PAS 0001-14 V1.0.0 (1998-01)

Publicly Available Specification

TETRAPOL Specifications
Part 14: System Simulators

Reference

Keywords

Tetrapol

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Foreword

This document is the Publicly Available Specification (PAS) of the TETRAPOL land mobile radio system, which shall provide digital narrow band voice, messaging, and data services. Its main objective is to provide specifications dedicated to the more demanding PMR segment: the public safety. These specifications are also applicable to most PMR networks.

This PAS is a multipart document which consists of:

Part 1 General Network Design

Part 2 Radio Air interface

Part 3 Air Interface Protocol

Part 4 Gateway to X.400 MTA

Part 5 Dispatch Centre interface

Part 6 Line Connected Terminal interface

Part 7 Codec

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Part 10 Inter System Interface

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TTR 1 Guide to TETRAPOL features

Part 18 Base station to Radioswitch interface

Part 19 Stand Alone Dispatch Position interface

1. Scope

The System Simulator (SS) is an equipment which enables to make the tests described in the Air interface protocol conformance tests PAS 0001-9-1[1] of the TETRAPOL system.

The system simulator shall simulate the network side of the MS-BS interface as seen by the MS.

The system simulator does not include environmental test equipment such as climatic chambers, shielded chamber, vibration or rotation devices.

2. Normative references

This PAS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this PAS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] PAS 0001-9-1: "TETRAPOL Specifications; Air Interface Protocol conformance tests".

[2] PAS 0001-1: " TETRAPOL Specifications; General Network Design, Reference Model".

[3] PAS 0001-3: " TETRAPOL Specifications; Air Interface Protocol".

3. Abbreviations

For the purposes of this PAS, the following abbreviations apply:

A/I	Air Interface
BN	Base Network
BS	Base Station
BSSim	Base Station Simulator
CCH	Control CHannel
CRP	Connexion Reference Point
CUG	Closed User Group
DB	DataBase
DCN	Delivery Confirmation Notification
DC	Dispatch Centre
DFN	Delivery Failure Notification
DM	Direct Mode
DM/NM	Direct Mode / Network Monitoring
DP	Dispatch Position
DC	Dispatch Centre
DPS	Dispatch Position Switch
DPSI	Dispatch Position Switch Interface
EDT	External Data Terminal
FBM	FallBack Mode
HRSW	Home RadioSWitch
ISI	Inter System Interface
KMC	Key Management Centre
LCIU	Line Connection Interface Unit
LCT	Line Connected Terminal
LLC	Logical Link Control
MAC	Medium Access Control
MM	Mobility Management
MOCH	Multisite Open CHannel

MRI	Mobile Random Identity
MS	Mobile Station
MSG APPLI	Messaging APPLIcation
NMC	Network Management Centre
OG	Operational Group
OMC	Operation and Maintenance Centre
PABX	Private Automatic Branch eXchange
PAS	Publicly Available Specification
(P)DN	(Public) Data Network
PDU	Protocol Data Unit
PMR	Private Mobile Radiocommunications
PSTN	Public Switched Telecommunications Network
PTT	Push-To-Talk
Ri	Reference point index i
RP	RePeater
RSW	RadioSWitch
RT	Radio Terminal
SADP	Stand Alone Dispatch Position
SDL	Specification and Description Language
SDP	Submit Delivery Protocol
SFN	Submit Failure Notification
SIM	Subscriber Identity Module
SS	System Simulator
ST	System Terminal
SwMI	Switching and Management Infrastructure
TCH	Traffic CHannel
TCP/IP	Transmission Control Protocol/Internet Protocol
TDX	Telephone and Data eXchange
TMSG-Id	Temporary MeSsaGe Identifier
TP	TransPort layer
TTI	Temporary Terminal Identifier
UA	User Agent
UDT	User Data Terminal
VRSW	Visited RadioSWitch
X.400 MTA	X.400 Message Transfer Agent

4. MS-Testing

4.1. Test configuration

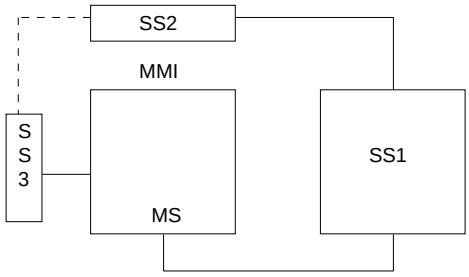

Figure 1: Test configuration

The test configuration is represented on figure 1 where SSI simulates the BS and the network (SwMI). It is also refered as Base Station Simulator BSSim. SS2 simulates the MMI and SS3 simulates the User Data Terminal (UDT).

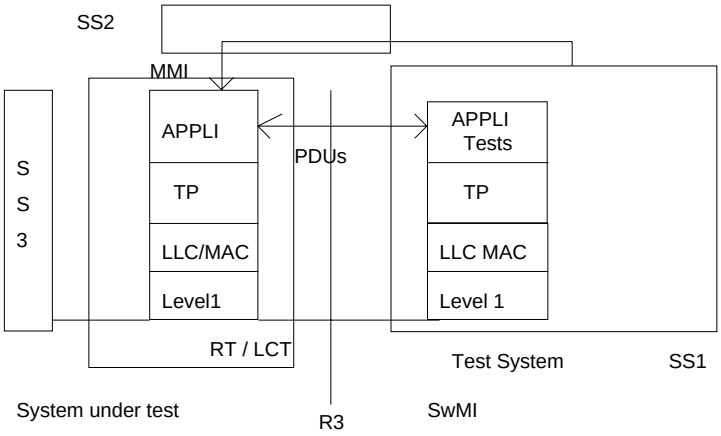

Figure 2: Test method

The tests allow to test the air Interface Protocol at reference point R3 as defined in PAS 0001-1 [2] and PAS 0001-3 [3].

The tests sequences are described below, the corresponding C source code may be provided on diskette.

5. Tests specifications

The System Simulator tests specifications cover the following family of tests:

BROADCAST CALLS

-The corresponding c code file is cdif_v3.cc

TRANSPORT PROTOCOL MANAGEMENT

- The corresponding c code file is tran_v3.cc

MOBILE REGISTRATION

- The corresponding c code file is inscr_v3.cc

VOICE CALLS

- The corresponding c code file is phon_v3.cc

OPEN CHANNEL CALLS

- The corresponding c code file is conf_v3.cc

EMERGENCY CHANNEL CALLS

- The corresponding c code file is det_v3.cc

DATA CALLS

- The corresponding c code file is donn_v3.cc

STATUS MANAGEMENT

The corresponding c code file is get_v3.cc

KEY DELIVERY

- The corresponding c code file is cle_v3.cc

INFORMATION DELIVERY

- The corresponding c code file is dist_v3.cc

COMMON TEST TASK FUNCTIONS

The corresponding c code file is comutil.cc

The tests are detailed each time with function, purpose, result espected.

