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Part 3: Abstract Test Suite (ATS)
(Release 11)

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

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y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part 3 of a multi-part conformance test specification for UE. The specification contains a TTCN (TTCN -2 and TTCN-3) design frame work and the detailed test specifications in TTCN for UE at the Uu interface.

3GPP TS 34.123-1 [1]: "User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

3GPP TS 34.123-2 [2]: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".

3GPP TS 34.123-3: "Abstract Test Suite (ATS)" (the present document).

1 Scope

The present document specifies the protocol conformance testing in TTCN for the 3GPP User Equipment (UE) at the Uu interface.

The present document is the 3^{rd} part of a multi-part test specification, 3GPP TS 34.123. The following TTCN test specification and design considerations can be found in the present document:

- the overall test suite structure;
- the testing architecture;
- the test methods and PCO definitions;
- the test configurations;
- the design principles, assumptions, and used interfaces to the TTCN tester (System Simulator);
- TTCN styles and conventions;
- the partial PIXIT proforma;
- the TTCN.MP and TTCN.GR forms for the mentioned protocols tests.

The Abstract Test Suites designed in the document are based on the test cases specified in prose (3GPP TS 34.123-1 [1]).

The present document is valid for UE implemented according to 3GPP releases starting from Release 1999 up to the Release indicated on the cover page of the present document.

2 References

The following documents contain provisions, which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.
  - For a Release 1999 UE, references to 3GPP documents are to version 3.x.y, when available.
  - For a Release 4 UE, references to 3GPP documents are to version 4.x.y, when available.
  - For a Release 5 UE, references to 3GPP documents are to version 5.x.y, when available.
  - For a Release 6 UE, references to 3GPP documents are to version 6.x.y, when available.
  - For a Release 7 UE, references to 3GPP documents are to version 7.x.y, when available.
  - For a Release 8 UE, references to 3GPP documents are to version 8.x.y, when available.
  - For a Release 9 UE, references to 3GPP documents are to version 9.x.y, when available.
  - For a Release 10 UE, references to 3GPP documents are to version a.x.y, when available.

[1] 3GPP TS 34.123-1: "User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[2] 3GPP TS 34.123-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".

[3] 3GPP TS 34.108: "Common test environments for User Equipment (UE) conformance testing".

[4] 3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".

[5] 3GPP TR 21.905: " Vocabulary for 3GPP specifications".

[6] 3GPP TS 23.003: "Numbering, addressing and identification".

[7] 3GPP TS 23.101: "General UMTS architecture".

[8] 3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".

[9] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core network protocols; Stage 3".

[10] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[11] 3GPP TS 24.012: "Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface".

[12] 3GPP TS 25.214: "Physical layer procedures (FDD)".

[13] 3GPP TS 25.224: "Physical layer procedures (TDD)".

[14] 3GPP TS 25.301: "Radio interface protocol architecture".

[15] 3GPP TS 25.303: "Interlayer procedures in connected mode".

[16] 3GPP TS 25.304: "User Equipment (UE) procedures in idle mode and procedures for cell reselection in connected mode".

[17] 3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".

[18] 3GPP TS 25.322: "Radio Link Control (RLC) protocol specification".

[19] 3GPP TS 25.323: "Packet Data Convergence Protocol (PDCP) specification".

[20] 3GPP TS 25.324: "Broadcast/Multicast Control (BMC)".

[21] 3GPP TS 25.331: "Radio Resource Control (RRC) protocol specification".

[22] 3GPP TS 27.005: "Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE-DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)".

[23] 3GPP TS 27.007: "AT command set for 3G User Equipment (UE)".

[24] 3GPP TS 27.060: "Packet domain; Mobile Station (MS) supporting Packet Switched services".

[25] 3GPP TS 33.102: "3G security; Security architecture".

[26] 3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification".

[27] ETSI TR 101 666 (V1.0.0): "Information technology; Open Systems Interconnection Conformance testing methodology and framework; The Tree and Tabular Combined Notation (TTCN) (Ed. 2++)".

[28] ITU-T Recommendation X.691 (1997) "Information technology - ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)".

[29] ISO/IEC 8824 (all parts): "Information technology - Abstract Syntax Notation One (ASN.1)".

[30] IETF RFC 2507: "IP Header Compression".

[31] 3GPP TS 45.002: "Multiplexing and multiple access on the radio path".
3GPP TS 05.02: "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path".

[32] 3GPP TS 44.060: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol".
3GPP TS 04.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol".

[33] 3GPP TS 44.064: "Mobile Station - Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) layer specification".

[34] 3GPP TS 23.038: "Alphabets and language-specific information".

[35] 3GPP TS 23.040: "Technical realization of Short Message Service (SMS)".

[36] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[37] ETSI ETR 141: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".

[38] ETSI TR 101 101: "Methods for Testing and Specification (MTS); TTCN interim version including ASN.1 1994 support [ISO/IEC 9646-3] (Second Edition Mock-up for JTC1/SC21 Review)".

[39] ITU-T Recommendation X.680: "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[40] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".

[41] ISO/IEC 9646 (all parts): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework".

[42] 3GPP TS 44.006: "Mobile Station - Base Stations System (MS - BSS) Interface Data Link (DL) layer specification".

[43] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol".
3GPP TS 04.18: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol".

[44] 3GPP TR 25.925: "Radio interface for Broadcast/Multicast Services".

[45] ITU-T Recommendation O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[46] IETF RFC 1144: "Compressing TCP/IP headers for low-speed serial links".

[47] ITU-T Recommendation V.42bis: "Data compression procedures for data circuit-terminating equipment (DCE) using error correction procedures".

[48] ITU-T Recommendation V.44: "Data compression procedures".

[49] 3GPP TS 44.008: "Mobile radio interface layer 3 specification".
3GPP TS 04.08: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".

[50] 3GPP TS 24.080: "Mobile radio interface layer 3 supplementary services specification; Formats and coding".

[51] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[52] ITU-T Recommendation Q.773: "Signalling System No. 7 - Transaction Capabilities Formats and Encoding".

[53] ITU-T Recommendation X.880: "Information Technology - Remote Operations: Concepts, Model and Notation".

[54] IETF RFC 3095: "RObust Header Compression (ROHC): Framework and four profiles: RTP, UDP, ESP, and uncompressed".

[55] 3GPP TS 34.022: "Radio Link Protocol (RLP) for circuit switched bearer and teleservices".

[56] 3GPP TS 36.571-4: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 4: Test suites".

[57] 3GPP TS 25.433: "UTRAN Iub interface Node B Application Part (NBAP) signalling".

[58] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".

[59] 3GPP TS 25.306: "UE Radio Access capabilities".

[60] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[61] 3GPP TS 44.118: "Mobile radio interface layer 3 specification, Radio Resource Control (RRC) protocol; Iu mode".

[62] 3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Abstract Test Suites (ATS)".

[63] 3GPP TS 37.571-2: “Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 2: Protocol conformance”.

[64] 3GPP TS 37.571-4: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC);User Equipment (UE) conformance specification for UE positioning; Part 4: Test suites".

[65] ETSI ES 201 873-1: "Methods for Testing and Specification (MTS); The Tree and Tabular Combined Notation version 3; Part 1: TTCN-3 Core Language".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 34.123-1 [1] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TS 34.123-1 [1], 3GPP TS 24.008 [9], 3GPP TS 25.331 [21] and TR 101 666 [27] apply.

4 Requirements on the TTCN development

A number of requirements are identified for the development and production of TTCN specification for 3GPP UE at Uu interface.

1. Top-down design, following 3GPP TS 34.123-1 [1], 3GPP TS 34.108 [3] and 3GPP TS 34.109 [4].

2. A unique testing architecture and test method for testing all protocol layers of UE.

3. Uniform TTCN style and naming conventions.

4. Improve TTCN readability.

5. Using TTCN-2++ (TR 101 666 [27]) for R99, Release 4, Release 5, Release 6, Release 7, Release 8 and Release 9 and TTCN-3 (ETSI ES 201 873-1[65]) for Release 10 and later Releases.

6. TTCN specification feasible, implementable and compilable.

7. Test cases shall be designed in a way for easily adaptable, upwards compatible with the evolution of the 3GPP core specifications and the future Releases.

8. The test declarations, data structures and data values shall be largely reusable.

9. Modularity and modular working method.

10. NAS ATS should be designed being independent from the radio access technologies.

11. Minimizing the requirements of intelligence on the emulators of the lower testers. Especially the functionality of the RRC emulator in the TTCN tester should be reduced and simplified, the behaviours should be standardized as the TTCN RRC test steps in the TTCN modular library.

12. Giving enough design freedom to the test equipment manufacturers.

13. Maximizing reuse of ASN.1 definitions from the relevant core specifications.

In order to fulfil these requirements and to ensure the investment of the test equipment manufacturers having a stable testing architecture for a relatively long period, a unique testing architecture and test method are applied to the 3GPP UE protocol tests.

5 TTCN-2 ATS structure

The total TTCN specification for the UE testing is structured in a number of separate layered ATSs. The number of ATS being produced corresponds to the number of the 3GPP core specifications referred. The separation of ATSs reduces the size of ATSs. The layer-specific test preambles and test data can be confined to one test suite and parallel development of test suites can be facilitated. The separation of ATSs enables also easily to follow the evolution of the core specifications.

- NAS ATSs:
    1) GSM MAP L3 ATS including MM, CC, GMM, SM test groups;
    2) SMS ATS;
    3) A-GPS ATS
- AS ATSs:
    1) RRC ATS including Single cell and multicell test group;
    2) RLC ATS;
    3) MAC ATS;
    4) BMC ATS;
    5) PDCP ATS;
    6) RAB ATS;
    7) IR_U ATS;
    8) HSD_ENH ATS (Rel-5 or later);
    9) HSU_ENH ATS (Rel-6 or later);
    10) MBMS ATS (Rel-6 or later);

11) HSPA7_ENH ATS (Rel-7 or later);

12) HSPA8_ENH ATS (Rel-8 or later);

13) HSPA9_ENH ATS (Rel-9 or later).

5.1 Modularity

The modular TTCN approach is used for the development of the 3GPP ATS specification work. Three modules, BasicM, RRC_M and L3M are installed.

5.1.1 Module structure

The module structure is shown in Figure 5.1.1.

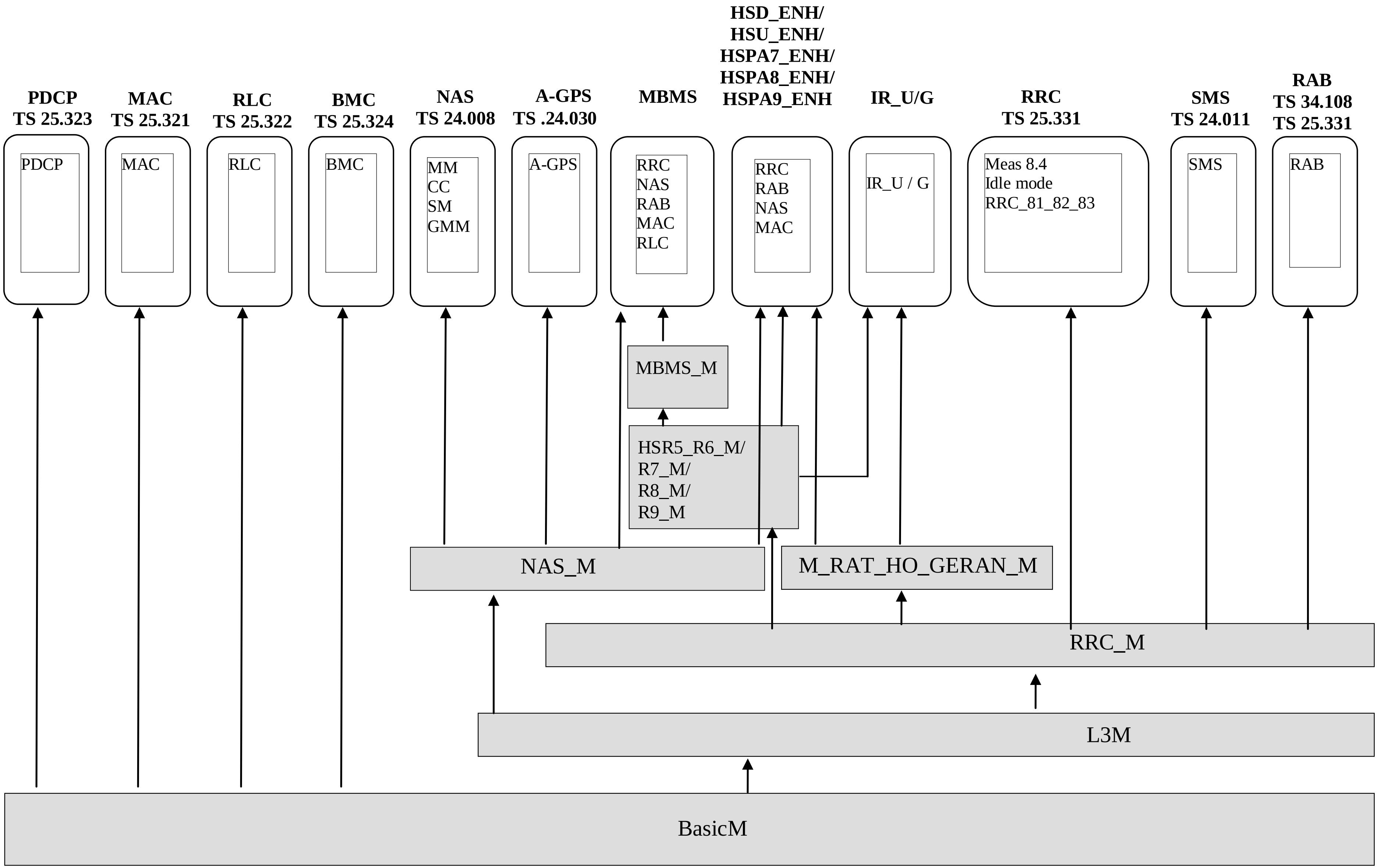

Figure 5.1.1: Module structure

The BasicM (**Basic M**odule) is a minimum module commonly for the layer 2 and layer 3 testing. The L3M (**L**ayer **3 M**odule) contains all the items to be shared by the RRC, NAS, SMS, RAB, IR_U/G, A-GPS, HSD_ENH, HSU_ENH and MBMS ATSs. NAS is applied to the NAS, A-GPS, HSD_ENH, HSU_ENH, MBMS, HSPA7_ENH, HSPA8_ENH and HSPA9_ENH ATSs. The RRC_M is a module containing common object for RRC, RAB, IR_U/G, SMS, A-GPS, HSD_ENH, HSU_ENH, MBMS, HSPA7_ENH, HSPA8_ENH and HSPA9_ENH ATSs.

5.1.2 Contents of the modules

The BasicM module includes objects related to the RRC, the layer 2 and the physical layer. It includes also all test steps needed by the layer 2 and layer 3 test cases for configurations and all objects related to the definition of the steps:

- Common test steps and default test steps defined as generic procedures in 3GPP TS 34.108 [3];
- RRC declarations related to the steps: types, timers, PDU types, ASP type, PCOs, TSOs, constants;
- Related ICS and IXIT parameters needed for testing and respectively defined in 3GPP TS 34.123-2 [2] and the present document;
- Defaults constraints based on the default message contents defined in 3GPP TS 34.108 [3];
- MMI PCO and ASPs;
- All TTCN objects related to the SS configuration, e.g. PCOs, declaration of the components.

The L3M module includes the NAS configuration steps and all related TTCN objects:

- Common test steps and default test steps defined as generic procedures in 3GPP TS 34.108 [3];
- NAS declarations related to these steps: types, PDU, ASP, PCOs, TSOs, constants;
- Related ICS and IXIT parameters needed for testing and respectively defined in 3GPP TS 34.123-2 [2] and the present document;
- Default constraints based on the default message contents defined in 3GPP TS 34.108 [3].

The RRC_M module includes the RRC steps common to RRC and RAB test cases and all related TTCN objects.

5.1.3 Example of a working platform

Figure 5.1.3 shows the working platform for the user that is writing the SMS test cases.

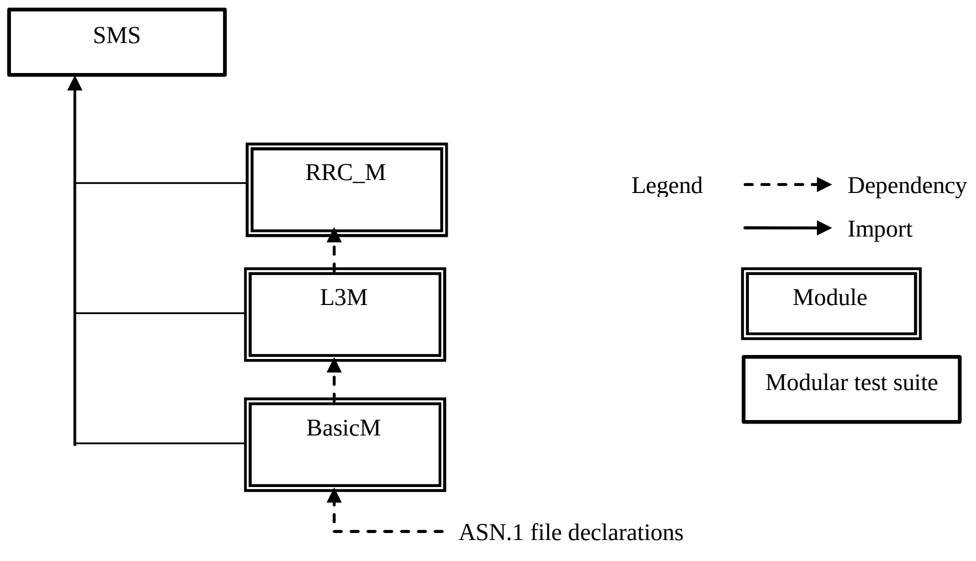

Figure 5.1.3: An example of working platform for SMS

6 Test method and testing architecture

6.1 Test method

The distributed single party test method is used for the UE testing. The lower tester configures the emulator and communicates with the UE under test via the emulator. An upper tester interfaces UE as (E)MMI.

All common parts in 3GPP TS 34.108 [3], 3GPP TS 34.109 [4] and 3GPP TS 34.123-2 [2] are developed in a TTCN library including the declarations, default constraints, preambles and postambles. They have the following characteristics:

- Very complex;
- Worked in different layers;
- Including data representing the radio parameters for SS setting and the data representing the UE capabilities (PICS parameters);
- Including the generic procedures to bring the UE into certain test states or a test mode (C-plane);
- Setting RABs at U-plane and SRBs in C-plane;
- Being used by every test cases no matter which layer the test case belongs to;
- No affect on the test verdict of PASS or FAIL.

The layer-specific test cases have the characteristics:

- relatively simple and straight forward;
- having narrow test scope and test purposes;
- test scenarios in a single layer (one PCO);
- assigning the test verdict.

6.2 TTCN-2 Testing architecture

A unique testing architecture is shown in Figure 6.2.

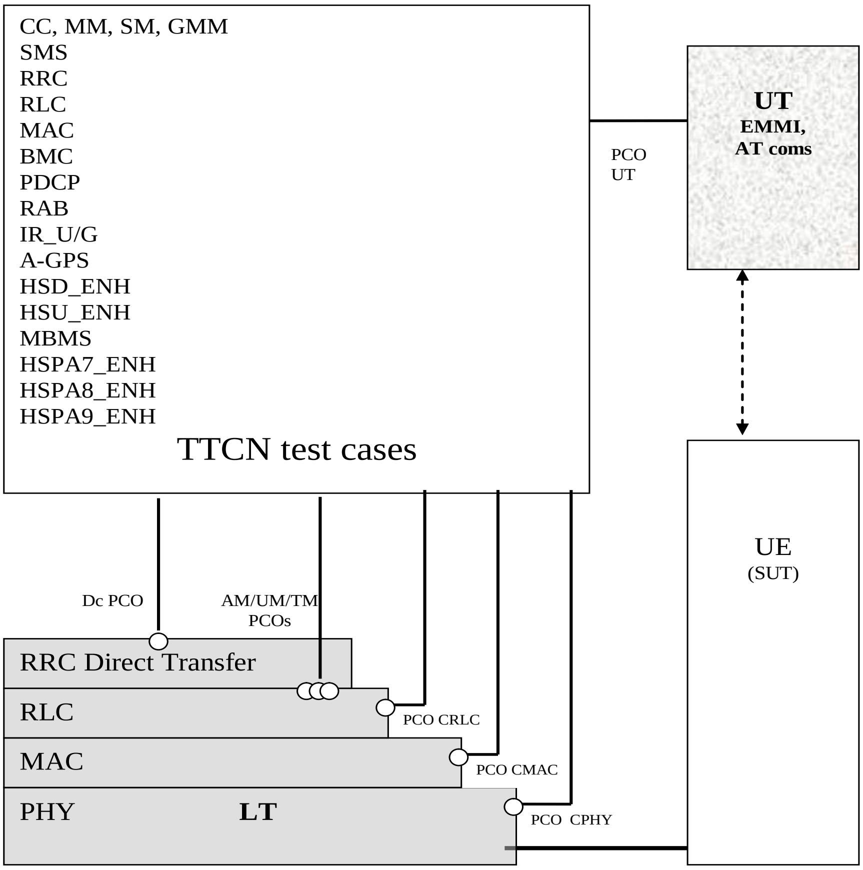

Figure 6.2: A unique testing architecture

6.2.1 Lower Tester (LT)

The Lower Tester (LT) provides the test means for the execution of the test cases for CC, SM, MM, GMM, SMS, RRC, RLC, MAC, PDCP, BMC, RAB, IR_U/G, A-GPS, HSD_ENH, HSU_ENH, MBMS, HSPA7_ENH, HSPA8_ENH and HSPA9_ENH. The LT provides also the RLC, MAC and PHY emulators to communicate with the UE. The configuration and initialization of the emulators are control by the TTCN via ASPs.

6.2.2 Configuration and initialization

A number of TTCN test steps are designed for the generic setting.

1) Configuration of L1 of the tester, such as the cells, Physical channels and common transport channels via CPHY-PCO, configuration of MAC via CMAC-PCO and configuration of RLC layer via CRLC-PCO.

2) Sending system information via TR-PCO.

3) Establishment RRC connection via AM or UM-PCO.

4) Assigning a radio bearer via AM-PCO.

5) MM /GMM registration via Dc-PCO.

6) Establishment of a CS call or a PDP context via Dc-PCO.

7) Setting security parameters and control of integrity via CRLC- and ciphering via CRLC- and CMAC-PCO.

6.2.3 Upper Tester (UT)

An Upper Tester (UT) exists in the test system. The UT interfaces toward UE with any optional EMMI (3GPP TS 34.109 [4], clause 7). TTCN communicates with the UT by passing coordination primitives via a Ut PCO. The primitives can either contain AT commands aiming at the automatic tests, or some informal commands as MMI, in order to request the UE for certain actions and to provide simple means for observations of UE.

6.2.4 TTCN-2

TTCN-2 is used as specification language based on TR 101 666 [27] (TTCN 2++). The importation of ASN.1 modules and modular TTCN-2 are two of the most important features used in the design of the ATSs.

The TTCN test suites have been designed to maximize the portability from the language TTCN-2 to TTCN-3.

6.2.5 Model extension

If a test case needs to handle a concurrent situation two or more LTs can be configured at the same time. The following test scenarios identified may require multiple testers in the test configuration.

6.2.6 Multiplexing of RLC services

For the RRC and NAS testing, the TTCN RRC test steps (on RB1 and RB2) and the RRC emulator (on RB3 and RB4 for the NAS messages) share the same service access point (AM SAP). The RLC emulator shall provide separate message queues (buffers) for the TTCN RRC test steps and the RRC emulator for the TTCN NAS test cases, according to the signalling radio bearer identities.

6.3 NAS test method and architecture

6.3.1 Test configuration

The NAS test method is shown in Figure 6.3.1.

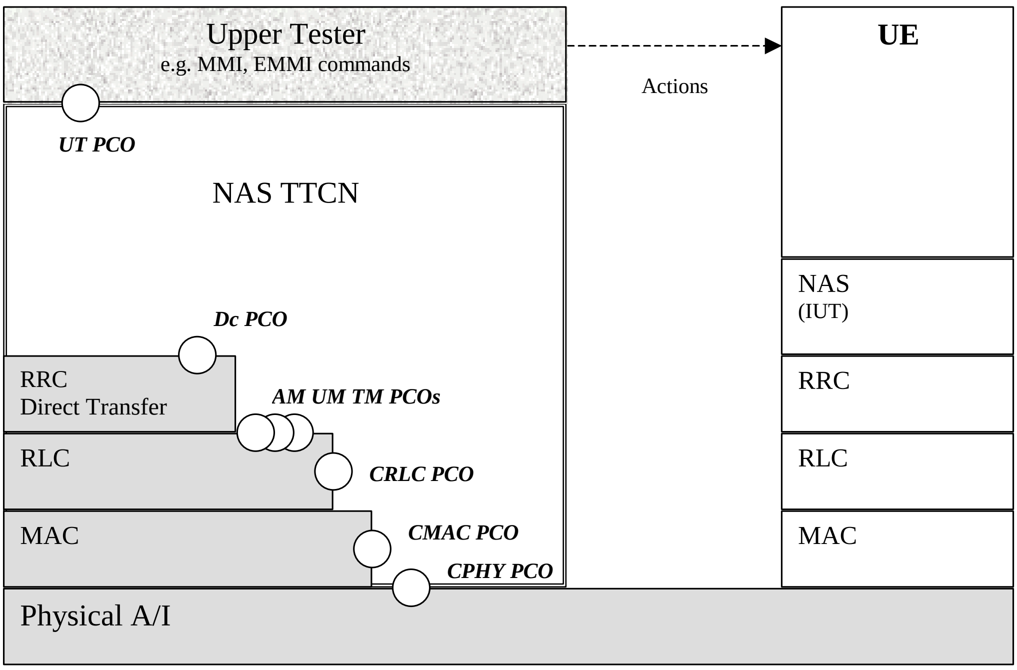

Figure 6.3.1: NAS testing architecture

The single layer distributed test method is used.

The Point of Control and Observation (PCO) are defined as the Dc (Dedicated control) SAP. The NAS test verdicts are assigned depending on the behaviours observed at the PCO.

The TTCN tester provides the NAS TTCN test cases and steps with a simple RRC direct transfer function which buffers the NAS PDU data, converts the data from the NAS TTCN table format into ASN.1, or in reverse way, and delivers all lower layer services of AM-SAP for RB3 and RB4.

The NAS TTCN test cases make also intensively use of the RRC TTCN test steps, in order to:

- Configure, initialize and control the L2 emulator;
- Initialize the UE for testing.

The RRC test steps, which are called by the NAS test cases or steps, interface with the RLC PCOs (UM, AM and TR), the control PCOs CRLC, CMAC and CPHY.

The General control (Gc) SAP and the Notification (Nt) SAP are not applied. Messages exchanged via these SAPs will be replaced with the corresponding RRC TTCN test steps.

The Ut PCO (so called logical interface [4]) is served as the interface to the UE EMMI to allow a remote control of operations, which have to be performed during execution of a test case such as to switch the UE on/off, initiate a call, etc.

6.3.2 Routing UL NAS massages in SS

The UL NAS messages are embedded in RRC messages INITIAL / UL DIRECT TRANSFER. In the UE test, the received UL NAS messages can either be routed to the Dc PCO and verified at the NAS message level, or routed to AM PCO and verified at the RRC message level.

1) RBid =3 at the SS side indicates that the UL NAS high priority messages to be routed to Dc PCO. RB3 applies to RRC_DataInd/Req.

2) RBid= -16 at the SS side indicates the received messages to be routed to RLC AM PCO. RB-16 applies to RLC_DataInd/Req.

The RB3 and RB-16 do not coexist. The TTCN writer uses the MAC and RLC reconfigurations to re-map the RB and the corresponding logical channels. If RB3 has been configured, but a test case needs to re-map the logical channel from RB3 to RB-16 the following way is to replace RB3 with RB-16.

- CMAC_CONFIG_REQ (reconfiguration, RB-16).

Re-mapping on RB-16 which appears in the transport channel and logical channel mapping list.

- CRLC_CONFIG_REQ (reconfiguration, RB-16).

RB-16 appears in the routing info, in order to replace the original mapping on RB3.

Mapping from RB-16 to RB3 is done in the reverse way.

6.4 RRC and RAB test method and architecture

6.4.1 Test configuration

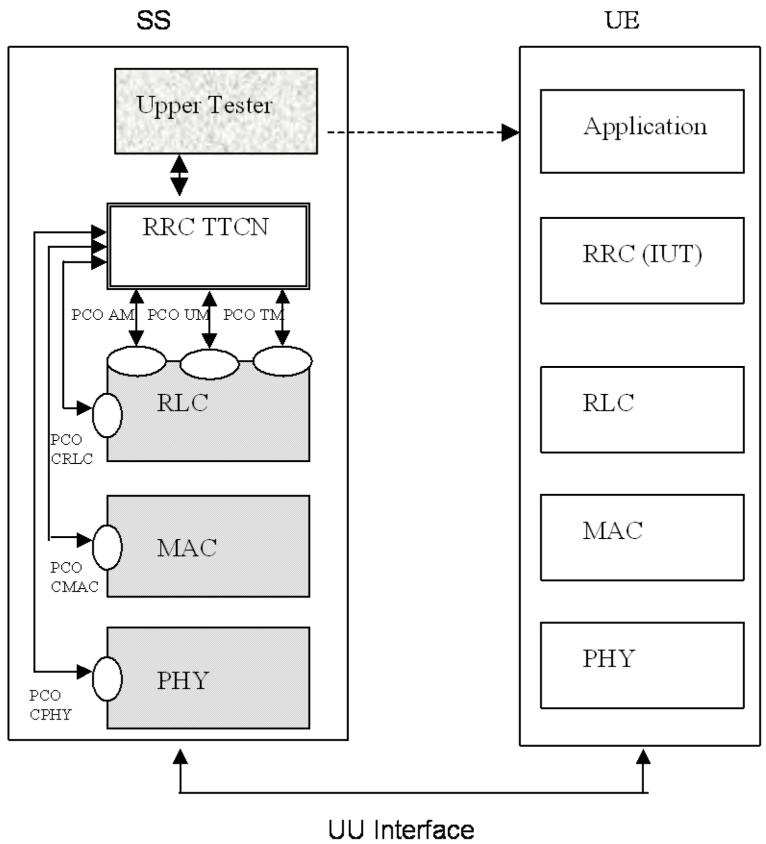

Figure 6.4.1: RRC testing architecture

The single layer distributed test method is used.

The PCOs are defined as the AM (Acknowledged Mode), UM (Unacknowledged Mode) and TM (Transparent Mode) SAPs. The RRC test verdicts are assigned depending on the behaviours observed at the PCO. The RRC TTCN interface also with the control PCOs CRLC, CMAC and CPHY, for the configuration, initialization and control of the System Simulator.

The RRC TTCN test cases also make use of the NAS TTCN test steps in order to:

- Bring UE to Idle state;
- Bring UE to state U10.

The NAS test steps, which are called by the RRC test cases or steps, interface with the Dc PCO.

The Ut PCO (so called logical interface [4]) is served as the interface to the UE EMMI to allow a remote control of operations, which have to be performed during execution of a test case such as to switch the UE on/off, initiate a call, etc.

According to 3GPP TS 25.331 [21], clause 12.1.1, the encoding of RRC PDUs is obtained by applying UNALIGNED PER to the abstract syntax value as specified in ITU-T Recommendation X.691 [28]. The two tables below show the declaration of the encoding rule and an example of the use in the definition of an RRC PDU.

Table 6.4.1.1: PER_Unaligned Encoding Rule

Encoding Rule Name	PER_Unaligned
Reference	ITU-T Recommendation X.691 [28]
Default	
Comments	Packet encoding rules (ITU-T Recommendation X.691 [28]) unaligned and with adapted padding

Table 6.4.1.2: Definition of the RRC ASN.1 DL_DCCH_Message type by reference

PDU Name	DL_DCCH_Message
PCO Type	DSAP
Type Reference	DL-DCCH-Message
Module Identifier	Class-definitions
Enc Rule	PER_Unaligned
Enc Variation	

6.4.2 RAB test method

6.4.2.1 Sending data on the same TTI

The RAB test requires a specific test method to send the test data on the same TTI. The TFC restriction method is used in this case. A specific TFC subset is allowed to ensure the test data are sent on different RBs on the same TTI. The downlink restriction can be used to ensure that the SS uses a specific TFC for transmission of data, by only allowing the "No data" TFC, and the "desired" TFC. It may also be necessary to include one or more "signalling only" TFCs to allow signalling to occur. The uplink restriction can be used to verify that the UE has used a specific TFC. Any data received by the SS using a forbidden TFCI shall be discarded.

6.4.2.2 Sending continuous data on consecutive TTIs

The RBS ATS is developed using the tabular TTCN notation. In order to test of multiple-RB combinations and simultaneous signalling, the SS shall be capable of sending continues test data in every TTI using the downlink transport format combination under test. A specific TSO is designed to request the SS sending continuous data. The information about the number of RLC SDUs and their sizes for each RAB will be provided to the system simulator through TSO.

6.5 RLC test method and architecture

6.5.1 Testing architecture

Figure 6.5.1 illustrates a typical realization of the RLC ATS.

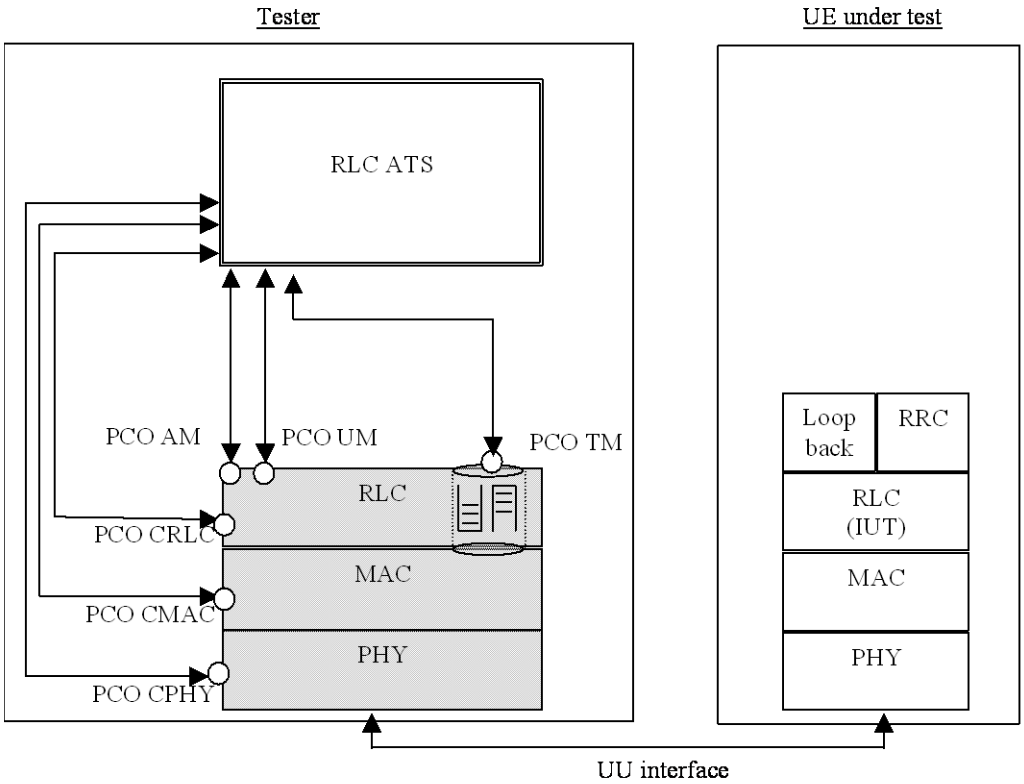

Figure 6.5.1: RLC ATS single party test method

The single party test method is used for RLC testing.

Separation of TTCN test cases from the configuration of the tester and initialization of the UE is achieved by using test steps. For each RLC test case, common test steps will be used to perform the configuration of the tester and the appropriate generic setup procedures as described in 3GPP TS 34.108 [3]. These test steps will make use of PCOs AM, UM, TM, CRLC, CMAC, and CPHY.

Three PCOs are provided at the top of the RLC emulation in the tester, one corresponding to each of the available RLC modes: acknowledged, unacknowledged, and transparent. Routing information for different radio bearers used at these PCOs will be provided in ASP parameters.

The queues shown in the RLC emulation in Figure 6.5.1 indicate that normal RLC transmit and receive buffering will be used to isolate the TTCN test suite from the real time issues involved if messages are sent directly to the MAC layer.

The RLC TTCN test cases make also use of the NAS TTCN test steps in order to bring UE to Idle state. The NAS test steps, which are called by the RLC test cases or steps, interface with the Dc PCO.

6.5.2 Test method

Figure 6.5.2.1 illustrates an example configuration for downlink UM testing. Uplink and AM tests will use similar configurations. A Tr-Entity is established on the tester side using a CRLC-CONFIG-REQ. A corresponding UM-Entity is created in the UE by sending a Radio Bearer Setup PDU. RLC PDUs are specified in the TTCN test suite, and sent to TM PCO. These PDUs shall be carefully designed so that the Tr-Entity will not perform any segmentation. The system simulator is responsible for direct encoding the abstract representation of transmitted PDUs into a bitstring to be sent by the Transmitting Tr entity. Direct encoding is performed by concatenation of all of the present fields in the abstract representation. It is the TTCN author's responsibility to ensure that the PDU is valid. To test reassembly in the UE side, the segmentation must be explicitly coded in TTCN. To test various aspects of the RLC header (e.g. sequence numbering, length indications, etc.), the RLC header must be explicitly coded in TTCN. Ciphering will not be tested using this approach, and will be disabled in the UE UM Entity.

The segmentation block in the SS Tr-entity is shown in grey to indicate that the functionality is present in the SS, but the test cases shall be carefully designed to ensure that segmentation is not used in the SS Tr-entity for RLC testing.

The deciphering block in the UE UM-entity is shown in grey to indicate that the functionality may be present in the UE, but shall be disabled for RLC testing.

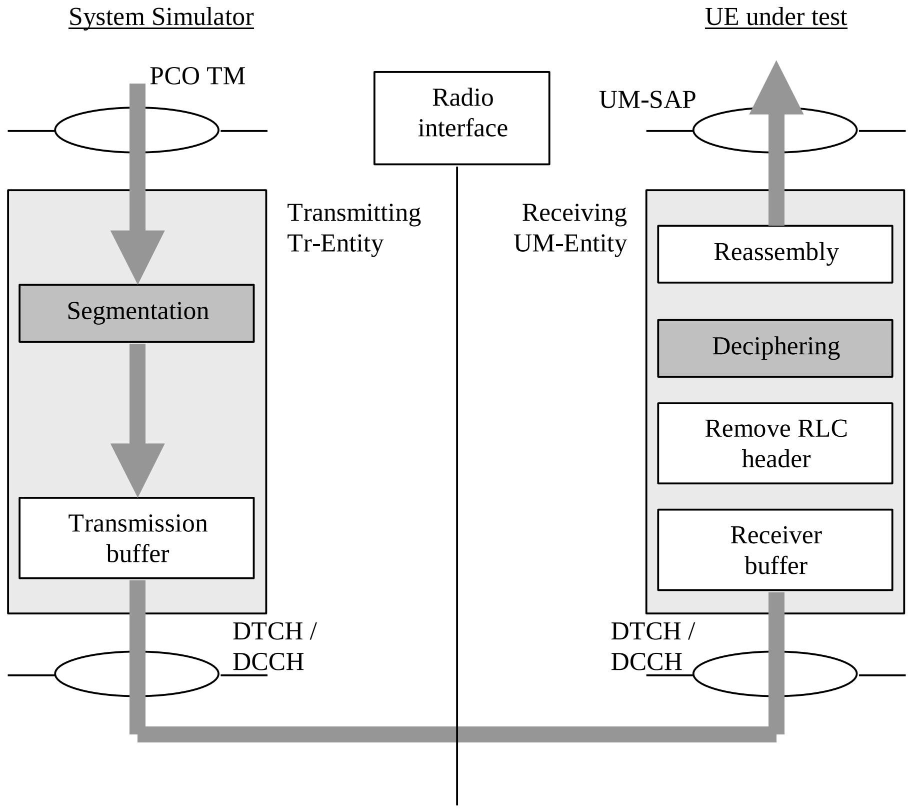

Figure 6.5.2.1: Example configuration for downlink RLC UM testing

The TFCS used for RLC testing must guarantee that Tr mode segmentation will not occur. This is to prevent transmission of more than one Tr PDU per TTI.

All RLC tests that require uplink data will make use of the UE test loop mode 1 defined in 3GPP TS 34.109 [4]. The UE test loop mode 1 function provides all Upper Tester (UT) functionality required, so an UT PCO is not required for RLC tests. Test Loop mode 1 is only available in the user plane, so all RLC tests will be performed in the user plane, using DTCH and DCCH logical channels mapped to DCH transport channels.

