a single phonebook entry.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBW=3\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1,20\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"03039094103\",129,\"JIE\"",SILENT);
AT_RECEIVE("+CPBR: 2,\"01723838999\",129,\"ERWIN\"",SILENT);
AT_RECEIVE("+CPBR: 4,\"4939094116\",129,\"BERND\"",SILENT);
AT_RECEIVE("+CPBR: 7,\"004939091401\",129,\"MANFREDO\"",SILENT);
AT_RECEIVE("+CPBR: 8,\"03039094117\",129,\"Stefan\"",SILENT);
AT_RECEIVE("+CPBR: 10,\"112\",129,\"EC\"",SILENT);
AT_RECEIVE("+CPBR: 11,\"1\",129,\"KURZ1\"",SILENT);
AT_RECEIVE("+CPBR: 17,\"1\",129,\"Erasmus\"",SILENT);
AT_RECEIVE("+CPBR: 18,\"01234567890123456789\",129,\"Edith\"",SILENT);
AT_RECEIVE("+CPBR: 19,\"03039094205\",129,\"e\"",SILENT);
AT_RECEIVE("+CPBR: 20,\"12345\",129,\"Eduard\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                    15.05.00   SAB   Set new preamble.

4.1.15 PHB022: Test Command for Writing Phonebook Entries

Description: This test command returns location range supported by the current storage as a compound value, the maximum lengths of <number> field supported number formats of the storage, and the maximum length of <text> field.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBW=?\r\n",SILENT);
```

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```
AT_RECEIVE ("+CPBW: (1-20),20,(128-201),8",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                  15.05.00   SAB   Set new preamble.

4.1.16 PHB023: Read Emergency Callcode Phonebook

Description: This command selects the ECC phonebook memory storage and reads it
Preamble: PHB002
Script:

```
AT_SEND ("AT+CPBS=\"EN\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1,20\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"112\",128,\"\"",SILENT);

AT_RECEIVE("+CPBR: 2,\"999\",128,\"\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   SAB   Initial
                  15.05.00   SAB   Set new preamble.

4.1.17 PHB024: Write and Read a Phonebook Entry

Description: This test is used to write and read a phonebook entry using GSM character set.
Preamble: PHB002
Script:
```
AT_SEND ("AT+CSCS=\"GSM\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBW=1,\"03039094444\",129,\"ab\001\002\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"03039094444\",129,\"ab\001\002\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.18 PHB025: 'w', 'W', 'p', 'P', '*', '#', '?' Characters are Stored

Description: This test is used to write and read a phonebook entry including all characters listed
                     above.
Preamble: PHB002
Script:
```
AT_SEND ("AT+CPBW=1,\"12wWpP*#?34\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);
```

```
AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"12WWWW*#?34\",129,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.19 PHB026: Write and Read a Phonebook Entry

Description:
Preamble: PHB025
Script:

```
AT_SEND ("AT+CPBW=1,\"*#4711*+12345*+12#\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"*#4711*12345*12#\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.20 PHB027: Write and Read a Phonebook Entry

Description:
Preamble: PHB026
Script:

```
AT_SEND ("AT+CPBW=1,\"4*+12345\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"4*12345\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.21 PHB028: Write and Read a Phonebook Entry

Description:
Preamble: PHB027
Script:

```
AT_SEND ("AT+CPBW=1,\"0012345\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"12345\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:　　　　　01.02. 99　　　　　　　　AK　　　　　　　　Initial

4.1.22 PHB029: Write and Read a Phonebook Entry

Description:
Preamble:　　PHB028
Script:

```
AT_SEND ("AT+CPBW=1,\"+12345\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"12345\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:　　　　　01.02. 99　　　　　　　　AK　　　　　　　　Initial