6. Detail of the tests for broadcast call

PURPOSE System simulator BCH management test tasks

DESCRIPTION SYSTEM_INFO management

Asynchronous D_CELL_SELECTION and D_OCH_LIST message broadcast

Modification of D_CELL_SELECTION by keyed message (number of cells, thresholds),

D_OCH_LIST updating by inter-task, open channel and emergency channel appli messages

Modification of SYS_INFO by keyed message (tlr, scrambling)

INPUT PARAMETERS

COM_AFFICHAGE_FIN or COM_AFFICHAGE_GROSSIER

EXPECTED EVT_UDC (Event from BSSim)

CDIF_MSGUDC_SAISIE_TLR:	update TLR in SYSTEM_INFO
CDIF_MSGUDC_SAISIE_R1R2R3:	enter r1r2r3
CDIF_MSGUDC_SAISIE_CR_RR:	enter RSW and BS
CDIF_MSGUDC_GFA_COMPOSE:	stop/start D_GROUP_COMPOSITION
CDIF_MSGUDC_CELLULE_INFO:	stop/start D_CELL_SELECTION
CDIF_MSGUDC_CONF_LIST:	stop/start D_OCH_LIST
CDIF_MSGUDC_CONF_LIST_PARA:	stop/start D_OCH_LIST parameters
CDIF_MSGUDC_MODE_NORMAL:	change to normal mode
CDIF_MSGUDC_MODE_MD31:	change to RSW fall back mode
CDIF_MSGUDC_MODE_MD32:	change to BS fall back mode
COM_MSGUDC_RESUME_RHM:	available MMI summary

EXPECTED REL_MSG_INTER_ET (Messages between test tasks)

COM_MSGITT_EACTI_MAJ_TLR:	update TLR field in SYS_INFO
COM_MSGITT_EINSC_MAJ_EMB_VB_MON:	update scrambling in SYS_INFO
COM_MSGITT_ECOFD_MAJ_DET:	update D_OCH_LIST on emergency channel setup.

COM_MSGITT_ECOFD_FIN_DET: update D_OCH_LIST on emergency channel closing.

COM_MSGITT_ECOFT_MAJ_CONF: update D_OCH_LIST on open channel setup.

COM_MSGITT_ECOFT_FIN_CONF: update D_OCH_LIST on open channel closing.

FUNCTION: BCH_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: tt_upd_och

PURPOSE: Updates the table of open channels used to construct the periodically broadcast D_OCH_LIST TSDU (uses gobal DC and num_och variables). Modifies periodic D_OCH_LIST broacasts.

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_upd_ech

PURPOSE: Updates the table of established emergency channels used to construct the periodically broadcast D_OCH_LIST TSDU (uses global DC and RSWr_BS variables). Modifies periodic D_OCH_LIST broadcasts.

A CP is sent before modifying SDCH to make sure that RT detects the change immediately (i.e. before the EMERGENCY_NOTIFICATION arrives).

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_broadcast_system_info

PURPOSE: Broadcasts SYSTEM_INFO on CCH

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_reinit_channel

PURPOSE: Reinitialises a channel

RESULT:

FUNCTION: tt_modif_mode

PURPOSE: Changes modes: Normal, RSW or BSC fall back modes

RESULT:

FUNCTION: tt_modif_r1r2r3

PURPOSE: Modifies BCH r1, r2 and r3 fields

RESULT:

FUNCTION: tt_modif_RSW_BS

PURPOSE: Modifies BCH RSW and BS fields

RESULT:

FUNCTION: tt_start_broadcast

PURPOSE: Starts broadcast

RESULT:

FUNCTION: tt_stop_broadcast

PURPOSE: Stops broadcast

RESULT:

FUNCTION: tt_enter_tlr

PURPOSE: Enters a TLR value and slot number in MMI. The new values are saved in global tlr and DC variables.

RESULT: Ctx updated in DC

FUNCTION: tt_enter_nb_cell

PURPOSE: Enters the number of adjacent cells broadcast in the D_CELL_SELECTION TSDU

RESULT: None

FUNCTION: tt_og_composition

PURPOSE: Enters a composite OG

RESULT: None

FUNCTION: tt_enter_DC

PURPOSE: Enters a SADP number. Uses the DC global variable.

RESULT: Status COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_format_cell_info

PURPOSE: Formats a D_CELL_SELECTION TSDU

RESULT: Status COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_format_och_list

PURPOSE: Formats a D_OCH_LIST TSDU Uses a SADP global variable

RESULT: Status COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_format_og_composition

PURPOSE: Formats a D_GROUP_COMPOSITION TSDU

RESULT: Status COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays the list of keyed messages expected by TT and the list of managed open channels.

RESULT: None

---

7. Detail of the tests for transport protocol management

PURPOSE System simulator transport protocol management test tasks

DESCRIPTION Management of RT event reports and calls to implicit addresses

INPUT PARAMETERS

AFFICHAGE_FIN or AFFICHAGE_GROSSIER type

EXPECTED EVT_UDC:

TRA_MSGUDC_LIBERATION_VT: change a TCH mode to STOP

TRA_MSGUDC_APPEL_EN_INST: call an RT at an implicit address

COM_MSGUDC_RESUME_RHM: TT mmi summary

Expected REL_MSG_INTER_ET

FUNCTION: tran_v3

PURPOSE: Task entry point

Task body: initialises the task

Message reception loop

Message router

Call to finite state machine

RESULT: None

FUNCTION: tra_f_rdti_cr_resynchro

PURPOSE: Handles REL_DATA_IND event in COM_REPOS status

RESULT: New status: COM_ATT_CONF_DR_VIDE or COM_ETAT_INCONNU

FUNCTION: tra_f_rdti_conf_dr_empty

PURPOSE: Handles REL_DATA_IND event in COM_ATT_CONF_DR_VIDE status

RESULT: New status: COM_REPOS or COM_ATT_CONF_DR_VIDE or COM_ETAT_INCONNU

FUNCTION: tra_f_rami_ack_cp

PURPOSE: Handles REL_ACK_MAC_IND event in COM_ATT_ACK_CP status

RESULT: New status: COM_REPOS or COM_ETAT_INCONNU

FUNCTION: tra_f_rcdi_rep_ud_appel_inst

PURPOSE: Handles REL_CAD_IND in COM_REPOS status

RESULT: New status: COM_REPOS or COM_ETAT_INCONNU

FUNCTION: tra_f_release_tch

PURPOSE: Releases a TCH on UDC request (blocks TT or scenario) or all the base station TCH

RESULT: Status COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tra_f_mmi_summary

PURPOSE: Displays the list of keyed messages expected by TT

RESULT: None

FUNCTION: tra_f_trait_dde_waiting_call

PURPOSE: Enters the address associated with a waiting call

RESULT: None

FUNCTION: tra_f_send_ud_waiting_call

PURPOSE: Sends a D_CALL_WAITING TSDU

RESULT: New RT status: COM_REPOS

FUNCTION: tra_f_init

PURPOSE: Transport protocol management task init phase

RESULT: None

8. Detail of the tests for Mobile Registration

PURPOSE System simulator registration test task

DESCRIPTION Manages registration procedures

INPUT PARAMETERS

Initial TTI (2100)

Change scrambling (YES or NO)

EXPECTED EVT_UDC

INS_MSGUDC_CHANGE_TYPE_TR

EXPECTED REL_MSG_INTER_ET

FUNCTION: REGISTER_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: rach_rec

PURPOSE: Manages RACH reception. Sends TTI to RT

RESULT: RT changes to COM_ATT_CR_SEGM status

FUNCTION: segmented_cr_rec

PURPOSE: Manages segmented CR reception. Response D_ACK

RESULT: RT changes to INSC_ATT_CR_INSC_RQstatus

FUNCTION: cr_register_rq

PURPOSE: Manages U_REGISTRATION_REQ CR reception. Gets RT parameters. Updated UDS in the TTI. Response D_REGISTRATION_ACK with TLR parameter.

RESULT: RT changes to COM_ATT_INSC_DC

FUNCTION: register_dc-ack

PURPOSE: Manages D_REGISTRATION_ACK acknowledgement. UDC scenario warning.

RESULT: RT changes back to INSC_ATT_CAA status.