Ciphering will be disabled for all RLC test cases. Ciphering will be tested implicitly by other test cases that have ciphering enabled.

Figure 6.5.2.2 illustrates an example configuration for uplink UM testing, and reception of an example UMD PDU. Figure 6.5.2.3 illustrates an example configuration for uplink AM testing, reception of an example STATUS_PDU, and the use of the superFields and superFieldsRec fields.

The ciphering and deciphering blocks in the UE RLC entities are shown in grey to indicate that the functionality may be present in the UE, but shall be disabled for RLC testing.

The reassembly blocks in the SS Tr-entities are shown in grey to indicate that the functionality is present in the SS, but the test cases shall be carefully designed to ensure that reassembly is not used in the SS Tr-entity for RLC testing.

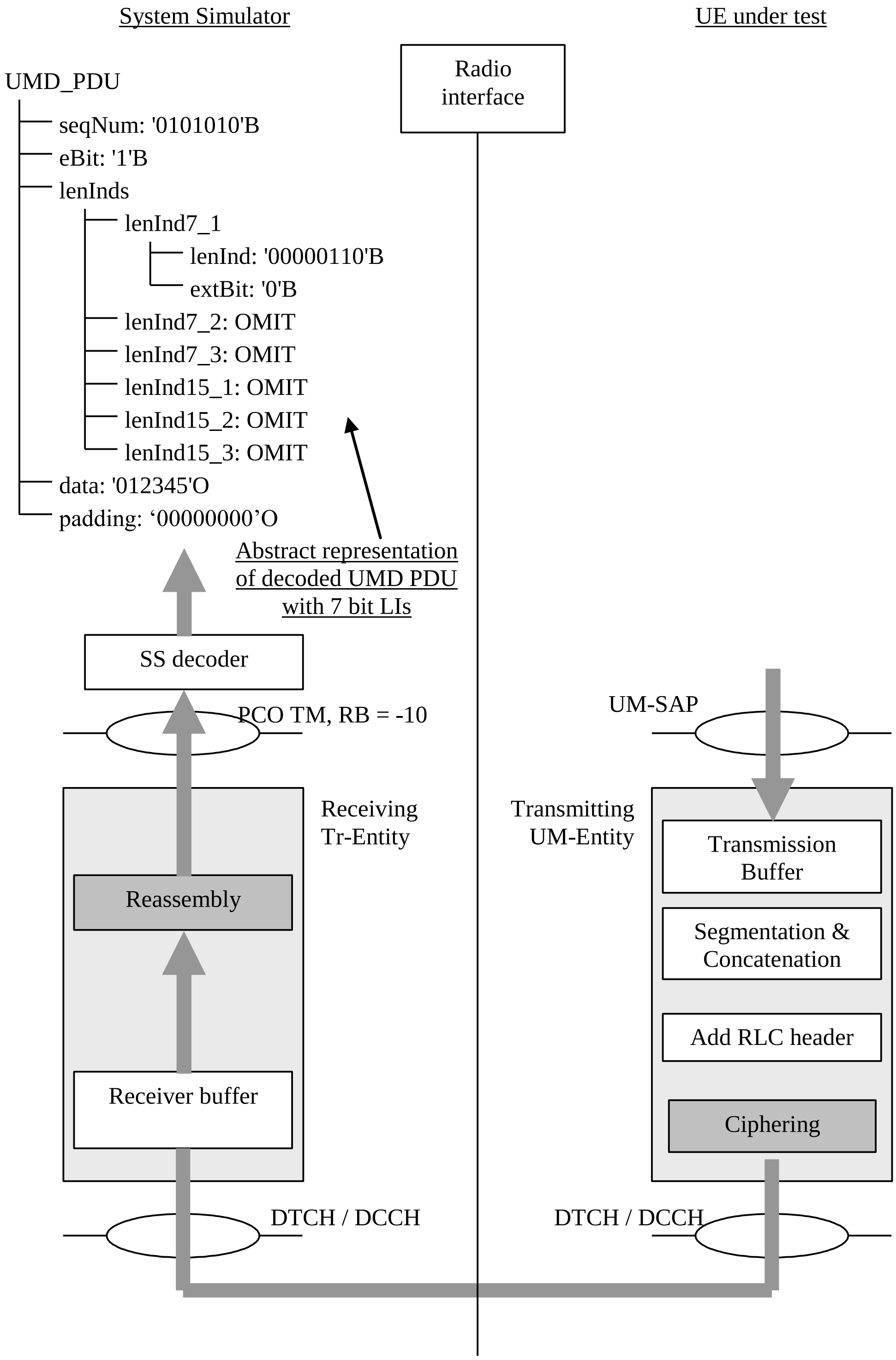

Figure 6.5.2.2: Example configuration for uplink RLC UM testing

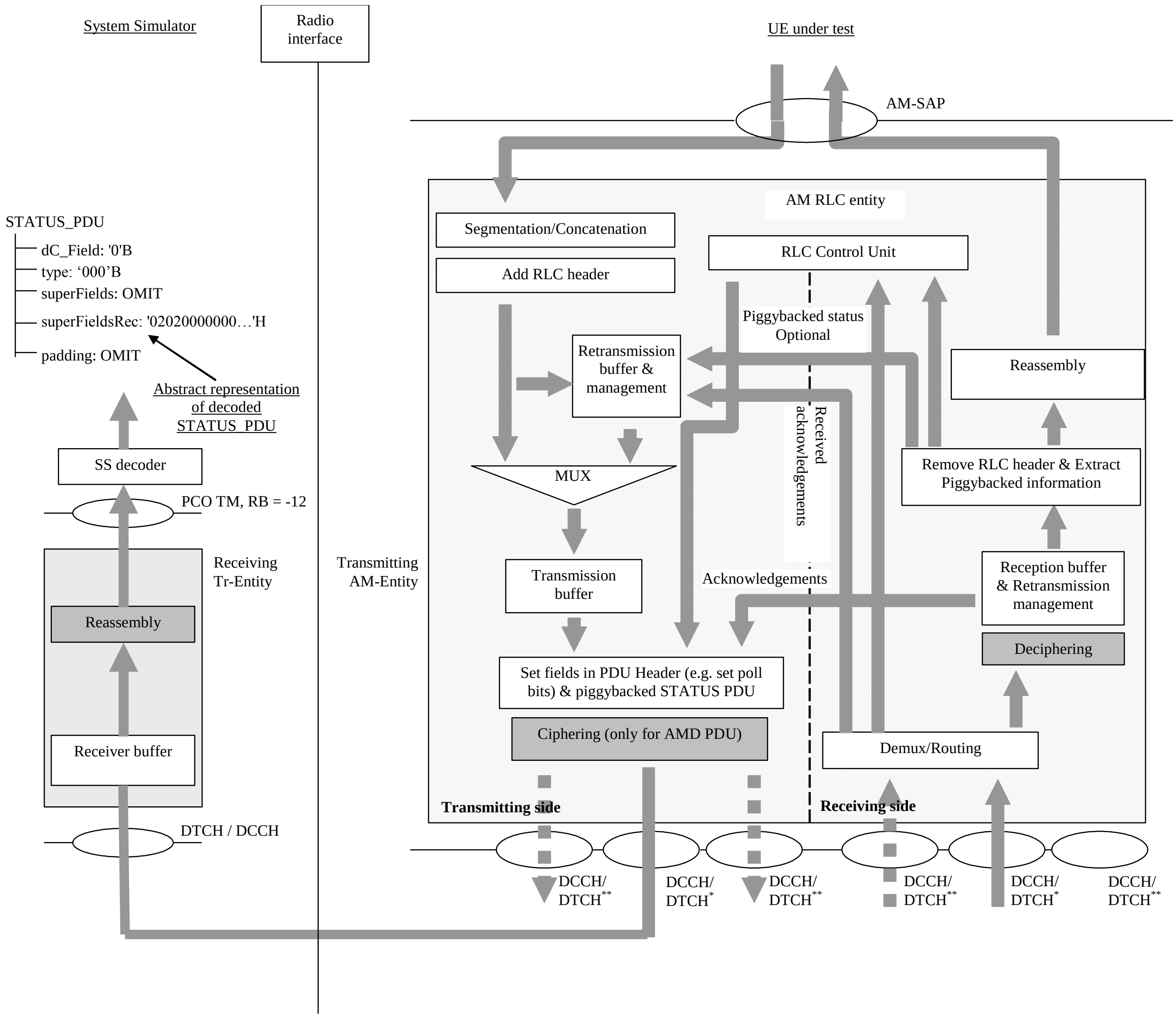

Figure 6.5.2.3: Example configuration for uplink RLC AM testing

Uplink data uses a similar approach to downlink, but the received data must be decoded in the correct way, depending on the current UE configuration. In the example in Figure 6.5.2.2, the SS must decode the data received at the TM PCO into an abstract representation of the structure defined in the TTCN for a UMD_PDU, using 7 bit length indicators. This structure is then compared with an abstract representation of the expected data to see if the receive event is successful. Refer to TR 101 666 [27], clause B.5.2.10 for more information.

For RLC testing, the following RB Ids are used within the system simulator, depending on the RLC mode, and length indicator size being simulated.

RLC mode	LI Size	RB Id
UM	7	-10
UM	15	-11
AM	7	-12
AM	15	-13
UM/AM (Rel-7 or later)	7/15	-25

The SS decoder can use the RB Id to determine which abstract structure to create during the decode process. The SS decoder must also understand the RLC peer-to-peer protocol enough to determine which fields are present.

EXAMPLE 1: The semantics of LI extension bits must be known to determine how many LIs are present.

EXAMPLE 2: The contents of the LIs must be interpreted to determine how many octets of data, and how many octets of padding are present.

The SUFI list and any subsequent padding in a received STATUS_PDU or PiggyBackedSTATUS_PDU shall be decoded as a HEXSTRING, and put in the 'superFieldsRec' field of the abstract representation of the STATUS PDU. The "superFields" and "padding" fields shall be omitted for received STATUS PDUs. This is illustrated in Figure 6.5.2.3.

As in downlink testing, the TFCS must be defined to guarantee that the Tr entity does not perform any reassembly. This is to prevent reception of more than one Tr PDU per TTI so that the TTCN does not need to manage possible interleaving problems due to multiple PDUs received at the same time (i.e. they may be placed on the PCO queue in any order).

6.5.2.1 Handling SUFIs in TTCN

The SUFIs are a very flexible set of information elements contained in the RLC protocol. The order of the fields varies, the existence of a field may depend upon the presence of another one. A field can be present multiple times. For matching received SUFIs, it is convenient to define the SUFIs as a HEXSTRING which is treated by a TSO **o_SUFI_Handler**.

Depending upon which SUFIs and which aspects of SUFIs are to be checked, the TSO is provided with the information (**SUFI_Params**) on what checking it is expected to perform. If the check is successful the result TRUE will be returned, otherwise FALSE. Additionally the TSO will return an object which is structured as the SUFIs used in transmission (SuperFields). This will allow to make use of information received and needed to establish SUFIs to be transmitted.

The input parameters to **o_SUFI_Handler** to be used as checking criteria are collected in tabular data structure **SUFI_Params** which is filled each time before the TSO is called. These data are to allow the checking of the presence and the value of SUFIs. All entries shall be set to well-defined values if these are to be used by **o_SUFI_Handler**. As a principle values specifically set are used as criteria for checking, values omitted are used as AnyOrOmit values. The resulting SUFI list is established by **o_SUFI_Handler** and can be retrieved in the data structure returned by the TSO. Details have to be defined in the TSO itself.

Tasks **o_SUFI_Handler** has to perform:

- Transfer the SUFIs received into the structure of SuperFields; this is the SUFI list structure existing today.
- If multiple occurrences of SUFI are found then use the **last** one to fill the SuperFields structure. The LIST SUFI is an exception: multiple SUFIs may be used to transfer the complete LIST information.
- Check for all parameters in SUFI_Params set to a specific expected value that one of the SUFIs using this value is present and that the value received matches the specific expected value.
- Check that if SUFIs are received for which an expected value of Any is specified, the SUFI is consistent if that SUFI is received.
- Check that if SUFIs are received for the presence of which no entry is specified in SUFI_Params, the SUFI is consistent.
- Check that sequence numbers are in the range between LB and UB if specific values are set.

Entries in **SUFI_Params**.

Element Name	Significance	Comment
LB	Lower bound of sequence number range	Lowest SN for checking SNs acknowledged
UB	Upper bound of sequence number range	Highest SN for checking SNs acknowledged
WSN_presence	Window Size SUFI present	To check the presence of the Window Size SUFI
MRW_presence	Move Receive Window SUFI present	To check the presence of the MRW SUFI
Nack1	SN of 1st PDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged
Nack2	SN of 2nd PDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged
Nack3	SN of 3rd PDU negatively acknowledged	For the NackList to check SN to be negatively acknowledged

More entries may be required in the future if specific SUFI field values are to be checked. The concept allows to add more fields easily.

6.5.2.2 Void

6.6 SMS test method and architecture

6.6.1 SMS CS test method and architecture

The test method used for SMS CS tests is the same as the NAS test method, see clause 6.3, and the same ASPs, see clause 7.1.2.

6.6.2 SMS PS test method and architecture

The test method used for SMS PS tests is the same as the NAS test method, see clause 6.3, and the same ASPs, see clause 7.1.2.

6.6.3 SMS Cell broadcasting test method and architecture

The test method used for SMS CB tests is the same as the BMC test method, see clause 6.8, and the same ASPs, see clause 7.3.1.1.

6.7 MAC test method and architecture

6.7.1 Testing architecture

Figure 6.7.1 illustrates a typical realization of the MAC ATS.

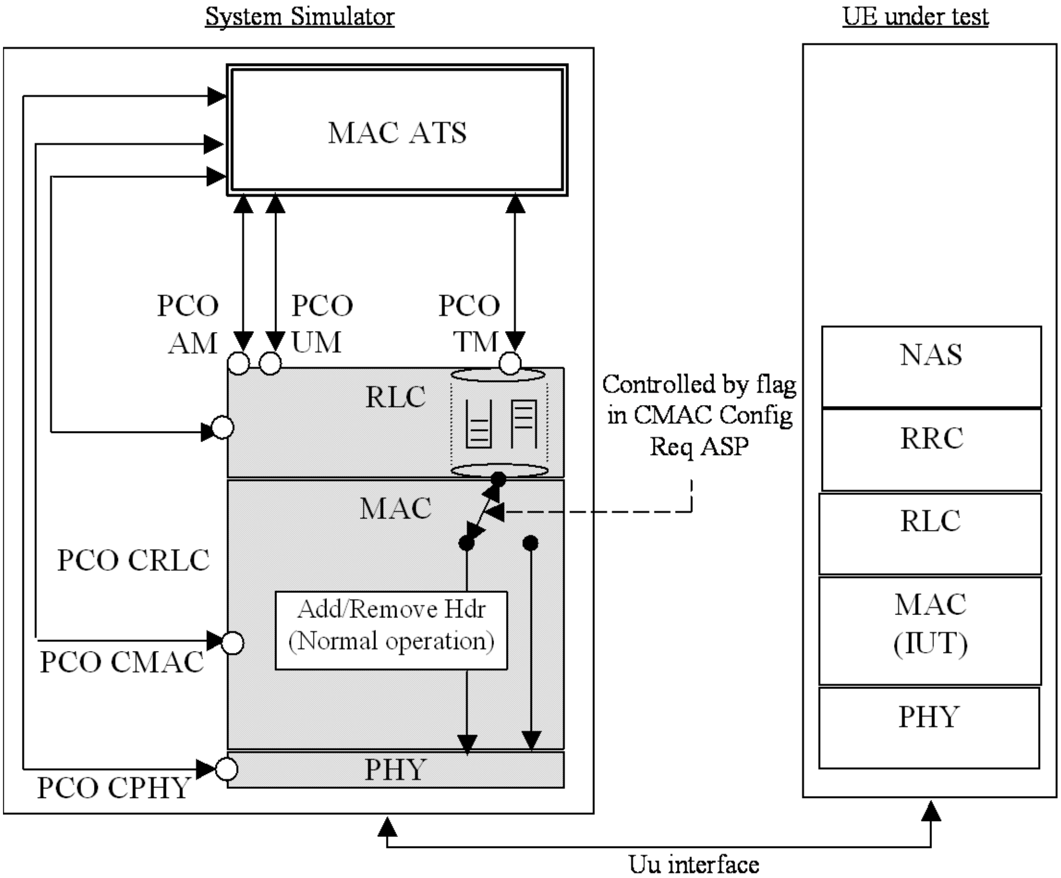

Figure 6.7.1: MAC ATS single party test method

6.7.2 Test method

The single party test method is used for MAC testing.

Separation of TTCN test cases from the configuration of the tester and initialization of the UE is achieved by using test steps. For each MAC test case, common test steps will be used to perform the configuration of the tester and the appropriate generic setup procedures as described in 3GPP TS 34.108 [3]. These test steps will make use of PCOs AM, UM, TM, CRLC, CMAC, and CPHY.

Three PCOs are provided at the top of the RLC emulation in the tester, one corresponding to each of the available RLC modes: acknowledged, unacknowledged, and transparent. Routing information for different radio bearers used at these PCOs will be provided in ASP parameters.

The queues shown in the RLC emulation in Figure 6.5.2.2 indicate that normal RLC transmit and receive buffering will be used to isolate the TTCN test suite from the real time issues involved if messages are sent directly to the MAC layer.

A flag is required within the CMAC Config Req to indicate that the SS MAC emulation must not add or remove any MAC header information, even if header fields should be present according to the configured channels. This flag shall allow control of the MAC header on a per logical channel basis. For example, it shall be possible to configure 4 DCCHs and a DTCH mapped to a DCH, such that the MAC will add / remove header information for the DCCHs, but not for the DTCH.

The MAC TTCN test cases make also use of the NAS TTCN test steps in order to bring UE to Idle state. The NAS test steps, which are called by the MAC test cases or steps, interface with the Dc PCO.

For MAC testing, the following RB Ids are used for the high priority NAS RB within the system simulator depending on the MAC configuration being simulated.

RB Id	Simulated configuration
-14	DCCH mapped to FACH
-15	DCCH mapped to DCH
-18	CCCH mapped to FACH

The SS decoder can use the RB Id to determine which MAC header fields are present, and create the appropriate abstract structure during the decode process. The SS decoder must understand enough of the MAC peer-to-peer protocol to determine which fields are present.

For example, the semantics of the UE Id Type field must be known to determine how many bits should be present in the UE Id field.

The MAC PDUs for MAC testing will always contain an AM RLC PDU (data or status) using 7 bit length indicators. See the RLC test method for further information on the SS decoder requirements for RLC PDUs.

Ciphering shall be disabled for all MAC tests.

6.7.2.1 Abnormal decoding situations

If the SS decoder cannot convert the received data into the supported structure, the SS shall terminate the test case immediately and indicate that a test case error has occurred.

6.7.2.2 MAC_es/e test method (Rel-6 or later)

MAC test method for MAC_es/e is depictured in the following figure. In the UE side the RLC entity is AM mode, in the SS the mode of RLC in downlink direction is TM, the AM mode functions are implemented in TTCN. In the uplink direction, the mapping between RB identity and logical channel identity is configured in the RLC entity, the RLC entity passes any data block received on the logical channel to the RB identified by tsc_RB_DTCH_E_DCH_MAC(value is -20), tsc_RB_DTCH_E_DCH_MAC1(-21), or tsc_RB_DTCH_E_DCH_MAC2(-22). Whenever a RLC pdu received through one of the specified RB identifiers, the TTCN shall generate a RLC ack for it and send it on the downlink direction.

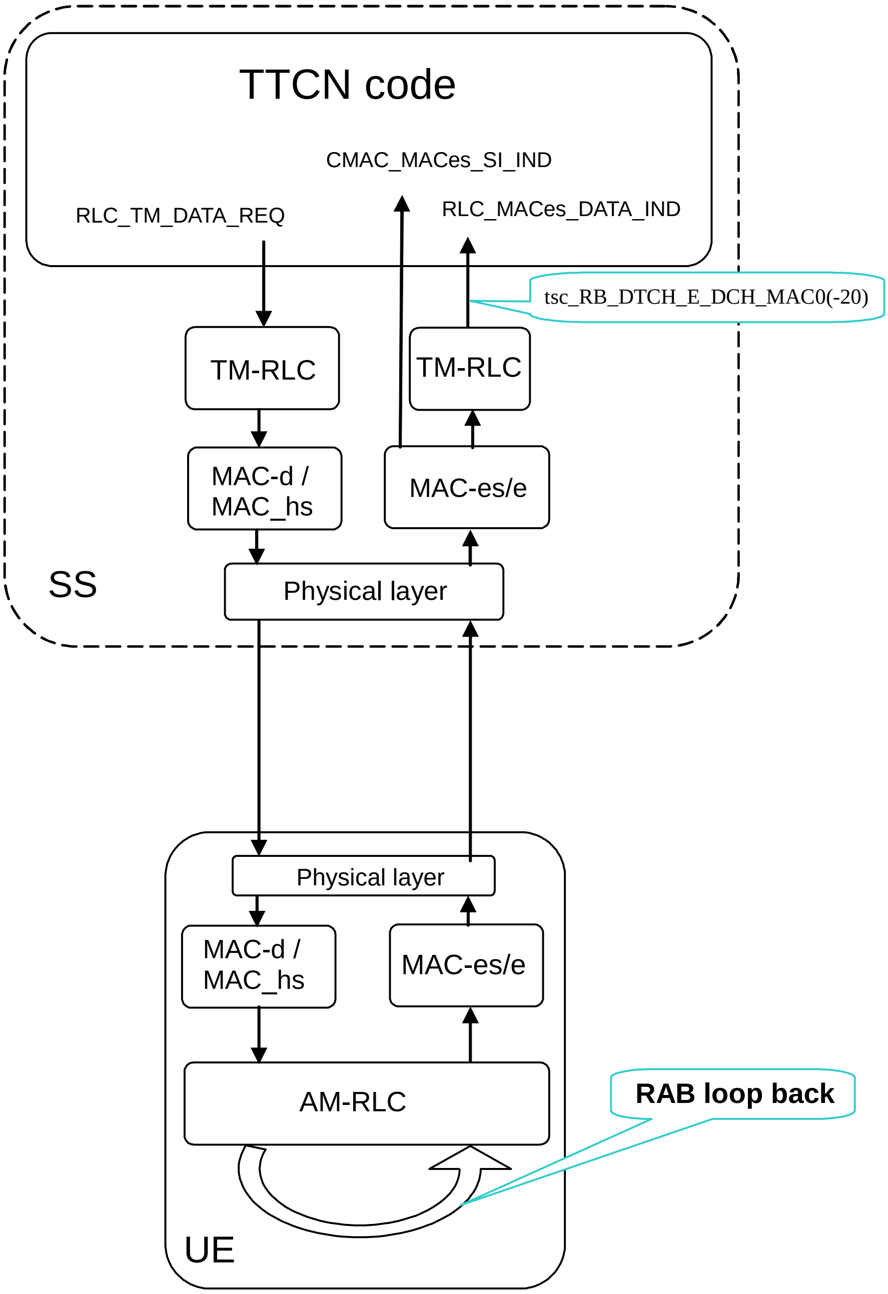

Figure 6.7.2.2: MAC_es/e testing model

6.7.2.3 MAC_is/i test method (Rel-8 or later)

MAC test method for MAC is/i is depictured in the following figure. In the UE side the RLC entity is AM or UM mode, in the SS the mode of RLC in downlink direction is TM, the AM or UM mode functions are implemented in TTCN. In the uplink direction, the mapping between RB identity and logical channel identity is configured in the RLC entity, the RLC entity passes any data block received on the logical channel to the RB identified by tsc_RB_DTCH_E_DCH_MAC(value is -20), tsc_RB_DTCH_E_DCH_MAC1(-21), or tsc_RB_DTCH_E_DCH_MAC2(-22). Whenever a RLC pdu received through one of the specified RB identifiers, the TTCN shall generate a RLC ack for it and send it on the downlink direction.

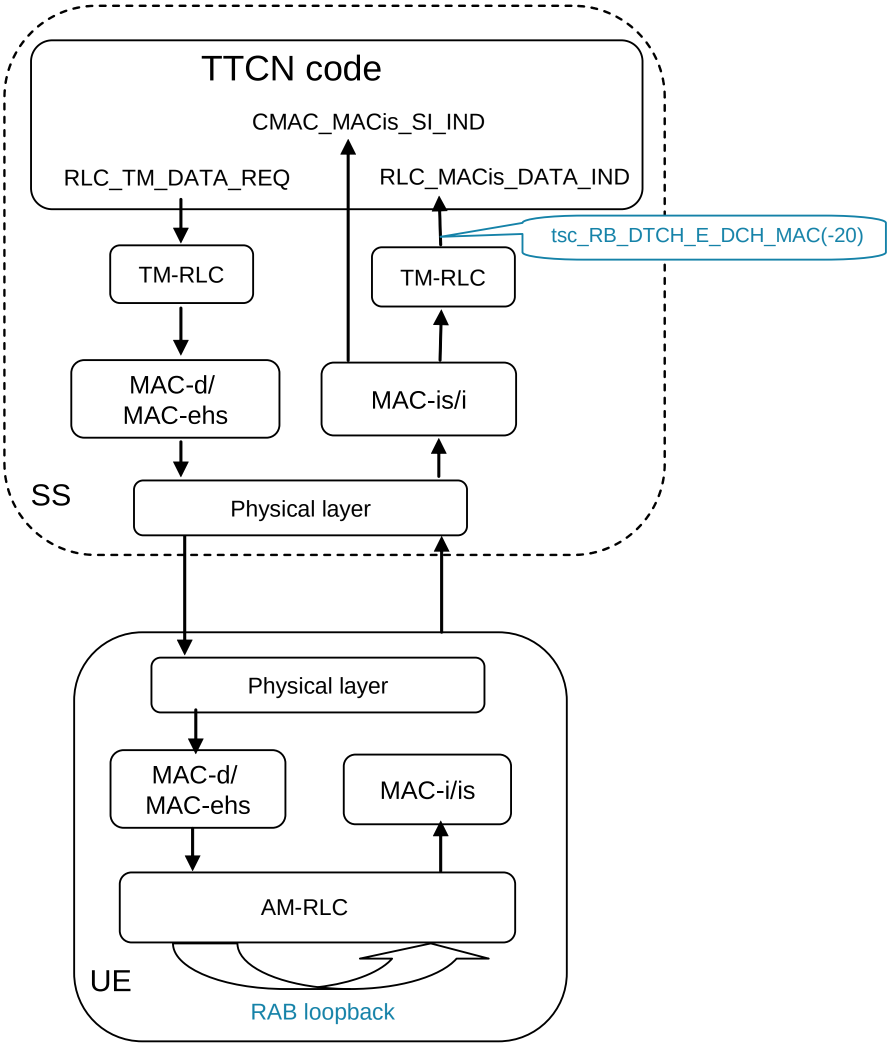

Figure 6.7.2.3: MAC_is/i testing model

6.8 BMC test method and architecture

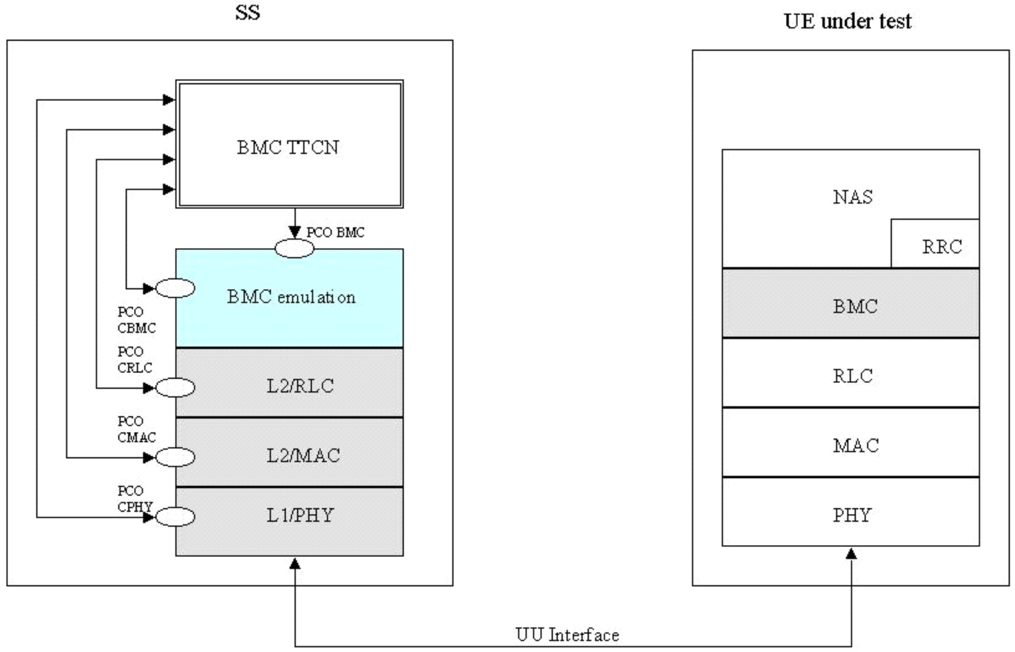

Figure 6.8: BMC testing architecture single party method

6.8.1 BMC test architecture

The single party test method is used for BMC testing, i.e. it does not exist an Upper Tester. BMC emulation is used as shown in Figure 6.8. The BMC emulation makes use of two PCOs. The CBMC PCO is defined, to pass configuration information for a BMC entity. The BMC PCO is defined for BMC message data transfer.

Separation of TTCN test cases from the configuration of the tester and initialization of the UE is achieved by using test steps. For BMC test cases, common test steps and newly defined test steps for BMC configuration will be used to perform the configuration of the tester and on UE side. These test steps make use of PCOs, CRLC, CMAC, and CPHY.

The UE shall be able to activate and deactivate a certain CB MessageID according CB data to be sent while testing.

BMC messages are sent in BMC message blocks on the CTCH. For sending BMC messages (BMC Scheduling Message (Level 2, DRX) and BMC CBS Message) a configuration in downlink direction shall be performed to map the CTCH (RB#30) onto the FACH - S-CCPCH.

6.8.2 BMC test method

For BMC testing, only PS Cell Broadcast Service as distributed BMC service is applied. CBS Messages and BMC Schedule Messages are only sent in downlink direction. No uplink is used for BMC testing. The BMC test data with necessary CBS information shall be given by PIXIT parameter with a description of the indication on the display.

There are two level of BMC scheduling, Level 1 for CTCH configuration and Level 2 for DRX. The BMC scheduling information is conveyed to both BMC and MAC layer.

Level 1 scheduling is used to configure the CTCH on the S-CCPCH. For BMC testing (FDD), the Level 1 scheduling parameter M_{TTI} contains one radio frame in the TTI of the FACH used for CTCH. Therefore, only Level 1 scheduling information N (period of CTCH allocation on S-CCPCH) and K (CBS frame offset to synchronize to the SFN cycle (0 to 4 095 frames per cycle)) are necessary to configure the CTCH onto the S-CCPCH.

The Level 1 scheduling is done in the SS MAC layer, therefore this information is given by using the primitive "CMAC_BMCscheduling_REQ" to inform the MAC on SS side about K and N. The Level 1 scheduling information, K and N, is broadcast as system information in SIB 5 and SIB 6. After having performed the CTCH configuration as Level 1 scheduling, the SS is configured to send BMC messages and the UE has to listen to each CTCH for a BMC message.

Segmentation of BMC messages is performed by RLC in UM according to the payload size on RB#30 (152 bits).

If only one CB data as BMC CBS message is sent and repeated for a BMC test case, Level 1 scheduling is adequate, i.e. no BMC Scheduling Message (Level 2) is needed. Then, no level 2 scheduling information are included in the "CMAC_BMCscheduling_REQ" primitive. If more then one BMC CBS message are transmitted and repeated or if BMC Scheduling Messages are transmitted, BMC scheduling Level 2 message shall be performed.Level 2 scheduling is used to predict the sent event of the next BMC message blocks and the BS index contents.

BMC scheduling Level 2 predicts exactly, which information is contained on a certain CTCH block set with an aligned Block Set index number and how many spare CTCH blocks are given as offset, before the next BMC message block will be sent. Figure 6.8.2.1 shows an example, how the messages flow shall be done for BMC scheduling Level 2.

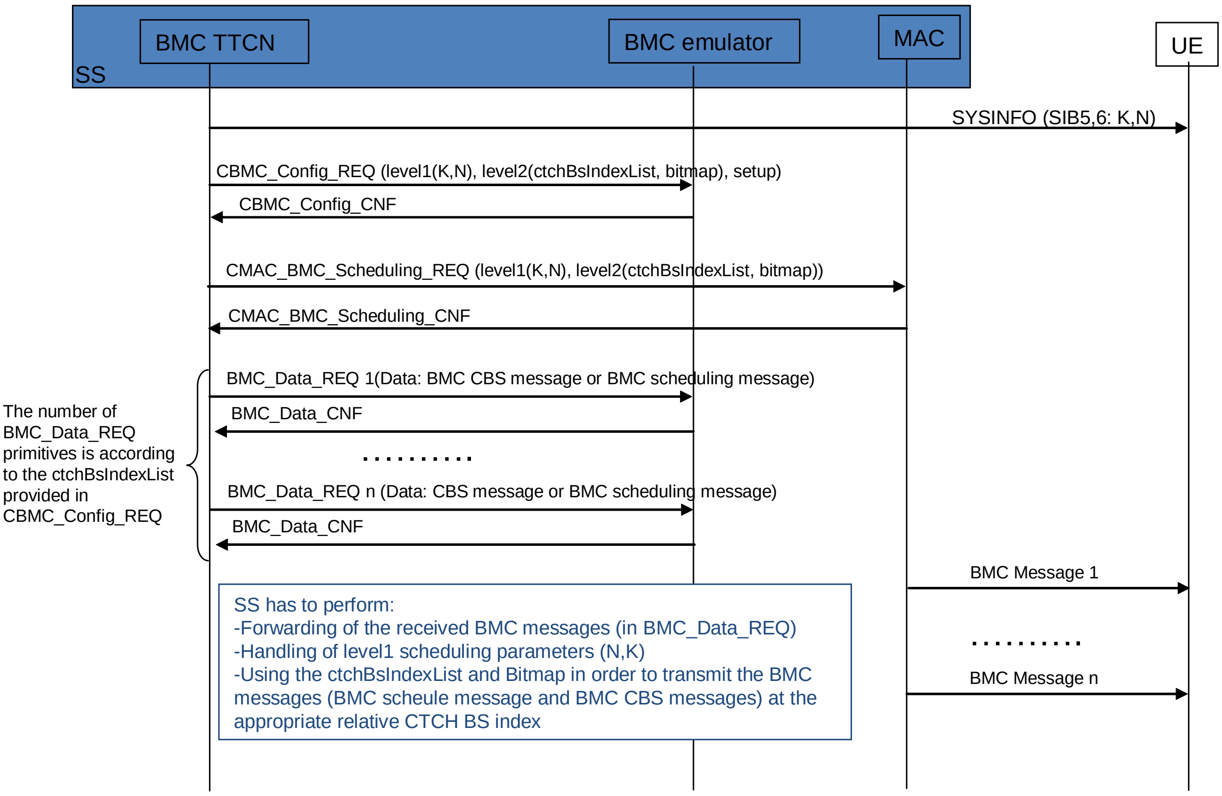

Figure 6.8.2.1: BMC Scheduling

The BMC test method makes use of the primitive: "BMC_Data_REQ" to transmit the BMC Messages to RLC. If BMC Scheduling Level 2 is used, it includes BMC CBS PDUs or BMC Schedule PDUs, created by the BMC TTCN and forwarded to the BMC emulation. The transmission of BMC PDU is confirmed through the primitive BMC_Data_CNF.

According to the K and N value, the MAC layer at SS side determines the CTCH blocks for the BMC use. The CTCH blocks are indexed (i = 1 ... 256).

If BMC DRX is needed, the BMC scheduling Level 2 information indicates the occupancy/spare of the available CTCH blocks by using a DRX_Selection_Bitmap and the list of CTCH BS index offsets. In the bitmap each bit, set to '1', corresponds to an actually available CTCH block belonging to the DRX period for the SS transmission. The all consecutive occupied CTCH blocks constitutes a BMC DRX period, whilst the consecutive spared blocks indicate the DRX offset as spare CTCH slot.Following the DRX_Selection_Bitmap, the segmented BMC messages are transmitted. Each BMC PDU is transmitted in a BMC_Data_REQ primitive in the order of expected transmission. The list of CTCH BS index offset indicating the offset relative to the previous message transmitted is included in the CMAC_BMC_Scheduling_REQ. If any, the retransmission is handled by the BMC TTCN.

The figure 6.8.2.2 shows an example of DRX level2 scheduling when sending 4 BMC messages (either BMC schedule or CBS BMC data messages) with the CTCH BS Index Offset List={0,6,1,11} and the Bitmap=‘107002’O.

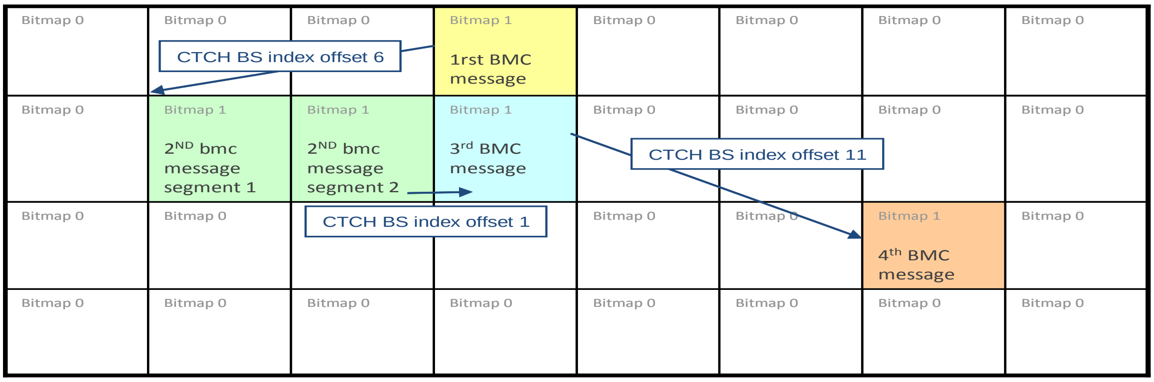

Figure 6.8.2.2: Example of BMC DRX scheduling: CTCH BS index offset list and Bitmap handling

6.9 PDCP test

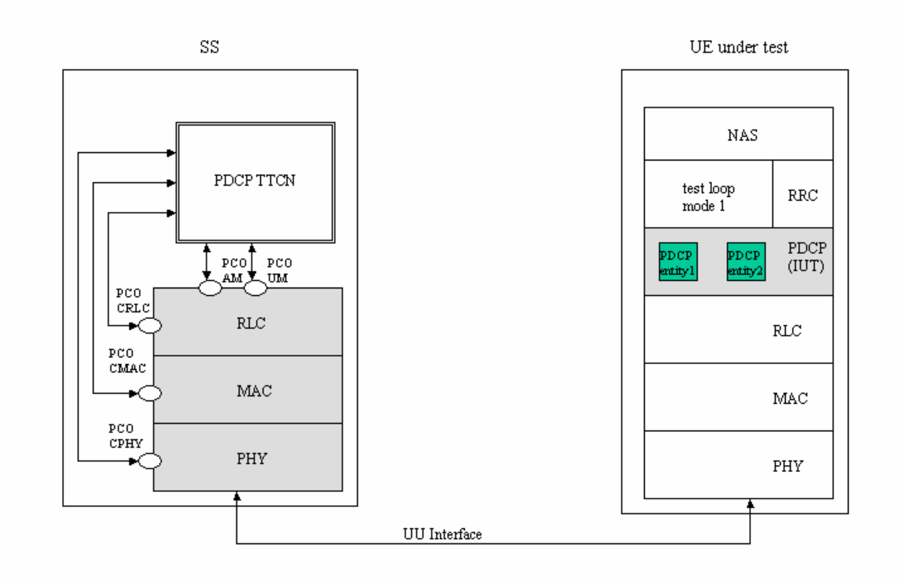

Figure 6.9: PDCP testing architecture 1: single party test method, with test loop mode 1

6.9.1 PDCP test architecture

The single party test method is used for PDCP testing. All PDCP tests that require uplink data will make use of the UE test loop mode 1 defined in 3GPP TS 34.109 [4]. Test Loop mode 1 is only available in the user plane, so all PDCP tests will be performed in the user plane, using the same logical channels mapped to transport channels as defined in RLC test cases, except for test case, clause 7.3.2.2.4, where a configuration of combined radio bearers used only for this test case is defined.