4.1.23 PHB030: Write and Read a Phonebook Entry

Description:
Preamble:　　PHB029
Script:

```
AT_SEND ("AT+CPBW=1,\"12345\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"12345\",129,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:　　　　　01.02. 99　　　　　　　　AK　　　　　　　　Initial

4.1.24 PHB031: Write and Read a Phonebook Entry

Description:
Preamble:　　PHB030
Script:

```
AT_SEND ("AT+CPBW=1,\"*#31#\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"*#31#\",255,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:　　　　　01.02. 99　　　　　　　　AK　　　　　　　　Initial

4.1.25 PHB032: Write and Read a Phonebook Entry

Description:
Preamble:　　PHB031

Script:

```
AT_SEND ("AT+CPBW=1,\"*31#\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"*31#\",255,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.26 PHB033: Write and Read a Phonebook Entry

Description:
Preamble: PHB032
Script:

```
AT_SEND ("AT+CPBW=1,\"#31#+1234\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"#31#1234\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.27 PHB034: Write and Read a Phonebook Entry

Description:
Preamble: PHB033
Script:

```
AT_SEND ("AT+CPBW=1,\"*31#+1234\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"*31#1234\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.28 PHB035: Write and Read a Phonebook Entry

Description:
Preamble: PHB034
Script:

```
AT_SEND ("AT+CPBW=1,\"**002*\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);
```

```
AT_RECEIVE ("+CPBR: 1,\"**002*\",255,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.29 PHB036: Write and Read a Phonebook Entry

Description:
Preamble: PHB035
Script:

```
AT_SEND ("AT+CPBW=1,\"**002#\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"**002#\",255,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.30 PHB037: Write and Read a Phonebook Entry

Description:
Preamble: PHB036
Script:

```
AT_SEND ("AT+CPBW=1,\"**002*+1234#\",,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"**002*1234#\",145,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.31 PHB038: Write and Read a Phonebook Entry

Description:
Preamble: PHB037
Script:

```
AT_SEND ("AT+CPBW=1,\"00493039094205\",255,\"TEST\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"00493039094205\",255,\"TEST\"",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

Texas **Instruments**

4.1.32 PHB039: Write and Read a Short Message Entry

Description: This testcase writes and read a SMS-SUBMIT.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CMGW=\"01711124\"\r\n",SILENT);

AT_RECEIVE("\r\n> ",SILENT);

AT_SEND ("This is the short message\r\n",SILENT);

AT_RECEIVE ("+CMGW: 1",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGR=1\r\n",SILENT);

AT_RECEIVE ("+CMGR: \"STO UNSENT\",\"01711124\",\"ANDREAS\",129,17,0,0,167,,,25",SILENT);

AT_RECEIVE ("This is the short message",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.33 PHB040: Write and Read a Short Message Entry

Description: This testcase writes and read a SMS-DELIVER.
Preamble: PHB039
Script:

```
AT_SEND ("AT+CSMP=0\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGW=\"12345\"\r\n",SILENT);

AT_RECEIVE("\r\n> ",SILENT);

AT_SEND ("This is the short message\r\n",SILENT);

AT_RECEIVE ("+CMGW: 2",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGR=2\r\n",SILENT);

AT_RECEIVE (
"+CMGR: \"REC UNREAD\",\"12345\",\"Eduard\",\"70/01/01,00:00:00+00\",129,0,0,0,,,25",SILENT);

AT_RECEIVE ("This is the short message",SILENT);

AT_RECEIVE("OK",SILENT);
```

History: 01.02.99   AK   Initial

4.1.34 PHB041: List All Short Message Entries

Description:
Preamble: PHB040

Script:

```
AT_SEND ("AT+CMGL\r\n",SILENT);


AT_RECEIVE ("+CMGL: 1,\"STO SENT\",\"01711124\",\"ANDREAS\",,129,25",SILENT);

AT_RECEIVE ("This is the short message",SILENT);

AT_RECEIVE (
"+CMGL: 2,\"REC READ\",\"12345\",\"Eduard\",\"70/01/01,00:00:00+00\",129,25",SILENT);