FUNCTION: cr_active

PURPOSE: Manages ACTIVE TSDU reception

RESULT: RT changes to INSC_ATT_ACTI_DC status.

FUNCTION: act_dc_rec

PURPOSE: Manages X EMPTY TSDU reception conveyed in a DC TPDU

RESULT: RT changes to ACTI_ATT_CR_ACTIF status.

FUNCTION: tt_enter_tti_base

PURPOSE: Enters starting tti for the first RT that registers and choice of scrambling

RESULT: basic tti

FUNCTION: tt_enter_type_rt

PURPOSE: Enters the type_rt parameter sent to fixed or mob rt

RESULT: RT type

FUNCTION: tt_enter_acti

PURPOSE: Choice of RS response to activity signalling

RESULT: TRUE / FALSE

FUNCTION: tt_mmi-summary

PURPOSE: Redisplays the listed of keyed messages expected by TT

RESULT: None

---

9. Detail of the tests for voice calls

PURPOSE System simulator test task emulating private calls.

DESCRIPTION Incoming and outgoing call management.

The task simulates network release by keyed message.

The task manages the call transfer function. It enables call ciphering or not.

EXPECTED EVT_UDC

PHON_MSGUDC_LIBERATION_RS: simulates network release

PHON_MSGUDC_INFO_CHIFF: encrypts voice call

PHON_MSGUDC_AFFICHE_CTX_TR: displays com_tr[]

PHON_MSGUDC_RETRAIT_INVITE: invites RT hook-on

COM_MSGUDC_RESUME_RHM: available

MMI summary

EXPECTED REL_MSG_INTER_ET

COM_MSGITT_ETRAN_RESYNCHRO: manages BS loss

COM_MSGITT_ECOFT_MAJ_CONF: updates open channel list when a temp. open channel is setup.

COM_MSGITT_ECOFT_FIN_CONF: updates open channel list when a temp open channel is closed.

FUNCTION: PHON_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: cr_call_setup_seg

PURPOSE: Receives segmented CR to setup a voice call with at least two requested parties.

BSSim replies with a CC to accept the transport connection

RESULT: RT changes to PHON_ATT_APPEL_PHONIE status

FUNCTION: cr_call_setup

PURPOSE: Receives a U_CALL_SETUP_x TSDU (x = 1,2,3 or 4) If x <> 1, BSSim replies with a D_ REFUSAL and unauthorised service in the cause field to interrupt the protocol. The purpose to validate transmission of multiple party call TSDU by RT.

RESULT: RT changes back to its initial status PHON_CR_APP_PHO

FUNCTION: conf_cc_call_set up

PURPOSE: Manages D_ACK_RT CC acknowledgement.
D_REJECT if called TR is unknown, busy or unreachable. The calling rt ctx is copied to the called rt ctx. TCH selection. A PCH or SCH or SCHTI is sent to the called party. Executes the preempted voice call release procedure.

RESULT: Calling RT remains in ATT_DEMANDEUR_ATT_CONF_CC_APP_PHO status.
Called RT changes to ATT_DEMANDE_ACK_CPP or CPPIE or PREM_ACK_CP status.

FUNCTION: conf_cc_entree_com

PURPOSE: Manages D_ACK_RT CC transmission after ENTREE_COM.
Transfers not handled as in standard case of ringing on CCH.D_CALL CONNECT ent to called RT.

D_CALL ALERT sent to calling RT.

RESULT: Called RT changes to ATT_DT_PASSAGE_ACK status.

FUNCTION: d_call_alert

PURPOSE: Manages D_CALL_ALERT acknowledgement to RT call originator. Transmission of UICPH available channel. Sends D_CALL_CONNECT.

RESULT: Calling RT changes to ATT_DT_PASSAGE_ACK status.

FUNCTION: d_call_connect_ack

PURPOSE: Manages D_CALL_CONNECT_ACK. acknowledgement. Sends FDR_GO.

RESULT: Calling RT changes to ATT_CONF_FDR_CONFIRMATION status.

FUNCTION: fdr_confirmation

PURPOSE: Manages FDR_GO acknowledgement. UDS updating. Reinit certain com_tr[ref_fixe] fields.

RESULT: RT changes to PHON_ATT_CR_RETRAIT_INTERV_COM status.

FUNCTION: prem_ack_cp

PURPOSE: Manages wakekup CP acknowledgement to called rt.sends SONNERIE or D_CALL_IMMEDIATE_CONNECT depending on call origin.

RESULT: RT changes to DDE_ATT_CC_SONNERIE or ATT_BASCULE_ACK status depending on the case.

FUNCTION: u_call_immediate_connect_ack

PURPOSE: Manages U_CALL_IMMEDIATE_CONNECT_ACK. Sends FDR_GO.

RESULT: RT change to ATT_CONF_FDR_CONFIRMATION status.

FUNCTION: cc_sonnerie

PURPOSE: Manages ACK_RT reception after sending SONNERIE. Gets ref_gda_tr.

RESULT: RT changes to DDE_ATT_REPONSE status.

FUNCTION: u_answer_to_paging

PURPOSE: Manages U_ANSWER_TO_PAGING reception for called RT. Sends to the D_CALL_ALERT to call originator if no transfer in progress.

RESULT: RT change to ATT_DT_PASSAGE_ACK status. RT originator changes to DEMANDEUR_ATT_CONF_DT_APP_RET status.

FUNCTION: voice_rec

PURPOSE: Receives voice segments on tch. Changes [].tr_parle to TRUE for everybody.

RESULT: RT stays in final status.

FUNCTION: uicph_rec

PURPOSE: Receives UICPH with speech or not. Changes all the fields in the alternate speech structure to TRUE.

RESULT: RT stays in final status.

FUNCTION: d_hook_on_invitation

PURPOSE: Manages intrusion in voice call CR or HOOK ON INVITATION. Sends refusal if RT not registered or REJECT if call terminated.

RESULT: RT changes to COM_ATT_CONF_DR_VIDE (hook on or refusal) or
PHON_ATT_CONF_CC_INTERV_COM status.

FUNCTION: cr_call_intrusion_pc

PURPOSE: Manages call intrusion CR in temporary open channel. Accepted if line connected DC has an open channel, by sending D_ACK CC
Use of global num_conf variables.

RESULT: RT changes to ATT_CONF_CC_INTERV_CONF status.

FUNCTION: och_cc_call_intrusion_och

PURPOSE: Manages CC acknowledgement in response to a CALL_INTRUSION_OCH CR
Sends AUTHENTICATION TSDU.

RESULT: RT changes to ATT_DT_VALIDATION status.

FUNCTION: u_authentication

PURPOSE: Manages reception of U_AUHENTICATION .
Sends D_AUTHORISATION OR D_REJECT.

RESULT: Called RT change to ATT_VIDE status.

FUNCTION: u_call_transfer_request

PURPOSE: Manages U_CALL_TRANSFER _REQUEST for individual call. Retransmits
U_CALL_TRANSFER_NAK if rt not registered or other problem. No tch stealing. Retransmitted D_END if OK. Sends CP to called RT on CCH.

RESULT: RT changes to ATT_DR_VIDE status.
Called RT changes to DDE_ATT_PREM_ACK_CP status.

FUNCTION: cr_entree_com

PURPOSE: Manages ENTREE_COM CR reception. No rejection cases are foreseen.
Gets qds, prio_com, c1c2c3 du dde et ref_gda_tr
Sends D_ACK_RT.

RESULT: Calling RT change to ATT_DEMANDEUR_ATT_CONF_CC_ENT_COM status.