Separation of TTCN test cases from the configuration of the tester and initialization of the UE is achieved by using test steps. For PDCP test cases, common test steps and newly defined test steps for PDCP configuration will be used to perform the configuration of the tester and the appropriate generic setup procedures as described in 3GPP TS 34.108 [3] and in clause 7.3 of 3GPP TS 34.123-1 [1]. These test steps will make use of PCOs RLC AM, RLC UM, CRLC, CMAC, and CPHY.

The PDCP TTCN test cases make also use of the NAS TTCN test steps in order to setup a PS session.

For PDCP testing, the IP Header Compression protocol as described in RFC 2507 [30] is used as optimization method. The IP header compression and decompression mechanisms as described in RFC 2507 [30] is not part of PDCP TTCN. PDCP testing make use of uncompressed, compressed and decompressed TCP/IP header packets of a certain packet stream and uncompressed, compressed and decompressed UDP/IP header packets of a certain generation. This parameters are given as test parameter (PIXIT information).

PDCP testing includes transmission/reception of compressed/decompressed IP header packets, PDCP sequence numbering while lossless SRNS relocation and PID assignment rules as well as PDCP configuration tests as described in 3GPP TS 25.323 [19]. It does not test optimization specific protocol behaviour as error recovery and packet reordering as described in RFC 2507 [30].

6.9.2 PDCP test method

For PDCP testing, the RB test mode is used with test loop mode 1. After establishing a PS session with RB in RLC UM or/and AM, the UE is configured to support a negotiated PDCP configuration. UDP/IP header packets are used as Non-TCP/IP header packets as PDCP test data.

There are different input parameter as PIXIT values necessary for PDCP testing.

For TCP/IP header packets, uncompressed TCP/IP header packets shall be defined as PIXIT input parameter. In addition, there are the corresponding RFC 2507 [30] FULL_HEADER packet, COMPRESSED_TCP packet and COMPRESSED_TCP_NONDELTA packet given for each TCP/IP header packet as PIXIT information.

For UDP/IP header packets, uncompressed UDP/IP header packets shall be defined as PIXIT input parameter. In addition, there are the corresponding RFC 2507 [30] FULL_HEADER packet and COMPRESSED_NON_TCP packet given for each UDP/IP header packet as PIXIT information.

To check the use of certain PID values assigned to IP compressed header types, a given IP header packet (PIXIT) will be sent to the UE. The UE shall return a appropriate valid IP header packet type, which corresponds to the previous sent IP header packet. The usage of valid compressed/uncompressed IP header packets shall be checked by comparing the given PIXIT IP header packet types for each IP header packet previously sent.

The IP header packet order as described in RFC 2507 [30] shall be applied within a test case.

If for example an TCP/IP header packet of type "COMPRESSED_TCP" shall be sent, the TTCN uses the given TCP/IP header packet (PIXIT) for transmission to the UE. The UE shall decompress the received packets appropriate, afterwards it will be returned by the loop back entity and it shall be sent by applying IP header compression rules as described in RFC 2507 [30] and as configured. Then, the SS receives returned IP header packets and compares it with all valid IP header packets given as PIXIT parameter corresponding to the previously sent IP header packet. It is checked, whether or not the IP header packet with assigned PID is valid and a configured PDCP PDU where used for transmission. In this way, it is checked, that the UE performs IP header compression as configured and is able to assign the correct PID values.

6.9.2.1 CS voice over HSPA

For PDCP CS voice over HSPA tests, the RB test mode used is test loop mode 1 with loopback of PDCP SDUs (as per 3GPP TS 34.109 [4], clause 5.3.2.6.1). The CS domain voice RAB is associated with one RB and one PDCP entity. The two RLC entities (DL/UL) are configured in UM with SN_delivery mode. The PDCP entity serving CS service does not use header compression, therefore no ROHC is configured.

6.9.2.2 Network initiated secondary PDP context

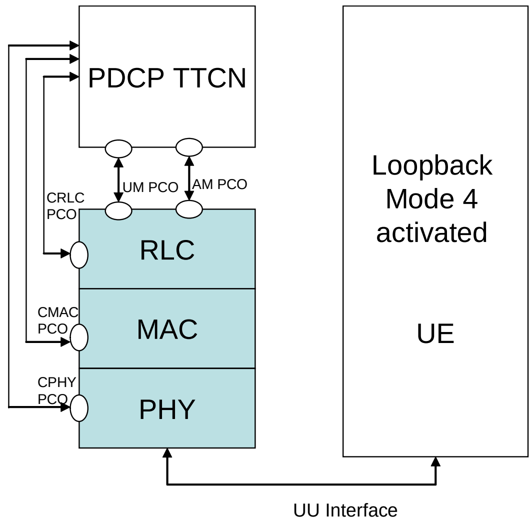

Figure 6.9.2.2: Network initiated secondary PDP testing architecture

For the network initiated secondary PDP context tests using data loopback, the UE test loop mode 4 is applied with loopback of IP PDUs (as per 3GPP TS 34.109 [4], clause 5.3.2.8.1). No header compression is tested, therefore no ROHC is configured.

6.10 Multi-RAT Handover Test Model

6.10.1 Overview

The test model is shown in Figure 6.10.2.9.6. The SS in the model consists of UTRAN emulation part and GERAN emulation part, GERAN emulation part includes protocol emulation modules for GSM CS services and protocol emulation modules for GPRS service. Protocol stack L1 (GERAN), L2 is for GSM CS service function emulation, protocol stack L1, RLC/MAC, LLC, SNDCP is for GPRS service function emulation. SNDCP emulation model and relevant PCO's can be removed if "traffic channel gets through" is not tested.

L1 (GERAN) provides necessary physical layer functionality for both GSM and GPRS. A control PCO and a set of ASP's are defined for configuring and controlling its protocol behaviour required in the test cases. L1 (GERAN) provides services to L2 and RLC/MAC emulation modules, the interfaces between them are not specified in this test model, it is implementation dependent and shall follow the relevant GSM and GPRS specifications.

L2 emulates necessary GSM L2 protocol functionality used in testing. A data PCO and a set of ASP's are defined for this module and used for transmitting and receiving layer 3 signalling messages and use data. The definition of the PCO and these ASP's are based on the logical channel concept of GSM specification. A control PCO and related ASP's are also defined for L2, they are used to introduce abnormal layer 2 behaviour required by the test purposes.

RLC/MAC is emulation module for GPRS Radio Link Control/Medium Access Control protocol. Two PCO's and related ASP's are defined for the module. Control PCO is used to set TBF and assign physical resources to it, actual physical resources (packet channels) are created by L1 (GERAN) ASP's beforehand. Data PCO is for transmitting and receiving RLC control messages (RLC control block). Before any RLC data or control block is sent (or received) a proper TBF shall be configured. In addition RLC/MAC module provides service to LLC emulation module, the interface between them is determined by implementation and shall be compliant with relevant core specification.

LLC performs GPRS Logical Link Control protocol emulation. Its data PCO and ASP's are used for exchange GMM signalling messages between TTCN and the UE under test. The current defined ASP's on control PCO are subset of the primitives defined in core specification, they are used to assign, un-assign TLLI and ciphering parameters, or get status report.

6.10.2 ASP function description

6.10.2.1 Identities

- Within the SS, a cell is identified by cell identifier (cellId), which is of TTCN type CellId (INTEGER).
- Within a cell, a basic physical channel is identified by physical channel identifier (physicalChId), which is of TTCN type PhysicalChId (INTEGER). In multislot configuration a basic physical channel is identified by physical channel identifier (physicalChId) and timeslot, which is of TTCN type TN (INTEGER).
- Within a physical channel, logical channel is identified by logical channel type (g_LogicChType), which is of TTCN type G_LogicChType (INTEGER). When multiple logical channels of same type are carried by (mapped to) the same basic physical channel, they are differentiated by sub-channel number (subChannel), which is of TTCN type SubChannelNumber (INTEGER).
- At the top boundary of L2 emulation module two service access points (SAP) are available, they are identified by SAPI. SAPI=3 is used for short message service; SAPI=0 is used for L3 signalling messages and user data.

EXAMPLE: If G_L2_DATA_REQ ASP has the following parameter setting:

- cellId = tsc_CellA;
- sAPI = tsc_SAPI_0;
- physicalChId = tsc_PhyCh0;
- g_LogicChType = tsc_SDCCH4; and
- subChannel = tsc_SubChannel1;

it sends PDU on the SDCCH4(1) logical channel which is carried by the physical channel tsc_PhyCh0 in cell A.

6.10.2.2 Cell configuration and control

In GSM each base station has a base station identity code BSIC, it consists of network colour code and base station colour code (NCC + BCC). BSIC is continuously broadcasted on the SCH channel, and it shall be used as the training sequence code for broadcast and common control channels.

In the test model the function of G_CL1_CreateCell_REQ ASP is to create a cell and pass parameter BSIC to it. This ASP establishes the cell identifier which shall be used in the ASP's related to this cell.

This is the first step to configure L1 (GERAN) emulation module of the SS.

6.10.2.3 L1 (GERAN) configuration and control

Configuration and control functions identified for L1 (GERAN) of a cell are:

- creation of basic physical channels;
- creation of multislot configuration;
- release of basic physical channel;
- modifications of channel mode, ciphering parameters and transmission power level;
- reporting of L1 header of SACCH channel;
- pickup a frame in near future, which can carry L3 message.

6.10.2.3.1 Basic physical channel configuration

A basic physical channel uses a combination of frequency and time domain resources, therefore, the definition of a particular basic physical channel consists of a description in the frequency domain and a description in the time domain. In time domain the resource is called Time Slot, there are 8 time slots in one frame, numbered from 0 to 7. In frequency domain a basic physical channel may use only one frequency or may use multiple frequencies in frequency hopping.

Basic physical channel carrying FCCH + SCH + BCCH + CCCH (PCH, AGCH, RACH) or FCCH + SCH + BCCH + CCCH + SDCCH4 logical channels shall be located in time slot 0, and uses single frequency (non-hopping). The basic physical channel carrying additional BCCH, CCCH (PCH, AGCH, RACH) logical channels shall be located in time slot 2, 4, 6 and uses the same single frequency as the frequency used by the physical channel carrying FCCH, SCH.

GSM specification defines 24 permitted combinations of different logical channels, which can be mapped on to a basic physical channel. The combination defines which logical channels are carried by a basic physical channel, and it is also an indication of which modulation (GMSK or 8PSK) is used for the basic physical channel.

Training Sequence Code (TSC) is another parameter needed by physical channel. Common control and broadcast channel have to use BCC as its TSC.

Dedicated control channel and dedicated traffic channel need more parameters to configure. Parameter "Channel Mode" is needed to specify channel coding (therefore the user data rate). Ciphering related parameters are required to define the ciphering behaviour of the channel.

Common control channels need parameters to configure where in the 51-multiframe paging and access grant blocks are located.

Transmission power level is provided as per physical channel parameter, power level of each physical channel can be controlled independently.

The function of ASP G_CL1_CreateBasicPhyCh_REQ is to create a basic physical channel which has the required property defined by all the parameters mentioned above.

In the process of L1 (GERAN) configuration, calling the ASP is the next step after calling G_CL1_CreateCell_REQ.

6.10.2.3.2 Multislot configuration for circuit or packet switched channels

Multislot configuration for circuit switched connection consists of multiple circuit switched traffic channels, in L1 point of view these traffic channels are independent basic physical channels with the same frequency parameters (ARFCN or MA, MAIO, HSN) and the same training sequence code but located in different time slots, one of the basic physical channels is the main channel of the configuration carrying the main signalling (FACCH, SACCH, IACCH) for the configuration. The main channel shall be bi-directional channel and with channelCombanition TCH/F+FACCH/F+SACCH/M or E-TCH/F+E-IACCH/F+E-FACCH/F+E-SACCH/M. When transmitting user data (not signalling message) stream is divided into substreams, each substream is transmitted independently on a channel in the configuration. At the receiving side all substreams are combined back to user stream.

According to the test model creation of a multislot configuration for circuit switched connection needs two ASP calls. Firstly, G_L1_CreatedBasicPhyCh_REQ is called to establish the main channel, then G_L1_CreateMultiSlotConfig_REQ is called to allocate more timeslots to the channel established by the previous ASP. A substream of a multislot configuration is identified with the physicalChId and timeslot.

Multislot configuration for packet switched connection consists of multiple PDCHs which can carry PDTCH/Us or PDTCH/Ds. All these PDCHs use the same frequency parameters (ARFCN or MA, MAIO, HSN) and the same training sequence code, but are located on different timeslots.

Similarly, a multislot configuration for packet switched connection is created with two ASP calls. First G_L1_CreatedBasicPhyCh_REQ is called to establish the first PDCH channel, then G_L1_CreateMultiSlotConfig_REQ is called to allocate more timeslots to the channel established by the previous ASP. All data ASP on packet data channel use physicalChId and timeslot to address the physical channels.

6.10.2.3.3 Frame in the near future

ASP G_CL1_ComingFN_REQ is defined to request L1 (GERAN) return the reduced frame number (FN modulo 42432) which is far enough in the future from current frame number and is able to carry L3 message on the specified channel. "far enough" means that there is enough time left for TTCN to prepare a L3 message to be sent on that frame. When calculating startingTime, this ASP could be useful. The starting time usually is set to a frame number in a time distance from current frame number. TTCN writer can use G_CL1_ComingFN_REQ to get a frame number in the future then add a certain number of frames as time distance to it and use the result as the value for startingTime.

6.10.2.3.4 L1 header

The layer 1 header of SACCH from UE to network carries information of timing advance and UE uplink transmission power level, verifying L1 header contents is required in some test cases, ASP G_CL1_L1Header_REQ and G_CL1_L1Header_CNF are defined for fulfilling this requirement.

6.10.2.4 L2 configuration and control

For normal operation there is no parameter configurable in L2. Some abnormal L2 behaviours are required in test cases. In the test model two ASP's are currently defined to introduce abnormal L2 behaviour. When creating a dedicated channel the initial SACCH header is set to the values in powerLevel and timingAdvance fields of DedCH_Info.

6.10.2.4.1 Don't response to some handover access bursts

In non-synchronized handover procedure UE/MS, having received handover command, sends handover access bursts on the target channel repeatedly till it receives PHYSICAL INFORMATION message from network or T3124 times out. Normally network replies PHYSICAL INFORMATION as soon as it receives handover access burst. Some test cases require that the SS ignores several incoming handover access bursts then responses to the one that follows. ASP G_CL2_HoldPhyInfo_REQ is defined for fulfilling this requirement. It is used together with and before a data ASP sending PHYSICAL INFORMATION message. When SS receives the G_CL2_HoldPhyInfo_REQ, it does not transmit the PHYSICAL INFORMATION message until n handover access bursts have been received.

6.10.2.4.2 No UA reply to SABM

GSM L2 protocol is adapted from LAPD (HDLC subset). The multiframe operation mode is established through exchange of supervisory frame SABM and unnumbered frame UA between peer entities, and SABM is always sent by UE/MS, UA is always sent by network. UE/MS will repeatedly transmit SABM till it receives UA or retransmission counter is reached. Some handover test cases require that the SS does not response to the incoming SABM, so handover fails. G_CL2_NoUAforSABM_REQ is used for such purpose, it commands the SS not to send UA response to the UE when SABM is received.

6.10.2.5 System Information sending

There are 17 different SYSTEM INFORMATION messages on BCCH and 4 different SYSTEM INFORMATION messages on SACCH defined for circuit switched services in GSM specification. In a particular test case not all of them are required. SYSTEM INFORMATION messages on BCCH shall be broadcasted periodically by the SS, SYSTEM INFORMATION TYPE 5, 6 and optionally 5bis and 5ter messages shall be sent on SACCH by the SS when nothing else has to be sent on that channel.

G_L2_SYSINFO_REQ is defined to deliver a SYSTEM INFORMATION message and its type SysInfoType to the SS, SS shall store the SYSTEM INFORMATION and transmit it periodically according to the scheduling rules specified in 3GPP TS 45.002 [31], clause 6.3.1.3. SYSTEM INFORMATION message newly delivered shall override the same type SYSTEM IFORMATION message previously stored in the SS.

SYSTEM INFORMATION message type 18, 19, 20 are scheduled by scheduling information in SYSTEM INFORMATION type 9. ASP for scheduling these messages has not been defined yet because these messages are not required in current test cases.

6.10.2.6 Paging

Paging message for a particular UE/MS shall be sent on the right CCCH_GROUP and PAGING_GROUP which are determined by IMSI of the UE/MS and other parameters. In the test model TTCN code is responsible to calculate the value of CCCH_GROUP and the value of PAGING_GROUP.

TTCN selects the right channel according to the value of CCCH_GROUP, then PAGING REQUEST message and the value of PAGING_GROUP are passed to the SS by using:

- ASP G_L2_Paging_REQ in case of UE/MS in idle mode or the UE/MS not supporting SPLIT_PG_CYCLE on CCCH when it is in GPRS attached mode.

The SS shall determine the position where the paging block is located using the value PAGING_GROUP and other CCCH parameters configured by G_CL1_CreateBasicPhyCH_REQ, then send the PAGING REQUEST message according the parameter pagingMode in the ASP:

- send the message on the paging block determined by PAGING_GROUP if pagingMode = "normal paging";

- send the message on the paging block determined by PAGING_GROUP and the "next but one" position on the PCH if pagingMode = "extended paging";

- send the message on all paging blocks if pagingMode ="paging reorganization".

6.10.2.7 Generic procedures for GPRS signalling

Two channel combinations are applied to configure a GERAN cell for the GPRS signalling:

- The channel combinations 5 + 13, (FCCH + SCH + BCCH + CCCH + SDCCH/4(0..3) + SACCH/C4(0..3)) + (PDTCH/F+PACCH/F+PTCCH/F), are considered as default at the interRAT tests and GERAN to UTRAN Inter-RAT test cases in clause 42.4.7 of TS 51.010-1.

The following generic procedures show the usages of GPRS ASP's for the GPRS generic attach procedures, the generic cell change order within a TBF and the GSM ciphering procedure.

6.10.2.7.1 GPRS generic attach procedures and ciphering mode control

6.10.2.7.1.1 GPRS attach procedure in channel combinations 5 and 13

Direction	ASP	message	Comments
SS	G_CL1_CreateCell_REQ		Create the cell
SS	G_CL1_CreateBasicPhyCh_REQ		Create the physical channel combination 5 for FCCH+SCH+BCCH+CCCH+SDCCH/4(0..3)+SACCH/C4(0..3)
SS	G_CL1_CreateBasicPhyCh_REQ		Create the physical channel combination 13 for PDTCH/F+PACCH/F+PTCCH/F
SS -> MS	G_L2_SYSINFO_REQ	SYSTEM INFORMATION TYPE1, SYSTEM INFORMATION TYPE2, SYSTEM INFORMATION TYPE2quater, SYSTEM INFORMATION TYPE3, SYSTEM INFORMATION TYPE4, SYSTEM INFORMATION TYPE13	Broadcast system information messages : SI 1~4; SI 13
SS	G_CRLC_CreateRLC_MAC_REQ		Create RLC/MAC emulation entity
SS	G_CLLC_CreateLLE_REQ		Create LLC emulation entity
SS	MMI_CmdReq		Power on the UE/MS
MS-> SS	G_L2_ACCESS_IND	CHANNEL REQUEST	RACH, TBF establishment with Establishment Cause = one phase packet access.

Direction	ASP	message	Comments
SS	G_CRLC_UL_TBF_Config_REQ		Set up uplink TBF in RLC/MAC entity in SS, this TBF is corresponding to what indicated in IMMEDIATE ASSIGNMENT.
SS -> MS	G_L2_UNITDATA_REQ	IMMEDIATE ASSIGNMENT	Assign the uplink resources (uplink TBF) to MS. Polling bit and Starting Time are set
MS -> SS	G_RLC_ControlMsg_IND	PACKET CONTROL ACKNOWLEDGEMENT	
SS	G_CLLC_Assign_REQ		Assign TLLI, ciphering key and algorithm. The ciphering algorithm = "ciphering not used". The value of ciphering key shall be the one generated in the following authentication procedure. If there is no user data traffic in acknowledged mode before authentication procedure the ciphering algorithm may be set to one of the GPRS ciphering algorithm, and the late G_CLLC_Assign_REQ shall be not used.
MS -> SS	G_LLC_UNITDATA_IND	ATTACH REQUEST	MS uses the assigned uplink TBF to transmit the L3 message to SS, the SS manages the operation of the TBF without TTCN intervention and releases the TBF automatically according the countdown procedure. The SS reassembles the received data blocks into the L3 message and passes it to the LLC DATA PCO G_LLC.
SS	G_CRLC_DL_TBF_Config_REQ		Set up downlink TBF in RLC/MAC entity in SS
SS -> MS	G_L2_Paging_REQ	IMMEDIATE ASSIGNMENT	Downlink TBF establishment
SS -> MS	G_LLC_UNITDATA_REQ	AUTHENTICATION AND CIPHERING REQUEST	
MS-> SS	G_L2_ACCESS_IND	CHANNEL REQUEST	RACH, TBF establishment with Establishment Cause = one phase packet access.
SS	G_CRLC_UL_TBF_Config_REQ		Set up uplink TBF in RLC/MAC entity in SS, this TBF is corresponding to what indicated in IMMEDIATE ASSIGNMENT.
SS -> MS	G_L2_UNITDATA_REQ	IMMEDIATE ASSIGNMENT	Assign the uplink resources (uplink TBF) to MS. Polling bit and Starting Time are set
MS -> SS	G_RLC_ControlMsg_IND	PACKET CONTROL ACKNOWLEDGEMENT	
SS	G_CLLC_Assign_REQ		Assign TLLI, if changed
MS -> SS	G_LLC_UNITDATA_IND	AUTHENTICATION AND CIPHERING RESPONSE	
SS	G_CLLC_Assign_REQ		Keep TLLI unchanged, ciphering algorithm = one of the GPRS ciphering algorithm. The value of ciphering key shall be the one generated in the authentication procedure. If no user data traffic in acknowledged mode before authentication procedure, this ASP is not needed.
SS	G_CRLC_DL_TBF_Config_REQ		Set up downlink TBF in RLC/MAC entity in SS
SS -> MS	G_L2_Paging_REQ	IMMEDIATE ASSIGNMENT	Downlink TBF establishment

Direction	ASP	message	Comments
SS -> MS	G_LLC_UNITDATA_REQ	ATTACH ACCEPT	SS uses the established downlink TBF to transmit the L3 message to MS, the SS manages the operation of the TBF without TTCN intervention and releases the TBF automatically after all data blocks of the L3 message are transmitted
MS-> SS	G_L2_ACCESS_IND	CHANNEL REQUEST	RACH, TBF establishment with Establishment Cause = one phase packet access.
SS	G_CRLC_UL_TBF_Config_REQ		Set up uplink TBF in RLC/MAC entity in SS
SS -> MS	G_L2_UNITDATA_REQ	IMMEDIATE ASSIGNMENT	Assign the uplink resources (uplink TBF) to MS. Polling bit and Starting Time are set
MS -> SS	G_RLC_ControlMsg_IND	PACKET CONTROL ACKNOWLEDGEMENT	
SS	G_CLLC_Assign_REQ		Assign new TLLI
MS -> SS	G_LLC_UNITDATA_IND	ATTACH COMPLETE	MS uses the assigned uplink TBF to transmit the L3 message to SS, the SS manages the operation of the TBF without TTCN intervention and releases the TBF automatically according the countdown procedure
SS	G_CRLC_DeleteRLC_MAC_REQ		Release resources in the SS for RLC/MAC emulation entity
SS	G_CLLC_DeleteLLE_REQ		Release resources in the SS for LLC emulation entity
SS	G_CL1_DeleteChannel_REQ		Release SS resources of channel combination 13
SS	G_CL1_DeleteChannel_REQ		Release SS resources of channel combination 5
SS	G_CL1_DeleteCell_REQ		

6.10.2.7.1.2 Void

6.10.2.7.2 Cell change order within a TBF

6.10.2.7.2.1 Cell change order procedure in channel combinations 5 and 13

Direction	ASP	message	Comments
SS	G_CL1_CreateCell_REQ		
SS	G_CL1_CreateBasicPhyCh_REQ		Create the physical channel combination 5 for FCCH+SCH+BCCH+CCCH+SDCCH/4(0..3)+SACCH/C4(0..3)
SS	G_CL1_CreateBasicPhyCh_REQ		Create the physical channel combination 13 for PDTCH/F+PACCH/F+PTCCH/F
SS -> MS	G_L2_SYSINFO_REQ	SYSTEM INFORMATION TYPE1, SYSTEM INFORMATION TYPE2, SYSTEM INFORMATION TYPE2quater, SYSTEM INFORMATION TYPE3, SYSTEM INFORMATION TYPE4, SYSTEM INFORMATION TYPE13	Broadcast system information messages: SI 1~4; SI 13
SS	G_CRLC_CreateRLC_MAC_REQ		Create RLC/MAC emulation entity
SS	G_CLLC_CreateLLE_REQ		Create LLC emulation entity
SS	G_CLLC_Assign_REQ		Assign TLLI, ciphering key and algorithm

Direction	ASP	message	Comments
MS			MS is GPRS attached, PDP context activated, then trigger MS to send two SNDCP PDU on LLC SAPI 3, each with 500 bytes user data.
MS-> SS	G_L2_ACCESS_IND	CHANNEL REQUEST	RACH, TBF establishment with Establishment Cause = one phase packet access.
SS	G_CRLC_UL_TBF_Config_REQ		Set up uplink TBF in RLC/MAC entity in SS, this TBF is corresponding to what indicated in the next IMMEDIATE ASSIGNMENT. The USFRate is set to 5 USF per second.
SS -> MS	G_L2_UNITDATA_REQ	IMMEDIATE ASSIGNMENT	Assign the uplink resources (uplink TBF) to MS
MS -> SS	G_LLC_UNITDATA_IND	User data on SAPI 3, the first SNDCP PDU	The TBF shall not be in countdown process
SS -> MS	G_RLC_ControlMsg_REQ	PACKET MEASUREMENT ORDER	This is within the TBF established above, which is in the process handling the second SNDCP PDU REPORT_TYPE = 1
MS -> SS	G_RLC_ControlMsg_IND	PACKET MEASUREMENT REPORT	MS sends the PACKET MEASUREMENT REPORT
SS -> MS	G_RLC_ControlMsg_REQ	PACKET CELL CHANGE ORDER	This is within the TBF established above what follows are in UTRAN cell, not present here

6.10.2.7.2.2 Void

6.10.2.8 Generic configuration procedure for GSM ciphering mode control

Direction	ASP	message	Comments
	. . .		Other necessary configuration ASP's
SS	G_CL1_CreateBasicPhyCh_REQ		Create a dedicated physical channel, e.g. combination 1 with ciphering not started: This ASP download Kc and ciphering algorithm to the SS with startingCiph = 0 in cipherMode. If there is no authentication procedure before CIPHERING MODE COMMAND, the value of Kc in this ASP shall be the one generated in previous authentication procedure, otherwise the value of Kc shall be the one generated by forthcoming authentication procedure.
	. . .		Any other signalling message sending/receiving or configuration ASP's
SS	G_CL1_CipheringControl_REQ		rcvCipherMode ='1' , the SS starts ciphering on receiving
SS	G_CL1_CipheringControl_CNF		
SS -> MS	G_L2_DATA_REQ	CIPHERING MODE COMMAND	Sent without ciphering
SS			Before this point both transmitting and receiving in the SS are not ciphered.
MS -> SS	G_L2_DATA_IND . . .	CIPHERING MODE COMPLETE	After receiving this message the SS shall start ciphering on transmitting, The CIPHERING MODE COMPLETE is ciphered Any signalling message or user data sending/receiving in ciphered mode

6.10.2.9 L|H bits convention and bit padding in DL

6.10.2.9.1 GERAN DL RLC/MAC message bit padding

The length of a GPRS RLC/MAC control messages is an integer number of RLC/MAC control blocks. Padding bits are necessary to fill the message up to the desired length. The padding bits may be the 'null' string. Otherwise, the padding bits starts with bit '0', followed by "spare padding". The padding sequence used for "spare padding" in the present document, is a repetition of octet '00101011', starting on an octet boundary.

< padding bits > ::= { null | 0 < spare padding >

"<spare padding> ::= <spare L> {null | < spare padding>}"

In the TTCN a specific encoding variation - encoding rule 1 - is defined according to the rules described above. This shall be used in the definition of the message itself. No 'padding bits' field will be defined in the TTCN. The implementation shall ensure that after encoding the message contents defined in the TTCN, the remainder of the message shall be filled with 'padding bits'.

6.10.2.9.2 GSM DL message spare padding

A number of GPRS information elements are defined in the rest octets of certain GSM DL messages, for instance, IA Rest Octets, SI 2quater Rest Octets, SI 3 Rest Octets, SI 4 Rest Octets, SI 13 Rest Octets, etc. These rest octets were filled in a repetition of bit padding '00101011' or '2B'O, starting on an octet boundary to a certain length.

In the TTCN, a second encoding variation - encoding rule 2 - shall be used in the definition of the message itself, which shall be of a fixed length (always 23 octets). No "spare padding" field will be defined in the TTCN. The implementation shall ensure that after encoding the message contents defined in the TTCN, the remainder of the message, up to the defined fixed length, shall be filled with "spare padding".

6.10.2.9.3 L | H convention in rest octets of GSM DL messages

A number of GPRS information elements are defined in the rest octets of certain GSM DL messages. The special notations "L" and "H" are used to denote respectively the bit's logical value corresponding to the padding spare bit for that position, and the other value. The actual value of the bit transmitted by SS therefore depends upon its position within the octet - this involves counting bits.

In the TTCN a third encoding variation - encoding rule 3 - is defined for this purpose. This encoding variation is applied to those specific TTCN Rest Octets definitions which contain the L|H convention.

6.10.2.9.4 Spare Bits

Where the IE definition of RLC/MAC blocks contains bits defined to be 'spare bits', these bits shall set to the value '0' by the TTCN writers, according to the defined length indicator.

6.10.2.9.5 GSM System Information messages on SACCH

Certain GSM System Information messages, for instance, SI 5 and SI 6 are sent as a B4 frame on the SACCH. These messages are defined in 3GPP TS 44.006 [42], clause 8.8.3, to have a maximum of 19 octets.

In the TTCN a fourth encoding variation - encoding rule 4 - shall be used in the definition of the message itself. The implementation shall ensure that after encoding the message contents defined in the TTCN, the remainder of the message, up to the fixed length of 19 octets, shall be filled with "spare padding".

6.10.2.9.6 GSM Measurement Information messages on SACCH

The GSM Measurement Information message is sent as a Bter UI frame on the SACCH. This messages is defined in 3GPP TS 44.006 [42], clause 8.8.3 to have a maximum of 21 octets.

In the TTCN a fifth encoding variation - encoding rule 5 - shall be used in the definition of the message itself. The implementation shall ensure that after encoding the message contents defined in the TTCN, the remainder of the message, up to the fixed length of 21 octets, shall be filled with "spare padding".

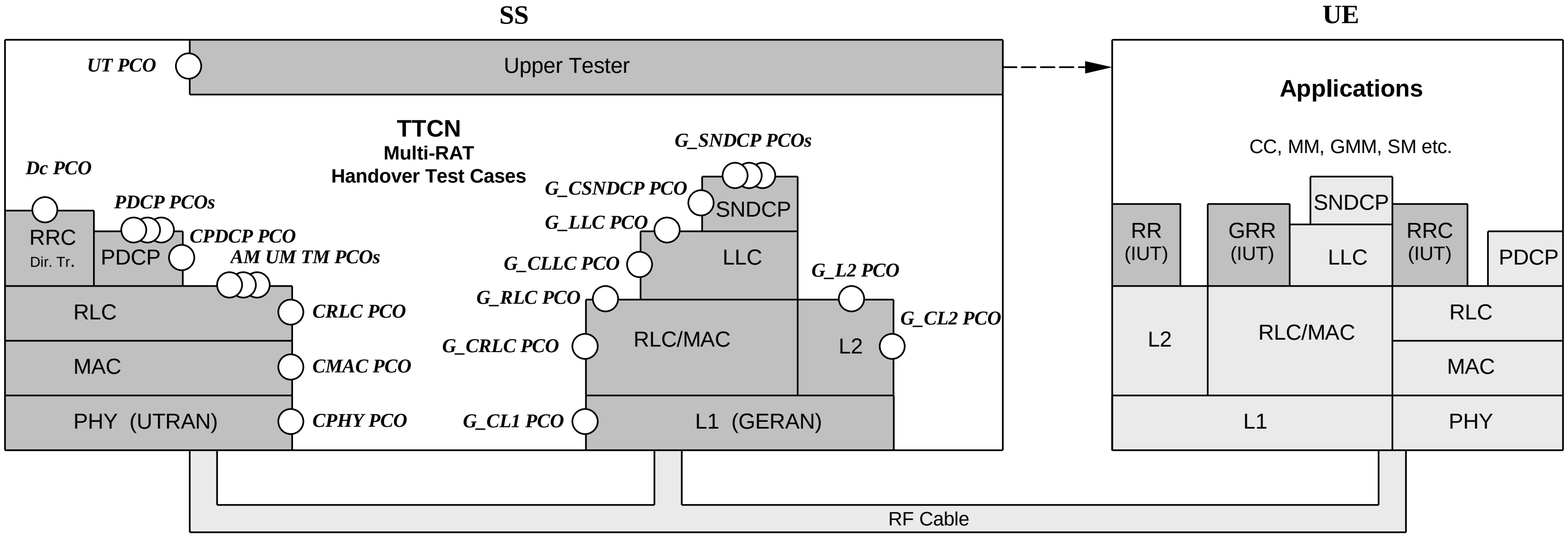

Figure 6.10.2.9.6: The model of multi-RAT handover testing

6.11 DCH-DSCH model (R99 or Rel-4)

The model illustrates the relationship between various channels from logical channel to physical channels. DCH are associated with DSCH.

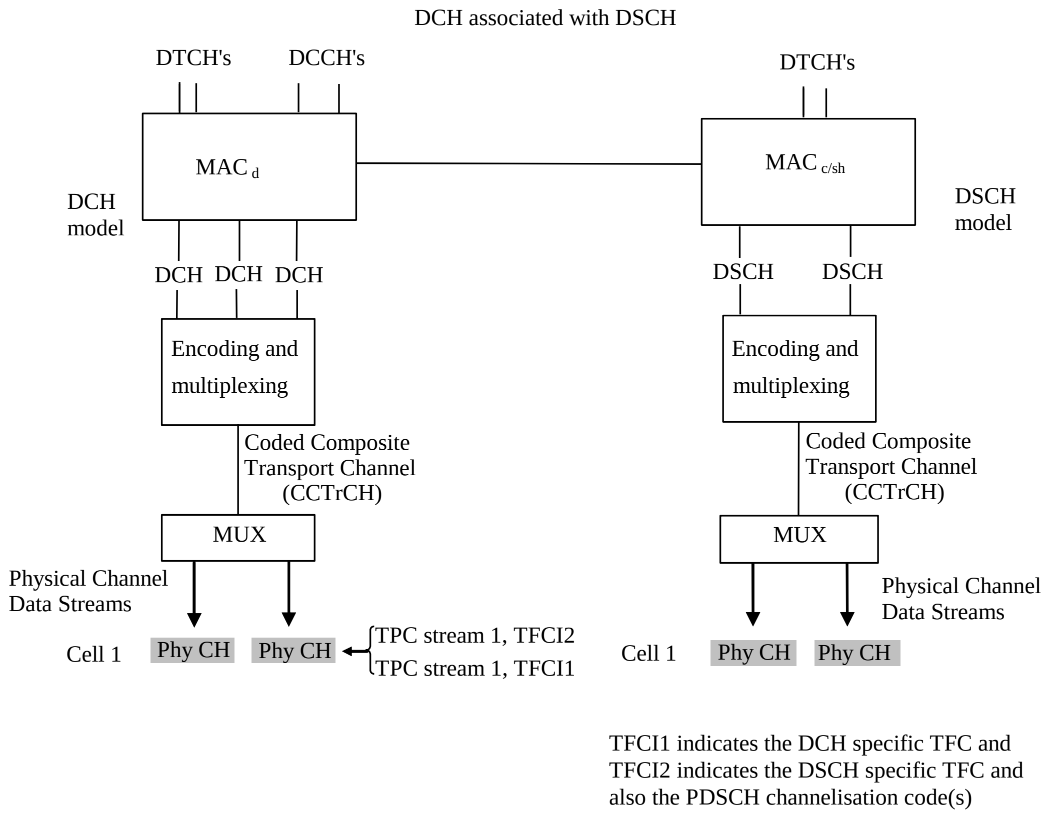

Figure 6.11: Associated DCH-DSCH model

The model associating DCH with DSCH enable in the SS:

- to define DSCH transport channel;
- to define TFCI(field2) for DSCH;
- to configure PDSCH;
- to define DSCH-RNTI value.

6.12 DCH with HS-DSCH (MAC-hs) model (FDD, Rel-5 or later)

The test model illustrates the relationship between various channels from logical channels to physical channels. All DCH are associated with a single HS-DSCH.

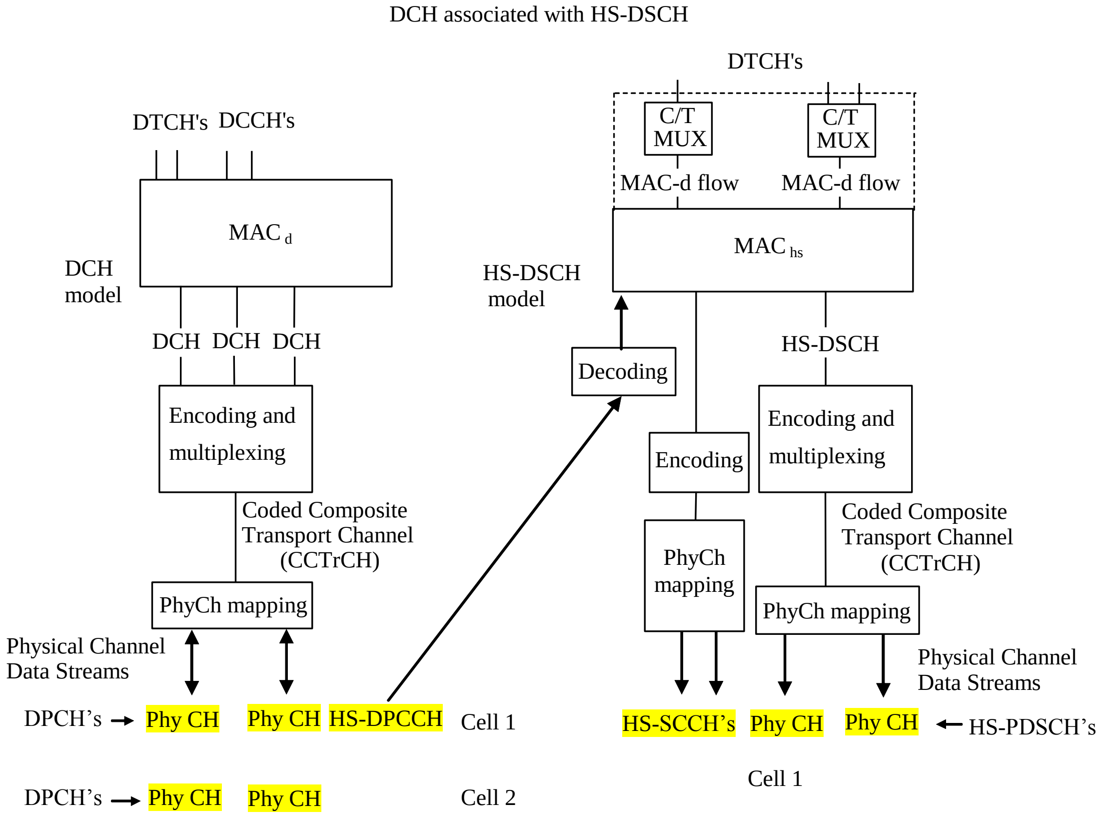

Figure 6.12: Associated DCH with HS-DSCH model

Associating DCH with HS-DSCH, the model enables in the SS:

- to define MAC-hs and multiplexing of logical channels DTCHs onto MAC-d flows;
- to configure HS-DSCH transport channel and MAC-d flows;
- to configure HS-PDSCHs and HS-SCCHs;
- to define the H-RNTI value.