AT_RECEIVE ("This is the short message",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:	01.02. 99	AK	Initial

4.1.35 PHB042: Write and Read a GSM Control String as a Phonebook Entry

Description: This test is used to write and read a GSM control string as a phonebook entry using
GSM character set.
Preamble: PHB002
Script:
```
AT_SEND ("AT+CSCS=\"GSM\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBW=1,\"**21*+12345678#\",145,\"Call Forward\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1\r\n",SILENT);

AT_RECEIVE ("+CPBR: 1,\"**21*12345678#\",145,\"Call For\"",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("ATD>1\r\n",SILENT);

AT_RECEIVE("OK",SILENT);
```

History:	01.02. 99	AK	Initial
	15.05. 00	SAB	Set new preamble.

4.1.36 PHB100: MTC with Name Indication

Description: This test describes the mobile terminated call setup up to the CC state U6.
Preamble: PHB002
Script:

```
AT_SEND ("AT+CLIP=1\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

BS_CONFIG_CHANNEL (0, PCH, UNACK, SAPI_0);
BS_MSG3_SEND (0,paging_request_type_1,SILENT);
BS_RACH_AWAIT(0,channel_request,SILENT);


BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
```

TEXAS INSTRUMENTS

```
BS_STORE_RACH_PARAMS (0, 0);
BS_MSG3_SEND (0,immediate_assignment,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,paging_response,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_SEND (0,setup,SILENT);

AT_RECEIVE("RING",SILENT);

AT_RECEIVE("+CLIP: \"03039094117\",129,,,\"Stefan\"",SILENT);

AT_SEND ("AT+CPBS=\"LR\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=1,20\r\n",SILENT);

AT_RECEIVE("+CPBR: 1,\"03039094117\",129,\"Stefan\"",SILENT);
```

History:	17.12.97	LE	Initial
	15.05.00	SAB	Set new preamble.

4.1.37 PHB101: Dial Name

Description: This Test searches a name out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD>\"Stefan\";\r\n ",SILENT);


BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                      15.05.00   SAB   Set new preamble.

4.1.38 PHB102: Dial Index of Phonebook ADN

Description: This test reads a name out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD>AD8;\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);
```

TEXAS INSTRUMENTS

```
BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.39 PHB103: Dial Index of Currently Selected Phonebook

Description: This test reads a name out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD>8;\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

Texas Instruments

4.1.40 PHB104: Emergency Call

Description: This Test searches the emergency phonebook and setup a emergency call
Preamble: PHB002
Script:

```
AT_SEND ("ATD999;\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.41 PHB105: Dial Number

Description: This Test searches a name out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD03039094117;\r\n ",SILENT);


BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.42 PHB106: Dial Index of Currently Selected Phonebook using Keystroke Sequence

Description: This test reads a number out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD8#\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);
```

TEXAS INSTRUMENTS

```
BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);


BS_MSG3_AWAIT(0,setup_moc,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);


BS_MSG3_SEND ( 0, connect,               "MS shall stop tone generation")


AT_RECEIVE("OK",SILENT);


BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)


BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.43 PHB107: Dial Index of Currently Selected Phonebook using Keystroke Sequence

Description: This test reads a number out of the phonebook and dials the number
Preamble: PHB002
Script:

```
AT_SEND ("ATD20#\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);


BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);


BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);


BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);


BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);


BS_MSG3_AWAIT(0,setup_moc_1,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);


BS_MSG3_SEND ( 0, connect,               "MS shall stop tone generation")


AT_RECEIVE("OK",SILENT);


BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)


BS_MSG3_SEND ( 0, status_enquiry_0,    SILENT)
BS_MSG3_AWAIT( 0, status_30_10,        "cause 30#, state U10")
```

History: 10.02.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.44 PHB108: Phonebook Dialling with Automatically Generated DTMF Tones

Description: This test writes a new entry to the current phonebook, containing DTMF digits. After successful storage of the entry, this entry is used for dialling. As soon as the call is connected, the DTMF digits are send to the network.

Preamble: PHB002

Script:

```
AT_SEND ("AT+CPBW=8,\"12345W09W#*W23\",,\"DTMF\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CPBR=8\r\n",SILENT);

AT_RECEIVE ("+CPBR: 8,\"12345W09W#*W23\",129,\"DTMF\"",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("ATD8#\r\n ",SILENT);

BS_RACH_AWAIT(0,channel_request_moc,SILENT);
BS_CONFIG_CHANNEL (0, AGCH, UNACK, SAPI_0);
BS_STORE_RACH_PARAMS (0, 0);

BS_MSG3_SEND (0,immediate_assignment_tch,SILENT);

BS_CONFIG_CHANNEL (0, SDCCH, 1, SAPI_0);
BS_MSG3_AWAIT(0,cm_service_request,SILENT);

BS_MSG3_SEND (0,channel_mode_modify,SILENT);
BS_MSG3_AWAIT(0,channel_mode_modify_acknowledge,SILENT);

BS_MSG3_SEND (0,ciphering_mode_command,SILENT);
BS_MSG3_AWAIT(0,ciphering_mode_complete,SILENT);

BS_MSG3_AWAIT(0,setup_moc_1,SILENT);
BS_MSG3_SEND (0,call_proceeding,SILENT);

BS_MSG3_SEND ( 0, connect,              "MS shall stop tone generation")

AT_RECEIVE("OK",SILENT);

BS_MSG3_AWAIT( 0, connect_acknowledge, SILENT)

BS_MSG3_SEND ( 0, status_enquiry_0,     SILENT)
BS_MSG3_AWAIT( 0, status_30_10,         "cause 30#, state U10")

ISS_DELAY (2500);

BS_MSG3_AWAIT( 0, start_dtmf_0,                 SILENT);
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_0,     SILENT);

BS_MSG3_AWAIT( 0, stop_dtmf,                     SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,          SILENT);
BS_MSG3_AWAIT( 0, status_30_10,              "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,     SILENT);

BS_MSG3_AWAIT( 0, start_dtmf_9,                  SILENT);
```

TEXAS INSTRUMENTS

```
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_9,    SILENT);

BS_MSG3_AWAIT( 0, stop_dtmf,                    SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,        SILENT);
BS_MSG3_AWAIT( 0, status_30_10,            "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,       SILENT);

ISS_DELAY (2500);

BS_MSG3_AWAIT( 0, start_dtmf_hash,             SILENT);
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_hash,SILENT);

BS_MSG3_AWAIT( 0, stop_dtmf,                    SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,        SILENT);
BS_MSG3_AWAIT( 0, status_30_10,            "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,       SILENT);

BS_MSG3_AWAIT( 0, start_dtmf_star,             SILENT);
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_star,SILENT);

BS_MSG3_AWAIT( 0, stop_dtmf,                    SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,        SILENT);
BS_MSG3_AWAIT( 0, status_30_10,            "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,       SILENT);

ISS_DELAY (2500);

BS_MSG3_AWAIT( 0, start_dtmf_2,                SILENT);
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_2,   SILENT);
```

```
BS_MSG3_AWAIT( 0, stop_dtmf,                        SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,         SILENT);
BS_MSG3_AWAIT( 0, status_30_10,             "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,     SILENT);

BS_MSG3_AWAIT( 0, start_dtmf_3,                     SILENT);
BS_MSG3_SEND ( 0, start_dtmf_acknowledge_3,  SILENT);

BS_MSG3_AWAIT( 0, stop_dtmf,                        SILENT);

BS_MSG3_SEND ( 0, status_enquiry_0,         SILENT);
BS_MSG3_AWAIT( 0, status_30_10,             "cause 30#, state U10");