FUNCTION: conf_dr_empty

PURPOSE: Manages DR_EMPTY acknowledgement. Ends ongoing call for RT or other party, with SCHTI, SCH.

RESULT: RT changes to ATT_APPEL_PHONIE_1 status.
Called RT changes to ATT_ACK_CPPIE or CPP or ATT_CR_APPEL status.

FUNCTION: tchti_ack

PURPOSE: Manages TCHTI ack sending

RESULT: RT changes to ATT_ACK_CPP status.

FUNCTION: sch_ack

PURPOSE: Manages SCH ack sending

RESULT: RT changes to DDE_ATT_DEUX_ACK_CP (PREM if preempted).

FUNCTION: two_cp_ack

PURPOSE: Manages cp acknowledgement after SCH GO_CCH
Sends D_RELEASE CR

RESULT: RT changes to ATT_CC_LIBERATION status.

FUNCTION: cc_release

PURPOSE: handles CC reception after RELEASE CR to RT
Sends X EMPTY

RESULT: RT changes to ATT_LAST_CONF_DR_VIDE status.

FUNCTION: last_conf_dr_empty

PURPOSE: Manages the x empty acknowledgement to RT released from voice call.
End of TT. Stops the TCH.

RESULT: RT changes to ATT_APPEL_PHONIE status.

FUNCTION: u_abort

PURPOSE: Manages U_ABORT reception.
Releases called RT unless preempted

RESULT: RT changes to ATT_APPEL_PHONIE status.

FUNCTION: fini_cc_sonnerie

PURPOSE: Manages transmit ringing CC reception when the call has been released by the originator.

RESULT: RT changes to ATT_DR_VIDE status.

FUNCTION: dc

PURPOSE: Manages DC reception after rejection or refusal.
If the refusal follows a refused TRANSFER, the rt connects to the voice call or the other is called.

RESULT: RT changes to ATT_APPEL_PHONIE or ATT_BASCULE_ACK status.

FUNCTION: hook_on_invitation

PURPOSE: Manages the HOOK_ON_INVITATION SCH on UDC MMI

RESULT:

FUNCTION: network_release

PURPOSE: Manages NETWORK_RELEASE CR sending on UDC MMI released by the originator.

RESULT: RT changes to ATT_ACK_CPP or CPPIE status.

FUNCTION: traite_conf_cc_inter_com

PURPOSE: Manages CC sending in response to CALL_INTRUSION_PC CR.
Sends D_CALL_CONNECT.

RESULT: RT changes to ATT_DT_PASSAGE_ACK status.

FUNCTION: unsuccessful_conf_cc_call_setup

PURPOSE: Sends the CC acknowledgement in response to CALL_SETUP then, sends CALL_ALERT if the request is unsuccessful.

RESULT: RT changes to ATT_ECHEC_CONF_APPEL_RETOUR status.

FUNCTION: unsuccessful_conf_call_alert

PURPOSE: Sends a CALL_ALERT acknowledgement, then sends a DD_REJECT if the request is unsuccessful.

RESULT: RT changes to ATT_DR_VIDE status.

FUNCTION: BS_loss

PURPOSE: After an event report from an RT that has lost its tch, RT call dispersion.

RESULT: RT changes to ATT_APPEL_PHONIE status. The others change to ATT_ACK_CPP or CPPIE status.

FUNCTION: tt_upd_och

PURPOSE: Updates the table of established open channels that is sued to refuse or accept call intrusion requests. Uses DC,num_conf,type_info global variables.

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_preempt_rt

PURPOSE: RT channel stealing on TCH. SCH or SCHTI request.

RESULT: STATUS GOOD or BAD

FUNCTION: tt_display_rt_call

PURPOSE: Displays com_tr[ref] fields on tch320

RESULT: STATUS GOOD or BAD

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays the list of keyed messages expected by TT.

RESULT: None.

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10. Detail of the tests for open channel calls

PURPOSE System simulator open channel test task

DESCRIPTION open channel management, update message sending to the BCH application.

EXPECTED EVT_UDC

COFT_MSGUDC_VOIR_ETAT_TR:	situation of RT on open channels
COFT_MSGUDC_CHIFF_CONF RNK:	delivery for open channel
COFT_MSGUDC_VOIR_LISTE:	list_och [] structure
COFT_MSGUDC_AFFICHE_CTX_TR:	displays RT contexts
COFT_MSGUDC_ACCES_SCE:	disable Setup_Close for c1c2c3
COFT_MSGUDC_PASSER_CONF_ACT:	activates open channel
COFT_MSGUDC_PASSER_CONF_INA:	inactivates open channel

COFT_MSGUDC_OUVRIR_CONF: sets up an open channel

COFT_MSGUDC_FERMER_CONF: closes an open channel closing

COFT_MSGUDC_INACTIVITE_AUTO: validates/invalidates auto och deactivation

COM_MSGUDC_RESUME_RHM EVT_UDC:summary

EXPECTED REL_MSG_INTER_ET

FUNCTION: CONF_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: idle_status

PURPOSE: Manages TSDU reception with an RT in idle status

U_OCH_SETUP or U_OCH_CLOSE CR TSDU may be received and also the DACH

U_OCH_ACTIVATION TSDU.

RESULT: RT status changes depends on the TSDU

FUNCTION: active_och

PURPOSE: Receives U_OCH_ACTIVATION DACH frame.

If the open channel is not yet active, sends an all-terminal PCH is before D_OCH_BUSY.

RESULT: RT changes to COM_ACK_CP status.

FUNCTION: pch_ack

PURPOSE: Manages all-terminal CP acknowledgements.

Sends a special D_OCH_BUSY TSDU then periodically broadcasts the normal D_CALL_BUSY TSDU

RESULT: None

FUNCTION: och_setup

PURPOSE: Receives open channel setup CR

Replies CC if OK or D_REFUSAL or D_REJECTDR

RESULT: RT changes to COFT_ATT_CONF_CC_CONF_OUVRIR or COFT_ATT_CONF_DR_REFUS_REJET status

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FUNCTION: conf_cc_och_setup

PURPOSE: Confirms open channel set up CC

Sends a D_AUTHENTICATION.

RESULT: RT changes to COFT_ATT_DT_VALIDATION_OUVRIR status.

FUNCTION: dt_setup_authorisation

PURPOSE: Analyses authorisation TSDU and sends D_AUTHORISATION or D_REJECT in case of nok authentication.

The BCH and PHO applications are informed of open channel setup.

RESULT: Calling RT changes to OFT_ATT_CONF_DR_REFUS_REJET or COFT_ATT_CONF_DR_CONFIRMATION status.

FUNCTION: och_dr_authorisation

PURPOSE: Receives confirm message.

Sends DR D_AUTHORISATION TPDU. Reinits the RT context.

RESULT: RT changes to initial status.

FUNCTION: close_och

PURPOSE: Receives open channel closing CR. Replies CC if OK or DR D_REFUSAL

RESULT: RT changes to COFT_ATT_CONF_CC_CONF_FERMER or COFT_ATT_CONF_DR_REFUS_REJET status.

FUNCTION: conf_cc_close_och

PURPOSE: Confirms close open channel CC Sends D_AUTHENTICATION DT

RESULT: RT changes to COFT_ATT_DT_VALIDATION_FERMER status.

FUNCTION: dt_close_authentication

PURPOSE: Analyses authentication TSDU and sends a D_AUTHORISATION or D_REJECT TSDU in case of nok authentication. BCH and PHO applications are informed of open channel closing.