6.12a DCH with HS-DSCH model for 1.28 Mcps TDD (Rel-5 or later)

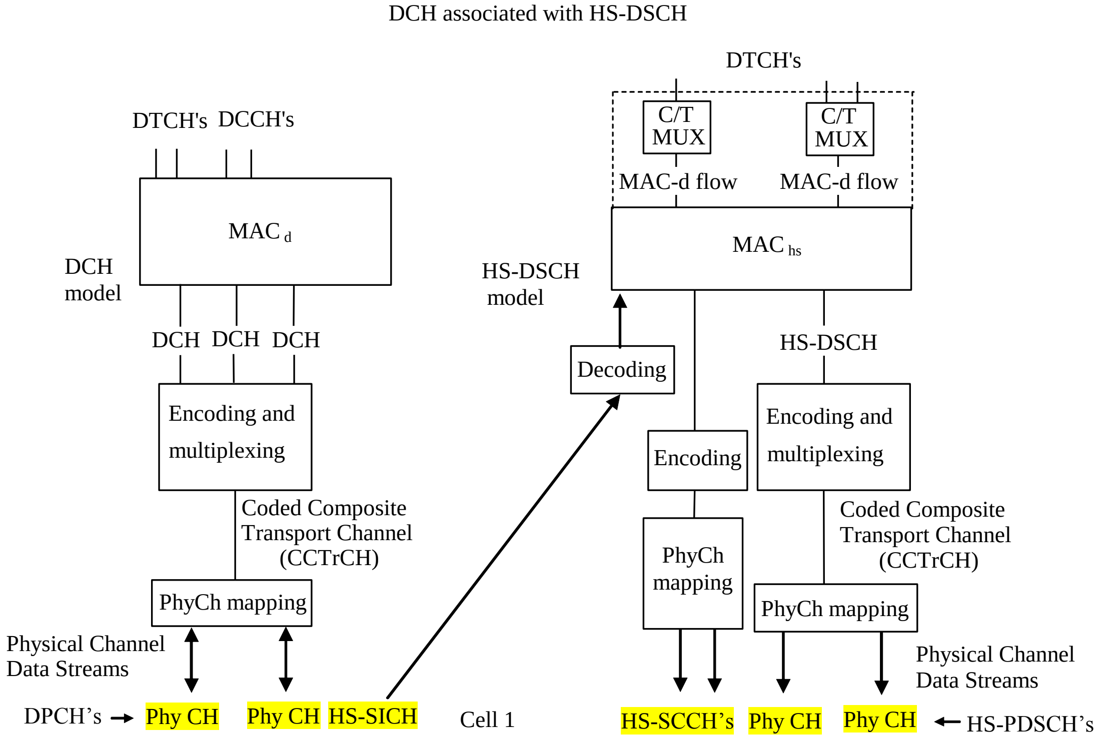

Figure 6.12a: Associated DCH with HS-DSCH model for 1.28 Mcps TDD

Associating DCH with HS-DSCH, the model enables in the SS:

- to define MAC-hs and multiplexing of logical channels DTCHs onto MAC-d flows;
- to configure HS-DSCH transport channel and MAC-d flows;
- to configure HS-PDSCHs and HS-SCCHs;
- to define the H-RNTI value.

6.12b DCH with HS-DSCH (MAC-ehs) model (FDD, Rel-7 or later)

The test model illustrates the relationship between various channels from logical channels to physical channels. All DCH are associated with a single HS-DSCH.

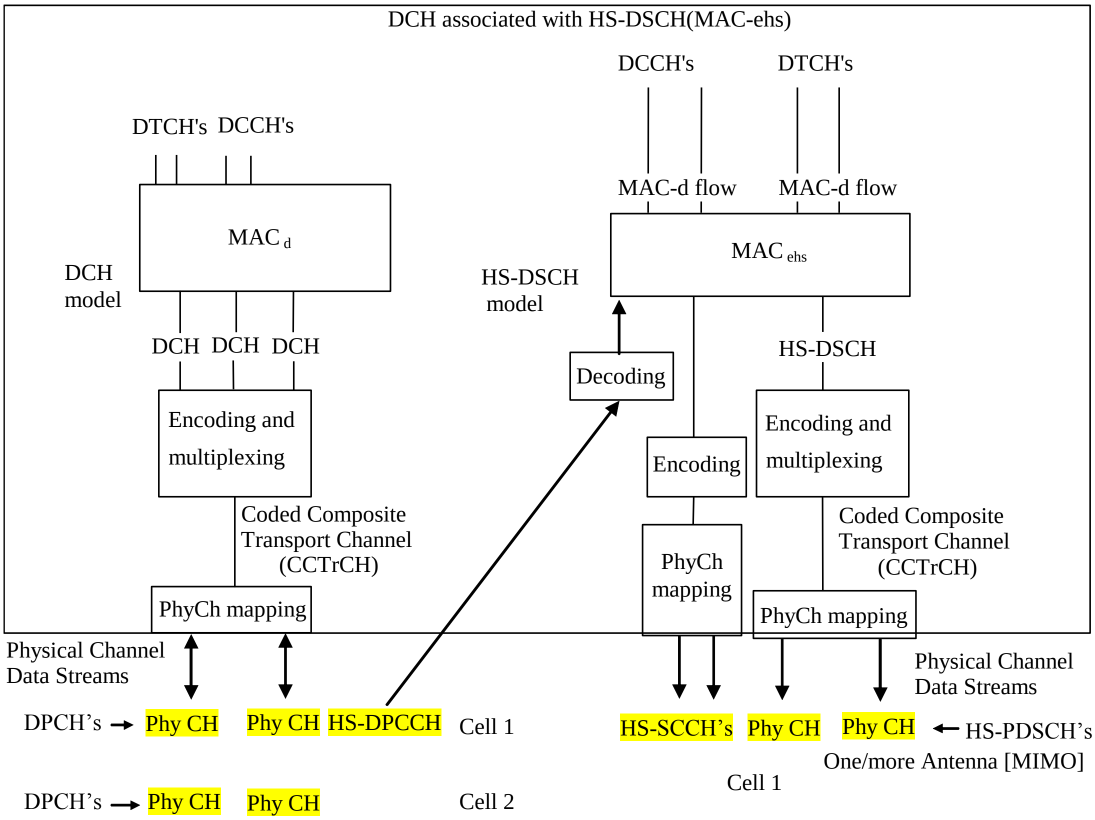

Figure 6.12b: Associated DCH with HS-DSCH model

Associating DCH with HS-DSCH, the model enables in the SS:

- to define MAC-ehs and multiplexing of logical channels DTCHs & DCCHs onto MAC-d flows;
- to configure HS-DSCH transport channel and MAC-d flows;
- to configure HS-PDSCHs and HS-SCCHs;
- to define the H-RNTI value.
- to configure MIMO;

6.12c HS-DSCH (MAC-hs/ehs) model (FDD, Rel-7 or later)(No DCH Associated)

The test model illustrates the relationship between various channels from logical channels to physical channels.

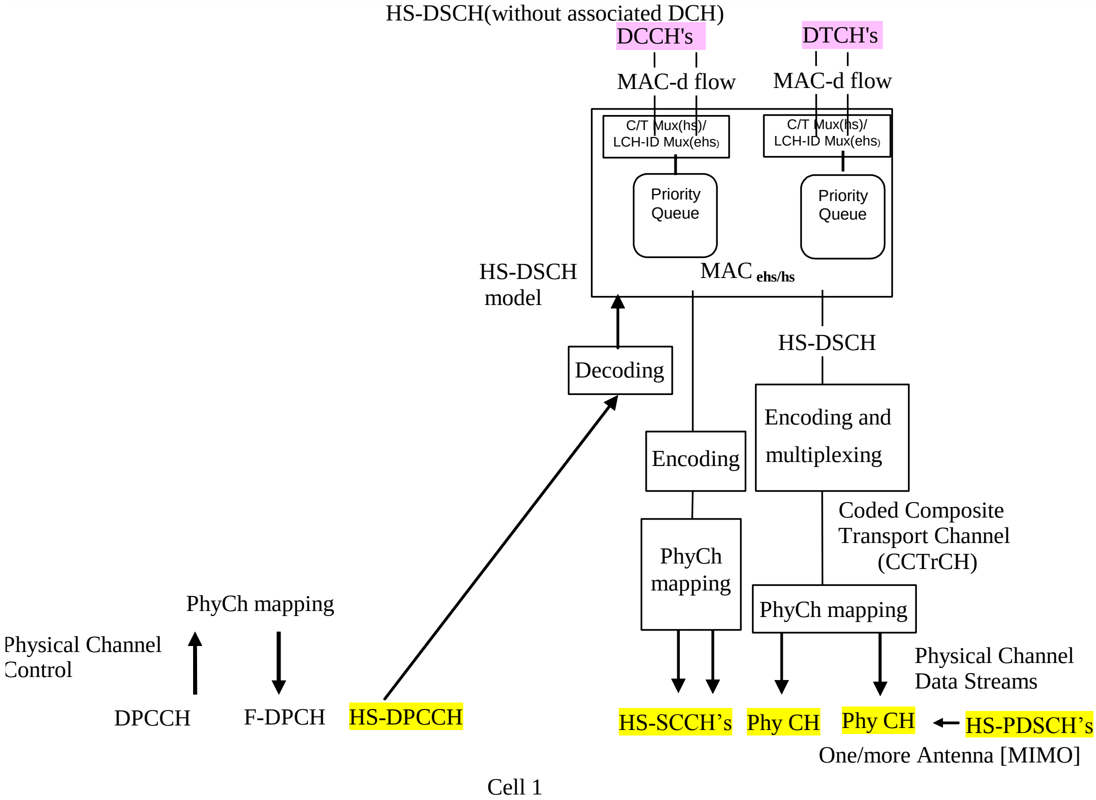

Figure 6.12c: HS-DSCH model without DCH associated

The model enables in the SS:

- to define MAC-ehs/hs and multiplexing of logical channels DTCHs & DCCHs onto MAC-d flows;
- to configure HS-DSCH transport channel and MAC-d flows/MAC-ehs Queues;
- to configure HS-PDSCHs and HS-SCCHs;
- to define the H-RNTI value(s);
- to configure MIMO.
- during the active set updating (soft handover), the test case configurations involves more than one cell; but one MAC-ehs entity is configured.

6.12d HS-DSCH (MAC-ehs) model for DC/4C -HSDPA (FDD, Rel-8 or later)

The test model illustrates the relationship between various channels from logical channels to physical channels.

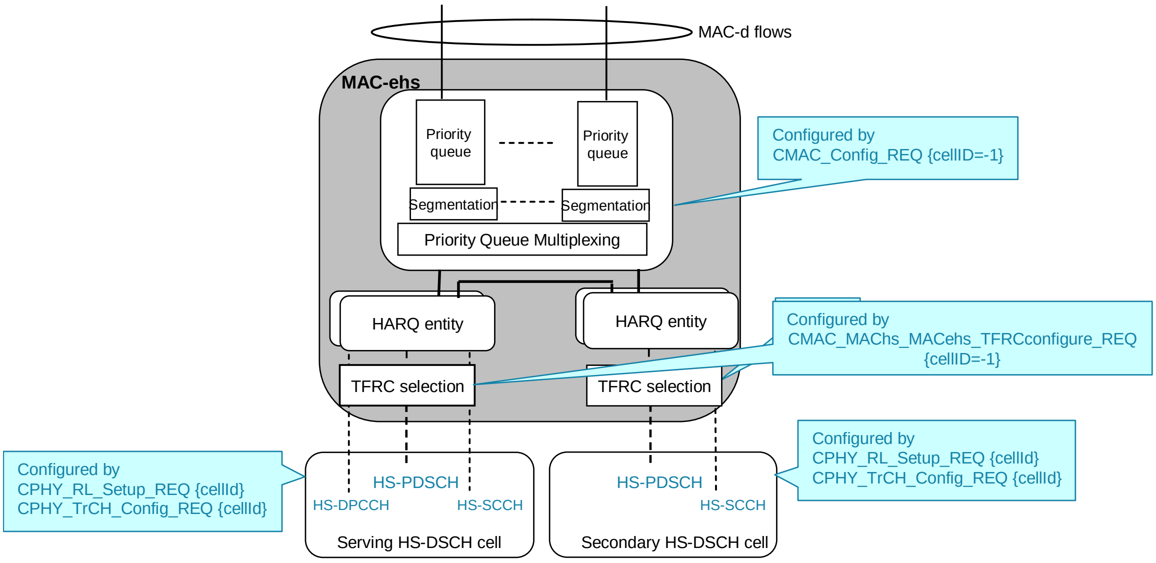

Figure 6.12d-1: HS-DSCH model with intra-NodeB DC-HSDPA

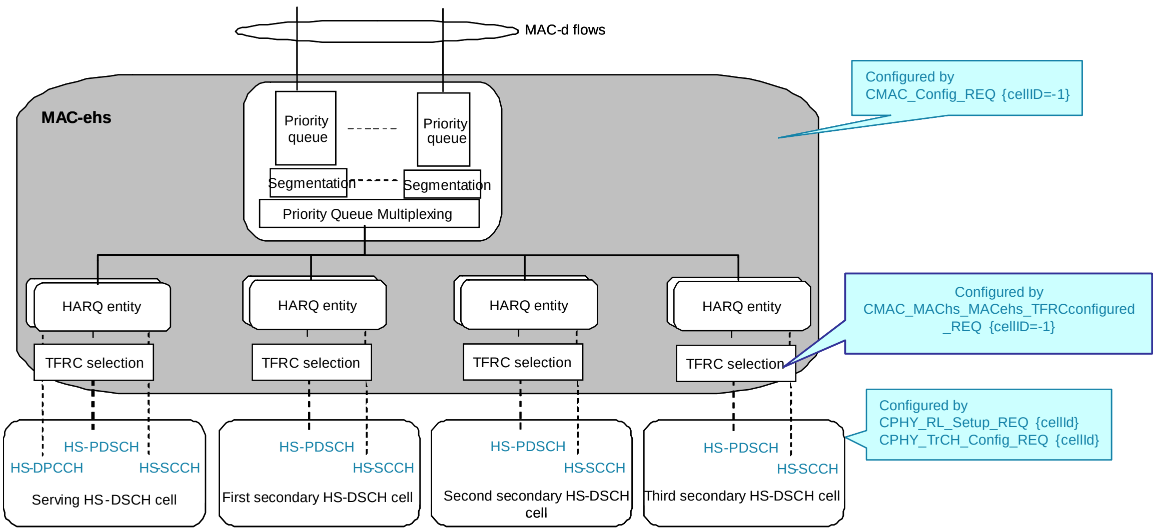

Figure 6.12d-2: HS-DSCH model for 4C-HSDPA with 3 secondary cells configured

The model enables in the SS to configure DC-HSDPA or 3C/4C-HSDPA:

- MAC-ehs and the served RLC are cell-independent and are configured by using the cell-id =-1. During reconfigurations, cell changes and state transitions, the relevant counters in the RLC are maintained
- to define MAC-ehs and multiplexing of logical channels DTCHs & DCCHs onto MAC-ehs queues;
- to configure HS-DSCH transport channel and MAC-ehs Queues;
- to configure HS-PDSCHs and HS-SCCHs on the serving cell and a secondary HS-DSCH cell for DC-HSDPA;
- to configure HS-DPCCH in the serving cell;

- to define the H-RNTI value(s);
- MIMO and DC-HSDPA do not co-exist in Rel-8;
- to configure combined DC-HSDPA and MIMO in Rel-9 or later Releases.
- to configure HS-PDSCHs and HS-SCCHs on the serving cell and two or three secondary HS-DSCH cells for 4C-HSDPA in Rel-10 or later Releases. MIMO can be configured in the serving and/or secondary cells. When DC-HSUPA is configured in uplink, the first secondary serving HS-DSCH cell is the cell associated with the secondary uplink frequency.

6.13 E-DCH model (Rel-6 or later)

6.13.1 MAC-e/MAC-es test model

The E-DCH model illustrates the relationship between various channels from logical channel to physical channels. In this model the TTCN writer can:

- define MAC-e/es and multiplexing of logical channels onto MAC-d flows;
- configure E-DCH transport channel and MAC-d flows;
- configure E-DPDCH, E-DPCCH, E-HICH, E-RGCH and E-AGCH.

MAC-es and the served RLC are cell-independent and are configured by using the cell-id = -1. During reconfigurations, cell changes and state transitions, the relevant counters in the RLC are maintained.

For the reason of simplicity, the E-DCH testing model does not shown the relation between E-DCH and related DCH and HS-DPCH, however the TTCN writer shall understand that the E-DCH active set is a subset of the DCH active set, when configuring E-DCH in the SS the TTCN writer shall keep this requirement respected.

During the active set updating (soft handover), the test case configurations may involve more than one cell. Those cells are under the control of the same Node B (intra-node) or under several Node B's (inter-node). For the signalling testing no macro diversity is required in the SS. In such test configurations only one E-DPDCH is necessary to be configured (together with corresponding E-DCH) for each Node B. Preferably, the E-DPDCH in the serving E-DCH cell controlled by the serving Node B is chosen for the configuration. In the inter-node soft handover cases, the E-DPDCH in a Non-serving RL cell of another Node B may require to be configured, instead of the one in the serving E-DCH cell. When the configuration involves several Node B's only one MAC-e (Node B) is necessary to be connected to the MAC-es. All possible connections are represented by dashed line and the preferable connection is the connection between MAC-es and the Node B controlling the serving E-DCH cell.

Since the UL-DPCCH is needed as reference channel for the E-DPCCH the UL-DPCH is configured in every cell where an E-DCH is configured (i.e. in serving and non-serving cell). In order to simplify the implementation and to avoid macro diversity in all non-serving cells the UL-DPCH is configured without the associated transport channel configuration, i.e. the physical channel is not connected to MAC-d.

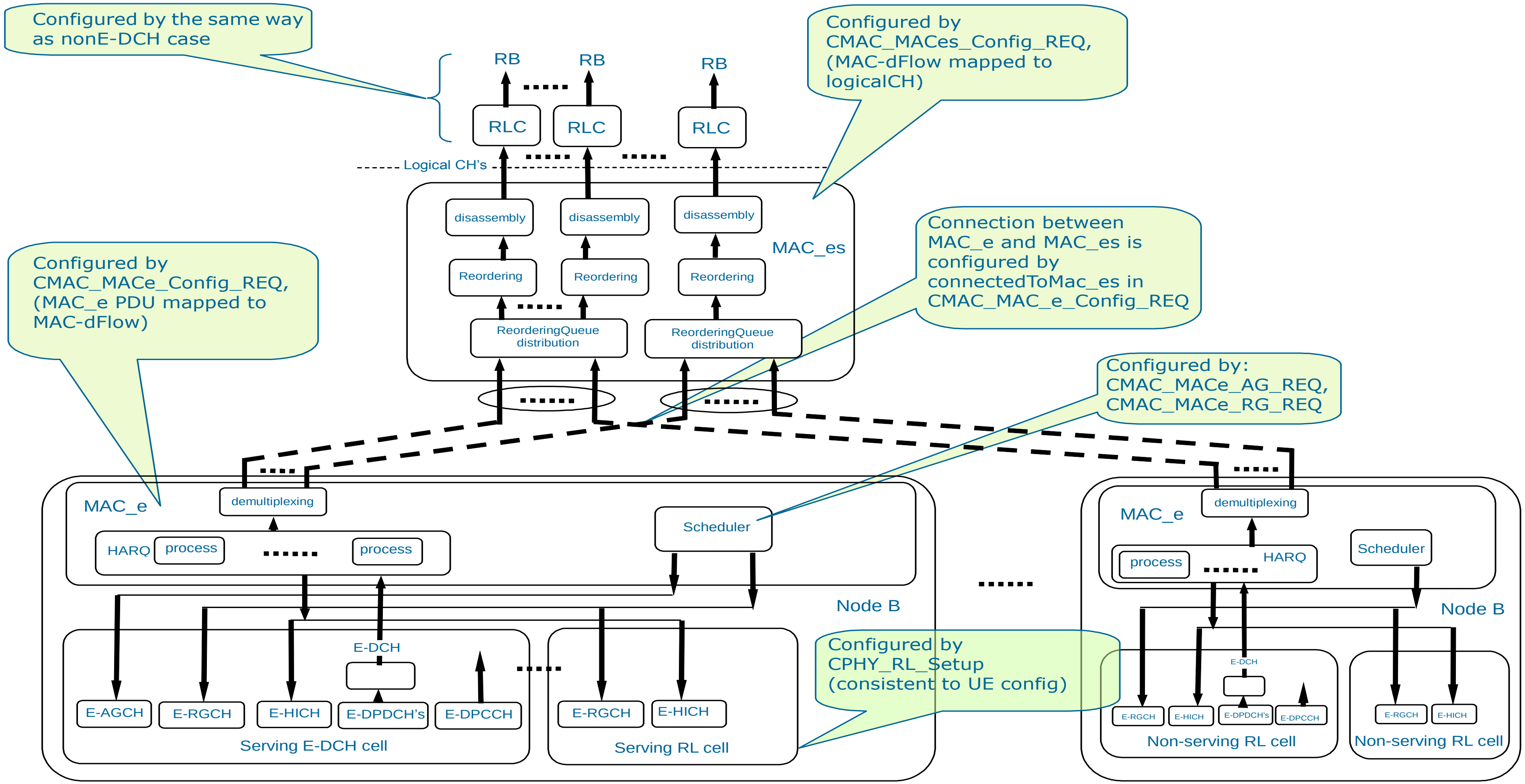

Figure 6.13.1: The model of E-DCH testing with MAC-e/MAC-es

6.13.2 MAC-i/MAC-is test model (Rel-8 or later)

For channel configuration and activate set update, the same requirement apply as for MAC-e/Mac-es in clause 6.13.1.

The MAC-i/is E-DCH test model is provided in Figure 6.13.2.

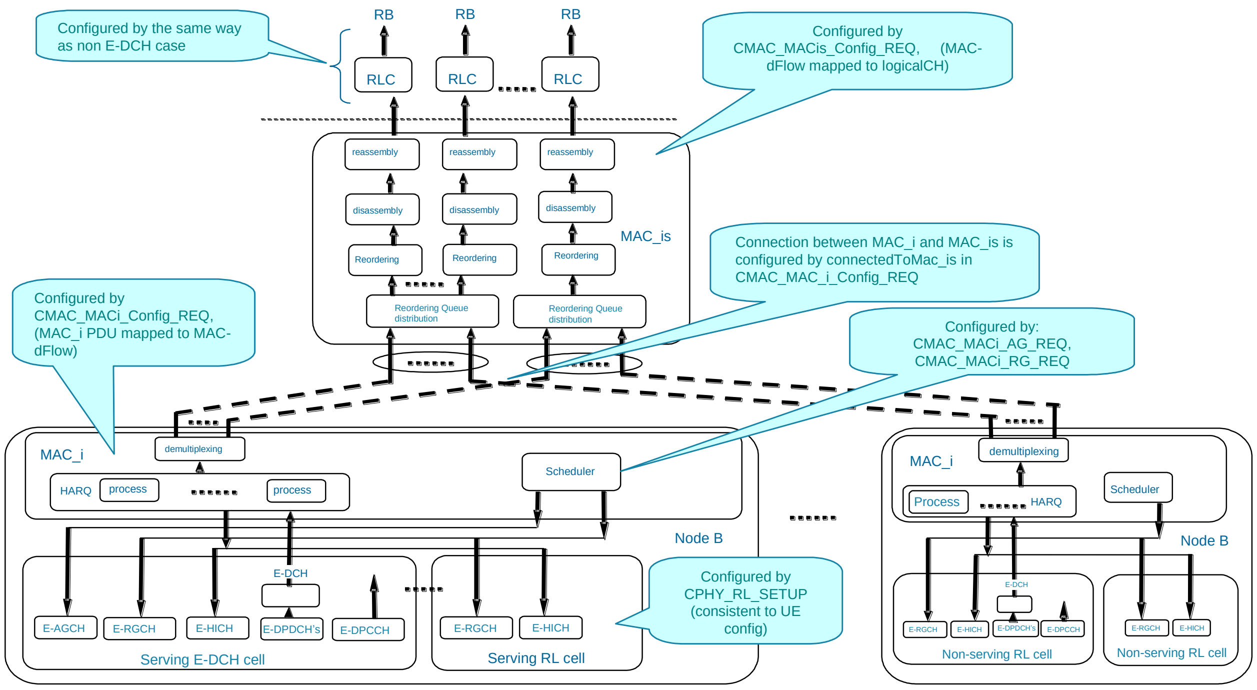

Figure 6.13.2: The model of E-DCH testing with MAC-i/MAC-is

6.13.2.1 MAC-i/MAC-is test model for Enhanced UL in Cell_FACH (Rel-8 or later)

The MAC-i/is E-DCH test model for enhanced UL in cell_FACH is provided in Figure 6.13.2.1.

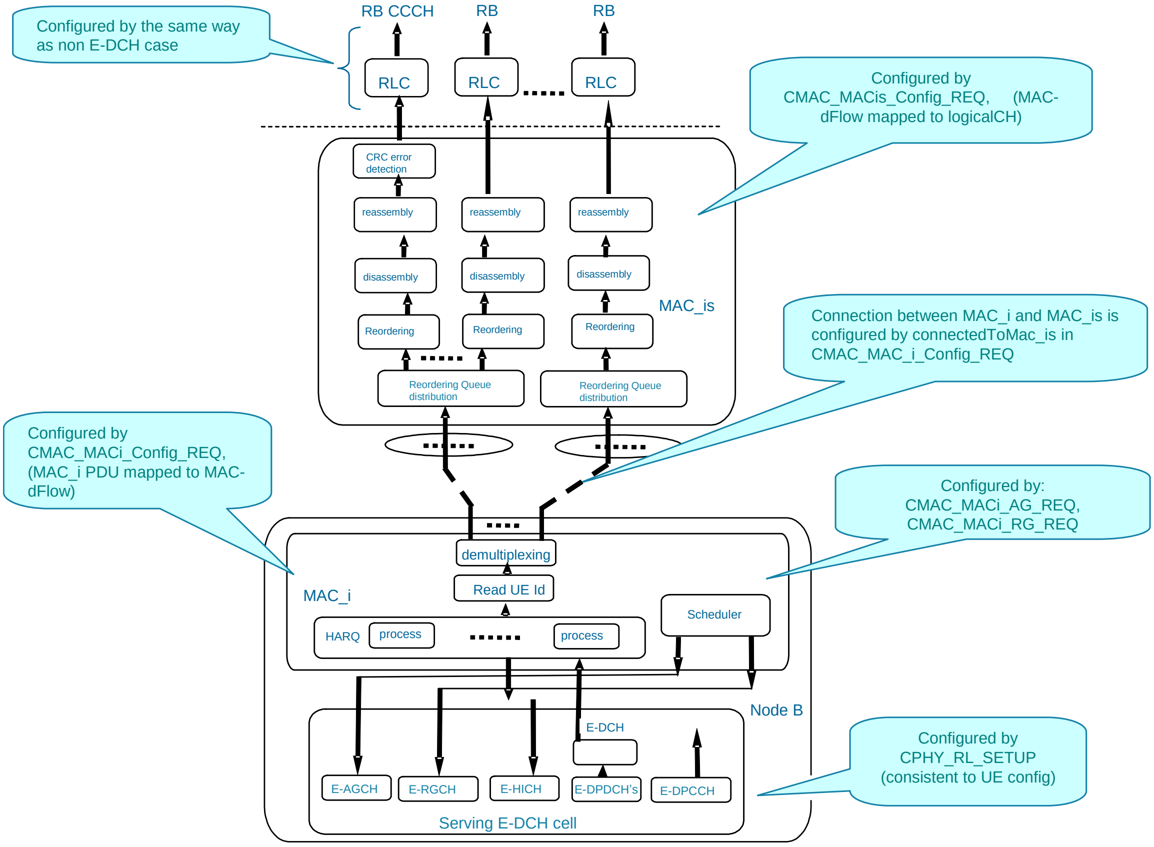

Figure 6.13.2.1: The model of E-DCH testing with MAC-i/MAC-is for enhanced uplink in CELL_FACH state

If the UE is in CELL_FACH state or Idle mode, the E-DCH active set consists of the serving E-DCH cell. When CCH is configured, MAC-is entity is configured per E-DCH cell basis, i.e. configured in the serving E-DCH cell, as well as in the neighbour E-DCH cells.

6.13.2.2 MAC-i/MAC-is test model for DC-HSUPA (Rel-9 or later)

The E-DCH model illustrates the relationship between various channels from logical channel to physical channels in DC-HSUPA configuration. In this model the TTCN can:

- define MAC-i/-is and multiplexing of logical channels onto MAC-d flows;
- configure E-DCH transport channel and MAC-d flows on all cells;
- configure E-DPDCH, E-DPCCH, E-HICH, E-RGCH and E-AGCH on primary and secondary uplink frequency.

MAC-is and the served RLC are cell-independent and are configured by using the cell-id = -1. During reconfigurations, cell changes and state transitions, the relevant counters in the RLC are maintained. MAC-i entities are mapped to a NodeB id and the two MAC-i entities related to the serving RL and the secondary Serving RL are connected to the MAC-is entity.

For the reason of simplicity, the E-DCH testing model does not shown the relation between E-DCH and related DCH and HS-DPCH, however, it is understood that the E-DCH active set is a subset of the DCH active set, when configuring E-DCH in the SS. The HS-DPCCH channel is configured only in the primary uplink frequency cell. Since the UL-DPCCH is needed as reference channel for the E-DPCCH the UL-DPCH is configured in every cell where ver an E-DCH is configured (i.e. in serving and secondary serving cell).

During the active set updating (soft handover), the added RL are configured in the same way as for MAC-e/es.

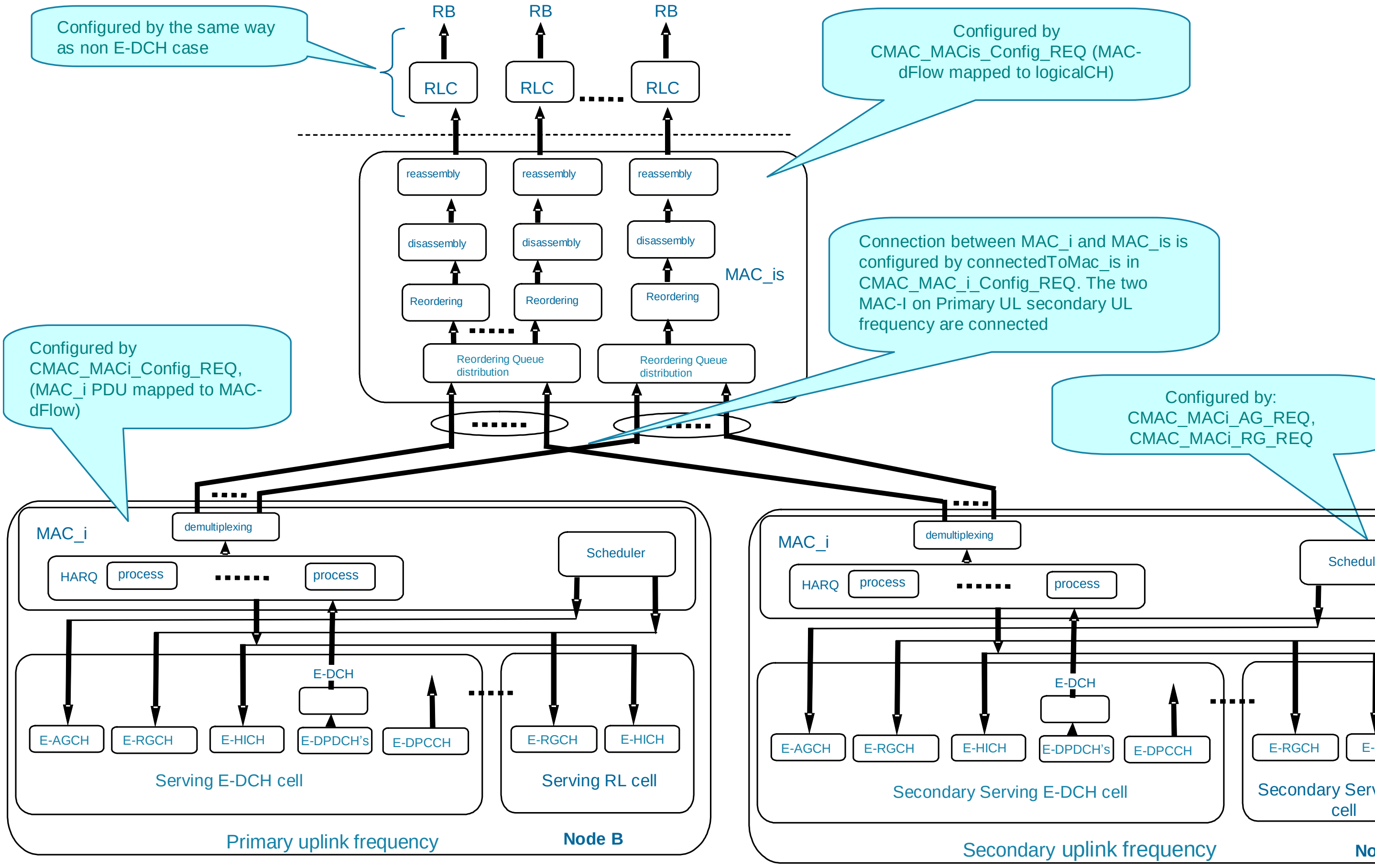

Figure 6.13.2.2: The model of E-DCH testing with MAC-i/MAC-is for DC-HSUPA

6.14 MBMS model (Rel-6 or later)

The MBMS test model illustrates the relationship between various channels, from logical channel to physical channels applied to the MBMS test. The MBMS-dedicated stand-alone SCCPCH, MICH, MAC-m, MCCH, MSCH and MTCH are configured by the TTCN.

During softcombining, MTCHs which have the same logical channel identity but in different cells are connected to the same UM RLC.

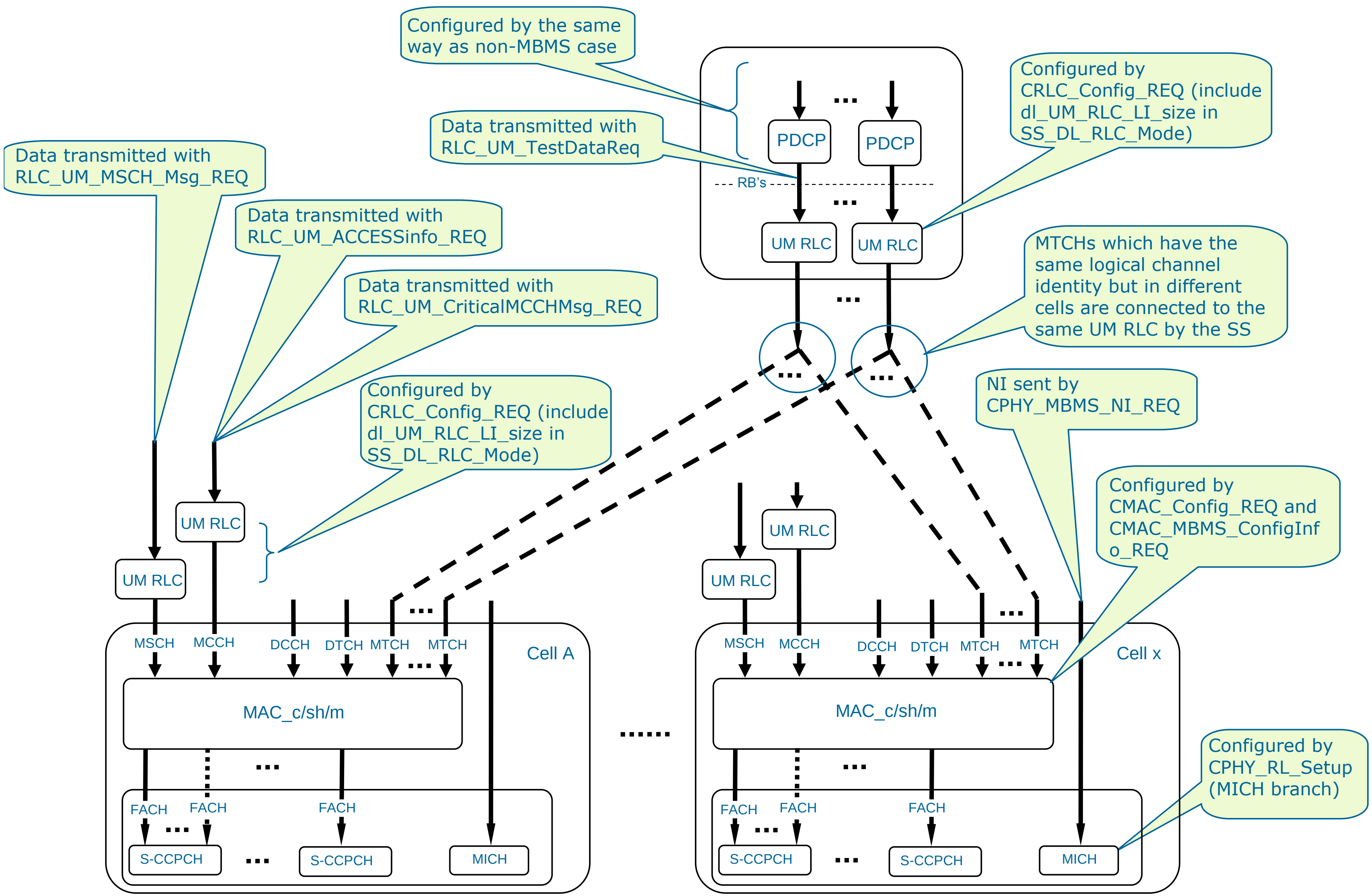
Configured by the same way as non-MBMS case
Data transmitted with RLC_UM_TestDataReq
Configured by CRLC_Config_REQ (include dl_UM_RLC_LI_size in SS_DL_RLC_Mode)
Data transmitted with RLC_UM_MSCH_Msg_REQ
Data transmitted with RLC_UM_ACCESSinfo_REQ
Data transmitted with RLC_UM_CriticalMCCHMsg_REQ
Configured by CRLC_Config_REQ (include dl_UM_RLC_LI_size in SS_DL_RLC_Mode)
MTCHs which have the same logical channel identity but in different cells are connected to the same UM RLC by the SS
NI sent by CPHY_MBMS_NI_REQ
Configured by CMAC_Config_REQ and CMAC_MBMS_ConfigInfo_REQ
Configured by CPHY_RL_Setup (MICH branch)
PDCP
PDCP
RB's
UM RLC
UM RLC
UM RLC
UM RLC
UM RLC
UM RLC
MSCH
MCCH
DCCH
DTCH
MTCH
MTCH
Cell A
MAC_c/sh/m
FACH
FACH
FACH
S-CCPCH
S-CCPCH
MICH
MSCH
MCCH
DCCH
DTCH
MTCH
MTCH
Cell x
MAC_c/sh/m
FACH
FACH
FACH
S-CCPCH
S-CCPCH
MICH

Figure 6.14: The model of MBMS testing

6.14.1 MBMS RLC test model

6.14.1.1 RLC test model for MTCH test

For RLC tests on MTCH a TR radio bearer is configured (tsc_RB_MTCH_RLC_TR). Similar to the UM mode, data scheduling is applied at the test.

When reconfiguring back from TR to UM mode, MAC is reconfigured and RLC is released/reconfigured again. It implies that UM will restart with sequence number 0; the corresponding RLC state variables are set to 0. Sequence numbers between the one used in the last PDU sent in TR mode and the sequence number 0 are considered by the UE as lost sequence numbers and shall have no impact on the test in the UM mode.

6.14.1.2 RLC test model for MCCH test

For RLC tests the MCCH critical messages can be sent as a DL sequence of PER encoded UM RLC PDUs in RLC TR mode. To achieve this, the normal UM radio bearer on MCCH is replaced with a TR radio bearer configured with a negative RB Id (tsc_RB_MCCH_RLC_TR). This is achieved by reconfiguring MAC and releasing the existing RLC UM entity /configuring a new TR RLC entity. It results in only one RLC entity being able to map on MCCH at the test.

It is assumed that the necessary MCCH data are completely sent out before the reconfiguration procedure mentioned above takes place.

When changing from UM to TR the care should be taken on the sequence numbers used in the RLC PDUs. That can be achieved by querying the SN from SS with CRLC_SequenceNumber_REQ. When changing back to UM the RLC may continue with the sequence number following the last sequence number used before changing to TR mode. That implies, the UM part of the RLC in SS does not need to take care of the UM PDUs sent in TR mode. The UE will regard it as PDU lost.

To support re-synchronization the 'specialLI' of the RLC_UM_CriticalMCCHMsg_REQ following TR mode can be set to TRUE.

6.15 IP signalling

In the TTCN-2 implementation, no IP signalling are handled because of the limitation of the test language. For IPv4 or IPv4IPv6 UE, only an IPv4 address is assigned in the NAS signalling in the ACTIVATE PDP CONTEXT ACCEPT message. For IPv6 only UE, a full IPv6 address is assigned in the NAS signalling in the ACTIVATE PDP CONTEXT ACCEPT message.

In the TTCN-3 implementation, IP signalling is referred to 3GPP TS 36.523-3 [62] clause 4.4.1.1. For IPv4 or IPv6 UE, an IPv4 or a full IPv6 address is respectively assigned in the ACTIVATE PDP CONTEXT ACCEPT message. For IPv4IPv6 UE the both IP addresses are assigned.