BS_MSG3_SEND ( 0, stop_dtmf_acknowledge,     SILENT);
```

History: 02.11.99   AK   Initial
                  15.05.00   SAB   Set new preamble.

4.1.45 PHB200: Alphanumerical Value in Short Message

Description: This testcase is used to check whether the alphanumerical value read from the phonebook is processed correctly when reading a short message from memory. In the first part of the testcase a phonebook entry is found successfully, in the second one no corresponding entry is found.

Preamble: PHB002

Script:

```
AT_SEND ("AT+CSCA=\"1\"\r\n",SILENT);
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGW=\"4939094116\"\r\n",SILENT);

AT_RECEIVE("\R\N> ",SILENT);
AT_SEND ("This is the short message", SILENT);
AT_RECEIVE("+CMGW: 1",SILENT);
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGR=1\r\n",SILENT);
AT_RECEIVE
("+CMGR: \"STO UNSENT\",\"4939094116\",\"BERND\",129,17,0,0,167,\"1\",129,25",SILENT);
AT_RECEIVE("\r\nThis is the short message",SILENT);
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGW=\"123456\"\r\n",SILENT);

AT_RECEIVE("\R\N> ",SILENT);
AT_SEND ("This is the short message", SILENT);
AT_RECEIVE("+CMGW: 2",SILENT);
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGR=2\r\n",SILENT);
AT_RECEIVE("+CMGR: \"STO UNSENT\",\"123456\",,129,17,0,0,167,\"1\",129,25",SILENT);
AT_RECEIVE("\r\nThis is the short message",SILENT);
AT_RECEIVE("OK",SILENT);

AT_SEND ("AT+CMGW=\"\"\r\n",SILENT);

AT_RECEIVE("\R\N> ",SILENT);
AT_SEND ("This is the short message", SILENT);
```

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```
AT_RECEIVE("+CMGW: 3",SILENT);
AT_RECEIVE("OK",SILENT);


AT_SEND ("AT+CMGR=3\r\n",SILENT);
AT_RECEIVE("+CMGR: \"STO UNSENT\",,,129,17,0,0,167,\"1\",129,25",SILENT);
AT_RECEIVE("\r\nThis is the short message",SILENT);
AT_RECEIVE("OK",SILENT);
```

History:	01.02.99	SAB	Initial
	15.05.00	SAB	Set new preamble.

4.1.46 PHB300: Power On

Description: This test describes the initialization of environment and activation of the Mobile Station.

Preamble: None

Script:

```
ISS_INIT (4);

BS_SET_SYS_INFO ( 0 , system_information_type_1 );
BS_SET_SYS_INFO ( 0 , system_information_type_2 );
BS_SET_SYS_INFO ( 0 , system_information_type_3 );
BS_SET_SYS_INFO ( 0 , system_information_type_4 );
BS_SET_SYS_INFO_SACCH ( 0 , system_information_type_5 );
BS_SET_SYS_INFO_SACCH ( 0 , system_information_type_6 );

BS_SET_SCH ( 0 , BSIC , RFN );
BS_SET_ARFCN ( 0 , ARFCN_BCCH );
BS_SET_POWER ( 0 , -50 );
BS_ON_OFF  ( 0 , TRUE );

AT_SEND ("at+cfun=1;+cops=0\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

ISS_DELAY (20000);
```

History:	01.02.99	AK	Initial

4.1.47   PHB301: FAX Setup

Description: This command sets up the FAX parameters.
Preamble: PHB300
Script:

```
AT_SEND ("at+cbst=71;+cmod=1;+fnr=1,1,1,1;+fbu=1;+fis=1,3,0,2,0,0,0,2,0;+fli=\"39094128\"\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("at%test=11,a0\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("at%test=15\r\n",SILENT);

AT_RECEIVE("OK",SILENT);

AT_SEND ("atd 030 390 94 444\r\n",SILENT);
```

History: 01.02.99   AK   Initial

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Appendices

A. Acronyms

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

B. Glossary

International Mobile Tel-ecommunication 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/>