RESULT: Calling RT changes to COFT_ATT_CONF_DR_REFUS_REJET or COFT_ATT_CONF_DR_CONFIRMATION status.

FUNCTION: end_och_c

PURPOSE: Receives the D_OCH_END confirmation TSDU.

Changes TCH mode to STOP.

RESULT:

FUNCTION: call_rec

PURPOSE: Receives voice segment.

RESULT: No change to RT status.

FUNCTION: rec_uicph

PURPOSE: Receives UICPH frame

Displays an active or established channel or open channel, else ignores the frame.

If the RT transmits or stops transmitting, RT contexts are updated.

RESULT: No change to RT status.

FUNCTION: abort_rec

PURPOSE: Receives U_ABORT DR TSDU.

The transport connection was correctly released by the TRP layer by sending a DC

TPDU (this mechanism is transparent to application layers and is not handled by the

TT). Updates the terminal CTX

RESULT: RT changes to initial status.

FUNCTION: och_dr_refuse_reject

PURPOSE: Receives confirmation. Sends DR TPDU

D_REFUSAL or D_REJECT DR TPDU.

Reinits the RT CTX.

RESULT: RT changes to initial status.

FUNCTION: ack_cppie_all_rt

PURPOSE: Receives SCH/TI acknowledgement for all the RT on the traffic channel

Sends a D_OCH_END TSDU on the SCH to all the RT on the traffic channel.

RESULT: No change in RT status.

FUNCTION: tt_identify_och

PURPOSE: Gives the open channel table index according to its number.

RESULT: Open channel index.

FUNCTION: tt_see_rt_status

PURPOSE: Displays the status of all the RT managed by the CONF application on the UDT.

RESULT: None.

FUNCTION: tt_see_list

PURPOSE: Redisplays the list of established open channels and rnk with its status.

RESULT: None

FUNCTION: tt_encrypt_och

PURPOSE: Changes the RNK open channel key.

The operation is only performed is the open channel is still established.

RESULT: None

FUNCTION: tt_change_och_active

PURPOSE: Activates a specified inactive open channel.

RESULT:

FUNCTION: tt_change_och_inactive

PURPOSE: Deactivates a specified active open channel by sending a CONF_INACTIVE CPP

RESULT:

FUNCTION: tt_och_inactive

PURPOSE: Sends a CONF_INACTIVE TSDU and updates the open channel status.

RESULT:

FUNCTION: tt_setup_och

PURPOSE: Sets up an open channel with an MMI and changes TCH to speech mode.

RESULT:

FUNCTION: tt_close_och

PURPOSE: Closes the open channel with an MMI, and stops the TCH

RESULT:

FUNCTION: tt_display_rt_ctx

PURPOSE: Displays the com_tr[ref] fields on tch320

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: tt_stop_ongoing_call

PURPOSE: Cancels the inactivity timer and D_OCH_BUSY broadcasts

RESULT: None

FUNCTION: tt_start_tpo_inact

PURPOSE: Sets the automatic inactivity timer

RESULT: None

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays of all the keyed messages expected by TT.

RESULT: None

---

11. Detail of the tests for emergency channel calls

PURPOSE System simulator emergency channel test task.

DESCRIPTION Manages emergency channels; sends updating messages to the BCH application.

EXPECTED EVT_UDC

COFD_MSGUDC_VOIR_ETAT_TR:	situation of RT on emergency channel
COFD_MSGUDC_VOIR_LISTE:	ech_list [] structure
COFD_MSGUDC_AFFICHE_CTX_TR:	displays RT contexts
COFD_MSGUDC_ACCES_SCE:	disables Setup_Close for c1c2c3
COFD_MSGUDC_PASSER_CONF_ACT:	activates emergency channel
COFD_MSGUDC_PASSER_CONF_INA:	deactivates emergency channel
COFD_MSGUDC_OUVRIR_CONF:	sets up an emergency channel
COFD_MSGUDC_FERMER_CONF:	closes an emergency channel
COFD_MSGUDC_INACTIVITE_AUTO:	validates/invalidates auto ech deactivation

COM_MSGUDC_RESUME_RHMEVT_UDC: summary

EXPECTED REL_MSG_INTER_ET

FUNCTION: DET_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: idle_rec

PURPOSE: Manages TSDU reception with the RT in idle status.

U_ECH_SETUP or U_ECH_CLOSE CR TSDU may also be received, as also DACH U_ECH_ACTIVATION TSDU.

RESULT: RT status changes depends on the TSDU

FUNCTION: active_ech

PURPOSE: Receives U_ECH_ACTIVATION DACH frame.

If the emergency channel is not yet active, sends an all-terminal CH is before D_ECH_BUSY.

RESULT: RT changes to COM_ACK_CP status.

FUNCTION: pch_ack

PURPOSE: Manages all-terminal PCH acknowledgements.

Sends a special D_ECH_BUSY TSDU then periodically broadcasts the normal D_ECH_BUSY TSDU

RESULT: RT changes to initial status.

FUNCTION: traite_cr_segmentee

PURPOSE: Receives segmented setup emergency channel CR.

Replies CC.

RESULT: RT changes to COFD_ATT_DET_OUVRIR status.

FUNCTION: och_setup

PURPOSE: Receives emergency channel setup CR.,

Replies CC if OK or D_REFUSAL or D_REJECTDR.

RESULT: RT changes to COFD_ATT_CONF_CC_DET_OUVRIR or COFD_ATT_CONF_DR_REFUS_REJET status.

FUNCTION: conf_cc_setup_ech

PURPOSE: Confirms emergency channel set up CC.

Sends a D_AUTHENTICATION.

RESULT: RT changes to COFD_ATT_DT_VALIDATION_OUVRIR status.

FUNCTION: dt_setup_authorisation

PURPOSE: Analyses authorisation TSDU and sends D_AUTHORISATION or D_REJECT in case of nok authentication

The BCH applications are informed of emergency channel setup.

RESULT: Calling RT changes to OFT_ATT_CONF_DR_REFUS_REJET or COFT_ATT_CONF_DR_CONFIRMATION status.

FUNCTION: conf_dr_ech_authorisation

PURPOSE: Receives confirm message.

Sends DR D_AUTHORISATION TPDU. Reinits the RT context.

RESULT: RT changes to initial status.

FUNCTION: close_ech

PURPOSE: Receives emergency channel closing CR. Replies CC if OK or DR D_REFUSAL

RESULT: RT changes to COFD_ATT_CONF_CC_DET_FERMER or COFD_ATT_CONF_DR_REFUS_REJET status.

FUNCTION: conf_cc_close_ech

PURPOSE: Confirms close emergency channel CC. Sends D_AUTHENTICATION DT

RESULT: RT changes to COFD_ATT_DT_VALIDATION_FERMER status.

FUNCTION: dt_close_authentication

PURPOSE: Analyses authentication TSDU and sends a D_AUTHORISATION or D_REJECT TSDU in case of nok authentication. BCH applications are informed of emergency channel closing.

RESULT: Calling RT changes to COFD_ATT_CONF_DR_REFUS_REJET or COFD_ATT_CONF_DR_CONFIRMATION status.

FUNCTION: end_ech_c

PURPOSE: Receives the D_ECH_END confirmation TSDU.

Changes TCH mode to STOP.

RESULT:

FUNCTION: call_rec

PURPOSE: Receives voice segment.

RESULT: No change to RT finite state machines

FUNCTION: rec_uicph

PURPOSE: Receives UICPH frame.

Displays an active or established channel or emergency channel, else ignores the frame.

If the RT transmits or stops transmitting, RTs contexts are updated.

RESULT: No change to RT finite state machines.