6A TTCN-3 Test method and testing architecture

The following signalling conformance tests are specified in TTCN-3:

Rel-10 or later;

UE capability audit;

Network Initiated Secondary PDP context.

The system architecture and the test model are based on 3GPP TS 36.523-3 [62].

6A.1 Test system architecture

6A.1.1 General system architecture

Refer to 3GPP TS 36.523-3 [62], clause 4.1.1.

6A.1.2 Component architecture

The component architecture as defined in 3GPP TS 36.523-3 [62], clause 4.1.2 is applied. The TTCN-3 master test component (MTC) and the UTRAN TTCN-3 parallel component (PTC) are configured.

6A.2 Test model

Refer to the test model defined in clause 6 of the present test specification. UTRAN PDCP, if necessary, is configured according to 3GPP TS 36.523-3 [62] clause 4.4.1.1.

6A.3 ASP specifications

6A.3.1 ASPs for Control Primitive Transmission

TTCN-3 ASP Definition		
Type Name	**U_CPHY_CONFIG_REQ**	
TTCN-3 Type	union	
Port	UTRAN_CPHY	
CPHY_RL_Setup_FDD_REQ		clause 7.3.2.2.11
CPHY_RL_Setup_TDD_REQ		clause 7.3.2.3.1
CPHY_RL_Modify_FDD_REQ		clause 7.3.2.2.9
CPHY_RL_Modify_TDD_REQ		clause 7.3.2.3.1
CPHY_RL_Release_REQ		clause 7.3.2.2.10
CPHY_TrCH_Config_FDD_REQ		clause 7.3.2.2.13
CPHY_TrCH_Config_TDD_REQ		clause 7.3.2.2.13
CPHY_TrCH_Release_REQ		clause 7.3.2.2.14
CPHY_Cell_Config_FDD_REQ		clause 7.3.2.2.2
CPHY_Cell_Config_TDD_REQ		clause 7.3.2.3.1
CPHY_Cell_Release_REQ		clause 7.3.2.2.3, see note
CPHY_Ini_REQ		clause 7.3.2.2.4
CPHY_Cell_TxPower_Modify_REQ		clause 7.3.2.2.5
CPHY_Frame_Number_REQ		clause 7.3.2.2.6
NOTE: The Cell Release ASP can only ever be called at the end of the UTRAN side of the test case. Nothing else will occur on this cell within the test case after this ASP has been called.		

TTCN-3 ASP Definition		
Type Name	**U_CPHY_CONFIG_CNF**	
TTCN-3 Type	union	
Port	UTRAN_CPHY	
CPHY_RL_Setup_CNF		clause 7.3.2.2.11
CPHY_RL_Modify_CNF		clause 7.3.2.2.9
CPHY_RL_Release_CNF		clause 7.3.2.2.10
CPHY_TrCH_Config_CNF		clause 7.3.2.2.13
CPHY_TrCH_Release_CNF		clause 7.3.2.2.14
CPHY_Cell_Config_CNF		clause 7.3.2.2.2
CPHY_Cell_Release_CNF		clause 7.3.2.2.3
CPHY_Ini_CNF		clause 7.3.2.2.4
CPHY_Cell_TxPower_Modify_CNF		clause 7.3.2.2.5
CPHY_Frame_Number_CNF		clause 7.3.2.2.6
CPHY_Sync_IND		clause 7.3.2.2.12
CPHY_Out_of_Sync_IND		clause 7.3.2.2.7

TTCN-3 ASP Definition		
Type Name	**U_CMAC_CONFIG_REQ**	
TTCN-3 Type	union	
Port	UTRAN_CMAC	
CMAC_Config_FDD_REQ		clause 7.3.2.2.17
CMAC_Config_TDD_REQ		clause 7.3.2.2.17
CMAC_SYSINFO_Config_REQ		clause 7.3.2.2.22
CMAC_SecurityMode_Config_REQ		clause 7.3.2.2.20
CMAC_Ciphering_Activate_REQ		clause 7.3.2.2.16
CMAC_PAGING_Config_FDD_REQ		clause 7.3.2.2.18
CMAC_PAGING_Config_TDD_REQ		clause 7.3.2.2.18
CMAC_MACes_Config_REQ		clause 7.3.2.2.17d
CMAC_MACe_Config_FDD_REQ		clause 7.3.2.2.17b
CMAC_MACe_Config_TDD_REQ		clause 7.3.2.2.17b
CMAC_MACe_NodeB_CellMapping_REQ		clause 7.3.2.2.17c
CMAC_MAChs_MACehs_TFRCconfigure_FDD_REQ		clause 7.3.2.2.17a
CMAC_MAChs_MACehs_TFRCconfigure_TDD_REQ		clause 7.3.2.3.1
CMAC_MACi_Config_FDD_REQ		clause 7.3.2.2.17k
CMAC_MACi_NodeB_CellMapping_REQ		clause 7.3.2.2.17l
CMAC_MACis_Config_REQ		clause 7.3.2.2.17m
CMAC_MACi_AG_REQ		clause 7.3.2.2.17n
CMAC_MACi_E_TFC_Restriction_REQ		clause 7.3.2.2.17p
CMAC_MACehs_HARQAssign_MultiFlows_REQ		clause 7.3.2.2.17a1

TTCN-3 ASP Definition		
Type Name	**U_CMAC_CONFIG_CNF**	
TTCN-3 Type	union	
Port	UTRAN_CMAC	
CMAC_Config_CNF		clause 7.3.2.2.17
CMAC_SYSINFO_Config_CNF		clause 7.3.2.2.22
CMAC_SecurityMode_Config_CNF		clause 7.3.2.2.20
CMAC_Ciphering_Activate_CNF		clause 7.3.2.2.16
CMAC_PAGING_Config_CNF		clause 7.3.2.2.18
CMAC_MACes_Config_CNF		clause 7.3.2.2.17d
CMAC_MACe_Config_CNF		clause 7.3.2.2.17b
CMAC_MACe_NodeB_CellMapping_CNF		clause 7.3.2.2.17c
CMAC_MAChs_MACehs_TFRCconfigure_CNF		clause 7.3.2.2.17a
CMAC_MACi_Config_CNF		clause 7.3.2.2.17k
CMAC_MACi_NodeB_CellMapping_CNF		clause 7.3.2.2.17l
CMAC_MACis_Config_CNF		clause 7.3.2.2.17m
CMAC_MACi_AG_CNF		clause 7.3.2.2.17n
CMAC_MACi_E_TFC_Restriction_CNF		clause 7.3.2.2.17p
CMAC_MACehs_HARQAssign_MultiFlows_CNF		clause 7.3.2.2.17a1

TTCN-3 ASP Definition	
Type Name	**U_CRLC_CONFIG_REQ**
TTCN-3 Type	union
Port	UTRAN_CRLC
CRLC_Config_FDD_REQ	clause 7.3.2.2.24
CRLC_Config_TDD_REQ	clause 7.3.2.2.24
CRLC_Sequence_Number_REQ	clause 7.3.2.2.29
CRLC_SecurityMode_Config_REQ	clause 7.3.2.2.28
CRLC_Ciphering_Activate_REQ	clause 7.3.2.2.23
CRLC_Integrity_Activate_REQ	clause 7.3.2.2.25
CRLC_SetRRC_MessageSN_REQ	clause 7.3.2.2.28a
CRLC_RRC_MessageSN_REQ	clause 7.3.2.2.27a
CRLC_Resume_REQ	clause 7.3.2.2.27
CRLC_Suspend_REQ	clause 7.3.2.2.31
CRLC_ProhibitRLC_Ack_REQ	clause 7.3.2.2.26a
CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows_REQ	clause 7.3.2.2.22c
CRLC_ReportReceivedCellId_REQ	clause 7.3.2.2.26d

TTCN-3 ASP Definition	
Type Name	**U_CRLC_CONFIG_CNF**
TTCN-3 Type	union
Port	UTRAN_CRLC
CRLC_Config_CNF	clause 7.3.2.2.24
CRLC_Sequence_Number_CNF	clause 7.3.2.2.29
CRLC_SecurityMode_Config_CNF	clause 7.3.2.2.28
CRLC_Ciphering_Activate_CNF	clause 7.3.2.2.23
CRLC_integrity_Activate_CNF	clause 7.3.2.2.25
CRLC_Integrity_Failure_IND	clause 7.3.2.2.26
CRLC_SetRRC_MessageSN_CNF	clause 7.3.2.2.28a
CRLC_RRC_MessageSN_CNF	clause 7.3.2.2.27a
CRLC_Resume_CNF	clause 7.3.2.2.27
CRLC_Suspend_CNF	clause 7.3.2.2.31
CRLC_ProhibitRLC_Ack_CNF	clause 7.3.2.2.26a
CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows_CNF	clause 7.3.2.2.22c
CRLC_ReportReceivedCellId_CNF	clause 7.3.2.2.26d

TTCN-3 ASP Definition	
Type Name	**U_CPDCP_CONFIG_REQ**
TTCN-3 Type	union
Port	UTRAN_CPDCP
CPDCP_Config_REQ	clause 7.3.6.2.2

TTCN-3 ASP Definition	
Type Name	**U_CPDCP_CONFIG_CNF**
TTCN-3 Type	union
Port	UTRAN_CPDCP
CPDCP_Config_CNF	clause 7.3.6.2.2

6A.3.1.1 FDD Control ASP extension types

The control ASP extension types are defined for Rel-10 or later, they are implemented in TTCN-3 ATSs only.

6A.3.1.1.1 CPHY_RL_Setup extension

ASN.1 Type Definition	
Type Name	DPCHInfo_r10OrLaterExtensionType
Comment	Applicable Rel-10 or later
Type Definition	

```
CHOICE {
    rel10_AspExt SEQUENCE   {
        ul_DPCHInfo             UL_DPCH_Info_r7         OPTIONAL,
        dl_DPCHInfo             DL_DPCHInfo_r10         OPTIONAL,
        hs_DPCCHInd             HS_DPCCHInfo_r10        OPTIONAL,
        ss_UL_DPCCH_DRX_Info    SS_UL_DPCCH_DRX_Info    OPTIONAL,
        ss_DRX_Info             DTX_Info                OPTIONAL
    },
    rel11_AspExt SEQUENCE   {
        ul_DPCHInfo             UL_DPCH_Info_r11        OPTIONAL,
        dl_DPCHInfo             DL_DPCHInfo_r11         OPTIONAL,
        hs_DPCCHInd             HS_DPCCHInfo_r10        OPTIONAL,
        ss_UL_DPCCH_DRX_Info    SS_UL_DPCCH_DRX_Info    OPTIONAL,
        ss_DRX_Info             DTX_Info                OPTIONAL
    }
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r10
Comment	Applicable Rel-10 or later
Type Definition	

```
SEQUENCE    {
    dl_CommonInformation    DL_CommonInformation_r10,
    dl_Dpch_InfoPerRL       CHOICE  {
        dl_DPCH_InfoPerRL       DL_DPCH_InfoPerRL_r7,
        dl_FDPCH_InfoPerRL      DL_FDPCH_InfoPerRL_r7
        },
    rl_Information          RL_Information
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r11
Comment	Applicable Rel-11 or later
Type Definition	

```
SEQUENCE    {
    dl_CommonInformation    DL_CommonInformation_r11,
    dl_Dpch_InfoPerRL       CHOICE  {
        dl_DPCH_InfoPerRL       DL_DPCH_InfoPerRL_r7,
        dl_FDPCH_InfoPerRL      DL_FDPCH_InfoPerRL_r7
        },
    rl_Information          RL_Information
}
```

Type Name	HS_DPCCHInfo_r10
Comment	Applicable to 4C-HSDPA Rel-10 or later secondaryServing_HS_DSCH_Cell indicates if the HS-DSCH secondary serving cell is activated (see 3GPP TS 25.214 [12], clause 6A.1)
Type Definition	

```
SEQUENCE    {
    cqi_RepetitionFactor        CQI_RepetitionFactor,
    ackNackRepetitionFactor     ACK_NACK_repetitionFactor,
    mimoStatus                  BOOLEAN DEFAULT FALSE,
    firstSecondaryServing_HS_DSCH_Cell  ENUMERATED { deactivated (0), activated (1) }
                                DEFAULT deactivated,
    secondSecondaryServing_HS_DSCH_Cell ENUMERATED { deactivated (0), activated (1) }
                                DEFAULT deactivated,
    thirdSecondaryServing_HS_DSCH_Cell  ENUMERATED { deactivated (0), activated (1) }
                                DEFAULT deactivated
                                -- Relevant when third secondary cell is configured
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r10OrLaterExtensionType
Comment	Rel-10 or later. hS_PDSCH_Info rel10 extension is applied to 4C HSDPA configurations. The IEs related to HS-DSCH physical layer categories are mutually exclusive. One of the IE shall be present in the SS configuration. The IE "hsdsch_physical_layer_category_ext4" is present when 2 secondary cells are configured. The IE "hsdsch_physical_layer_category_ext5" is present when 3 secondary cells are configured. The IE "hsdsch_physical_layer_category_ext6" is present when multi-cell operation on 5 or 6 cells are configured. The IE "hsdsch_physical_layer_category_ext7" is present when multi-cell operation on 7 or 8 cells are configured. The IE "hsdsch_physical_layer_category_ext8" is present when MIMO with 4 transmit antenna are configured.

Type Definition

```
CHOICE {
    rel10_AspExt SEQUENCE   {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        hsdsch_physical_layer_category_ext2
                                    HSDSCH_physical_layer_category_ext2 OPTIONAL,
        hsdsch_physical_layer_category_ext3
                                    HSDSCH_physical_layer_category_ext3  OPTIONAL,
        hsdsch_physical_layer_category_ext4
                                    HSDSCH_physical_layer_category_ext4  OPTIONAL,
        hsdsch_physical_layer_category_ext5
                                    HSDSCH_physical_layer_category_ext5  OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r9,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        hs_scch_LessInfo            HS_SCCH_LessInfo_r7     OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r9      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        hs_SCCH_SttdIndicator       BOOLEAN DEFAULT FALSE
    },
    rel11_AspExt SEQUENCE   {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext
                                    HSDSCH_physical_layer_category_ext OPTIONAL,
        hsdsch_physical_layer_category_ext2
                                    HSDSCH_physical_layer_category_ext2 OPTIONAL,
        hsdsch_physical_layer_category_ext3
                                    HSDSCH_physical_layer_category_ext3  OPTIONAL,
        hsdsch_physical_layer_category_ext4
                                    HSDSCH_physical_layer_category_ext4  OPTIONAL,
        hsdsch_physical_layer_category_ext5
                                    HSDSCH_physical_layer_category_ext5  OPTIONAL,
        hsdsch_physical_layer_category_ext6
                                    HSDSCH_physical_layer_category_ext6 OPTIONAL,
        hsdsch_physical_layer_category_ext7
                                    HSDSCH_physical_layer_category_ext7 OPTIONAL,
        hsdsch_physical_layer_category_ext8
                                    HSDSCH_physical_layer_category_ext8 OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r11,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        hs_scch_LessInfo            HS_SCCH_LessInfo_r7     OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r9      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        hs_SCCH_SttdIndicator       BOOLEAN DEFAULT FALSE
    }
}
```

ASN.1 Type Definition	
Type Name	SS_E_HICH_Info_r10OrLaterExtensionType
Comment	Rel-11 or later. Only one of e_HICHInfo, e_HICHInfoCommonEDCH or e_HICHInfo_r11 can be present.
Type Definition	

```
CHOICE {
    rel11_AspExt SEQUENCE   {
        e_HICHInfo_r11              E_HICH_Information_r11  OPTIONAL
    }
}
```

6A.3.1.1.2 CMAC_MACehs_HARQAssign_MultiFlows extension

ASN.1 Type Definition	
Type Name	HARQAssign_MultiFlows_r10OrLaterExtensionType
Comment	Rel-10 or later Extension to assign the HARQ processes for the simultaneous transmission of the MAC-ehs PDUs on the different flows on the second and third secondary cells on the same TTI when 4C-HSDPA is configured. In 4C-HSDPA, the primaryFlow corresponds to the serving cell, the secPrimaryFlow corresponds to the first secondary cell, the thirdPrimaryFlow corresponds to the second secondary cell, and the fourthPrimaryFlow corresponds to the third secondary cell, when configured. In 4C-HSDPA and MIMO: the primaryFlow and secondaryFlow corresponds to the serving cell. The secPrimaryFlow and secSecondaryFlow corresponds to the first secondary cell. The thirdPrimaryFlow and thirdSecondaryFlow corresponds to the second secondary cell. The fourthPrimaryFlow and fourthSecondaryFlow corresponds to the third secondary cell, when configured.
Type Definition	

```
CHOICE {
    rel10_AspExt    SEQUENCE    {
        thirdPrimaryFlowHarqProcessId       INTEGER(0..15|31),
            -- of third cell
        thirdSecondaryFlowHarqProcessId     INTEGER(0..15|31)   OPTIONAL,
            -- for MIMO in third cell
        fourthPrimaryFlowHarqProcessId      INTEGER(0..15|31)   OPTIONAL,
            -- of fourth cell for 4C-HSDPA
        fourthSecondaryFlowHarqProcessId    INTEGER(0..15|31)   OPTIONAL
            -- for MIMO in fourth cell for 4C-HSDPA
    }
}
```

6A.3.1.1.3 CMAC_MAChs_MACehs_TFRCconfigure extension

ASN.1 Type Definition	
Type Name	TFRCconfigure_r10OrLaterExtensionType
Comment	Rel-10 or later Extension to configure the TFRC selection in the MAC-ehs entity when 4C-HSDPA is configured.
Type Definition	

```
CHOICE {
    rel10_AspExt CHOICE {
        sS_Configured_4C        SEQUENCE { -- Rel-10 3C/4C HSDPA
            serving_TFRC        TFRC_Configured_Type,
            firstSecondary_TFRC     TFRC_Configured_Type,
            secondSecondary_TFRC    TFRC_Configured_Type,
            thirdSecondary_TFRC     TFRC_Configured_Type OPTIONAL,
                                    -- for the third secondary cell when configured
            iniHS_PDSCH_TxPower     DL_TxPower,
                                    -- default offset related
                                    -- to p-CPICH or s-CPICH
            hs_scch_LessInfo        HS_SCCH_LessInfo_r7 OPTIONAL
            },
        explicitlyConfigured_4C     SEQUENCE { -- Rel-10 3C/4C HSDPA
            serving_TFRC            TFRC_Explicit_Type  OPTIONAL,
                -- when omitted then no data is sent on the serving HS-DSCH cell
            firstSecondary_TFRC     TFRC_Explicit_Type  OPTIONAL,
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            secondSecondary_TFRC    TFRC_Explicit_Type  OPTIONAL,
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            thirdSecondary_TFRC     TFRC_Explicit_Type  OPTIONAL
                -- for the third secondary cell when configured
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            },
        explicitlyConfigured_4C_MIMO        SEQUENCE { -- Rel-10 3C/4C HSDPA
            serving_TFRC            TFRC_ExplicitMIMO_Type OPTIONAL,
                -- when omitted then no data is sent on the serving HS-DSCH cell
            firstSecondary_TFRC     TFRC_ExplicitMIMO_Type  OPTIONAL,
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            secondSecondary_TFRC    TFRC_ExplicitMIMO_Type  OPTIONAL,
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            thirdSecondary_TFRC     TFRC_ExplicitMIMO_Type  OPTIONAL
                -- for the third secondary cell when configured
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            }
    }
}
```

ASN.1 Type Definition	
Type Name	TFRC_Configured_Type
Comment	Rel-10 or later.
Type Definition	

```
SEQUENCE {
    minChannelisationCodeOffset INTEGER (1..15),
    maxNoOfChannelisationCodes  INTEGER (1..15),
    mimoStatus                  BOOLEAN DEFAULT FALSE
}
```

ASN.1 Type Definition	
Type Name	TFRC_Explicit_Type
Comment	Rel-10 or later.
Type Definition	

```
SEQUENCE{
    modulationScheme                ModulationScheme,
    channelisationCodeOffset        INTEGER (1..15),
    noOfChannelisationCodes         INTEGER (1..15),
    tbSizeIndexOnHS_SCCH            INTEGER (0..63),
    minimumInterTTIinterval         INTEGER (1..3),
    redundancyVersions              RedundancyVersionList,
    hs_PDSCH_TxPower                DL_TxPower  -- default offset related
                                                -- to p-CPICH or s-CPICH
}
```

ASN.1 Type Definition	
Type Name	TFRC_ExplicitMIMO_Type
Comment	Rel-10 or later.
Type Definition	

```
SEQUENCE{
    modulationSchemeAndNumTB            INTEGER(0..7),
        -- set according to table 14 of 25.212
        -- Values 1,2 and 5 are used for 64QAM+MIMO
    channelisationCodeOffset            INTEGER (1..15),
    noOfChannelisationCodes             INTEGER (1..15),
    precodingWeight2                    INTEGER (0..3),
        -- set according to table 14a of 25.212
    primaryTB_SizeIndexOnHS_SCCH        INTEGER (0..63),
    secondaryTB_SizeIndexOnHS_SCCH      INTEGER (0..63) OPTIONAL,
        -- present only if second TB is to be tx
        -- as per modulationSchemeAndNumTB
    minimumInterTTIinterval             INTEGER (1..3),
    primaryRedundancyVersions           RedundancyVersionList,
    secondaryRedundancyVersions         RedundancyVersionList OPTIONAL,
        -- present only if second TB is to be tx
        -- as per modulationSchemeAndNumTB
    hs_PDSCH_TxPower                    DL_TxPower
        -- default offset related
        -- to p-CPICH or s-CPICH
}
```

6A.3.1.1.4 CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows extension

ASN.1 ASP Type Definition	
Type Name	BindTestDataInMultipleMACehs_r10OrLaterExtensionType
PCO Type	CSAP
Comment	Extension to request of binding subsequent data sending on the third and fourth secondary cells.
Type Definition	

```
CHOICE {
    rel10_AspExt SEQUENCE { -- Extension for 4C-HSDPA with or without MIMO
        thirdPrimaryFlowNumOfSDUs       INTEGER,
        -- Number of RLC SDU's for primary flow of third cell
        thirdSecondaryFlowNumOfSDUs     INTEGER     OPTIONAL,
        -- Number of RLC SDU's for secondary flow of third cell
        fourthPrimaryFlowNumOfSDUs      INTEGER     OPTIONAL,
        -- Number of RLC SDU's for fourth cell primary flow
        fourthSecondaryFlowNumOfSDUs    INTEGER     OPTIONAL
        -- Number of RLC SDU's for fourth cell secondary flow
    }
}
```

6A.3.1.1.5 CMAC_Config

ASN.1 Type Definition	
Type Name	TrCHInfo_r10OrLaterExtensionType
Comment	Rel-11 or later For rel-11 MAC-ehs configuration: When ulconnectedTrCHList, ulTFCS, dlconnectedTrCHList and dlTFCS are omitted and ehs_DSCH_Flows or E-HS-DSCH_Common Flows or ehs_DSCH_Flows_r11 is present this ASP configures an MAC-ehs entity. Only one of hsDSCHMacdFlows or ehs_DSCH_Flows or ehs_DSCH_Flows_r9 or ehs_DSCH_Flows_r11 can be present.
Type Definition	

```
CHOICE {
    rel11_AspExt SEQUENCE   { -- Rel-11 or later
        ehs_DSCH_Flows_r11      EHS_DSCH_Flows_r11      OPTIONAL
    }
}
```

Type Name	EHS_DSCH_Flows_r11
Comment	Applicable Rel-11 or later
Type Definition	

```
SEQUENCE        {
    harqInfo_r11                    HARQ_Info_r11                OPTIONAL,
    addOrReconfMAC_ehs_ReordQ       SS_MAC_ehs_AddReconfReordQueueList_r11  OPTIONAL,
    ackNackRepetitionFactor         ACK_NACK_repetitionFactor    OPTIONAL,
    mimoStatus                      BOOLEAN                      OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_MAC_ehs_AddReconfReordQueueList_r11
Comment	Applicable Rel-11 or later
Type Definition	

```
SEQUENCE (SIZE (1..maxQueueIDs)) OF SS_MAC_ehs_AddReconfReordQ_r11
```

ASN.1 Type Definition	
Type Name	SS_MAC_ehs_AddReconfReordQ_r11
Comment	Applicable Rel-11or later The priority of PriorityQueue shall set according to the priority of logical channels which is mapped on to this priority queue. NOTE: The range of priority of PriorityQueue is from 0 to 7 and 0 is the lowest priority.
Type Definition	

```
SEQUENCE    {
    mAC_ehs_AddReconfReordQ     MAC_ehs_AddReconfReordQ_r11,
    priority                    INTEGER(0..7)
}
```

6A.3.1.1.6 CRLC_Config

ASN.1 Type Definition	
Type Name	SS_RLC_Info_r10OrLaterExtensionType
Comment	Rel-11 or later
Type Definition	

```
CHOICE {
    rel11_AspExt SEQUENCE   {  -- Rel-11 or later
        sS_ul_RLC_Mode          DL_RLC_Mode_r11     OPTIONAL,
        sS_dl_RLC_Mode          SS_DL_RLC_Mode      OPTIONAL,
        rlc_OneSidedReEst       BOOLEAN             DEFAULT FALSE,
        altE_bitInterpretation  ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for UM RLC mode
        useSpecialValueOfHEField ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for AM RLC mode
        uM_SN_DeliveryMode  ENUMERATED { nonConfigured(0), configured(1)}
                            DEFAULT nonConfigured
    }
}
```

6A.3.2 ASPs for Data Transmission and Reception

TTCN-3 ASP Definition	
Type Name	U_RLC_AM_REQ
TTCN-3 Type	union
Port	UTRAN_AM
RLC_AM_DATA_REQ	clause 7.3.2.2.34
RLC_AM_TestDataReq	clause 7.3.3.1

TTCN-3 ASP Definition		
Type Name	U_RLC_AM_IND	
TTCN-3 Type	union	
Port	UTRAN_AM	
RLC_AM_DATA_CNF		clause 7.3.2.2.34
RLC_AM_DATA_IND		clause 7.3.2.2.34
RLC_AM_TestDataInd		clause 7.3.3.1

TTCN-3 ASP Definition	Port	Defined in
UTRAN_RLC_AM_REQ	UTRAN_AM	clause 7.3.2.2.34
UTRAN_RLC_AM_IND	UTRAN_AM	clause 7.3.2.2.34
UTRAN_RLC_TR_REQ	UTRAN_TM	clause 7.3.2.2.33
UTRAN_RLC_TR_IND	UTRAN_TM	clause 7.3.2.2.33
UTRAN_RLC_UM_REQ	UTRAN_UM	clause 7.3.2.2.35
UTRAN_RLC_UM_IND	UTRAN_UM	clause 7.3.2.2.35
RRC_DataReq	UTRAN_Dc	clause 7.1.2
RRC_DataReqInd	UTRAN_Dc	clause 7.1.2
PDCP_DATA_REQ	UTRAN_PDCP	clause 7.3.6.3.2
PDCP_DATA_IND	UTRAN_PDCP	clause 7.3.6.3.2

The Invalid_DL_DCCH_Message type is replaced with:

Type Name	**Invalid_DL_DCCH_Message**
TTCN-3 Type	NULL

6A.4 Upper Tester Interface

Refer to 3GPP TS 36.523-3 [62], clause 5.

6A.5 IXIT Proforma

Refer to Annex B of the present test specification.

7 PCO and ASP definitions

7.1 NAS PCO and ASP definitions

7.1.1 NAS PCO Definitions

Table 7.1.1.1: Dc PCO Type Declarations

PCO Type Declarations	
PCO Type	Dc_SAP
Role	LT
Comments	The PCO type for NAS testing

Table 7.1.1.2: Dc PCO Declarations

PCO Declarations	
PCO Name	Dc
PCO Type	Dc_SAP
Role	LT
Comments	Carry transmission and reception of NAS messages

7.1.2 Primitives used at Dc PCO

The Dc PCO is used to transmit and receive NAS (MM, CC, SM, SS) messages. Two categories of primitives are operated at the Dc PCO:

- RRC_DataReq for transmission of a NAS PDU;
- RRC_DataInd for reception of a NAS PDU.

These primitives are declared in TTCN tabular form, see Tables 7.1.2.1-1 and 7.1.2.1-2.

Table 7.1.2.1-1: Primitive RRC_DataInd used at the Dc PCO

ASP Name	RRC_DataInd	
PCO Type	Dc_SAP	
Comments	The ASP is used to indicate the receipt of the NAS PDU message using acknowledged operation (NAS <- RRC).	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	Cell Id
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
ch	LogicChGERAN	Logical channel (used for interworking with GERAN)
sapId	SapId	RRC SAP identifier (SAP0)
cN_Domain	SS_CN_DomainIdentity	CN domain identity
start	START_Value	Mandatory in INITIAL DIRECT TRANSFER
msg	PDU	NAS PDU
Detailed Comments		

Table 7.1.2.1-2: Primitive RRC_DataReq used at the Dc PCO

ASP Name	RRC_DataReq	
PCO Type	Dc_SAP	
Comments	The ASP is used to request the transmission of the NAS PDU message using acknowledged operation (NAS -> RRC).	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	Cell Id
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
ch	LogicChGERAN	Logical channel (used for interworking with GERAN)
sapId	SapId	RRC SAP identifier (SAP0)
cN_Domain	SS_CN_DomainIdentity	CN domain identity
msg	PDU	NAS PDU
Detailed Comments		

The RB Identity and CN domain parameters defined in the primitives are mandatory for UTRAN and not applicable for GERAN.

The START parameter is mandatory in INITIAL DIRECT TRANSFER; each time when it is received the new START shall be downloaded to the SS to reinitialize counters-C and counters-I.

The LogicChGSM and SapId parameters are mandatory for GERAN and not applicable for UTRAN. They are defined because they may be used for future TTCN test cases.

Except the initial, uplink and downlink direct transfer procedures, the NAS TTCN specification uses the TTCN test steps to realize all RRC functions for testing. The single layer test concept is kept for the NAS tests.

A simple RRC emulation shall be maintained for the NAS tests. It has four functions:

- Emulate the three direct transfer procedures.
- Convert the NAS downlink messages defined in 3GPP TS 24.008 [9] in table format to the NAS message in ASN.1 octet string specified in 3GPP TS 25.331 [21]. Convert the NAS uplink message in the reverse way.
- PER encoding and decoding.

- Have the integrity protection.

RB3 and RB4 are specifically used for the NAS signalling. When an uplink message entered the receiving buffer at AM-SAP from the RLC emulation, either an RRC test step if running will take it out; or the RRC emulation if running will pick the received message from the buffer. Activation of any RRC test steps and activation of any NAS test steps at the same time shall be excluded in TTCN (no concurrency between them).

7.2 Ut PCO and ASP definitions

7.2.1 Ut PCO Declarations

The Ut PCO is served as the interface to the UE EMMI for remote control of operations, which have to be performed during execution of a test case such as to switch the UE on/off, initiate a call, etc.

Table 7.2.1.1: Declaration of the upper tester PCO type

PCO Type Declarations	
PCO Type	MMI
Role	UT
Comments	The PCO type for MMI or EMMI of the upper tester

Table 7.2.1.2: Declaration of the Ut PCO

PCO Declarations	
PCO Name	Ut
PCO Type	MMI
Role	UT
Comments	Carry transmission commands and reception of results for the upper tester

7.2.2 Primitives used at Ut PCO

The Ut PCO is used to indicate to the upper tester actions and to receive the acknowledgement of these actions. The AT commands are used wherever the suitable commands exist within 3GPP TS 27.007 [23], 3GPP TS 27.005 [22] and 3GPP TS 27 060 [24]. An MMI command is used, when AT commands does not exit for the action to performed. The primitives used at the Ut PCO, are declared in TTCN tabular form, see Table 7.2.2.1.

Table 7.2.2.1: Primitives used at the Ut PCO

Primitive	Parameters	Use
AT_CmdReq	Command: IA5String SMS_BlockMode: HEXSTRING	Request an AT command to the upper tester.
AT_CmdInd	Command: IA5String SMS_BlockMode: HEXSTRING	Indication of a result from the upper tester.
AT_CmdCnf	Result: BOOLEAN ResultString: IA5String SMS_BlockMode: HEXSTRING	Return a positive or negative result from the command previously sent. Both the Boolean result and String parameter are optional.
MMI_CmdReq	Command: IA5String	Request a command to the upper tester.
MMI_CmdCnf	Result: BOOLEAN ResultString: IA5String	Return a positive or negative result from the command previously sent. The String parameter is optional.

The AT_CmdReq primitive for sending AT commands is mostly used to trigger electronically an uplink access, such as initiating of a call, attaching or detaching, starting packet data transfer etc. The MMI_primitive is defined mainly for observation of some test events via a test operator, such as checking DTMF tone or checking called party number, etc.

The AT_CmdInd primitive for receiving AT commands is mostly used to transfer unsolicited result codes from the UE to the lower tester.

The SMS_BlockMode parameter is used to control and observe the Block mode procedure for SMS. This parameter is not yet used; it is defined for future development. The Command and SMS_BlockMode parameters are mutually exclusive

For the Command in the AT_CmdReq and AT_CmdInd primitives, the verbose format is used as defined in 3GPP TS 27.007 [23]. For the Command in MMI_CmdReq, just a descriptive IA5 string line, like "Check DTMF tone" is used.

7.3 RRC PCO and ASP definitions

7.3.1 AM/UM/TM PCO and ASP definitions

7.3.1.1 SAP and PCO for data transmission and reception

Table 7.3.1.1.1: Declaration of the RRC PCO Type

PCO Type Definition	
PCO Type	DSAP
Role	LT
Comment	DATA transmission and reception

Table 7.3.1.1.2: PCO TM declaration

PCO Type Definition	
PCO Name	TM
PCO Type	DSAP
Role	LT
Comment	Carry Transparent Mode RLC PDU

Table 7.3.1.1.3: PCO AM declaration

PCO Type Definition	
PCO Name	AM
PCO Type	DSAP
Role	LT
Comment	Carry Acknowledged Mode RLC PDU

Table 7.3.1.1.4: PCO UM declaration

PCO Type Definition	
PCO Name	UM
PCO Type	DSAP
Role	LT
Comment	Carry Unacknowledged Mode RLC PDU

Table 7.3.1.1.5: PCO BMC declaration

PCO Type Definition	
PCO Name	BMC
PCO Type	DSAP
Role	LT
Comment	Provide Unacknowledged Mode BMC data transmission service

7.3.2 Control PCO and ASP

7.3.2.1 SAP and PCO for control primitives transmission and reception

Table 7.3.2.1.1: SAP declaration

PCO Type Definition	
PCO Type	CSAP
Role	LT
Comment	Control primitives transmission and reception

Table 7.3.2.1.2: PCO CPHY

PCO Definition	
PCO Name	CPHY
PCO Type	CSAP
Role	LT
Comment	Control Physical Layer

Table 7.3.2.1.3: PCO CRLC

PCO Definition	
PCO Name	CRLC
PCO Type	CSAP
Role	LT
Comment	Control RLC Layer

Table 7.3.2.1.4: PCO CMAC

PCO Definition	
PCO Name	CMAC
PCO Type	CSAP
Role	LT
Comment	Control MAC Layer

Table 7.3.2.1.5: PCO CBMC

PCO Definition	
PCO Name	CBMC
PCO Type	CSAP
Role	LT
Comment	Control BMC Layer

Table 7.3.2.1.6: ExternalAsn1Codec declaration

PCO Type Definition	
PCO Type	ExternalAsn1Codec
Role	LT
Comment	Control decoder primitives transmission and reception

Table 7.3.2.1.7: PCO CCodec

PCO Definition	
PCO Name	CCodec
PCO Type	ExternalAsn1Codec
Role	LT
Comment	Control asn.1 CONTAINING decoder

Table 7.3.2.1.8: ExternalStructure Codec declaration

PCO Type Definition	
PCO Type	ExternalStructureCodec
Role	LT
Comment	Control decoder from a BITSTRING to a structure type primitives transmission and reception

Table 7.3.2.1.9: PCO CCodecS

PCO Definition	
PCO Name	CCodecS
PCO Type	ExternalStructureCodec
Role	LT
Comment	Control BITSTRING to structure type decoder

7.3.2.2 Control ASP Type Definition

7.3.2.2.1 CPHY_AICH_AckModeSet

ASN.1 ASP Type Definition	
Type Name	CPHY_AICH_AckModeSet_REQ
PCO Type	CSAP
Comment	To request for setting of AICH Acknowledge Mode

Type Definition

```
SEQUENCE    {
            cellId              INTEGER(0..63),
            routingInfo         RoutingInfo,
            ratType             RatType,
            aICH_Mode           AICH_Mode
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_AICH_AckModeSet_CNF
PCO Type	CSAP
Comment	To confirm setting of AICH Acknowledge Mode

Type Definition

```
SEQUENCE    {
                cellId                  INTEGER(0..63),
                routingInfo             RoutingInfo
}
```

ASN.1 Type Definition	
Type Name	AICH_Mode
Comment	Normal operation: The AICH will operate as normal, and will acknowledge or negatively acknowledge on all UE RACH/E-DCH transmission attempts, appropriately. No Acknowledge: The AICH shall not transmit acknowledge or Negative Acknowledge on all UE RACH/E-DCH transmission attempts. Negative Acknowledge: The AICH shall transmit Negative Acknowledge on all UE RACH/E-DCH transmission attempts
Type Definition	

```
ENUMERATED  {
            normal  (0),
            noAck   (1),
            negACK  (2)
}
```

7.3.2.2.2 CPHY_Cell_Config

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Config_CNF
PCO Type	CSAP
Comment	To confirm to setup the cell parameter
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Config_REQ
PCO Type	CSAP
Comment	To request to setup the cell parameter. The unit of tcell is chip; the unit of sfnOffset is frame number. The sfnOffset is defined as the number of frames the SFN shall be shifted, i.e. the frames lagging behind or in advance, in comparison to a system reference time. The both interpretations are valid for the test. The primary scrambling code number of the cell is 16*primaryScramblingCode_SS. The unit of dLTxAttenuationLevel is dB; If set to 123 the cell becomes a non-suitable off cell (CPICH_Ec ≤ -122 dBm/3.84 MHz of an off cell).
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            tcell                           INTEGER(0..38399),
            sfnOffset                       INTEGER(0..4095),
            frequencyInfo                   FrequencyInfo,
            primaryScramblingCode_SS        INTEGER(0..511),
            cellTxPowerLevel                CellTxPowerLevel,
            dLTxAttenuationLevel            INTEGER(0..30|123),
            frequencyBandIndicator          FrequencyBandFDD,
            relAspTypeExtension             BIT STRING OPTIONAL -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	CellTxPowerLevel
Comment	The defaultCellTxPowerLvl is a default setting and is used for the most signalling tests. The real total cell DL Tx power level equals to the sum of the DL Tx power of the individual physical channels configured. The totalCellTxPowerLvl applies to e.g. the idle mode tests in a non-default multi-cell radio environment.
Type Definition	

```
CHOICE {
            defaultCellTxPowerLvl       NULL,
            totalCellTxPowerLvl         DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	FrequencyBandFDD
Comment	The frequency band indicator indicates how to interpret the radio frequency broadcast.
Type Definition	

```
CHOICE {
        frequencyBandIndicator      RadioFrequencyBandFDD,
        frequencyBandIndicator2     RadioFrequencyBandFDD2,
        frequencyBandIndicator3     RadioFrequencyBandFDD3,
        relAspTypeExtension         BIT STRING
}
```

7.3.2.2.3 CPHY_Cell_Release

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Release_CNF
PCO Type	CSAP
Comment	The confirmation to the CPHY_Cell_Release_Req
Type Definition	

```
SEQUENCE {
            soft_Reset          BOOLEAN,
            cell_ID_List        SEQUENCE (SIZE (1..8)) OF INTEGER(0..63)    -- cell IDs
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Release_REQ
PCO Type	CSAP
Comment	1. This Primitive with "Soft_Reset" flag ON gives a common known starting point/state of SS for a test case. The SS perfoms the following whenever it receives this primitive with "Soft_Reset" flag ON: Releases all configured Channels and cells (if any) irrespective of Cell ID list IE. 2. Releases the associated Memory Buffers (if any). 3. Cancels all active timers (if any) With "Soft_Reset" flag OFF: 1. Releases cells listed in IE Cell_ID_List and associated configured Channels (if any) 2. Releases the Memory Buffers(if any) associated with Cells listed in IE Cell_ID_List 3. Cancels all active timers (if any) associated with Cells listed in IE Cell_ID_List. Presence of rbConfig_List IE indicates the configured Channels in the associated cells in the list to be released. If rbConfig_List IE is present, then for each entry in cell_ID_List a corresponding entry in rbConfig_List shall be present. The configuration values applied in rbConfig_List follows RB_ConfigType.
Type Definition	

```
SEQUENCE {
    soft_Reset          BOOLEAN,
    cell_ID_List        SEQUENCE (SIZE (1..8)) OF INTEGER(0..63) ,  -- cell IDs
    rbConfig_List       SEQUENCE (SIZE (1..8)) OF INTEGER OPTIONAL
}
```

7.3.2.2.3a CPHY_Cell_TimingAdjust

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_TimingAdjust_CNF
PCO Type	CSAP
Comment	To confirm to set the cell timing parameter
Type Definition	

```
SEQUENCE    {
    cellId      INTEGER (0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_TimingAdjust_REQ
PCO Type	
Comment	To request the cell identified by cellId to adjust its timing to the amount of deltTcell given in this ASP. Usage: The deltTcell is a relative value, which specifies the timing difference between the original timing (i.e. before calling this ASP) and the timing after calling this ASP. Example: assume the cell 1 is initially 5 chips advance of cell 2 in timing, the test case requires timing change of cell 2 being -19 chips delay with respect to cell 1 (i.e. cell 2 is 19 chips advance of cell 1 in timing) , TTCN can use this ASP with deltTcell = -24 and cellId = cell 2 to adjust the timing; later on the test case requires timing change again: cell 2 being 19 chips delay with respect to cell 1, TTCN can use this ASP with deltTcell = 38 and cellId = cell 2 to achieve the required timing difference.
Type Definition	

```
SEQUENCE    {
    cellId      INTEGER(0..63),
    deltTcell   INTEGER(-128..127)
}
```

7.3.2.2.3b CPHY_Detect_TFCI

ASN.1 ASP Type Definition	
Type Name	CPHY_DetectTFCI_CNF
PCO Type	CSAP
Comment	To confirm to CPHY_DetetTFCI_REQ
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63) ),
            routingInfo                     RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_DetectTFCI_REQ
PCO Type	CSAP
Comment	To set the mode of the SS for detecting whether the specified list of TFCI values occurred. Usage: At the SS initialization, the default mode is stop. When the mode is set to start, the SS shall detect whether the specified list of TFCI values (tfci_List) happens on the specified uplink physical channel. When happened the SS generates a CPHY_TFCI_Detected_IND and stop further detection. Otherwise keeps monitoring until a CPHY_DetectTFCI_REQ with mode = stop received.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo,
            mode                            ENUMERATED{start(0), stop(1)},
            tfci_List                       TFCI_List
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TFCI_Detected_IND
PCO Type	CSAP
Comment	To indicate the TFCI value specified in the CPHY_DetectTFCI_REQ has been detected.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo,
            tfciValue                       INTEGER (0..1023)
}
```

ASN.1 Type Definition	
Type Name	TFCI_List
Comment	
Type Definition	
`SEQUENCE ( SIZE (1..1024)) OF INTEGER (0..1023)`	

7.3.2.2.4 CPHY_Ini

ASN.1 ASP Type Definition	
Type Name	CPHY_Ini_REQ
PCO Type	CSAP
Comment	Request to initialize the test
Type Definition	

```
ENUMERATED {
            defaultRadioEnvironment(0),
            nonDefaultMultiCell(1)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Ini_CNF
PCO Type	CSAP
Comment	Confirm the test initialization
Type Definition	

```
SEQUENCE    {
            confirmation        NULL
}
```

7.3.2.2.5 CPHY_Cell_TxPower_Modify

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_TxPower_Modify_CNF
PCO Type	CSAP
Comment	To confirm to change the DL power
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_TxPower_Modify_REQ
PCO Type	CSAP
Comment	To request to change the DL power If the Tx attenuation level value is set to 123, the cell becomes a non-suitable off cell (CPICH_Ec ≤ -122 dBm/3.84 MHz of an off cell).
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(0..63),
            dLTxAttenuationLevel        INTEGER(0..40|123)
}
```

7.3.2.2.6 CPHY_Frame_Number

ASN.1 ASP Type Definition	
Type Name	CPHY_Frame_Number_CNF
PCO Type	CSAP
Comment	To return the requested connection frame number. The routingInfo indicates a physical channel. The frameNumber is set to (SFN mod 256) when requested on S-CCPCH in PCH/FACH.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        frameNumber                 INTEGER (0..255)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Frame_Number_REQ
PCO Type	CSAP
Comment	To request the physical layer to return a connection frame number on which the next message can be sent at the specified PCO on the specified logical channel. The return frame number shall leave time from current frame number in order to leave some execution time for TTCN preparing next message. The routingInfo indicates a physical channel
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo
}
```

7.3.2.2.6a CPHY_SFN (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_SFN_CNF
PCO Type	CSAP
Comment	To return the requested system frame number of the cell. The routingInfo indicates the P-CCPCH physical channel. In MBMS the MICH Connection Frame Number (CFN) corresponds to the Cell SFN of the frame in which the start of the S-CCPCH frame is located.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        currentSFN                  INTEGER(0..4095)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_SFN_REQ
PCO Type	CSAP
Comment	To request the physical layer to return the current SFN of the cell. The routingInfo indicates the P-CCPCH physical channel. In MBMS the MICH Connection Frame Number (CFN) corresponds to the Cell SFN of the frame in which the start of the S-CCPCH frame is located. The timing of S-CCPCH relative to P-CCPCH can be configured as timingOffSet in steps of 256 chips.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo
}
```

7.3.2.2.6b CPHY_MBMS_MICH_q (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_MBMS_MICH_q_CNF
PCO Type	CSAP
Comment	To confirm CPHY_MBMS_MICH_q_REQ. The routingInfo indicates the MICH physical channel.
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(0..63),
            routingInfo         RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_MBMS_MICH_q_REQ
PCO Type	CSAP
Comment	To request the physical layer to transmit MBMS notification Indicators on the MICH physical channel. The transmission shall start on the SFN specified by the parameter mICHCFN and be continued for one modification period indicated by parameter modiCoefficent. The routingInfo indicates the MICH physical channel. The notification indicators to be transmitted are specified by the parameter indicatorList.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(0..63),
            routingInfo             RoutingInfo,
            mICHCFN                 MICH_CFN,
            modiPeriodCoefficent    INTEGER(7..10),
            indicatorList           MBMS_q_List
}
```

ASN.1 Type Definition	
Type Name	MBMS_q_List
Comment	The maximum number of notification indicators per frame for the nn18 alternative is 18. The maximum number of notification indicators per frame for the nn36 alternative is 36. The maximum number of notification indicators per frame for the nn72 alternative is 72. The maximum number of notification indicators per frame for the nn144 alternative is 144.
Type Definition	

```
CHOICE {
        nn18    Q_List18,
        nn36    Q_List36,
        nn72    Q_List72,
        nn144   Q_List144
}
```

ASN.1 Type Definition	
Type Name	Q_List18
Comment	This type is a list which holds 128 or 256 or 512 or 1024 values of ListOf18q, each value of ListOf18q is also a list of (1..18) values of INTEGER. The first value of ListOf18q is corresponding to the MICH frame which starts the modification period, the second value of ListOf18q is corresponding to the next MICH frame in the modification period and so on, the last value of ListOf18q is corresponding to the last MICH frame of the modification period. Be noted that for different modification period configurations the number of values of ListOf18q are different and shall match the configuration. The SS sets the bits {b0, …, b287} of the MICH frame according to the INTEGER values in the ListOf18q corresponding to the MICH frame (see 3GPP TS 25.211 [40], subclause 5.3.3.15)
Type Definition	

```
CHOICE {
    fRM128      SEQUENCE SIZE((128)) OF ListOf18q,
    fRM256      SEQUENCE SIZE((256)) OF ListOf18q,
    fRM512      SEQUENCE SIZE((512)) OF ListOf18q,
    fRM1024     SEQUENCE SIZE((1024)) OF ListOf18q
}
```

ASN.1 Type Definition	
Type Name	ListOf18q
Comment	This type holds (1..18) values of the "q" for a MICH frame which MICH CFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs The values of q are calculated by TTCN according to formula: $q = \left\lfloor \left(\left(C \times \left(\mathrm{NI} \oplus \left(\left(C \times SFN \right) \mathrm{mod} G \right) \right) \right) \mathrm{mod} G \right) \times \frac{Nn}{G} \right\rfloor$ where: G =2^{16}, C = 25033; NI = Notification Indicator (0..65535) is computed by the TTCN for each TMGI according to the formula: $NI = \left(TMGI + \lfloor TMGI / G \rfloor \right) \mathrm{mod} G$ where G = 2^{16}; the number of TMGI could be 1 to 18; SFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs; Nn = the number of notification indicators per frame:
Type Definition	
`SEQUENCE (SIZE(1..18)) OF INTEGER (0..17)`	

ASN.1 Type Definition	
Type Name	Q_List36
Comment	This type is a list which holds 128 or 256 or 512 or 1024 values of ListOf36q, each value of ListOf36q is also a list of (1..36) values of INTEGER. The first value of ListOf36q is corresponding to the MICH frame which starts the modification period, the second value of ListOf36q is corresponding to the next MICH frame in the modification period and so on, the last value of ListOf36q is corresponding to the last MICH frame of the modification period. Be noted that for different modification period configurations the number of values of ListOf36q are different and shall match the configuration. The SS sets the bits {b0, …, b287} of the MICH frame according to the INTEGER values in the ListOf36q corresponding to the MICH frame (see 3GPP TS 25.211 [40], subclause 5.3.3.15).
Type Definition	

```
CHOICE {
        fRM128      SEQUENCE (SIZE(128)) OF ListOf36q,
        fRM256      SEQUENCE (SIZE(256)) OF ListOf36q,
        fRM512      SEQUENCE (SIZE(512)) OF ListOf36q,
        fRM1024     SEQUENCE (SIZE(1024)) OF ListOf36q
}
```

ASN.1 Type Definition	
Type Name	ListOf36q
Comment	This type holds (1..36) values of the "q" for a frame which MICH CFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs The values of q are calculated by TTCN according to formula: $q = \left\lfloor \left(\left(C \times \left(\mathrm{NI} \oplus \left(\left(C \times SFN \right) \mathrm{mod} G \right) \right) \right) \mathrm{mod} G \right) \times \frac{Nn}{G} \right\rfloor$ where: G = 2^{16}, C = 25033; NI = Notification Indicator (0..65535) is computed by the TTCN for each TMGI according to the formula: $NI = \left(TMGI + \lfloor TMGI / G \rfloor \right) \mathrm{mod} G$ where G = 2^{16}; the number of *TMGI* could be 1 to 36; SFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs; Nn = the number of notification indicators per frame:
Type Definition	
`SEQUENCE (SIZE(1..36)) OF INTEGER (0..35)`	

ASN.1 Type Definition	
Type Name	Q_List72
Comment	This type is a list which holds 128 or 256 or 512 or 1024 values of ListOf72q, each value of ListOf72q is also a list of (1..72) values of INTEGER. The first value of ListOf72q is corresponding to the MICH frame which starts the modification period, the second value of ListOf72q is corresponding to the next MICH frame in the modification period and so on, the last value of ListOf72q is corresponding to the last MICH frame of the modification period. Be noted that for different modification period configurations the number of values of ListOf72q are different and shall match the configuration. The SS sets the bits {b0, …, b287} of the MICH frame according to the INTEGER values in the ListOf72q corresponding to the MICH frame (see 3GPP TS 25.211 [40], subclause 5.3.3.15).
Type Definition	

```
CHOICE {
        fRM128      SEQUENCE (SIZE(128)) OF ListOf72q,
        fRM256      SEQUENCE (SIZE(256)) OF ListOf72q,
        fRM512      SEQUENCE (SIZE(512)) OF ListOf72q,
        fRM1024     SEQUENCE (SIZE(1024)) OF ListOf72q
}
```

ASN.1 Type Definition	
Type Name	ListOf72q
Comment	This type holds (1..72) values of the "q" for a frame which MICH CFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs The values of q are calculated by TTCN according to formula: $q = \left\lfloor \left(\left(C \times \left(\mathrm{NI} \oplus \left(\left(C \times SFN \right) \mathrm{mod} G \right) \right) \right) \mathrm{mod} G \right) \times \frac{Nn}{G} \right\rfloor$ where: G = 2^{16}, C = 25033; NI = Notification Indicator (0..65535) is computed by the TTCN for each TMGI according to the formula: $NI = \left(TMGI + \left\lfloor TMGI / G \right\rfloor \right) \mathrm{mod} G$ where G = 2^{16}; the number of *TMGI* could be 1 to 72; SFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs; Nn = the number of notification indicators per frame:
Type Definition	

```
SEQUENCE (SIZE(1..72)) OF INTEGER (0..71)
```

ASN.1 Type Definition	
Type Name	Q_List144
Comment	This type is a list which holds 128 or 256 or 512 or 1024 values of ListOf144q, each value of ListOf144q is also a list of (1..144) values of INTEGER. The first value of ListOf144q is corresponding to the MICH frame which starts the modification period, the second value of ListOf144q is corresponding to the next MICH frame in the modification period and so on, the last value of ListOf144q is corresponding to the last MICH frame of the modification period. Be noted that for different modification period configurations the number of values of ListOf144q are different and shall match the configuration. The SS sets the bits {b0, …, b287} of the MICH frame according to the INTEGER values in the ListOf144q corresponding to the MICH frame (see 3GPP TS 25.211 [40], subclause 5.3.3.15).
Type Definition	

```
CHOICE {
            fRM128      SEQUENCE (SIZE(128)) OF ListOf144q,
            fRM256      SEQUENCE (SIZE(256)) OF ListOf144q,
            fRM512      SEQUENCE (SIZE(512)) OF ListOf144q,
            fRM1024     SEQUENCE (SIZE(1024)) OF ListOf144q
}
```

ASN.1 Type Definition	
Type Name	ListOf144q
Comment	This type holds (1..144) values of the "q" for a frame which MICH CFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs The values of q are calculated by TTCN according to formula: $q = \left\lfloor \left(\left(C \times \left(\mathrm{NI} \oplus \left(\left(C \times SFN \right) \bmod G \right) \right) \right) \bmod G \right) \times \frac{Nn}{G} \right\rfloor$ where: G = 2^{16}, C = 25033; NI = Notification Indicator (0..65535) is computed by the TTCN for each TMGI according to the formula: $NI = \left(TMGI + \lfloor TMGI / G \rfloor \right) \bmod G$ where G = 2^{16}; the number of *TMGI* could be 1 to 144; SFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs; Nn = the number of notification indicators per frame:
Type Definition	
`SEQUENCE (SIZE(1..144)) OF INTEGER (0..143)`	

ASN.1 Type Definition	
Type Name	MICH_CFN
Comment	Subclause 9.2.1.46a of 3GPP TS 25.433 [57]
Type Definition	
`INTEGER (0..4095)`	

7.3.2.2.6c CPHY_MBMS_NI (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_MBMS_NI_CNF
PCO Type	CSAP
Comment	To confirm CPHY_MBMS_NI_REQ. The routingInfo indicates the MICH physical channel.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_MBMS_NI_REQ
PCO Type	CSAP
Comment	To request the physical layer to transmit MBMS Notification Indicators on the MICH physical channel. The transmission shall start on the SFN specified by the parameter startingTime and be continued for one modification period indicated by parameter modiPeriodCoefficent. The routingInfo indicates the MICH physical channel. The notification indicators to be transmitted are specified by the parameter indicatorList. If value of invert is TRUE, all notification indicators Nq are set to "0" and all other indicators are set to "1".
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo,
        startingTime            MICH_CFN,
        modiPeriodCoefficent    INTEGER(7..10),
        nIList                  MBMSIndicatorList,
        invert                  BOOLEAN DEFAULT FALSE
}
```

ASN.1 Type Definition	
Type Name	MBMSIndicatorList
Comment	The TTCN calculates Notification Indicator (NI, 0..65535) for each TMGI according to the formula: $NI = (TMGI + \lfloor TMGI / G \rfloor) \bmod G$ where G = 2^{16} and sends these NI to the SS by the MBMSIndicatorList; The SS shall calculate the q values for every MICH frame of a modification period according to formula: $q = \left\lfloor \left(\left(C \times \left(\mathrm{NI} \oplus \left(\left(C \times SFN \right) \bmod G \right) \right) \right) \bmod G \right) \times \frac{Nn}{G} \right\rfloor$ where: G = 2^{16}, C = 25033; SFN = the SFN of the P-CCPCH radio frame during which the start of the MICH radio frame occurs; Nn = the number of notification indicators per frame: Then the SS sets the bits {b0, …, b287} of the MICH frame according to the calculated q values which corresponds to the MICH frame (see 3GPP TS 25.211 [40], subclause 5.3.3.15).
Type Definition	

```
CHOICE {
    nn18    SEQUENCE (SIZE(1..18)) OF SEQUENCE { nI INTEGER (0..65535)},
    nn36    SEQUENCE (SIZE(1..36)) OF SEQUENCE { nI INTEGER (0.. 65535)},
    nn72    SEQUENCE (SIZE(1..72)) OF SEQUENCE { nI INTEGER (0.. 65535)},
    nn144   SEQUENCE (SIZE(1..144)) OF SEQUENCE { nI    INTEGER (0.. 65535)}
}
```

7.3.2.2.7 CPHY_Out_of_Sync

ASN.1 ASP Type Definition	
Type Name	CPHY_Out_of_Sync_IND
PCO Type	CSAP
Comment	To report that the physical channel synchronization (in FDD mode, sync with uplink DPCCH) was lost as detected by the SS receiver.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(0..63),
            routingInfo                 RoutingInfo
}
```

7.3.2.2.8 CPHY_PRACH_Measurement

ASN.1 ASP Type Definition	
Type Name	CPHY_PRACH_Measurement_CNF
PCO Type	CSAP
Comment	To Confirm PRACH Measurement Req
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(0..63),
            routingInfo         RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_PRACH_Measurement_REQ
PCO Type	CSAP
Comment	To request for Start or Stop of PRACH Measurements to be done every PRACH PREAMBLE or MESSAGE received. If reportSFN is set to TRUE, SS shall report in the IE PRACH_MeasurementReport the SFN value at which the event is received.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        routingInfo             RoutingInfo,
        ratType                 RatType,
        pRACH_MeasurementInd    PRACH_MeasurementInd,
        reportSFN               BOOLEAN DEFAULT FALSE -- Rel-8 or later
}
```

ASN.1 Type Definition	
Type Name	PRACH_MeasurementInd
Comment	1) StartMeas: The SS shall start the sending PRACH parameters Measurement report on CPHY PCO, for each PRACH Preamble or MESSAGE received from the UE by primitive CPHY_PRACH_Measurement_Report_IND on CPHY PCO. 2) StopMeas: The SS shall stop sending of PRACH parameters Measurement report on CPHY PCO, for each PRACH Preamble or MESSAGE received from the UE by primitive CPHY_PRACH_Measurement_Report_IND on CPHY PCO.
Type Definition	

```
ENUMERATED  {
        startMeas (0),
        stopMeas (1)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_PRACH_Measurement_Report_IND
PCO Type	CSAP
Comment	SS indicates a PRACH parameters measurement report for each PRACH Preambles or MESSAGE received from the UE
Type Definition	

```
SEQUENCE     {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        measurementReport           PRACH_MeasurementReport
}
```

ASN.1 Type Definition	
Type Name	PRACH_MeasurementReport
Comment	sfn is included if reportSFN is TRUE in CPHY_PRACH_Measurement_REQ.
Type Definition	

```
SEQUENCE    {
        usedPRACH_AcessSlot         INTEGER (0..14),
        usedPRACH_Signature         INTEGER (0..15) OPTIONAL,
        sfn                         INTEGER (0..4095) OPTIONAL -- Rel-8 or later
}
```

7.3.2.2.9 CPHY_RL_Modify

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Modify_CNF
PCO Type	CSAP
Comment	To confirm to modify the Radio Link
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Modify_REQ
PCO Type	CSAP
Comment	To request to modify the Radio Link HardHandover (PhysicalChannelReconfig) ChannelizationCodeChange FrequencyChange PhysicalChannelModifyForTrCHReconfig CompressedMode(PhysicalChannelReconfig) Re_Synchronized HardHandover Softhandover
Type Definition	

```
SEQUENCE        {
                cellId                  INTEGER(0..63),
                routingInfo             RoutingInfo,
                ratType                 RatType,
                modifyMessage           CphyRlModifyReq
}
```

ASN.1 Type Definition	
Type Name	CphyRlModifyReq
Comment	
Type Definition	

```
SEQUENCE    {
    activationTime                      SS_ActivationTime,
    physicalChannelInfo
        CHOICE {
            dpch_CompressedModeStatusInfo       Dpch_CompressedModeStatusInfo,
            secondaryCCPCHInfo          SecondaryCCPCHInfo,
            pRACHInfo                   PRACHInfo,
            dPCHInfo                    DPCHInfo,
            dPCHInfo_r5                 DPCHInfo_r5OrLater,     -- Rel-5 or later
            hS_PDSCHInfo                HS_PDSCHInfo_r5OrLater, -- Rel-5 or later
            e_DPCHInfo                  SS_E_DPCH_Info_r6OrLater,   -- Rel-6 or later
            e_AGCHInfo                  SS_E_AGCH_Info,             -- Rel-6 or later
            e_HICHInfo                  SS_E_HICH_Info,             -- Rel-6 or later
            e_RGCHInfo                  SS_E_RGCH_Info,             -- Rel-6 or later
            mBMS_MICHInfo               SS_MBMS_MICHConfigurationInfo_r6,
                                        -- Rel-6 or later
            aICHInfo                    AICHInfo,
            relAspTypeExtension         BIT STRING  -- Rel-10 or later
            },
        trchConfigToFollow              BOOLEAN         DEFAULT TRUE,
        relAspTypeExtension             BIT STRING  OPTIONAL    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	SS_ActivationTime
Comment	
Type Definition	

```
CHOICE {
        activationCFN                   ActivationTime,
        activateNow                     NULL
}
```

7.3.2.2.10 CPHY_RL_Release

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Release_CNF
PCO Type	CSAP
Comment	PHY emulator confirms that a specified physical channel has been released.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Release_REQ
PCO Type	CSAP
Comment	To request to release the Radio Link
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        activationTime              SS_ActivationTime
}
```

7.3.2.2.11 CPHY_RL_Setup

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_CNF
PCO Type	CSAP
Comment	To confirm to setup the Radio Link
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_REQ
PCO Type	CSAP
Comment	To request to setup the associated transport channels and the Radio Link itself.
Type Definition	

```
SEQUENCE     {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        setupMessage                CphyRlSetupReq
}
```

ASN.1 Type Definition	
Type Name	CphyRlSetupReq
Comment	To request to setup the Radio Link
Type Definition	

```
SEQUENCE    {
    physicalChannelInfo         CHOICE      {
        primaryCPICHInfo            PrimaryCPICHInfo,
        secondaryCPICHInfo          SecondaryCPICHInfo,
        primarySCHInfo              PrimarySCHInfo,
        secondarySCHInfo            SecondarySCHInfo,
        primaryCCPCHInfo            PrimaryCCPCHInfo,
        secondaryCCPCHInfo          SecondaryCCPCHInfo,
        pRACHInfo                   PRACHInfo,
        pICHInfo                    PICHInfo,
        aICHInfo                    AICHInfo,
        dPCHInfo                    DPCHInfo,
        pDSCHInfo                   PDSCHInfo,
        dPCHInfo_r5                 DPCHInfo_r5OrLater,     -- Rel-5 or later
        hS_PDSCHInfo                HS_PDSCHInfo_r5OrLater, -- Rel-5 or later
        e_DPCHInfo                  SS_E_DPCH_Info_r6OrLater,   -- Rel-6 or later
        e_AGCHInfo                  SS_E_AGCH_Info,             -- Rel-6 or later
        e_HICHInfo                  SS_E_HICH_Info,             -- Rel-6 or later
        e_RGCHInfo                  SS_E_RGCH_Info,             -- Rel-6 or later
        mBMS_MICHInfo               SS_MBMS_MICHConfigurationInfo_r6,
                                        -- Rel-6 or later
        relAspTypeExtension         BIT STRING  -- Rel-10 or later
    },
    activationTime              SS_ActivationTime,
    trchConfigToFollow          BOOLEAN         DEFAULT TRUE,
    relAspTypeExtension         BIT STRING  OPTIONAL    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	PrimaryCPICHInfo
Comment	mimoAntenna2CPICH indicates if MIMO is either not configured or configured with a P-CPICH or with an S-CPICH on the MIMO antenna2 (see figure 7 of 3GPP TS 25.214 [12], clause 9). dC_SecondaryServingCell indicates if the cell is configured as secondary HS-DSCH serving cell, without other common channel than P-CPICH. MIMO and DC-HSDPA do not co-exist.
Type Definition	

```
SEQUENCE    {
        dl_TxPower_PCPICH           DL_TxPower_PCPICH,
        tx_diversityIndicator       BOOLEAN,
        mimoAntenna2CPICH           MimoAntennaConfigType   DEFAULT noMimo,
        -- Rel-7 or later
        dC_SecondaryServingCell     BOOLEAN                 DEFAULT FALSE,
        -- Rel-8 or later
        relAspTypeExtension         BIT STRING  OPTIONAL -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	SecondaryCPICHInfo
Comment	The channel can be configured for the MIMO antenna2. The value antenna2pCPICH is not applicable.
Type Definition	

```
SEQUENCE {
        scramblingCode              INTEGER(0..15),
        dl_ChannelizationCode       SF512_AndCodeNumber,
        dl_TxPower                  DL_TxPower,
        mimoAntenna                 MimoAntennaConfigType   DEFAULT noMimo
        -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	MimoAntennaConfigType
Comment	Rel-7 or later
Type Definition	

```
ENUMERATED  {noMimo(0), antenna2pCPICH(1), antenna2sCPICH(2), spare(3)}
```

ASN.1 Type Definition	
Type Name	PrimarySCHInfo
Comment	
Type Definition	

```
SEQUENCE {
        tstdIndicator               BOOLEAN,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	SecondarySCHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        tstdIndicator               BOOLEAN,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimaryCCPCHInfo
Comment	
Type Definition	

```
SEQUENCE    {
        sttd_Indicator              BOOLEAN,
        dl_TxPower                  DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	SecondaryCCPCHInfo
Comment	The range for powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0 dB to 6 dB, 0.25 dB per step. mbms_softCombTimingOffset is present when L1-combination applies When configuring SCCPCH for MBMS "positionFixedOrFlexible" shall be set to Flexible, and sCCPCHSlotFormat shall be chosen to the one without pilot bits
Type Definition	

```
SEQUENCE {
        scramblingCode              INTEGER(0..15),
        dl_ChannelizationCode       SF256_AndCodeNumber,
        sCCPCHSlotFormat            SCCPCHSlotFormat,
        timingOffset                INTEGER (0..149),
        positionFixedOrFlexible     PositionFixedOrFlexible,
        sttd_Indicator              BOOLEAN,
        dl_TxPower                  DL_TxPower,
        powerOffsetOfTFCI_PO1       INTEGER (0..24),
        powerOffsetOfPILOT_PO3      INTEGER (0..24),
        mbms_softCombTimingOffset   MBMS_SoftComb_TimingOffset OPTIONAL --Rel-6 or later
}
```

ASN.1 Type Definition	
Type Name	PRACHInfo
Comment	
Type Definition	

```
SEQUENCE {
    fdd_tdd     CHOICE  {
        fdd SEQUENCE   {
                preambleSignature               AvailableSignatures,
                spreadingFactorForDataPart      SF_PRACH,
                preambleScramblingCode          PreambleScramblingCodeWordNumber,
                puncturingLimit                 PuncturingLimit,
                accessSlot                      AvailableSubChannelNumbers
        },
        tdd SEQUENCE   {
                -- timeSlot                     TimeSlot,
                -- spreadingCode                SpreadingCode,
                -- midambleCode                 MidambleCode
        },
        fdd_prachForEnhUL SEQUENCE {            -- Rel-8 or later
                -- For rel-99 PRACH
                preambleSignature               AvailableSignatures,
                spreadingFactorForDataPart      SF_PRACH,
                preambleScramblingCode          PreambleScramblingCodeWordNumber,
                puncturingLimit                 PuncturingLimit,
                accessSlot                      AvailableSubChannelNumbers,

                -- For Enhanced Uplink E-DCH transmission
                commonEDCH_PreambleSignature    AvailableSignatures,
                                    -- access preamble signature for E-DCH transmission
                commonEDCH_PreambleScramblingCode   PreambleScramblingCodeWordNumber,
                commonEDCH_AccessSlot           AvailableSubChannelNumbers
        }
    }
}
```

ASN.1 Type Definition	
Type Name	PICHInfo
Comment	When the PICH is associated to the HS-SCCH, sccpchId_associated is set to 32 (Rel-7 or later).
Type Definition	

```
SEQUENCE    {
            pichinfo                    PICH_Info,
            dl_TxPower                  PICH_PowerOffset,
            sccpchId_associated         INTEGER (0..32)
                                        -- Value 32 used in Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	AICHInfo
Comment	When e_AI_Info is present: - upon receipt of the access preamble signature corresponding to a PRACH message transmission i.e. preambleSignature, the Acquisition Indicators is transmitted on AICH - upon receipt of the access preamble signature corresponding to an E-DCH transmission i.e. commonEDCH_PreambleSignature, the Extended Acquisition Indicators is transmitted on AICH.
Type Definition	

```
SEQUENCE    {
            aichinfo                    AICH_Info,
            dl_TxPower                  AICH_PowerOffset,
            e_AI_Info                   E_AI_InfoType   OPTIONAL    -- Rel-8 or later
}
```

ASN.1 Type Definition	
Type Name	DPCHInfo
Comment	At least one of the fields shall be present.
Type Definition	

```
SEQUENCE    {
            ul_DPCHInfo             UL_DPCH_Info    OPTIONAL,
            dl_DPCHInfo             DL_DPCHInfo     OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo
Comment	
Type Definition	

```
SEQUENCE    {
            dl_CommonInformation        DL_CommonInformation,
            dl_DPCH_InfoPerRL           DL_DPCH_InfoPerRL,
            rl_Information              RL_Information
}
```

ASN.1 Type Definition	
Type Name	HS_DPCCHInfo
Comment	mimoStatus represents status of MIMO and shall be set only if mimo_Parameters are provided in HS-PDSCH configuration
Type Definition	

```
SEQUENCE    {
            cqi_RepetitionFactor        CQI_RepetitionFactor,
            ackNackRepetitionFactor     ACK_NACK_repetitionFactor,
            mimoStatus                  BOOLEAN DEFAULT FALSE
            -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	HS_DPCCHInfo_r8
Comment	mimoStatus represents status of MIMO and shall be set only if mimo_Parameters are provided in HS-PDSCH configuration. secondaryServing_HS_DSCH_Cell indicates if the HS-DSCH secondary serving cell is activated (see 3GPP TS 25.214 [12], clause 6A.1)
Type Definition	

```
SEQUENCE    {
    cqi_RepetitionFactor        CQI_RepetitionFactor,
    ackNackRepetitionFactor     ACK_NACK_repetitionFactor,
    mimoStatus                  BOOLEAN DEFAULT FALSE,
    secondaryServing_HS_DSCH_Cell   ENUMERATED { deactivated (0), activated (1) }
                                    DEFAULT deactivated
                                    -- Rel-8 or later
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r5
Comment	Applicable Rel-5 or later
Type Definition	

```
SEQUENCE    {
            dl_CommonInformation        DL_CommonInformation_r5,
            dl_DPCH_InfoPerRL           DL_DPCH_InfoPerRL_r5,
            rl_Information              RL_Information
}
```

ASN.1 Type Definition	
Type Name	DL_TxPower_PCPICH
Comment	Absolute Tx Power of PCPICH
Type Definition	

```
INTEGER (-60..-30)
```

ASN.1 Type Definition	
Type Name	DL_TxPower
Comment	Downlink Tx Power relative to PCPICH
Type Definition	
`INTEGER (-35..+15)`	

ASN.1 Type Definition	
Type Name	SCCPCHSlotFormat
Comment	Reference to 3GPP TS25.211 [40]
Type Definition	
`INTEGER (0..17)`	

ASN.1 Type Definition	
Type Name	PDSCHInfo
Comment	
Type Definition	

```
SEQUENCE {
    fdd_tdd         CHOICE  {
            fdd     SEQUENCE    {
                        pdsch_CodeMapping       PDSCH_CodeMapping
                                },
            tdd     SEQUENCE    {
                        --pdsch_Identity        PDSCH_Identity,
                        --pdsch_Info            PDSCH_Info,
                        --pdsch_PowerControlInfo    PDSCH_PowerControlInfo  OPTIONAL
                                },
                            },
    dl_TxPower          DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DPCHInfo_r5OrLater
Comment	Applicable Rel-5 or later At least one of the first two fields ul_DPCHInfo or dl_DPCHInfo shall be present. Presence of hs_DPCCHInd means that the HS-DPCCH shall be configured in the uplink DPCH. If hs_DPCCHInd is absent no HS-DPCCH shall be configured in the uplink DPCH, or the configured HS-DPCCH shall be removed in the modify ASP. In the active set which has radio links from more than one cell the HS-DPCCH is configured only in the HS-DSCH serving cell. Three combinations are valid: ul_DPCH_Info only, dl_DPCHInfo only and ul_DPCH_Info + hs_DPCCHInd. Presence of ss_UL_DPCCH_DRX_Info if UL DPCH being configured and presence of ss_DRX_Info if DL F-DPCH being configured indicates that UL_DTX is enabled. ss_DRX_Info is provided as F-DPCH TPC commands need not be transmitted during gaps due to UL-DPCCH DTX (3GPP TS 25.214 [12], subclause 5.1.2.2.1). ul_DPCH_TimingOffset is the timing offset relative to P-CCPCH, it is provided in Rel-7 only when Enhanced Cell FACH Downlink (common_HS_PDSCH_Info) is configured.
Type Definition	

```
CHOICE  {
    r5  SEQUENCE    {
            ul_DPCHInfo             UL_DPCH_Info_r5         OPTIONAL,
            dl_DPCHInfo             DL_DPCHInfo_r5          OPTIONAL,
            hs_DPCCHInd             HS_DPCCHInfo            OPTIONAL
    },
    r6      SEQUENCE {
            ul_DPCHInfo             UL_DPCH_Info_r6         OPTIONAL,
            dl_DPCHInfo             DL_DPCHInfo_r6          OPTIONAL,
            hs_DPCCHInd             HS_DPCCHInfo            OPTIONAL
    },
    r7  SEQUENCE{
            ul_DPCHInfo             UL_DPCH_Info_r7         OPTIONAL,
            ul_DPCH_TimingOffset        INTEGER (0..38399) OPTIONAL,
                -- timing offset relative to P-CCPCH
                -- applicable to Rel-7 when Enhanced Cell FACH DL is configured
            dl_DPCHInfo             DL_DPCHInfo_r7          OPTIONAL,
            hs_DPCCHInd             HS_DPCCHInfo            OPTIONAL,
            ss_UL_DPCCH_DRX_Info    SS_UL_DPCCH_DRX_Info    OPTIONAL,
            ss_DRX_Info             DTX_Info                OPTIONAL
    },
    r8  SEQUENCE{
            ul_DPCHInfo             UL_DPCH_Info_r7         OPTIONAL,
            dl_DPCHInfo             DL_DPCHInfo_r8          OPTIONAL,
            hs_DPCCHInd             HS_DPCCHInfo_r8         OPTIONAL,
            ss_UL_DPCCH_DRX_Info    SS_UL_DPCCH_DRX_Info    OPTIONAL,
            ss_DRX_Info             DTX_Info                OPTIONAL
    },
    relAspTypeExtension             BIT STRING
                                    {CONTAINING DPCHInfo_r10OrLaterExtensionType}
                                    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r6
Comment	Applicable Rel-6 For SS reconfiguration from DL-DPCH to F-DPCH and vice versa the dl_CommonInformation shall include the defaultDPCH_OffsetValue as additional information for SS even when this is not included in the corresponding RRC message sent to the UE and the timing is maintained.
Type Definition	

```
SEQUENCE    {
            dl_CommonInformation        DL_CommonInformation_r6,
            dl_Dpch_InfoPerRL           CHOICE {
                    dl_DPCH_InfoPerRL           DL_DPCH_InfoPerRL_r6,
                    dl_FDPCH_InfoPerRL          DL_FDPCH_InfoPerRL_r6
                    },
            rl_Information              RL_Information
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r7
Comment	Applicable Rel-7 or later
Type Definition	

```
SEQUENCE    {
    dl_CommonInformation    DL_CommonInformation_r7,
    dl_Dpch_InfoPerRL       CHOICE  {
        dl_DPCH_InfoPerRL       DL_DPCH_InfoPerRL_r7,
        dl_FDPCH_InfoPerRL      DL_FDPCH_InfoPerRL_r7
        },
    rl_Information          RL_Information
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r8
Comment	Applicable Rel-8 or later
Type Definition	

```
CHOICE  {
    r8  SEQUENCE    {
        dl_CommonInformation    DL_CommonInformation_r8,
        dl_Dpch_InfoPerRL       CHOICE  {
            dl_DPCH_InfoPerRL       DL_DPCH_InfoPerRL_r7,
            dl_FDPCH_InfoPerRL      DL_FDPCH_InfoPerRL_r7
            },
    rl_Information          RL_Information
    },
    spare1 NULL
}
```

ASN.1 Type Definition	
Type Name	SS_UL_DPCCH_DRX_Info
Comment	
Type Definition	

```
SEQUENCE    {
    ss_DRX_Info                         DTX_Info                OPTIONAL,
    dtx_DRX_timingInfo                  DTX_DRX_TimingInfo_r7   OPTIONAL,
    uplink_DPCCHSlotFormatInformation   Uplink_DPCCH_Slot_Format_Information
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r5OrLater
Comment	Applicable Rel-5 or later When CHY_RL_Setup_REQ is called with CHOICE of hS_PDSCHInfo HS_PDSCH and HS-SCCH shall be configured in SS. The following HS-DSCH related parameters are passed to the SS implicitly by HSDSCH_physical_layer_category: - Maximum number of HS-DSCH codes can be received by UE. - Minimum inter-TTI interval. - Maximum number of bits of an HS-DSCH transport block within an HS-DSCH TTI. - Total number of soft channel bits". HSDSCH_physical_Layer_category is also used for interpretation of the meaning of CQI value. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured.
Type Definition	

```
CHOICE {
    r5  SEQUENCE    {
        hSDSCHPhysicalLayerCategory     HSDSCH_physical_layer_category,
        h_RNTI                          H_RNTI,
        dlHSPDSCHInformation            DL_HSPDSCH_Information,
        sttd_Indicator                  BOOLEAN,
        hs_SCCH_TxPower                 DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow                BOOLEAN DEFAULT TRUE
                    },
    r6  SEQUENCE    {
        hSDSCHPhysicalLayerCategory     HSDSCH_physical_layer_category,
        h_RNTI                          H_RNTI,
        dlHSPDSCHInformation            DL_HSPDSCH_Information_r6,
        sttd_Indicator                  BOOLEAN,
        hs_SCCH_TxPower                 DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow                BOOLEAN DEFAULT TRUE
                    },
    r7  HS_PDSCHInfo_r7,
    r8  HS_PDSCHInfo_r8,
    r9  HS_PDSCHInfo_r9,
    relAspTypeExtension     BIT STRING
                            (CONTAINING HS_PDSCHInfo_r10OrLaterExtensionType )
                            -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r7
Comment	Rel-7 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of ss_DTX_Info makes DL DRX to be enabled. Presence of hs_scch_LessInfo makes HS-SCCH less operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. MIMO and HS-SCCH less operation do not co-exist. MIMO is not applicable for non DCH states. The two IE "hSDSCHPhysicalLayerCategory" and "hsdsch_physical_layer_category_ext" are mutually exclusive. One of the IE shall be present in the SS configuration. The IE "hsdsch_physical_layer_category_ext" is present when MAC-ehs is configured. If commonOrDedicated_H_RNTI is omitted, HS-SCCHless is to be applied. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. In common_HS_PDSCH_Info, hs_DPCCHToFollow is set to FALSE unless HS-DPCCH is required in specific configuration.

Type Definition

```
CHOICE {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r7,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        hs_scch_LessInfo            HS_SCCH_LessInfo_r7     OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r7      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        hs_SCCH_SttdIndicator       BOOLEAN DEFAULT FALSE
        },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI    H_RNTI  OPTIONAL,
        bcchSpecific_H_RNTI         H_RNTI,
        hs_scch_SystemInfo          HS_SCCH_SystemInfo,
        hs_dsch_PagingSystemInformation HS_DSCH_PagingSystemInformation OPTIONAL,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE
        },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r8
Comment	Rel-8 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of ss_DTX_Info makes DL DRX to be enabled. Presence of hs_scch_LessInfo makes HS-SCCH less operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. MIMO and HS-SCCH less operation do not co-exist. MIMO is not applicable for non DCH states. The three IE "hSDSCHPhysicalLayerCategory", "hsdsch_physical_layer_category_ext" and "hsdsch_physical_layer_category_ext2" are mutually exclusive. One of the IE shall be present in the SS configuration. The IE "hsdsch_physical_layer_category_ext2" is present when DC-HSDPA is configured. If commonOrDedicated_H_RNTI is omitted, HS-SCCHless is to be applied. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. Presence of ss_HS_DSCH_DtxCellFach makes HS-DSCH DRX operation enabled and SS shall transmit any requested HS-SCCH and HS-DSCH only in occasions when UE will be listening.