FUNCTION: abort_rec

PURPOSE: Receives U_ABORT DR TSDU.

The transport connection was correctly released by the TRP layer by sending a DC TPDU (this mechanism is transparent to application layers and is not handled by the TT).

Updates the terminal CTX.

RESULT: RT changes to initial status.

FUNCTION: ech_dr_refuse_reject

PURPOSE: Receives confirmation. Sends DR TPDU

D_REFUSAL or D_REJECT DR TPDU.

Reinits the RT CTX.

RESULT: RT changes to initial status.

FUNCTION: ack_cppie_all_rt

PURPOSE: Receives SCH/ TI acknowledgement for all the RT on the traffic channel.

Sends a D_OCH_END TSDU on the SCH to all the RT on the traffic channel.

RESULT: No change in RT finite state machines.

FUNCTION: tt_identify_ech

PURPOSE: Gives the emergency channel table index according to its number.

RESULT: Emergency channel index.

FUNCTION: tt_see_rt_status

PURPOSE: Displays the status of all the RT managed by the CONF application on the UDT.

RESULT: None.

FUNCTION: tt_see_list

PURPOSE: Redisplays the list of established emergency channels and rnk with status.

RESULT: None

FUNCTION: tt_change_ech_active

PURPOSE: Activates a specified inactive emergency channel.

RESULT:

FUNCTION: tt_change_ech_inactive

PURPOSE: Deactivates a specified active emergency channel by sending a CONF_INACTIVE CPP

RESULT

FUNCTION: tt_ech_inactive

PURPOSE: Sends a CONF_INACTIVE TSDU and updates the emergency channel status.

RESULT

FUNCTION: tt_setup_ech

PURPOSE: Sets up an emergency channel with an MMI and changes TCH to speech mode.

RESULT

FUNCTION: tt_close_ech

PURPOSE: Closes the emergency channel with an MMI, and stops the TCH

RESULT

FUNCTION: tt_display_rt_ctx

PURPOSE: Displays the com_tr[ref] fields on tch320.

RESULT: None

FUNCTION: tt_stop_ongoing_echl

PURPOSE: Cancels the inactivity timer and D_ECH_BUSY broadcasts.

RESULT: None

FUNCTION: tt_start_tpo_inact

PURPOSE: Sets the automatic inactivity timer

RESULT: None

FUNCTION: tt_send_emergency_not

PURPOSE: Broadcasts D_EMERGENCY_NOTIFICATION TSDU on CCH; after sending PCH.

RESULT: GOOD or COM_BAD_STATUS

FUNCTION: ack_cp_ech

PURPOSE: Sends D_EMERGENCY_NOTIFICATION on CCH

RESULT: None

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays of all the keyed messages expected by TT

RESULT: None

---

12. Detail of the tests for data calls

PURPOSE System simulator data test task

DESCRIPTION Sends receives messages with SCN, SFN or DFN

With the loopback option, the tasks returns to wait for a message. Messages are encrypted.

Invites RT, conversing on TCH to go on-hook when a message is waiting.

Sends receives status messages

INPUT PARAMETERS AFFICHAGE_FIN or AFFICHAGE_GROSSIER type

EXPECTED EVT_UDC:

DON_MSGUDC_MSG_SCE: sends service message to tt RT

DON_MSGUDC_AFFICHE_CTX_TR: displays TR context fields

DON_MSGUDC_PARAM_TR: sets RT parameters

DON_MSGUDC_PARAM_TT: TT param (SCN, SFN, DFN, ...)

DON_MSGUDC_REDEMARRAGE: reinits rt contexts

DON_MSGUDC_RETRAIT_INVITE: invites RT to go on-hook

DON_MSGUDC_STATUS: sends status to RT

DON_MSGUDC_INFO_CHIFF: encrypts data call

COM_MSGUDC_RESUME_RHM: mmi summary

EXPECTED REL_MSG_INTER_ET:

COM_MSGITT_XYYYY_RETRAIT_EFFECTUE: TR return to CCH after DON_MSGUDC_RETRAIT_INVITE

FUNCTION: data_v3

PURPOSE: Task entry point

Task body: Task initialisation

Message reception loop

Message router

Call to finite state machine

RESULT None

FUNCTION: don_f_rdti_cr_data_up

PURPOSE: Manages U_DATA_UP. CR reception

Sends D_REFUSAL if RT not registered.

RESULT: Calling RT changes to DON_ATT_CONF_CC_DONN_MONT status.

FUNCTION: don_f_rdtc_conf_cc_data_up

PURPOSE: Manages D_ACK_RT CC acknowledgement

RESULT: RT changes to ETAT_DT_VALIDATION status.

FUNCTION: don_f_rdti_dt_authentication

PURPOSE: Manages U_AUTHENTICATION DT reception. RT authentication

RESULT: RT changes to ETAT_ATT_CONFIRMATION status.

FUNCTION: don_f_rdti_dt_msg_upt_1

PURPOSE: Manages expected message reception Sends D_DATA_MESSAGE_END DR.

RESULT: RT changes to DON_ATT_CONF_DR_D_FINI_M status.

FUNCTION: don_f_rdti_conf_dr_d_m_e

PURPOSE: Manages RT disconnect acknowledgements.

Contacts called RT.

A called RT on TCH, is alerted by a D_HOOK_ON_INVITATION CPP and change to

COM_ATT_ACK_CPP status.

A called RT on CCH is alerted by a CP and changes to COM_REPOS status.

RESULT:

FUNCTION: don_f_rdti_data_down_ack

PURPOSE: Manages U_DATA_DOWN_ACCEPT CC. Authenticates called RT.

RESULT: RT changes to DON_ATT_CONF_DONN_MSG_D status.

FUNCTION: don_f_rdtc_conf_data_msg_d

PURPOSE: Manages downlink message acknowledgements.

RESULT: RT changes to ETAT_ATT_CONF_D_FINI_D status.

FUNCTION: don_f_rdti_conf_dr_d_end_d

PURPOSE: Acknowledges disconnection after downlink transmission.

Contacts RT to send SCN or SFN

RESULT: RT changes to COM_REPOS status if completed or COM_ATT_ACK_CP if SCN or SFN to send.

FUNCTION: don_f_rami_ack_cp

PURPOSE: Acknowledges CP sent to RT for message transmission.

Sends D_DATA_DOWN CR.

RESULT: New status: DON_ATT_DONN_DESC_ACK

FUNCTION: don_f_rami_ack_cpp

PURPOSE: Acknowledges D_HOOK_ON_INVITATION CPP to RT message recipient.

A message is expected from call or temporary open channel setup TT indicating that the RT has gone on-hook and returned to CCH.

RESULT: RT changes to DON_ATT_RETRAIT_EFFECTUE status.

FUNCTION: don_f_rdti_dc

PURPOSE: Manages DC TPDU reception after refuse or reject

RESULT: RT changes to IDLE status

FUNCTION: don_f_rcdi_status

PURPOSE: REL_CAD_IND event handling in COM_REPOS status.

RESULT: New status: COM_REPOS or COM_ETAT_INCONNU

FUNCTION: don_f_trait_send_status_req

PURPOSE: Enters the address associated with a status

RESULT: None

FUNCTION: don_f_send_ud_status_r

PURPOSE: Send STATUS_R TSDU.

RESULT: New RT status: COM_REPOS

Function: don_f_dr_abort

Purpose: Manages U-ABORT DR reception,

Result:RT changes to IDLE status.

FUNCTION: don_f_dr_empty

PURPOSE: Manages X EMPTY DR reception (case or RT downlink message refusal).