Type Definition

```
CHOICE  {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        hsdsch_physical_layer_category_ext2
                                    HSDSCH_physical_layer_category_ext2 OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r8,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        hs_scch_LessInfo            HS_SCCH_LessInfo_r7     OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r8      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        hs_SCCH_SttdIndicator       BOOLEAN DEFAULT FALSE
        },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI    H_RNTI                      OPTIONAL,
        bcchSpecific_H_RNTI         H_RNTI,
        hs_scch_SystemInfo          HS_SCCH_SystemInfo,
        hs_dsch_PagingSystemInformation HS_DSCH_PagingSystemInformation OPTIONAL,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        ss_HS_DSCH_DtxCellFach      HS_DSCH_DrxCellfach_info OPTIONAL
        },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r9
Comment	Rel-9 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of ss_DTX_Info makes DL DRX to be enabled. Presence of hs_scch_LessInfo makes HS-SCCH less operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. MIMO and HS-SCCH less operation do not co-exist. MIMO is not applicable for non DCH states. The IEs "hSDSCHPhysicalLayerCategory", "hsdsch_physical_layer_category_ext", "hsdsch_physical_layer_category_ext2" and "hsdsch_physical_layer_category_ext3" are mutually exclusive. One of the IE shall be present in the SS configuration. The IE "hsdsch_physical_layer_category_ext2" is present when DC-HSDPA is configured. The IE "hsdsch_physical_layer_category_ext3" is present when DC-HSDPA with MIMO is configured. If commonOrDedicated_H_RNTI is omitted, HS-SCCHless is to be applied. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. Presence of ss_HS_DSCH_DtxCellFach makes HS-DSCH DRX operation enabled and SS shall transmit any requested HS-SCCH and HS-DSCH only in occasions when UE will be listening.

Type Definition

```
CHOICE  {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        hsdsch_physical_layer_category_ext2
                                    HSDSCH_physical_layer_category_ext2 OPTIONAL,
        hsdsch_physical_layer_category_ext3
                                    HSDSCH_physical_layer_category_ext3  OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r9,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        hs_scch_LessInfo            HS_SCCH_LessInfo_r7     OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r9      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        hs_SCCH_SttdIndicator       BOOLEAN DEFAULT FALSE
        },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI    H_RNTI                      OPTIONAL,
        bcchSpecific_H_RNTI         H_RNTI,
        hs_scch_SystemInfo          HS_SCCH_SystemInfo,
        hs_dsch_PagingSystemInformation HS_DSCH_PagingSystemInformation OPTIONAL,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        ss_HS_DSCH_DtxCellFach      HS_DSCH_DrxCellfach_info OPTIONAL
        },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	SS_E_DPCH_Info_r6OrLater
Comment	Rel-6 or later. If there is an UL-DPCH configured in the cell the E-DPCH shall use the same scramblingCodeType and scramblingCode as the UL-DPCH. Presence of ul_16QAM_Settings enables usage of 16QAM in UL. With 16QAM configured the value of "E-TFCI table index" is increased by 2, and indices in the SG-Table refer to Scheduling Grant Table 2 in 3GPP TS 25.321 [17]. The IEs "edch_PhysicalLayerCategory" , "edch_PhysicalLayerCategory_extension" and "edch_PhysicalLayerCategory_extension2" are mutually exclusive. One of the IE shall be present in the SS configuration. The IE "edch_PhysicalLayerCategory_extension" is present only for UE categories greater than or equal to 7. "edch_PhysicalLayerCategory_extension2" is present when Dual Cell E-DCH operation is configured.

Type Definition

```
CHOICE  {
    r6  SEQUENCE {
        e_DPCCH_Info                    E_DPCCH_Info,
        e_DPDCH_Info                    E_DPDCH_Info,
        scramblingCodeType              ScramblingCodeType OPTIONAL,
        scramblingCode                  UL_ScramblingCode OPTIONAL,
        tti                             E_DCH_TTI OPTIONAL,
        edch_PhysicalLayerCategory      INTEGER (1..16)
        },
    r7  SEQUENCE    {
        e_DPCCH_Info                E_DPCCH_Info_r7,
        e_DPDCH_Info                E_DPDCH_Info_r7,
        scramblingCodeType          ScramblingCodeType  OPTIONAL,
        scramblingCode              UL_ScramblingCode   OPTIONAL,
        tti                         E_DCH_TTI           OPTIONAL,
        edch_PhysicalLayerCategory  INTEGER (1..16)     OPTIONAL,
        edch_PhysicalLayerCategory_extension    INTEGER (7) OPTIONAL,
        ul_16QAM_Settings           UL_16QAM_Settings   OPTIONAL
        },
    r8  SEQUENCE    {
        e_DPCCH_Info                E_DPCCH_Info_r7,
        e_DPDCH_Info                E_DPDCH_Info_r8,
        scramblingCodeType          ScramblingCodeType  OPTIONAL,
        scramblingCode              UL_ScramblingCode   OPTIONAL,
        tti                         E_DCH_TTI           OPTIONAL,
        edch_PhysicalLayerCategory  INTEGER (1..16)     OPTIONAL,
        edch_PhysicalLayerCategory_extension    INTEGER (7) OPTIONAL,
        ul_16QAM_Settings           UL_16QAM_Settings       OPTIONAL,
        s_offset                    INTEGER (0..9)  OPTIONAL -- Used for enhFACH UL
        },
    r9  SEQUENCE    {
        e_DPCCH_Info                E_DPCCH_Info_r7,
        e_DPDCH_Info                E_DPDCH_Info_r8,
        scramblingCodeType          ScramblingCodeType  OPTIONAL,
        scramblingCode              UL_ScramblingCode   OPTIONAL,
        tti                         E_DCH_TTI           OPTIONAL,
        edch_PhysicalLayerCategory  INTEGER (1..16)     OPTIONAL,
        edch_PhysicalLayerCategory_extension    INTEGER (7) OPTIONAL,
        edch_PhysicalLayerCategory_extension2   INTEGER (8..9)  OPTIONAL,
        ul_16QAM_Settings           UL_16QAM_Settings       OPTIONAL,
        s_offset                    INTEGER (0..9)  OPTIONAL -- Used for enhFACH UL
        },
    relAspTypeExtension             BIT STRING  -- Rel-10 or later

}
```

ASN.1 Type Definition	
Type Name	SS_E_AGCH_Info
Comment	Rel-6 or later. Presence of ss_DTX_Info indicates DL_DRX is enabled and SS shall transmit any requested AGCH only in occasions when UE will be listening.
Type Definition	

```
CHOICE  {
    r6  SEQUENCE {
        e_AGCHInfo              E_AGCH_Information,
        tti                     E_DCH_TTI,
        e_AGCH_PowerOffset      INTEGER (0..255)
                            -- Range and Step are FFS (25.433, 9.2.2.13If)
                            -- Offset relative to P-CPICH,
        e_RNTI_Primary          E_RNTI OPTIONAL,
        e_RNTI_Secondary        E_RNTI OPTIONAL,
        ss_DTX_Info             DRX_Info    OPTIONAL,   -- Rel-7 or later
        sttdIndicator           BOOLEAN DEFAULT FALSE
    },
    r8      SEQUENCE {          -- Rel-8 or later
        e_AGCHInfo              E_AGCH_Information_r8,
        tti                     E_DCH_TTI,
        e_AGCH_PowerOffset      INTEGER (0..255),
                            -- Range and Step are FFS (25.433, 9.2.2.13If)
                            -- Offset relative to P-CPICH
        e_RNTI_Primary          E_RNTI OPTIONAL,
        e_RNTI_Secondary        E_RNTI OPTIONAL,
        ss_DTX_Info             DRX_Info    OPTIONAL,
        initialServingGrantValue    INTEGER (0..37) OPTIONAL, -- Used for enhFACH UL
        sttdIndicator           BOOLEAN DEFAULT FALSE
    },
    relAspTypeExtension         BIT STRING  -- Rel-10 or later

}
```

ASN.1 Type Definition	
Type Name	SS_E_HICH_Info
Comment	Rel-6 or later. Only one of e_HICHInfo and e_HICHInfoCommonEDCH can be present.
Type Definition	

```
SEQUENCE {
        e_HICHInfo              E_HICH_Information  OPTIONAL,
        e_HICHInfoCommonEDCH    E_HICH_Information_CommonEdch   OPTIONAL,
        -- Rel-8 or later
        tti                     E_DCH_TTI,
        e_HICH_PowerOffset      INTEGER (0..255),
                            -- PowerOffset = -32 + offset * 0.25
                            -- Unit dB, Range -32dB .. +31.75dB, Step +0.25dB
                            -- (25.433, 9.2.2.13Id), offset relative to P-CPICH
        sttdIndicator           BOOLEAN DEFAULT FALSE,
        relAspTypeExtension     BIT STRING
                            (CONTAINING SS_E_HICH_Info_r10OrLaterExtensionType)OPTIONAL
                            -- Rel-10 or later

}
```

ASN.1 Type Definition	
Type Name	SS_E_RGCH_Info
Comment	Rel-6 or later. Presence of ss_DTX_Info indicates DL_DRX is enabled and SS shall transmit any requested RGCH only in occasions when UE is going to listen. Only one of e_RGCHInfo and e_RHCHInfoCommonEDCH can be present.
Type Definition	

```
SEQUENCE {
        e_RGCHInfo              E_RGCH_Information  OPTIONAL,
        e_RHCHInfoCommonEDCH    E_RGCH_Information_CommonEdch   OPTIONAL,
        -- Rel-8 or later
        tti                     E_DCH_TTI,
        e_RGCH_PowerOffset      INTEGER (0..255),
                            -- Range Range:-32 .. +31.75 dB, Step: 0.25 dB
                            -- Offset relative to P-CPICH
        ss_DTX_Info             DRX_Info    OPTIONAL,   -- Rel-7 or later
        sttdIndicator           BOOLEAN DEFAULT FALSE,
        relAspTypeExtension     BIT STRING OPTIONAL -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	RL_Information
Comment	The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0 dB to 6 dB, 0,25 dB per step. The IE cfnTgtSfnFrameOffset is applied when adding another RL or moving the UE to another cell in DCH state in the timing-maintained hard handover or in the softhandover. The cfnTgtSfnFrameOffset is defined as being the time difference between the CFN and the SFN of the cell in which the RL is to be added. The use of cfnTgtSfnFrameOffset and DOFF (Default DPCH Offset Value) is mutually exclusive. The IE cfnTgtSfnFrameOffset is omitted when configuring the 1^{st} RL, or configuring the RL in the timing re-initialized hard handover where the required synchronization information is provided in defaultDPCH_offsetValue in DL_CommonInformation. In addition, TmTgt value is provided to dpch_FrameOffset in DL_DPCH_InfoPerRL_r5 or DL_DPCH_InfoPerRL_r6 as CFNchipOffset_Tgt. TmTgt can be observed by the UE, or calculated by the TTCN. If it is calculated, TmTgt = (DOFF*512 + 38400 + TCell_Ref - TCell_Tgt) Mod 38400. dl_FDPCH_ShoConfig set to TRUE, indicates that F-DPCH is configured in softHO.
Type Definition	

```
SEQUENCE {
        powerOffsetOfTFCI_PO1           INTEGER (0..24),
        powerOffsetOfTPC_PO2            INTEGER (0..24),
        powerOffsetOfPILOT_PO3          INTEGER (0..24),
        dl_TxPower                      DL_TxPower,
        dl_TxPowerMax                   DL_TxPower,
        dl_TxPowerMin                   DL_TxPower,
        cfnTgtSfnFrameOffset            CfnTgtSfnFrameOffset    OPTIONAL,
        dl_FDPCH_ShoConfig              BOOLEAN DEFAULT FALSE -- Rel-6 or later
}
```

ASN.1 Type Definition	
Type Name	CfnTgtSfnFrameOffset
Comment	1. The observedValue is provided if the UE reads SFN when measuring "Cell synchronization information" and sends it to the SS in MEASUREMENT REPORT message. The OFF value in IE COUNT-C-SFN frame difference is applied to the observedValue. 2. If the synchronization between the target cell and the reference cell is calculated the calculatedAbsoluteValue is applied. Depending upon how to interpret SfnOffset two valid calculations exist. 2.1 If SfnOffset is interpreted as the frames lagging behind: calculated_sfnLagging = (((4096 * 38400) + SfnOffset_Ref * 38400 +TCell_Ref + DOFF*512 - (SfnOffset_Tgt * 38400 + TCell_Tgt)) mod (256 * 38400)) / 38400 2.2 If SfnOffset is interpreted as the frames in advance: calculated_sfnInAdvance = (((4096 + SfnOffset_Tgt - SfnOffset_Ref) * 38400 +TCell_Ref + DOFF*512 - TCell_Tgt) mod (256 * 38400)) / 38400 The formula can be further simplified in the default condition if SfnOffset_Ref and TCell_Ref are equal to 0: calculated_sfnLagging = (((4096 * 38400) + DOFF*512 - (SfnOffset_Tgt * 38400 + TCell_Tgt)) mod (256 * 38400)) / 38400 calculated_sfnInAdvance = ((DOFF*512 + SfnOffset_Tgt * 38400 - TCell_Tgt) Mod (256 * 38400)) / 38400 calculated_sfnInAdvance = (calculated_sfnLagging + 2* SfnOffset_Tgt) mod 256 calculated_sfnLagging = (calculated_sfnInAdvance + (4096 - SfnOffset_Tgt) * 2) mod 256 The TTCN provides calculated_sfnLagging.
Type Definition	

```
SEQUENCE {
        referenceCellId             INTEGER(0..63),
        cfnFrameOffset              CHOICE {
            observed                INTEGER (0..255),
            calculated              INTEGER (0..255) }
}
```

ASN.1 Type Definition	
Type Name	SS_MBMS_MICHConfigurationInfo_r6
Comment	Rel-6 or later.
Type Definition	

```
SEQUENCE    {
    michinfo                MBMS_MICHConfigurationInfo_r6,
    sccpchId_associated     INTEGER (0..31)
}
```

Type Name	E_AI_InfoType
Comment	defaultE_DCH_ResourceIndex is the index (range 0 to 31) in SIB5/5bis of the E-DCH resource to be used by SS when providing the resource configuration index to UE in the E-AI indication. defaultE_DCH_ResourceIndex = -1 indicates that any E-DCH resource index is used as appropriate and as indicated by UE in the access preamble. The totalNumberE_DCH is the total number of E-DCH resources configured in SIB5/5bis.
Type Definition	

```
SEQUENCE    {
        defaultE_DCH_ResourceIndex  INTEGER (-1..31),
        totalNumberE_DCH            INTEGER (1..32)
}
```

7.3.2.2.12 CPHY_Sync

ASN.1 ASP Type Definition	
Type Name	CPHY_Sync_IND
PCO Type	CSAP
Comment	To indicate that physical channel synchronization (in FDD mode, sync with DPCCH) has been achieved.
Type Definition	

```
SEQUENCE    {
                cellId                      INTEGER(0..63),
                routingInfo                 RoutingInfo
}
```

7.3.2.2.12a CPHY_HS_DPCCH_AckNack (Rel-5 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_AckNack_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later To Confirm CPHY_HS_DPCCH_AckNack_REQ
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_AckNack_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To request for start or stop reporting Ack/Nack received on the HS-DPCCH for the HARQ process hARQProcessId. Harq Process ID 0..15 represent the respective process Id with HS-SCCH type 1 operation. Value 31 represents all HARQ process IDs; it is used for HS-SCCH less/HS-SCCH Type 2 operation. At the initialization the SS is at the "sTOPRep" state without reporting any Ack/Nack
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(0..63),
            ratType                 RatType,
            ackNackReportReq        AckNackReportReq,
            hARQProcessId           INTEGER(0..15|31)
}
```

ASN.1 Type Definition	
Type Name	AckNackReportReq
Comment	Applicable Rel-5 or later startRep: The SS shall start reporting the HARQ-ACK information received on HS-DPCCH by primitive CPHY_HS_DPCCH_AckNack_IND on CPHY PCO. stopRep: The SS shall stop reporting.
Type Definition	

```
ENUMERATED  {
            startRep (0),
            stopRep  (1)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_AckNack_IND
PCO Type	CSAP
Comment	Applicable Rel-5 or later SS reportes the HARQ-ACK information received on HS_DPCCH, each received Ack/Nack generates a CPHY_HS_DPCCH_AckNack_IND Harq Process ID 0..15 represent the process Id with HS-SCCH type 1 operation. Value 31 represents all HARQ process IDs; it is used for HS-SCCH less/HS-SCCH Type 2 operation.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        ratType                     RatType,
        hARQ_ACKInfo                ENUMERATED {ack(0), nack (1)},
        hARQProcessId               INTEGER(0..15|31)
}
```

7.3.2.2.12b CPHY_HS_DPCCH_CQI (Rel-5 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later To Confirm CPHY_HS_DPCCH_CQI_REQ
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To enable the SS to start reporting N times of the CQI value received on the HS-DPCCH. After N times the SS stops reporting. N is specified in numberOfReports. At the SS initialization reporting of CQI values is disabled
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(0..63),
        ratType                 RatType,
        numberOfReports         INTEGER(1..32)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_IND
PCO Type	CSAP
Comment	Applicable Rel-5 or later SS generates the indication when a CQI value is received on HS_DPCCH after invocation of ASP CPHY_HS_DPCCH_CQI_REQ and before the numberOfReports is reached. This ASP is used for verifying whether the UE has configured the HS-DSCH and starts reception of HS-DSCH (3GPP TS 25.331 [21], subclause 8.6.6.34). 'second_cqi' shall be reported when MIMO is configured and dual transport block type A CQI report is received. When second_cqi is present, allowed values for 'cqi' are 0..14. In all other cases (i.e. non MIMO operation, MIMO operation but with CQI type B or single transport block type A CQI reports] 'second_cqi' shall not be reported and range for cqi is 0..30. 'pci' and cqiType shall be present when MIMO is configured.
Type Definition	

```
SEQUENCE    {
    cellId          INTEGER(0..63),
    ratType         RatType,
    cfn             INTEGER (0..255),   -- Rel-7 or later
    subframe        INTEGER (0..4),     -- Rel-7 or later
    cqi             INTEGER (0..30),
    cqiExt          CQI_ExtensionType

}
```

ASN.1 Type Definition	
Type Name	CQI_ExtensionType
Comment	Rel-7 or later The value -1 for second_cqi indicates the absence of the second CQI.
Type Definition	

```
SEQUENCE    {
    second_cqi      INTEGER (-1..14) OPTIONAL,
    pci             INTEGER (0..3) OPTIONAL,                       -- MIMO
    cqiType         ENUMERATED {cqiTypeA(0), cqiTypeB(1)} OPTIONAL  -- MIMO
}
```

7.3.2.2.12b1 CPHY_HS_DPCCH_CQI_DC (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_DC_CNF
PCO Type	CSAP
Comment	Applicable Rel-8 or later To Confirm CPHY_HS_DPCCH_CQI_DC_REQ
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_DC_REQ
PCO Type	CSAP
Comment	Applicable Rel-8 or later To enable the SS to start reporting N times of the CQI value received on the HS-DPCCH on cellId when DC-HSDPA is configured. After N times the SS stops reporting. N is specified in numberOfReports. At the SS initialization reporting of CQI values is disabled.
Type Definition	

```
SEQUENCE    {
    cellId                  INTEGER(0..63),
    ratType                 RatType,
    numberOfReports         INTEGER(1..32)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DPCCH_CQI_DC_IND
PCO Type	CSAP
Comment	Applicable Rel-8 or later SS generates the indication when a CQI value is received on HS-DPCCH after invocation of ASP CPHY_HS_DPCCH_CQI_REQ and before the numberOfReports is reached. This ASP is used for verifying whether the UE has configured the HS-DSCH and starts reception of HS-DSCH (3GPP TS 25.331 [21], subclause 8.6.6.34 and 3GPP TS 25.212 [58], subclause 4.7.3.A2).
Type Definition	

```
SEQUENCE    {
    cellId               INTEGER(0..63),
    ratType              RatType,
    cfn                  INTEGER (0..255),
    subframe             INTEGER (0..4) OPTIONAL,
    cqi_dCHSDPA          INTEGER (0..1023)
}
```

7.3.2.2.12c CPHY_HS_DSCH_CRC_Mode (Rel-5 or later)

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DSCH_CRC_Mode_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later Confirm a previous CPHY_HS_DSCH_CRC_Mode_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63),
        routingInfo         RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_DSCH_CRC_Mode_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To set the CRC calculation mode for HS-DSCH. If mode = normal, the SS generates the correct CRC. If mode = erroneous, the SS always generates any wrong CRC value which is different from the correct one on the specified MACdFlow/mac-ehs Queue. If mode = error1AndNormal, the SS generates wrong CRC for first transmission and correct CRC on first retransmission. Later SS operates in normal mode. If mode = error2AndNormal, the SS generates wrong CRC for first transmission, first retransmission and correct CRC second retransmission. The corrupted bits in first error transmission and second error transmission are different, so that when UE combines the data from three transmission, shall result in correct data. Later SS operates in normal mode. As default, the normal mode is applied. When the HS-DSCH first configured or reconfigured the SS enters the normal CRC calculation mode.
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(-1..63) ,
            routingInfo         RoutingInfo,
            flow_Queue_Id       Flow_Queue_ID,
            mode                ENUMERATED {normal(0), erroneous(1),
                                error1AndNormal(2), error2AndNormal(3)}
}
```

ASN.1 Type Definition	
Type Name	Flow_Queue_ID
Comment	Choice MAC_d_Flow is used when MAC-hs is configured and MAC_ehs_Queue is used when MAC-ehs is configured.
Type Definition	

```
CHOICE {
        mac_dFlowId         MAC_d_FlowIdentity,
        mac_ehs_QueueId     NULL
}
```

7.3.2.2.13 CPHY_TrCH_Config

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Config_CNF
PCO Type	CSAP
Comment	To confirm to configure the transport channel
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Config_REQ
PCO Type	CSAP
Comment	To request to configure the transport channel
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo,
            ratType                         RatType,
            trchConfigType                  TrchConfigType,
            configMessage                   CphyTrchConfigReq
}
```

ASN.1 Type Definition	
Type Name	CphyTrchConfigReq
Comment	To request to configure the transport channel. The same TFCS information should be provided to the PHY and MAC layers at all times. When a CPHY_TrCH_Config_REQ is used to configure the PHY layer, a corresponding CMAC_Config_REQ should be sent to the MAC layer to ensure that the configuration is consistent. HS-DSCH MAC-d/EHS-DSCH/EHS-DSCH-Common flows or E-DCH MAC-d flows shall be separately configured whilst the ulconnectedTrCHList, ulTFCS, dlconnectedTrCHList and dlTFCS are omitted. For configuring MBMS if the default TFCS used in the RRC message the dLTFCS shall use the "complete" CHOICE in "ExplicitTFCS-Configuration " IE and the TFCS configuration shall be in line with clause 14.10.1.1/14.10.1.2 of 3GPP TS 25.331 [21]. ehs_DSCH_Flow or ehs_DSCH_Flows_r9 is used when MAC-ehs is to be configured in Cell_DCH state. ehs_DSCH_CommonFlows shall be used for configuring MAC_ehs layer in common connected mode states. Only one of hsDSCHMacdFlows, ehs_DSCH_Flows, ehs_DSCH_CommonFlows, ehs_DSCH_Flows_r9, can be present. e_DCHMacd_CommonFlows shall be used for configuring MACi/is in common connected mode states.
Type Definition	

```
SEQUENCE    {
        activationTime      SS_ActivationTime,
        ulconnectedTrCHList     SEQUENCE (SIZE (0..maxTrCH)) OF SEQUENCE {
                trchid                  TransportChannelIdentity,
                ul_TransportChannelType SS_UL_TransportChannelType,
                transportChannelInfo    CommonOrDedicatedTFS
                                                                }   OPTIONAL,
        ulTFCS              TFCS    OPTIONAL,
        dlconnectedTrCHList     SEQUENCE (SIZE (0..maxTrCH)) OF SEQUENCE {
                trchid                  TransportChannelIdentity,
                dl_TransportChannelType SS_DL_TransportChannelType,
                transportChannelInfo    CommonOrDedicatedTFS
                                                                }   OPTIONAL,
        dlTFCS              TFCS    OPTIONAL,
        hsDSCHMacdFlows     HS_DSCHMACdFlows    OPTIONAL,   -- Rel-5 or later
        e_DCHMacdFlows      E_DCHMACdFlows      OPTIONAL,   -- Rel-6 or later
        ehs_DSCH_Flows      EHS_DSCH_Flows      OPTIONAL,   -- Rel-7 or later
        ehs_DSCH_CommonFlows    EHS_DSCH_CommonFlows    OPTIONAL,   -- Rel-7 or later
        e_DCHMacd_CommonFlows   CommonE_DCHMACdFlows    OPTIONAL,   -- Rel-8 or later
        ehs_DSCH_Flows_r9       EHS_DSCH_Flows_r9       OPTIONAL,   -- Rel-9 or later
        relAspTypeExtension     BIT STRING          OPTIONAL    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	RoutingInfo
Comment	To route between each channels.
Type Definition	

```
CHOICE     {
        physicalChannelIdentity         INTEGER                 {0..31},
        transportChannelIdentity        TransportChannelIdentity,
        logicalChannelIdentity          LogicalChannelIdentity,
        rB_Identity                     INTEGER                 {-31..32},
        cn_DomainIdentity               CN_DomainIdentity
}
```

ASN.1 Type Definition	
Type Name	RatType
Comment	To select route between each channels.
Type Definition	

```
ENUMERATED  {
            fdd (0), tdd (1)
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTFS
Comment	Transport Format Set
Type Definition	

```
SEQUENCE {
    tti                         CHOICE {
        tti10                   CommonOrDedicatedTF_InfoList,
        tti20                   CommonOrDedicatedTF_InfoList,
        tti40                   CommonOrDedicatedTF_InfoList,
        tti80                   CommonOrDedicatedTF_InfoList,
        dynamic                 CommonOrDedicatedTF_InfoList_DynamicTTI
    },
    semistaticTF_Information    SemistaticTF_Information
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_InfoList
Comment	Transport Format Set
Type Definition	

```
SEQUENCE (SIZE (1..maxTF)) OF CommonOrDedicatedTF_Info
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_Info
Comment	Transport Format Set
Type Definition	

```
SEQUENCE {
    tb_Size                 INTEGER (0..5035),
    numberOfTbSizeList      SEQUENCE (SIZE (1..maxTF)) OF NumberOfTransportBlocks,
    logicalChannelList      SS_LogicalChannelList
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTF_InfoList_DynamicTTI
Comment	Transport Format Set for TDD mode
Type Definition	

```
SEQUENCE {
    tb_Size                 INTEGER (0..5035),
    numberOfTbSizeList      SEQUENCE (SIZE (1..maxTF)) OF NumberOfTransportBlocks,
    logicalChannelList      SS_LogicalChannelList
}
```

ASN.1 Type Definition	
Type Name	TrchConfigType
Comment	
Type Definition	

```
CHOICE {
                    nonDch                      NULL,
                    dch                         ENUMERATED {normal(0), softHO(1)}
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>HS_DSCHMACdFlows</td></tr>
<tr><td>Comment</td><td>Applicable Rel-5 or later
Within the ACK/NACK repetition period indicated by ackNackRepetitionFactor the SS shall not transmit MAC-hs PDU's on HS-PDSCH.
Only one among harqInfo and harqInfo_r7 shall be present. Harq_Info_r7 shall be used for Rel-7 or later.
mimoStatus represents status of MIMO, and shall be set only if mimo_Parameters are provided in HS-PDSCH configuration</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
</table>

```
SEQUENCE        {
        harqInfo                    HARQ_Info                    OPTIONAL,
        addOrReconfMACdFlow         SS_AddOrReconfMAC_dFlow      OPTIONAL,
        ackNackRepetitionFactor     ACK_NACK_repetitionFactor    OPTIONAL,
        harqInfo_r7                 HARQ_Info_r7                 OPTIONAL
            -- to be used for Rel-7 or later.
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>EHS_DSCH_Flows</td></tr>
<tr><td>Comment</td><td>Applicable Rel-7 or later
Within the ACK/NACK repetition period indicated by ackNackRepetitionFactor the SS shall not transmit MAC-hs PDU's on HS-PDSCH.
mimoStatus represents status of MIMO, and shall be set only if mimo_Parameters are provided in HS-PDSCH configuration</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
</table>

```
SEQUENCE        {
    harqInfo_r7                 HARQ_Info_r7                 OPTIONAL,
    addOrReconfMAC_ehs_ReordQ   SS_MAC_ehs_AddReconfReordQueueList  OPTIONAL,
    ackNackRepetitionFactor     ACK_NACK_repetitionFactor    OPTIONAL,
    mimoStatus                  BOOLEAN                      OPTIONAL
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>SS_MAC_ehs_AddReconfReordQueueList</td></tr>
<tr><td>Comment</td><td>Applicable Rel-7 or later</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
</table>

```
SEQUENCE (SIZE (1..maxQueueIDs)) OF SS_MAC_ehs_AddReconfReordQ
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>SS_MAC_ehs_AddReconfReordQ</td></tr>
<tr><td>Comment</td><td>Applicable Rel-7 or later
The priority of PriorityQueue shall set according to the priority of logical channels which is mapped on to this priority queue.
NOTE: The range of priority of PriorityQueue is from 0 to 7 and 0 is the lowest priority.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
</table>

```
SEQUENCE    {
    mAC_ehs_AddReconfReordQ     MAC_ehs_AddReconfReordQ,
    priority                    INTEGER(0..7)
}
```

<table>
<tr><td>Type Name</td><td>EHS_DSCH_Flows_r9</td></tr>
<tr><td>Comment</td><td>Applicable Rel-9 or later
Within the ACK/NACK repetition period indicated by ackNackRepetitionFactor the SS shall not transmit MAC-hs PDU's on HS-PDSCH.
mimoStatus represents status of MIMO, and is set only if mimo_Parameters are provided in HS-PDSCH configuration. In dedicated MAC configuration mimostatus is not applicable.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
</table>

```
SEQUENCE        {
    harqInfo_r7                 HARQ_Info_r7                 OPTIONAL,
    addOrReconfMAC_ehs_ReordQ   SS_MAC_ehs_AddReconfReordQueueList_r9   OPTIONAL,
    ackNackRepetitionFactor     ACK_NACK_repetitionFactor    OPTIONAL,
    mimoStatus                  BOOLEAN                      OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_MAC_ehs_AddReconfReordQueueList_r9
Comment	Applicable Rel-9 or later
Type Definition	

```
SEQUENCE (SIZE (1..maxQueueIDs)) OF SS_MAC_ehs_AddReconfReordQ_r9
```

ASN.1 Type Definition	
Type Name	SS_MAC_ehs_AddReconfReordQ_r9
Comment	Applicable Rel-9 or later The priority of PriorityQueue shall set according to the priority of logical channels which is mapped on to this priority queue. NOTE: The range of priority of PriorityQueue is from 0 to 7 and 0 is the lowest priority.
Type Definition	

```
SEQUENCE    {
    mAC_ehs_AddReconfReordQ     MAC_ehs_AddReconfReordQ_r9,
    priority                    INTEGER(0..7)
}
```

ASN.1 Type Definition	
Type Name	EHS_DSCH_CommonFlows
Comment	Applicable Rel-7 or later
Type Definition	

```
SEQUENCE    {
    harqInfo_r7                         HARQ_Info_r7                            OPTIONAL,
    common_MAC_ehs_ReorderingQueueList  SS_Common_MAC_ehs_ReorderingQueueList   OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_Common_MAC_ehs_ReorderingQueueList
Comment	Applicable Rel-7 or later
Type Definition	

```
SEQUENCE (SIZE (1..maxQueueIDs)) OF SS_Common_MAC_ehs_ReorderingQueue
```

Type Name	SS_Common_MAC_ehs_ReorderingQueue
Comment	Applicable Rel-7 or later The priority of PriorityQueue shall set according to the priority of logical channels which is mapped on to this priority queue. NOTE: The range of priority of PriorityQueue is from 0 to 7 and 0 is the lowest priority.
Type Definition	

```
SEQUENCE        {
    common_MAC_ehs_ReorderingQueue      Common_MAC_ehs_ReorderingQueue,
    priority                            INTEGER(0..7)
}
```

ASN.1 Type Definition	
Type Name	SS_AddOrReconfMAC_dFlow
Comment	Applicable Rel-5 or later
Type Definition	

```
SEQUENCE {
    mac_hs_AddReconfQueue_List      SEQUENCE (SIZE(1..maxQueueIDs)) OF  SEQUENCE {
                    mac_hs_AddReconfQueue   SS_MAC_hs_AddReconfQueue}   OPTIONAL,
    mac_hs_DelQueue_List            SEQUENCE (SIZE(1..maxQueueIDs)) OF SEQUENCE {
                    mac_hsQueueId           INTEGER(0..7)}              OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_MAC_hs_AddReconfQueue
Comment	Applicable Rel-5 or later The priority of PriorityQueue shall set according to the priority of logical channels which is mapped on to this priority queue. NOTE: The range of priority of PriorityQueue is from 0 to 7 and 0 is the lowest priority. DiscardTimer defines the time (unit ms) to live for a MAC-hs SDU starting from the instant of its arrival into an HSDPA Priority Queue. The SS shall use this information to discard out-of-data MAC-hs SDUs from the HSDPA Priority Queues.
Type Definition	

```
SEQUENCE {
    mAChsAddReconfQueue             MAC_hs_AddReconfQueue,
    logicalChannelList              SEQUENCE OF LogicalChannelIdentity,
                                    -- logical channels mapping onto the priority queue
                                    -- which is specified in maChsAddReconfQueue
    priority                        INTEGER(0..7),
    discardTimer                    ENUMERATED {
v20(0),v40(1),v60(2),v80(3),v100(4),v120(5),v140(6),v160(7),v180(8),v200(9),
v250(10),v300(11),v400(12),v500(13),v750(14),v1000(15),v1250(16),v1500(17),v1750(18),v20
00(19),v2500(20),v3000(21), v3500(22),v4000(23),v4500(24),v5000(25), v7500(26)
                                                }   OPTIONAL
    }
```

ASN.1 Type Definition	
Type Name	E_DCHMACdFlows
Comment	Rel-6 or later addReconf_MAC_d_FlowList and addReconf_MAC_d_FlowList_r7 are mutually exclusive. One of these shall be present.
Type Definition	

```
SEQUENCE {
        tti                         E_DCH_TTI,
        harq_Info                   ENUMERATED {rv0 (0), rvtable (1)},
        addReconf_MAC_d_FlowList    E_DCH_AddReconf_MAC_d_FlowList  OPTIONAL,
                                    -- Rel-6
        addReconf_MAC_d_FlowList_r7 E_DCH_AddReconf_MAC_d_FlowList_r7   OPTIONAL
                                    -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	CommonE_DCHMACdFlows
Comment	Rel-6 or later addReconf_MAC_d_FlowList and addReconf_MAC_d_FlowList_r7 are mutually exclusive. One of these shall be present.
Type Definition	

```
SEQUENCE {
        tti                         E_DCH_TTI,
        harq_Info                   ENUMERATED {rv0 (0), rvtable (1)},
        addReconfMAC_d_FlowList     Common_E_DCH_MAC_d_FlowsList
}
```

ASN.1 Type Definition	
Type Name	SS_LogicalChannelList
Comment	
Type Definition	

```
CHOICE  {
    allSizes        NULL,
    configured      NULL,
    explicitList    SEQUENCE (SIZE (1..15 ) ) OF SS_LogicalChannelByRB
}
```

ASN.1 Type Definition	
Type Name	SS_LogicalChannelByRB
Comment	logChOfRb is an optional and currently unused
Type Definition	

```
SEQUENCE    {
    rb_Identity     INTEGER (-31..32),
    logChOfRb       INTEGER (0..1)  OPTIONAL
}
```

7.3.2.2.14a CPHY_UL_PowerModify

ASN.1 ASP Type Definition	
Type Name	CPHY_UL_PowerModify_CNF
PCO Type	CSAP
Comment	To confirm the increase/decrease in UE uplink DPCH power transmission or send the TPC commands as instructed.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_UL_PowerModify_REQ
PCO Type	CSAP
Comment	To request increase/decrease in the UE uplink DPCH transmission by the delta value given in dB, from the existing transmission level or make UE to transmit at maximum or minimum power level. It is assumed that the UE UL DPCH transmission power level is set to -20 dbm by default at beginning of each test. For routing Info the Dl DPCH Physical channel ID shall be used. For IE ul_DPCH_Id, the physical channel ID of associated UL DPCH shall be given. SS can use it or neglect it. Ul_UE_TxPower gives either the value in dB, by which SS shall increase/decrease the uplink transmission power of UE from the existing transmission power, when this primitive is called or Start transmission of TPC commands on DL DPCCH as configured
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo,
            ul_DPCH_Id                      INTEGER(0..31),
            ul_UE_Tx_Power                  Ul_UE_Tx_Power
}
```

ASN.1 Type Definition	
Type Name	Ul_UE_Tx_Power
Comment	Choice delta gives the value in dB, by which the existing UE UL DPCH transmission power level is to be increased or decreased. After reaching the new desired level SS shall make UE to maintain this new transmission power level. WithChoice maxMin, and ENUM 'tpc_Up' selection, SS shall start transmitting TPC commands on the DL DPCCH, as '1' every slot so as to ask UE to increase the transmission power. With Choice maxMin, and ENUM 'tpc_Down' selection, SS shall start transmitting TPC commands on the DL DPCCH, as '0' every slot so as to ask UE to decrease the transmission power. With Choice maxMin, and ENUM 'tpc_Maintain' selection, SS will start transmitting TPC commands on the DL DPCCH, as alternate '0' and '1' in alternate slots so as to maintain the UE uplink transmission power
Type Definition	

```
CHOICE      {
        deltaINTEGER        (-64..63),
        maxMin              ENUMERATED{ tpc_Up(0), tpc_Down(1), tpc_Maintain(2) }
}
```

7.3.2.2.14 CPHY_TrCH_Release

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_REQ
PCO Type	CSAP
Comment	To request to release the Radio Link
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,
        trchConfigType              TrchConfigType,
        activationTime              SS_ActivationTime
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_CNF
PCO Type	CSAP
Comment	To confirm to release the Radio Link
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(0..63),
            routingInfo             RoutingInfo
}
```

7.3.2.2.15 CMAC_BMC_Scheduling

ASN.1 ASP Type Definition	
Type Name	CMAC_BMC_Scheduling_CNF
PCO Type	CSAP
Comment	To confirm the BMC scheduling.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER(0..63),
    routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_BMC_Scheduling_REQ
PCO Type	CSAP
Comment	Send the BMC scheduling information to the MAC.
Type Definition	

```
SEQUENCE     {
    cellId                      INTEGER(0..63),
    routingInfo                 RoutingInfo,
    ratType                     RatType,
    schedulingInfo              BMC_SchedulingInfo
}
```

ASN.1 Type Definition	
Type Name	BMC_SchedulingInfo
Comment	
Type Definition	

```
SEQUENCE    {
    level1Info                  BMC_SchedulingLevel1Info,
    level2Info                  BMC_SchedulingLevel2Info    OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	BMC_SchedulingLevel2Info
Comment	ctchBsIndexList contains a CTCH BS index offset value for each BMC PDU transmitted, the offset is relative to the previous BMC PDU transmitted. The offset for the first BMC PDU is set to 0.
Type Definition	

```
SEQUENCE    {
    ctchBsIndexList             SEQUENCE (SIZE(1..256)) OF INTEGER (0..255),
    drxSelectionBitmap          OCTET STRING
}
```

ASN.1 Type Definition	
Type Name	BMC_SchedulingLevel1Info
Comment	0 ≤ K ≤ N-1 (3GPP TS 25.331 [21], subclause 8.5.16)
Type Definition	

```
SEQUENCE    {
    ctchAllocationPeriod        INTEGER (1..256),       -- N
    cbsFrameOffset              INTEGER (0..255)        -- K
}
```

7.3.2.2.16 CMAC_Ciphering_Activate

ASN.1 ASP Type Definition	
Type Name	CMAC_Ciphering_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the ciphering
Type Definition	