RESULT: RT changes to IDLE status.

FUNCTION: don_f_send_msg_service

PURPOSE: Sends a service message to all the RT on CCH of given DC

RESULT: GOOD or COM_BAD_STATUS

FUNCTION: don_f_send_serv_data

PURPOSE: Sends SER_DATA on radio and line connected CCH

RESULT: STATUS GOOD or BAD

FUNCTION: don_f_rt_hook_on

PURPOSE: Manages reception of messages from call or temporary open channel TT indicating that the RT has returned to CCH after a hook-on transaction. The RT can be contacted by a CP to forward the waiting message.

RESULT: RT changes to COM_ATT_ACK_CP status.

FUNCTION: don_f_enter_key_indiex

PURPOSE: Enters new ciphering key. Cancels previous key for all RTs.

RESULT:

FUNCTION: don_f_param_rt

PURPOSE: Sets RT parameters for a task (SCN, SFN, DFN, etc)

RESULT: None.

FUNCTION: don_f_param_tt

PURPOSE: Sets TT parameters (simulated RT request).

RESULT:

FUNCTION: don_f_enter_service_msg

PURPOSE: Enters service message to send and number of DC involved.

RESULT:

FUNCTION: don_f_format_intel_lg_ent

PURPOSE: Formats INTEL in downlink message headers and deletes the two lg octets.

RESULT: Result of u8 change to u16 INTEL

FUNCTION: don_f_display_rt_ctx

PURPOSE: Displays the RT context on tch320.

RESULT: COM_STATUS_GOOD or BAD

FUNCTION: don_f_mmi_summary

PURPOSE: Displays the list of keyed messages expected by TT

RESULT: None

13. Detail of the tests for status

PURPOSE System simulator status management test task

DESCRIPTION Manages RT status according to CO-RT rules

EXPECTED EVT_UDC:

GETA_MSGUDC_ENVOI_CR sends status management cr

EXPECTED REL_MSG_INTER_ET:

FUNCTION: get_v3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: keyed_msg

PURPOSE: Manages keyed message specifying the type of CR to send.

RESULT: RT changes to COM_ATT_ACK_CP status.

FUNCTION: ack_cp

PURPOSE: Manages wakekup DP acknowledgement from RT

RESULT: RT changes to GETA_ATT_ACK_TR status.

FUNCTION: ack_rt

PURPOSE: Manages U_ACK TSDU reception

RESULT: RT changes to COM_ATT_CONF_DR_VIDE status.

FUNCTION: foward_req

PURPOSE: Manages start or stop forwarding request reception from an RT.

RESULT: RT changes to COM_ATT_DC status.

FUNCTION: dc-rec

PURPOSE: Manages X_EMPTY reception conveyed in a DC TPDU.

RESULT: RT changes to GETA_ATT_RENVOI status.

FUNCTION: conf_dr_empty

PURPOSE: Manages X EMPTY TSDU acknowledgement.

RESULT: RT changes to GETA_ATT_RENVOI status.

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays the list of keyed messages expected by TT

RESULT: None.

14. Detail of the tests for key management

PURPOSE System simulator test task emulating TKK key delivery to a terminal registered with the simulator. The procedures is executed whenever the task simulating registration sends a terminal registration message.

DESCRIPTION TKK key delivery.

Rejected in case of authentication problems.

EXPECTED EVT_UDC

CLE_MSGUDC_DISTR_KDM: delivers a TKK key to an RT

CLE_MSGUDC_DISTR_KC: delivers an RNK key to an RT

CLE_MSGUDC_AFFICHE_CTX_TR: displays RT context fields

COM_MSGUDC_RESUME_RHM: available MMI summary

EXPECTED REL_MSG_INTER_ET

COM_MSGITT_CLE_DDE_KDM: delivers a TKK key to an RT

COM_MSGITT_CLE_RST_CHIFF: requests key resetting

FUNCTION: KEY_V3

PURPOSE: MAIN FILE PROCEDURE

FUNCTION: tkk distribution

PURPOSE: Sends D_TKK_MORE_DELIVERY CR

Initialises ciphering for the RT (enters Km)

Checks that the RT is registered

RESULT: RT changes to CLE_ATT_CC_DISTR_KDM status

FUNCTION: cc_kdm_delivery

PURPOSE: Manages U_ACK reception after sending D_TKK_MORE_DELIVERY

Retrieves ref_og_rt

RESULT: RT changes to ETAT_ATT_REPONSE_KDM status

FUNCTION: dt_ttk_answer

PURPOSE: Manages U_TKK_ANSWER DT reception.

Gets ALEA_TR and returns D_TKK_DELIVERY.

RESULT: RT changes to ATT_DR_FIN_KDM status.

FUNCTION: dr_end_TKK

PURPOSE: Manages C_KDM_END reception that ends TKK delivery

RESULT: RT changes to initial status

FUNCTION: RNK_delivery

PURPOSE: Sends DISTRIBUTION_KC3 CR.

Checks that RT is registered.

Depending on the value of RNK_index, sends the RNK with index number RNK_index or if RNK_index is 0, sends the three RNK1, RNK2, RNK3.

RESULT: RT changes to CLE_ATT_CC_DISTR_KC status

FUNCTION: cc_delivery _RNK

PURPOSE: Manages U_ACK reception after sending D_RNK_DELIVERY

Gets ref_og_rt

RESULT: RT changes to COM_ATT_CONF_DR_VIDE status

FUNCTION: conf_dr_empty

PURPOSE: Manages DR_VIDE acknowledgement

Reinits the terminal context

RESULT: RT changes to initial status

FUNCTION: send_cp

PURPOSE: Sends cp to the RT to which the TKK is due to be delivered

RESULT: RT changes to ATT_ACK_CP status

FUNCTION: ack_cp_tkk

PURPOSE: Manages CP acknowledgements after sending a KDM request

Sends D_TKK_MORE_DELIVERY CR

RESULT: RT changes to ATT_CC_DISTRIBUTION_KDM status

FUNCTION: ack_cp_rnk

PURPOSE: Manages CP acknowledgements after sends RNK request

RESULT: RT changes to ATT_CC_DISTRIBUTION_KC

FUNCTION: dr_abort

PURPOSE: Manages U_ABORT DR reception

RESULT: RT changes to initial status

FUNCTION: dc

PURPOSE: Manages DC reception after reject or refuse

RESULT: RT changes to initial status

FUNCTION: tt_init_cipher_rt

PURPOSE: Initialises ciphering for the rt and defines it ciphering key

TKK key definition for RT (=C1C2C3 followed by 0s) giving for 700100105:

Key = 00000000000010010500000000000000

TKK = 07001001050000000000000000000000

RNK (1) = 0000000000C100000000000000000000

RNK(2) = 0000000000C200000000000000000000

....

RNK(15)= 0000000000CF000000000000000000

RESULT: STATUS GOOD or BAD

FUNCTION: tt_request_tkk

PURPOSE: Request TKK delivery

RESULT:

FUNCTION: tt_request_RNK

PURPOSE: Requests RNK delivery

RESULT:

FUNCTION: tt_mmi_summary

PURPOSE: Redisplays the list of keyed messages expected by TT

RESULT:

15. Detail of the tests for information distribution

PURPOSE: System simulator task emulating local and secondary OG delivery to a terminal registered with the simulator.

This procedure is executed whenever the RNK delivery task sends a RNK delivery message.

DESCRIPTION: Local and secondary OG delivery

EXPECTED EVT_UDC:

DIS_MSGUDC_DISTR_GFA: delivers local or secondary OG to an RT

DIS_MSGUDC_AFFICHE_CTX_TR:displays RT context fields

COM_MSGUDC_RESUME_RHM: available

MMI summary

EXPECTED REL_MSG_INTER_ET:

FUNCTION: dist_v3

PURPOSE: Tasks entry point.

Task body. Initialises the task

Message reception loop

Message router

Call to finite state machine

RESULT: None

FUNCTION: dis_f_rami_ack_cp

PURPOSE: Handles the REL_ACK_MAC_IND event in COM_ATT_ACK_CP status.

RESULT: New state: DIS_ATT_CC_DISTR_INFOS or COM_ETAT_INCONNU or COM_REPOS

FUNCTION: dis_f_rdti_cc_distr_infos

PURPOSE: Handles a REL_DATA_IND event in DIS_ATT_CC_DISTR_INFOS status

RESULT: New status: COM_ATT_CONF_DR_VIDE or DIS_ATT_CC_DISTR_INFOS or COM_ETAT_INCONNU

FUNCTION: dis_f_rdti_conf_dr_empty

PURPOSE: Handles a REL_DATA_IND event in COM_ATT_CONF_DR_VIDE status

RESULT: New status: COM_REPOS or COM_ATT_CONF_DR_VIDE

FUNCTION: dis_f_emet_cr_distr_infos

PURPOSE: Sends INFO_DELIVERY TSDU

RESULT: New RT status: TR: DIS_ATT_CC_DISTR_INFOS

FUNCTION: dis_f_mmi_summary

PURPOSE: Displays the list of keyed messages expected by TT

RESULT: None

FUNCTION: dis_f_trait_req_distr_og

PURPOSE: Manages users requests for OG delivery

RESULT: None

16. Details of tests for common test tasks functions

PURPOSE: File containing all the common test task functions

DESCRIPTION:

INPUT PARAMETERS:

Expected REL_MSG_INTER_ET:

FUNCTION: com_start_tt

PURPOSE: Starts and subscribes a test task

RESULT:

FUNCTION: com_stop_tt

PURPOSE: Stops a TT

RESULT:

FUNCTION: com_type_display

PURPOSE: Choice of display type

RESULT:

FUNCTION: com_free_msg

PURPOSE: Frees a token

RESULT: 0 = OK, -1 = NOK

FUNCTION: com_lec_rr

PURPOSE: Reads base station characteristics

RESULT:

FUNCTION: com_ascii_c1c2c3

PURPOSE: Formats C1C2C3 in ASCII to display UDC scenario

RESULT:

FUNCTION: com_reinit_ctxtr

PURPOSE: Reinitialises an RT context

RESULT:

FUNCTION: om_refus_service

PURPOSE: disables/enables RT service

RESULT: oolean

FUNCTION: com_automatic_inactivity

PURPOSE: validates or invalidates automatic open channel deactivation on speech inactivity time- out

RESULT: Boolean

FUNCTION: com_get_mode_DC

PURPOSE: Gets a DC board mode according to its slot number: MODE_PER, MODE_ITF or MODE_DC_KO

RESULT: variable: mode

FUNCTION: com_test_tpdu

PURPOSE: Checks that the expected TPDU has been delivered

RESULT: COM_TPDU_OK or COM_BAD_STATUS

FUNCTION: com_ident_rt

PURPOSE: Identifies an RT from its reference

RESULT: C1C2C3, RT tti, channel and DC board

FUNCTION: com_send _data

PURPOSE: Sends a TPDU onto the network interface

RESULT: GOOD_STATUS, COM_BAD_STATUS or STATUS_DATA_NON_CONF

FUNCTION: com_modif_mode

PURPOSE: Modifies a channel mode

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_send_cp

PURPOSE: Sends a CP segment on Control Channel

RESULT: GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_send_cp_allrt

PURPOSE: Sends an ALL_RT CP segment

RESULT: GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_sends_uicph

PURPOSE: Sends a UICPH frame on traffic channel

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_send_sch

PURPOSE: Sends SCH to rt ref on TCH

RESULT: STATUS GOOD, BAD, or COM_NS (channel not tch)

FUNCTION: com_send_schti

PURPOSE: Sends SCHTI to rt ref on TCH

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_dr_reject

PURPOSE: Sends D_REJECT DR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_dr_refuse

PURPOSE: Sends D_REFUSAL DR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_dr_end

PURPOSE: Sends D_END DR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_cr_distr_tkk

PURPOSE: Sends D_TKK_MORE_DELIVERY CR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_cr_ring

PURPOSE: Sends ring CR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_ring_tch

PURPOSE: Sends ring_tch to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_call_connect

PURPOSE: Sends D_CALL_CONNECT to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_call_alert

PURPOSE: Sends D_CALL_ALERT to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_fdr_go

PURPOSE: Sends FDR_GO to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_sends_call_connectl

PURPOSE: Sends D_CALL_IMMEDIATE_CONNECT to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_dt_authentication

PURPOSE: Sends D_AUTHENTICATION DT to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_authorisation

PURPOSE: Sends D_AUTHORISATION to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_transfer_ack

PURPOSE: Sends TRANSFERT ACK to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_cr_release

PURPOSE: Sends D_RELEASE CR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_hookon_invite

PURPOSE: Sends HOOK_ON_INVITATION to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_transfer_nack

PURPOSE: Sends D_CALL_TRANSFER_NAK DR to rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_ack_rs_rt

PURPOSE: Sends D_ACK_RT CC on receipt of CR from rt ref

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_emg_notif

PURPOSE: Sends D_EMERGENCY_NOTIFICATION CC

RESULT: STATUS GOOD or BAD

FUNCTION: com_send_active_ack

PURPOSE: Sends D_LOCATION_ACTIVITY_ACK

RESULT: STATUS GOOD or BAD

FUNCTION: com_set_nice_niv

PURPOSE: Gets a token for the message due to be sent

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_modif_broadcast

PURPOSE: Modifies an asynchronous broadcast

RESULT: COM_GOOD_STATUS or COM_BAD_STATUS

FUNCTION: com_wait_keyboard

PURPOSE: Waits for a keyed message

RESULT: keyed message

FUNCTION: com_give_tch

PURPOSE: Gives the first free tch on given board

RESULT: Logical number of the tch or UDI_NB_VOIES_LOG if not free

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FUNCTION: com_display_rt

PURPOSE: Displays c1c2c3 and RT status

RESULT: None

FUNCTION: com_mode_speech

PURPOSE: changes a TCH mode to SPEECH

RESULT: COM_GOOD_STATUS/COM_BAD_STATUS

FUNCTION: com_release_tch

PURPOSE: Releases an TCH

RESULT: None

FUNCTION: com_error

PURPOSE: Finite state machine error

RESULT: None

FUNCTION: com_ignore

PURPOSE: ...

RESULT: None

FUNCTION: com_active_auto

PURPOSE: ...

RESULT: None

FUNCTION: com_display_ctxrt

tr

PURPOSE:

RESULT: None

FUNCTION: com_authentifie_tr

PURPOSE: ...

RESULT: None

FUNCTION: com_maj_tt

PURPOSE: Informs applications of open channel list modifications

RESULT: None

History

Document history		
Date	**Status**	**Comment**
15/07/1996	First version	Version 0.0.1
31/07/1996	Update following remarks	Version 0.0.2
25/11/1996	Converted to word 6	Version 0.0.3
16/12/1996	Editorial corrections	Version 0.0.4
27/10/1997	Reviewed	Version 0.1.0
30/01/1998	TETRAPOL Forum approval	Version 1.0.0