```
SEQUENCE {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_Ciphering_Activate_REQ
PCO Type	CSAP
Comment	To request to start or restart downlink ciphering or uplink deciphering. The physicalChannelIdentity of DPCH applies to routingInfo. Initialize the 20 MSB of HFN component of COUNT-C to the START value stored. If the value of incHFN is set to "NotInc" the SS initializes the remaining LSBs of HFN component in COUNT-C to zero and the SS shall not increment HFN part of COUNT-C at every CFN cycle. If the value of incHFN is set to "IncPerCFN_Cycle" the SS initializes the remainingLSBs of HFN component in COUNT-C accordingly. If it is absent the SS initialize the LSBs of HFN component in COUNT-C to zero, increments the HFN component in COUNT-C by one and then starts the increment HFN part of COUNT-C at every CFN cycle. Only one among cipheringModeInfo and CipheringModeInfo_r7 shall be present. The later being applicable from Rel 7 onwards.
Type Definition	

```
SEQUENCE {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo,
            ratType                     RatType,
            cn_DomainIdentity           CN_DomainIdentity,
            cipheringModeInfo           CipheringModeInfo OPTIONAL,
            cipheringModeInfo_r7        CipheringModeInfo_r7 OPTIONAL,
                -- Rel 7 or later
            incHFN                      Increment_Mode
}
```

ASN.1 Type Definition	
Type Name	Increment_Mode
Comment	
Type Definition	

```
ENUMERATED {incPerCFN_Cycler(0), notInc(1), incByOne_IncPerCFN_Cycle(2)}
```

7.3.2.2.16a CMAC_FACH_MeasOccas

ASN.1 ASP Type Definition	
Type Name	CMAC_FACH_MeasOccas_CNF
PCO Type	CSAP
Comment	To confirm to config FACH Measurement Occasions
Type Definition	

```
SEQUENCE    {
            cellId                        INTEGER(0..63),
            routingInfo                   RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_FACH_MeasOccas_REQ
PCO Type	CSAP
Comment	To request MAC layer to configure FACH Measurement Occasions (FMO). If IE "Inter-frequency FDD measurement indicator" is set to TRUE, the UE will start inter-frequency FMO at the activationTime. If this IE is set to FALSE, the UE inter-frequency FMO will be stopped at the activation Time. For the FDD test, the IE "Inter-frequency TDD measurement indicator" is set to FALSE. If IE "Inter-RAT measurement indicators" is included, the UE will start inter-RAT FMO at the activationTime. If this IE is omitted, the UE inter-RAT FMO will be stopped at the activation Time. largest_TTI_Number is the TTI (in number of 10ms frames) of the FACH having the largest TTI on the SCCPCH.
Type Definition	

```
SEQUENCE    {
                cellId              INTEGER(0..63),
                routingInfo         RoutingInfo,
                fMO                 FACH_MeasurementOccasionInfo,
                largest_TTI         INTEGER(1..8),
                activationTime      SS_ActivationTime
}
```

7.3.2.2.17 CMAC_Config

ASN.1 ASP Type Definition	
Type Name	CMAC_Config_CNF
PCO Type	CSAP
Comment	For MAC emulator to report that a previous attempt to setup, reconfigure or release a logical channel is successful.
Type Definition	

```
SEQUENCE    {
                cellId                  INTEGER(-1..63),
                routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_Config_REQ
PCO Type	CSAP
Comment	To request to configure MAC entity. Setup is used for creation of the MAC instances or the MAC resources. Release is used for free the all MAC resources. The reconfiguration is to change the MAC parameters, it is not the MAC modification.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(-1..63),
            routingInfo                     RoutingInfo,
            ratType                         RatType,
            configMessage                   CHOICE {
                setup                           CmacConfigReq,
                reconfigure                     CmacConfigReq,
                release                         SS_ActivationTime
            }
}
```

ASN.1 Type Definition	
Type Name	CmacConfigReq
Comment	To request to configure MAC The IE associatedPhychConfigToFollow should be set to TRUE when there is a associated physical channel configuration to follow (e.g configuration of PICH or MICH). The implementation of the IE "associatedPhychConfigToFollow" can be left to the SS either to wait for the associated physical channel before MAC is configured or to continue the configuration of MAC without waiting for the associated physical channel. If Dual Cell is configured, IE servingAndSecondaryCellActivation is included. Presence of tSN_FieldExtension indicates that the TSN field extension is used as defined in TS 25.321[17]; the absence indicates that 6 bits TSN is used. For 4C-HSDPA tSN_FieldExtension is set to TRUE.
Type Definition	

```
SEQUENCE    {
    activationTime                      SS_ActivationTime,
    uE_Info                             UE_Info,
    trCHInfo                            TrCHInfo,
    trCH_LogCHMapping                   TrCH_LogCHMappingList1,
    associatedPhychConfigToFollow       BOOLEAN DEFAULT FALSE,
    servingAndSecondaryCellActivation   ServingAndSecondaryCellActivation_Type OPTIONAL,
    -- for Dual Cell Rel-8 or later
    tSN_FieldExtension                  BOOLEAN DEFAULT FALSE,  -- Rel-9 or later
    relAspTypeExtension                 BIT STRING  OPTIONAL    -- Rel-10 or later

}
```

ASN.1 Type Definition	
Type Name	UE_Info
Comment	The value of c_RNTI_DSCH_RNTI is 16 bits, used either for C-RNTI or DSCH-RNTI. DSCH is configured if the physical channel in CMAC_config_REQ is a PDSCH. Otherwise, C-RNTI is applied. At the MAC-hs configuration both u_RNTI and c_RNTI_DSCH_RNTI are omitted. If MAC is being configured with Common_MAC_ehs flows, UE Info U-RNTI shall be provided when the common H-RNTI is applied and is applied in MAC-c header on SRB#1.
Type Definition	

```
SEQUENCE {
        u_RNTI              U_RNTI      OPTIONAL,
        c_RNTI              C_RNTI      OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	TrCH_LogCHMappingList1
Comment	maxulTrCH = maxdlTrCH = 16 dlconnectedMACdFlows is used for MAC-hs and dlconnectedMAC_ehsFlows for MAC-ehs configurations in dedicated. dlconnectedMAC_ehsCommonFlow is used for MAC-ehs in Common state. For BCCH and PCCH in common state, the mac_ehs_QueueId is omitted, no reordering is applied and the TSN and SI fields are always set to zero (according to 3GPP TS 25.321 [17], subclauses 9.1.4 and 11.6.4.4) dlconnectedMAC_ehsFlowsDC is used when dual cell or 4C-HSDPA is activated.
Type Definition	

```
SEQUENCE    {
        ulconnectedTrCHList     SEQUENCE (SIZE (1..maxulTrCH)) OF SEQUENCE {
                trchid                  TransportChannelIdentity,
                trCH_LogCHMappingList   TrCH_LogCHMappingList
                                                                }   OPTIONAL,
        dlconnectedTrCHList     SEQUENCE (SIZE (1..maxdlTrCH)) OF SEQUENCE {
                trchid                  TransportChannelIdentity,
                trCH_LogCHMappingList   TrCH_LogCHMappingList
                                                                }   OPTIONAL,
        dlconnectedMACdFlows    SEQUENCE (SIZE (1..8)) OF SEQUENCE {
                mac_dFlowId                 MAC_d_FlowIdentity,
                trCH_LogCHMappingList       TrCH_LogCHMappingList
                                                                    }   OPTIONAL,
                                    -- Rel-5 or later
        dlconnectedMAC_ehsFlows         SEQUENCE (SIZE (1..8)) OF SEQUENCE {
                mac_ehs_QueueId         MAC_ehs_QueueId,
                trCH_LogCHMappingList   TrCH_LogCHMappingList
                }   OPTIONAL,
                -- Rel-7 or later
        dlconnectedMAC_ehsCommonFlows   SEQUENCE (SIZE (1..8)) OF SEQUENCE {
                mac_ehs_QueueId         MAC_ehs_QueueId OPTIONAL,
                                          -- not present for BCCH/PCCH
                trCH_LogCHMappingList   TrCH_LogCHMappingList
                }   OPTIONAL,
                -- Rel-7 or later
        dlconnectedMAC_ehsFlowsDC   SEQUENCE (SIZE (1..8)) OF SEQUENCE {
                mac_ehs_QueueId                     MAC_ehs_QueueId,
                trCH_LogCHMappingList               TrCH_LogCHMappingList,
                }   OPTIONAL,
                -- Rel-8 or later
        relAspTypeExtension         BIT STRING  OPTIONAL    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	TrCH_LogCHMappingList
Comment	maxLogCHperTrCH = 15
Type Definition	

```
SEQUENCE (SIZE (1..maxLogCHperTrCH)) OF     TrCH_LogicalChannelMapping
```

ASN.1 Type Definition	
Type Name	TrCHInfo
Comment	The same TFCS information should be provided to the PHY and MAC layers at all times. When a CMAC_Config_REQ is used to configure the MAC layer, a corresponding CPHY_TrCH_Config_REQ should be sent to the PHY layer to ensure that the configuration is consistent. For MAC-hs configuration: When ulconnectedTrCHList, ulTFCS, dlconnectedTrCHList and dlTFCS are omitted and hsDSCHMacdFlows is present this ASP configures an MAC-hs entity. For MAC-ehs configuration: When ulconnectedTrCHList, ulTFCS, dlconnectedTrCHList and dlTFCS are omitted and ehs_DSCH_Flows or E-HS-DSCH_Common Flows or ehs_DSCH_Flows_r9 is present this ASP configures an MAC-ehs entity. Only one of hsDSCHMacdFlows or ehs_DSCH_Flows or ehs_DSCH_Flows_r9 can be present (Only one of MAC-hs or MAC-ehs layer can be configured).

Type Definition

```
SEQUENCE    {
    ulconnectedTrCHList     SEQUENCE (SIZE (1..maxulTrCH)) OF SEQUENCE {
            trchid                  TransportChannelIdentity,
            transportChannelInfo    CommonOrDedicatedTFS
                                                        }   OPTIONAL,
    ulTFCS                  TFCS    OPTIONAL,
    dlconnectedTrCHList     SEQUENCE (SIZE (1..maxdlTrCH)) OF SEQUENCE {
            trchid                  TransportChannelIdentity,
            transportChannelInfo    CommonOrDedicatedTFS
                                                        }   OPTIONAL,
    dlTFCS                  TFCS    OPTIONAL,
    hsDSCHMacdFlows         HS_DSCHMACdFlows        OPTIONAL,   -- Rel-5 or later
    ehs_DSCH_Flows          EHS_DSCH_Flows          OPTIONAL,   -- Rel-7 or later
    ehs_DSCH_CommonFlows    EHS_DSCH_CommonFlows    OPTIONAL,   -- Rel-7 or later
    ehs_DSCH_Flows_r9       EHS_DSCH_Flows_r9       OPTIONAL,   -- Rel-9 or later
    relAspTypeExtension     BIT STRING
                            (CONTAINING TrCHInfo_r10OrLaterExtensionType)   OPTIONAL
    -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	TrCH_LogicalChannelMapping
Comment	When used for logical channel to MAC_d flow mapping dl_LogicalChannelMapping shall be chosen,

Type Definition

```
SEQUENCE    {
    logicalChannel_Mapping      CHOICE  {
            ul_LogicalChannelMapping            SS_UL_LogicalChannelMapping,
            dl_LogicalChannelMapping            SS_DL_LogicalChannelMapping
                },
    rB_Identity                 INTEGER     (-31..32)   OPTIONAL,
    cn_DomainIdentity           CN_DomainIdentity       OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_UL_LogicalChannelMapping
Comment	If the macHeaderManipulation field is 'NormalMacHeader', then data received on the transport channel supporting this logical channel shall have it's MAC header inspected to determine the appropriate routing, and removed as normal. The MAC SDU shall be passed to the appropriate logical channel. If the macHeaderManipulation field is 'OmitMacHeader', then data received on the transport channel supporting this logical channel shall have it's MAC header inspected to determine the appropriate routing, but the MAC layer shall not remove the MAC header. Thus the entire MAC PDU shall be passed to the appropriate logical channel, and the MAC header can be checked by the TTCN.

Type Definition

```
SEQUENCE {
    macHeaderManipulation               MAC_HeaderManipulation,
    ul_TransportChannelType             SS_UL_TransportChannelType,
    logicalChannelIdentity              LogicalChannelIdentity,
    logicalChannelType                  LogicalChannelType
}
```

ASN.1 Type Definition	
Type Name	SS_DL_LogicalChannelMapping
Comment	If the macHeaderManipulation field is 'NormalMacHeader', then data transmitted on this logical channel shall have an appropriate MAC header added before it is sent to lower layers for transmission. If the macHeaderManipulation field is 'OmitMacHeader', then data transmitted on this logical channel shall not have any MAC header information added, even if the logical channel type and mapping indicates that there should be a MAC header present. This allows the entire MAC PDU to be specified in the TTCN, so individual fields in the MAC header can be modified. When used for DTCH mapping to MAC_d flow, rlc_SizeList shall choose "configured" according to the configured mAChsAddReconfQueue values. When the logical channel is MTCH, the logicalChannelIdentity shall be consistent with MBMS_LogicalChIdentity in MBMS_PTM_RBInformation_N and MBMS_PTM_RBInformation_C.
Type Definition	

```
SEQUENCE {
    macHeaderManipulation                MAC_HeaderManipulation,
    dlTransportChannelType               SS_DL_TransportChannelType,
    logicalChannelIdentity               LogicalChannelIdentity,
    logicalChannelType                   LogicalChannelType,
    rlc_SizeList                         CHOICE {
            allSizes                             NULL,
            configured                           NULL,
            explicitList                         RLC_SizeExplicitList},
    mac_LogicalChannelPriority           MAC_LogicalChannelPriority  OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_UL_TransportChannelType
Comment	
Type Definition	

```
ENUMERATED {
    dch (0),
    rach (1),
    cpch (2),
    usch (3),
    edch (4)        -- Rel-6 or later
}
```

ASN.1 Type Definition	
Type Name	SS_DL_TransportChannelType
Comment	
Type Definition	

```
ENUMERATED {
    dch     (0),
    fach    (1),
    bch     (2),
    pch     (3),
    dsch    (4),
    hsdsch  (5)     -- Rel-5 or later
}
```

ASN.1 Type Definition	
Type Name	LogicalChannelType
Comment	
Type Definition	

```
ENUMERATED {
    bCCH    (0),
    pCCH    (1),
    cCCH    (2),
    cTCH    (3),
    dCCH    (4),
    dTCH    (5),
    sHCCH   (6),
    mTCH    (7),    -- Rel-6 or later
    mCCH    (8),    -- Rel-6 or later
    mSCH    (9)     -- Rel-6 or later
}
```

ASN.1 Type Definition	
Type Name	MAC_HeaderManipulation
Comment	
Type Definition	

```
ENUMERATED  {
            normalMacHeader (0),
            omitMacHeader   (1)
}
```

ASN.1 Type Definition	
Type Name	ServingAndSecondaryCellActivation_Type
Comment	
Type Definition	

```
SEQUENCE {
    servingCellId                       INTEGER(0..63),
    secondaryCellId                     INTEGER(0..63),
    secondaryServing_HS_DSCH_Cell       ENUMERATED { deactivated (0), activated (1) }
                                        DEFAULT deactivated
}
```

7.3.2.2.17a CMAC_MAChs_MACehs_TFRCconfigure (Rel-5 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_MACehs_TFRCconfigure_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later Confirm a previous CMAC_MAChs_MACehs_TFRCconfigure_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_MACehs_TFRCconfigure_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To configure the TFRC selection in the MAC-hs entity, channelisationCodeOffset + noOfChannelisationCodes shall not be great than 15. If explicitlyConfigured is selected in `tfrcConfigMode`, the SS shall use all the parameter values specified to configure a correct transport format and radio resources. This configuration is used for HS-SCCH associated HS-DSCH transmission. If sS_Configured is selected, the parameter value range is specified. SS shall dynamically select the suitable values for the parameters "modulationScheme", "channelisationCodeOffset", "noOfChannelisationCodes ", .tbSizeIndexOnHS_SCCH", "redundancyVersion" and "hs_PDSCH_TxPower" according to UE's capability category and CQI information reported by the UE. As HS-SCCH less operation and MIMO cannot be simultaneously configured, only one among hs_scch_LessInfo and mimoStatus can be present. When both are absent non MIMO, non HS-SCCH less operation is configured. explicitHS_SCCH_LessMode is used to force SS to use HS-SCCH less operation. explicitMIMO is used for MIMO dual stream transmission. Presence of ss_DTX_Info indicates DL_DRX is enabled. If minimumInterTTIinterval is set to 1, Data is sent every TTI. If it is set to 2, every TTI with Data shall be followed by at least 1 TTI without Data. If it is set to 3, every TTI with Data shall be followed by at least 2 TTI without Data. This field needs to be set as per UE category as defined in Table 5.1a of 3GPP TS 25.306 [59].

Type Definition

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    tfrcConfigMode      CHOICE {
        explicitlyConfigured            SEQUENCE {
            modulationScheme                ModulationScheme,
            channelisationCodeOffset        INTEGER (1..15),
            noOfChannelisationCodes         INTEGER (1..15),
            tbSizeIndexOnHS_SCCH            INTEGER (0..63),
            minimumInterTTIinterval         INTEGER (1..3),
            redundancyVersions              RedundancyVersionList,
            hs_PDSCH_TxPower                DL_TxPower  -- default offset related
                                                        -- to p-CPICH or s-CPICH
            },
        sS_Configured       SEQUENCE {
            minChannelisationCodeOffset     INTEGER (1..15),
            maxNoOfChannelisationCodes      INTEGER (1..15),
            iniHS_PDSCH_TxPower             DL_TxPower, -- default offset related
                                                        -- to p-CPICH or s-CPICH
            hs_scch_LessInfo                HS_SCCH_LessInfo_r7 OPTIONAL,
            mimoStatus                      BOOLEAN             DEFAULT FALSE
            },
        explicitHS_SCCH_LessMode        SEQUENCE{
            hs_pdsch_CodeIndex          INTEGER (1..15),
            hs_scch_LessTFI             INTEGER (1..90),
            hs_scch_LessSecondCodeApplicability BOOLEAN,
            tbs                         INTEGER (0..3),
                    -- the index of tbs for HS-SCCH less operation
                    -- The value should be consistent with code index, TFI and second
                    -- code applicability
            minimumInterTTIinterval     INTEGER (1..3),
            hs_PDSCH_TxPower            DL_TxPower
                        -- default offset related to p-CPICH or s-CPICH
            },
        explicitMIMO            SEQUENCE {
            modulationSchemeAndNumTB            INTEGER(0..7),
                -- set according to table 14 of 25.212
                -- Values 1,2 and 5 are used for 64QAM+MIMO. Rel-8 or later
            channelisationCodeOffset            INTEGER (1..15),
            noOfChannelisationCodes             INTEGER (1..15),
            precodingWeight2                    INTEGER (0..3),
                -- set according to table 14a of 25.212
            primaryTB_SizeIndexOnHS_SCCH        INTEGER (0..63),
            secondaryTB_SizeIndexOnHS_SCCH      INTEGER (0..63) OPTIONAL,
                --present only if second TB is to be tx as per modulationSchemeAndNumTB
```

```
            minimumInterTTIinterval             INTEGER (1..3),
            primaryRedundancyVersions           RedundancyVersionList,
            secondaryRedundancyVersions         RedundancyVersionList OPTIONAL,
                --present only if second TB is to be tx as per modulationSchemeAndNumTB
            hs_PDSCH_TxPower                    DL_TxPower  -- default offset related
                                                            -- to p-CPICH or s-CPICH
            },
        sS_Configured_DC        SEQUENCE {
            serving_minChannelisationCodeOffset INTEGER (1..15),
            serving_maxNoOfChannelisationCodes  INTEGER (1..15),
            serving_mimoStatus              BOOLEAN DEFAULT FALSE,  -- Rel-9 or later
            sec_minChannelisationCodeOffset     INTEGER (1..15),
            sec_maxNoOfChannelisationCodes      INTEGER (1..15),
            sec_mimoStatus                  BOOLEAN DEFAULT FALSE,  -- Rel-9 or later
            iniHS_PDSCH_TxPower                 DL_TxPower,
                                                -- default offset related
                                                -- to p-CPICH or s-CPICH
            hs_scch_LessInfo                HS_SCCH_LessInfo_r7 OPTIONAL
            },
        explicitlyDC            SEQUENCE {
            servingTFRC     SEQUENCE{
                modulationScheme                ModulationScheme,
                channelisationCodeOffset        INTEGER (1..15),
                noOfChannelisationCodes         INTEGER (1..15),
                tbSizeIndexOnHS_SCCH            INTEGER (0..63),
                minimumInterTTIinterval         INTEGER (1..3),
                redundancyVersions              RedundancyVersionList,
                hs_PDSCH_TxPower                DL_TxPower  -- default offset related
                                                            -- to p-CPICH or s-CPICH
                } OPTIONAL,
                -- when omitted then no data is sent on the serving HS-DSCH cell
            secondaryTFRC   SEQUENCE{
                modulationScheme                ModulationScheme,
                channelisationCodeOffset        INTEGER (1..15),
                noOfChannelisationCodes         INTEGER (1..15),
                tbSizeIndexOnHS_SCCH            INTEGER (0..63),
                minimumInterTTIinterval         INTEGER (1..3),
                redundancyVersions              RedundancyVersionList,
                hs_PDSCH_TxPower                DL_TxPower  -- default offset related
                                                            -- to p-CPICH or s-CPICH
                } OPTIONAL
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            },
        explicitlyDC_MIMO       SEQUENCE {          -- Rel-9 or later

            servingTFRC     SEQUENCE{
                modulationSchemeAndNumTB            INTEGER(0..7),
                    -- set according to table 14 of 25.212
                    -- Values 1,2 and 5 are used for 64QAM+MIMO. Rel-8 or later
                channelisationCodeOffset            INTEGER (1..15),
                noOfChannelisationCodes             INTEGER (1..15),
                precodingWeight2                    INTEGER (0..3),
                    -- set according to table 14a of 25.212
                primaryTB_SizeIndexOnHS_SCCH        INTEGER (0..63),
                secondaryTB_SizeIndexOnHS_SCCH      INTEGER (0..63) OPTIONAL,
                    -- present only if second TB is to be tx
                    -- as per modulationSchemeAndNumTB
                minimumInterTTIinterval             INTEGER (1..3),
                primaryRedundancyVersions           RedundancyVersionList,
                secondaryRedundancyVersions         RedundancyVersionList OPTIONAL,
                    -- present only if second TB is to be tx
                    -- as per modulationSchemeAndNumTB
                hs_PDSCH_TxPower                    DL_TxPower
                    -- default offset related
                    -- to p-CPICH or s-CPICH
                } OPTIONAL
                -- when omitted then no data is sent on the serving HS-DSCH cell
            secondaryTFRC   SEQUENCE{
                modulationSchemeAndNumTB            INTEGER(0..7),
                    -- set according to table 14 of 25.212
                    -- Values 1,2 and 5 are used for 64QAM+MIMO. Rel-8 or later
                channelisationCodeOffset            INTEGER (1..15),
                noOfChannelisationCodes             INTEGER (1..15),
                precodingWeight2                    INTEGER (0..3),
                    -- set according to table 14a of 25.212
                primaryTB_SizeIndexOnHS_SCCH        INTEGER (0..63),
                secondaryTB_SizeIndexOnHS_SCCH      INTEGER (0..63) OPTIONAL,
                    -- present only if second TB is to be tx
```

```
                    -- as per modulationSchemeAndNumTB
                minimumInterTTIinterval             INTEGER (1..3),
                primaryRedundancyVersions           RedundancyVersionList,
                secondaryRedundancyVersions         RedundancyVersionList OPTIONAL,
                    -- present only if second TB is to be tx
                    -- as per modulationSchemeAndNumTB
                hs_PDSCH_TxPower                    DL_TxPower
                    -- default offset related
                    -- to p-CPICH or s-CPICH
                } OPTIONAL
                -- when omitted then no data is sent on the secondary HS-DSCH cell
            },
        relAspTypeExtension
                BIT STRING (CONTAINING TFRCconfigure_r10OrLaterExtensionType)
                -- Rel-10 or later
        },
    activationTime              SS_ActivationTime,
    ss_DTX_Info                 DRX_Info            OPTIONAL
    hs_DSCH_TBSizeTable         HS_DSCH_TBSizeTable OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	RedundancyVersionList
Comment	Gives the Redundancy and constellation version coding sequence (Xrv) to be used for every transmission / retransmission. The SIZE (number of Xrv elements in there) of the SEQUENCE implies the number of HARQ transmission / retransmissions to be required.
Type Definition	
`SEQUENCE (SIZE (1..8)) OF INTEGER (0..7)`	

ASN.1 Type Definition	
Type Name	ModulationScheme
Comment	
Type Definition	
`ENUMERATED {qpsk (0), qam16 (1), qam64 (2), spare1 (3)}`	

7.3.2.2.17a0 CMAC_MAChs_MACehs_HARQprocAssign

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_MACehs_HARQprocAssign_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later Confirm a previous CMAC_MAChs_MACehs_HARQprocAssign_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_MACehs_HARQprocAssign_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To assign a HARQ process handling the next MAC-hs PDU transmission. This ASP provides TTCN the ability to select an HARQ process serving the next MAC-hs PDU which follows the ASP. After successful transmission the MAC-hs returns back to normal operation. In the normal operation a suitable HARQ process is selected by HARQ entity in the MAC-hs to serve the MAC-hs PDU without TTCN intervening.
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(-1..63),
            harqProcessId       INTEGER(0..15|31)
}
```

7.3.2.2.17a1 CMAC_MACehs_HARQAssign_MultiFlows (Rel-7 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACehs_HARQAssign_MultiFlows_CNF
PCO Type	CSAP
Comment	Applicable Rel-7 or later Confirm a previous CMAC_MACehs_HARQAssign_MultiFlows_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACehs_HARQAssign_MultiFlows_REQ
PCO Type	CSAP
Comment	Applicable Rel-7 or later To assign the HARQ processes for the simultaneous transmission of the MAC-ehs PDUs on the different flows on the same TTI . After successful transmission the MAC-ehs returns back to normal operation. In the normal operation suitable HARQ processes are selected by HARQ entities in the MAC-ehs to serve the MAC-ehs PDU without TTCN intervening. For Dual Cell, the primaryFlow corresponds to the serving cell, the secPrimaryFlow corresponds to the secondary cell. For MIMO, the primary and secondary HARQ process identities (of serving cell) are set as per 3GPP TS 25.212 [58], subclause 4.6B.2.5. For combined DC-HSDPA and MIMO the primaryFlow and secondary flow correspond to the serving cell, the secPrimaryFlow and secSecondaryFlow to the secondary cell.
Type Definition	

```
SEQUENCE    {
    cellId                          INTEGER(-1..63),
    primaryFlowHarqProcessId        INTEGER(0..15|31),              -- of serving cell
    secondaryFlowHarqProcessId      INTEGER(0..15|31)   OPTIONAL,   -- of serving cell
    secPrimaryFlowHarqProcessId     INTEGER(0..15|31)   OPTIONAL,
                                    -- of secondary cell    Rel-9 or later
    secSecondaryFlowHarqProcessId   INTEGER(0..15|31)   OPTIONAL,
                                    -- of secondary cell    Rel-9 or later
    relAspTypeExtension
        BIT STRING  (CONTAINING HARQAssign_MultiFlows_r10OrLaterExtensionType)  OPTIONAL
        -- Rel-10 or later
}
```

7.3.2.2.17aa CMAC _MACehs_HS_SCCH_Orders (Rel-7 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACehs_HS_SCCH_OrdersCNF
PCO Type	CSAP
Comment	Applicable Rel-7 or later Confirm a previous CMAC _MACehs_HS_SCCH_Orders_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63),
        routingInfo         RoutingInfo         -- Physical Channel ID
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACehs_HS_SCCH_OrdersREQ
PCO Type	CSAP
Comment	Applicable Rel-7 or later To instruct SS to transmit requested HS-SCCH orders at requested time: OrderType, drx_order, dtx_Order are as per 3GPP TS 25.212 [58], subclause 4.6c.2. Cfn and subframe together indicate, the time on which the HS-SCCH order is to be transmitted.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    routingInfo         RoutingInfo,        -- Physical Channel ID
    cfn                 INTEGER (0..255),
    subframe            INTEGER (0..4),
    ordertype           INTEGER (0..7),
    xord1               INTEGER (0..1),
    xord2               INTEGER (0..1),
    xord3               INTEGER (0..1),
    h_RNTI              H_RNTI
    }
```

7.3.2.2.17b CMAC_MACe_Config (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_Config_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACe_Config_REQ being successful.
Type Definition	

```
SEQUENCE {
        nodeB_Id            INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_Config_REQ
PCO Type	CSAP
Comment	
Type Definition	

```
SEQUENCE    {
    nodeB_Id            INTEGER(0..63),
    configMessage       CHOICE  {
                            setup       MACeConfig,
                            reconfig    MACeConfig,
                            reset       NULL,
                            release     SS_ActivationTime
                                }
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>MACeConfig</td></tr>
<tr><td>Comment</td><td>If the macHeaderManipulation field is 'NormalMacHeader' in ddiMappingList, then data received on the E-DCH (MAC_e PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, and the MACes PDU shall be passed to the MAC_es together with the relevant DDI, N, CFN and subframe number.
If the macHeaderManipulation field field is 'OmitMacHeader', then data received on the E-DCH (MAC_e PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, then the MAC_e layer shall delivery the MAC-es PDU, SI and the related CFN, subframe number to the MAC_es entity.
connectedToMAC_es field is used to provide the possibility that the E-DCH-MACdFlows from only one MAC_e entity are connected to the MAC_es entity in the inter node B soft handover test cases.
The IEs ddiMappinglist and e_DCHMacdFlows can be OMITted when changing the serving cell MAC-e without modification of MAC-e configurations. It will be applied in EDCH SHO.
ss_DRX_MAC_Info presence indicates UL DRX shall be applied.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>SEQUENCE {
    activationTime   SS_ActivationTime,
    ddiMappinglist   DDI_MappingList   OPTIONAL,
    e_DCHMacdFlows   E_DCHMACdFlows   OPTIONAL,
    connectedToMAC_es   BOOLEAN DEFAULT TRUE, -- can be set to FALSE in inter nodeB SHO
    ss_DRX_MAC_Info   SS_DRX_MAC_Info   OPTIONAL
}</pre></td></tr>
</table>

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>SS_DRX_MAC_Info</td></tr>
<tr><td>Comment</td><td>Consistent with E-DCH TTI, either of mac_dtx_Cycle_2ms or mac_dtx_Cycle_10ms shall be present.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>SEQUENCE   {
    mac_InactivityThreshold   MAC_InactivityThreshold,
    mac_dtx_Cycle_2ms   MAC_DTX_Cycle_2ms OPTIONAL,
    mac_dtx_Cycle_10ms   MAC_DTX_Cycle_10ms OPTIONAL,
    timingInfo   NewTiming
}</pre></td></tr>
</table>

7.3.2.2.17c CMAC_MACe_NodeB_CellMapping (Rel-6 or later)

<table>
<tr><th colspan="2">ASN.1 ASP Type Definition</th></tr>
<tr><td>Type Name</td><td>CMAC_MACe_NodeB_CellMapping_CNF</td></tr>
<tr><td>PCO Type</td><td>CSAP</td></tr>
<tr><td>Comment</td><td>Confirm a previous CMAC_MACe_NodeB_CellMapping_REQ being successful.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>SEQUENCE {
        nodeB_Id   INTEGER(0..63)
}</pre></td></tr>
</table>

<table>
<tr><th colspan="2">ASN.1 ASP Type Definition</th></tr>
<tr><td>Type Name</td><td>CMAC_MACe_NodeB_CellMapping_REQ</td></tr>
<tr><td>PCO Type</td><td>CSAP</td></tr>
<tr><td>Comment</td><td>To put a set of cells under the control of a MAC_e entity indicated by nodeB_Id, which is configured by CMAC_MAC_e_Config_REQ.
This ASP establishes the routing relation between E-DCH related channels in these cells with a MAC_e entity.
A cell is mapped to only one NodeB, and the cellId allocation is unique in a test.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>SEQUENCE   {
    nodeB_Id   INTEGER(0..63),
    celllist   SEQUENCE OF INTEGER (0..63)
}</pre></td></tr>
</table>

7.3.2.2.17d CMAC_MACes_Config (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACes_Config_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACes_Config_REQ being successful. cellId=-1.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACes_Config_REQ
PCO Type	CSAP
Comment	This ASP is used for creating and configuring, reconfiguring, resetting or releasing an MAC_es, a cell / nodeB-independent entity in the SS. cellId=-1.
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(-1..63),
        configMessage       CHOICE  {
            setup               MACesConfig,
            reconfig            MACesConfig,
            reset               NULL,
            release             SS_ActivationTime}
}
```

ASN.1 Type Definition	
Type Name	MACesConfig
Comment	MACesConfig establishes the mapping between logical channels and E-DCH_MACd_Flows. When the macTestMode is TRUE, the re-ordering entity shall not eliminate the duplicated packets, but passes them to RLC. macTestMode = "TRUE" is used for testing the retransmission function of HARQ process.
Type Definition	

```
SEQUENCE    {
            activationTime      SS_ActivationTime,
            ddiMappinglist      DDI_MappingList,
            macTestMode         BOOLEAN DEFAULT FALSE
}
```

ASN.1 Type Definition	
Type Name	DDI_MappingList
Comment	
Type Definition	

```
SEQUENCE (SIZE (1..31)) OF DDI_Mapping
```

ASN.1 Type Definition	
Type Name	DDI_Mapping
Comment	Both SRBs and RBs can be mapped onto E-DCH. The mechanism for control of MAC header manipulation (macHeaderManipulation) is applied to individual logical channels to be mapped on E-DCH. Typically, the SRBs are configured in 'NormalMacHeader" mode while the RBs in user plane can be configured either in 'NormalMacHeader" or in "OmitMacHeader" mode. If more than one UL RLC PDU size is configured for the RB (represent by logicalChannelIdentity), the different sizes will use subsequent DDI values starting from the DDI value in this table. If the value of macHeaderManipulation field is 'NormalMacHeader', then data received on the E-DCH MACd flows supporting this logical channel shall have its MAC header inspected to determine the appropriate routing, and removed as normal. The MACes SDU shall be passed to the appropriate logical channel. If the value of macHeaderManipulation field is 'OmitMacHeader', then data received on the E-DCH MACd flows supporting this logical channel shall have it's MAC header inspected to determine the appropriate routing, then the MAC_es layer shall deliver the MAC-es SDU, SI and the related CFN, subframe number, HARQ process identity to the appropriate logical channel. The TTCN receives these fields by RLC_TR_MACesDATA_IND, then these fields can be checked by the TTCN. HARQ ID = CFN mod 4 for TTI=10ms; HARQ ID = (5*CFN + subframe number) mod 8 for TTI=2ms

Type Definition

```
SEQUENCE {
          macHeaderManipulation              MAC_HeaderManipulation,
          logicalChannelIdentity             LogicalChannelIdentity,
          e_DCH_MAC_d_FlowIdentity           E_DCH_MAC_d_FlowIdentity,
          ddi                                DDI,
          rlc_PDU_SizeList                   RLC_PDU_SizeList,
          includeInSchedulingInfo            BOOLEAN,
          mac_LogicalChannelPriority         MAC_LogicalChannelPriority,
          logicalChannelType                 LogicalChannelType,
          rB_Identity                        INTEGER (-31..32)   OPTIONAL
}
```

7.3.2.2.17e CMAC_MACe_AG (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_AG_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACe_AG_REQ being successful.

Type Definition

```
SEQUENCE {
       nodeB_Id                INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_AG_REQ
PCO Type	CSAP
Comment	The hARQProcId shall be converted to the nearest CFN (and subframe number if TTI = 2 ms) by the SS, and the Absolute Grant is sent in that CFN (and subframe number if TTI = 2 ms)

Type Definition

```
SEQUENCE    {
          nodeB_Id            INTEGER(0..63),
          grantType           ENUMERATED {primary(0), secondary(1)},
          absoluteGrantValue  BIT STRING(SIZE(5)),
          absoluteGrantScope  BIT STRING(SIZE(1)),
          hARQProcId          INTEGER (0..7),
          activationTime      SS_ActivationTime
}
```

7.3.2.2.17f CMAC_MACe_AckNack (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_AckNack_CNF
PCO Type	CSAP
Comment	To Confirm CMAC_e_AckNack_REQ
Type Definition	

```
SEQUENCE    {
            nodeB_Id                INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_AckNack_REQ
PCO Type	CSAP
Comment	To request the SS to set operation mode of the Ack/Nack function for the HARQ process hARQProcId. The harqProcId, between 0 to 3 for 10 ms TTI or 0 to 7 for 2 msTTI, is individually applied to the configuration for the normal / nack mode. If the special hARQProcId -1 is used, all active HARQ processes (0..3 for 10 ms TTI and 0..7 for 2 ms TTI) will be configured according to ackNackFunction. At the SS initialization Ack/Nack function is in normal operation mode
Type Definition	

```
SEQUENCE    {
            nodeB_Id            INTEGER(0..63),
            hARQProcId          INTEGER (-1|0..7),
            ackNackFunction     AckNackFunction
}
```

ASN.1 Type Definition	
Type Name	AckNackFunction
Comment	normal : put the HARQ process in normal operation mode, it generats the ACK or NACK according to whether the received TB block can be decoded correctly and delivery the correctly decoded data to higher layer. When the MAC_e is configured the HARQ process is in normal operation mode. nack : put the HARQ process in the special operation mode in which the HARQ process always sends NACK for the received TB blcok till the number of the retransmissions reaches the number indicated in this field. The HARQ process is back to the normal operation mode after the number is reached or received a normal mode request. Except each received TB shall be passed to higher layer, other operations are the same as a real NACK occured.
Type Definition	

```
CHOICE  {
            normal      NULL,
            nack        E_DCH_MAC_d_FlowMaxRetrans
}
```

7.3.2.2.17g CMAC_MACe_E_TFC_Restriction (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_E_TFC_Restriction_CNF
PCO Type	CSAP
Comment	For MAC emulator to report that a previous attempt of restricting TFCs have been successful.
Type Definition	

```
SEQUENCE    {
            nodeB_Id            INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_E_TFC_Restriction_REQ
PCO Type	CSAP
Comment	To request to configure MACe entity. The field restrictAllowedTFCs is provided to allow the E-TFCI to be restricted. The IE fullE_TFCS will be used to remove any previous E_TFCS restriction configured.
Type Definition	

```
SEQUENCE {
        nodeB_Id                        INTEGER (0..63),
        restrictAllowedTFCs         CHOICE {
                                        e_TFCS_Restriction      E_TFCS_Restriction,
                                        fullE_TFCS              NULL }
}
```

ASN.1 Type Definition	
Type Name	E_TFCS_Restriction
Comment	The E_TFCS restriction is a list of E-TFCIs, and can be used to verify that the UE has used a specific TFC. Any data received by the SS using a forbidden TFCI shall be discarded.
Type Definition	

```
SEQUENCE OF INTEGER (0..127)
```

7.3.2.2.17h CMAC_MACe_RG (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_RG_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACe_RG_REQ being successful.
Type Definition	

```
SEQUENCE {
        nodeB_Id                INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_RG_REQ
PCO Type	CSAP
Comment	For non-serving RL the value for relativeGrant is limited to "down" and "hold". The SS shall convert the hARQProcId to the nearest CFN (and subframe number if TTI = 2 ms) by the SS and send the Relative Grant in that CFN (and subframe number if TTI = 2 ms)
Type Definition	

```
SEQUENCE    {
            nodeB_Id            INTEGER(0..63),
            relativeGrant       ENUMERATED{up(0), down(1), hold(2)},
            hARQProcId          INTEGER (0..7),
            activationTime      SS_ActivationTime
}
```

7.3.2.2.17ha Void

7.3.2.2.17i CMAC_MACes_SI_IND (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACes_SI_IND
PCO Type	CSAP
Comment	This ASP is used for MACes delivering scheduling information in MAC_es testing. cellId=-1. If the SI was sent alone in a MAC-e PDU or sent together with other MAC-es PDU in a MAC-e PDU but without a special DDI associated the value of specialDDIpresense is set to absent; If the SI was sent together with other MAC-es PDU in a MAC-e PDU with a special DDI (DDI 63) associated the specialDDIpresence is set to present.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        cfn                         INTEGER (0..255),
        subframe                    INTEGER (0..4|7),-- 0..4 when TTI=2ms, 7 when
TTI=10ms
        specialDDIpresence          ENUMERATED {absent (0), present (1)},
        uePowerHeadRoom             BIT STRING (SIZE(5)),
        totalE_DCHBufferStatus      BIT STRING (SIZE(5)),
        highestPriorityLogChBS      BIT STRING (SIZE(4)),
        highestPriorityLogChId      BIT STRING (SIZE(4))
}
```

7.3.2.2.17j CMAC_MACes_SI_Config (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACes_SI_Config_CNF
PCO Type	CSAP
Comment	Applicable Rel-6 or later To Confirm CMAC_MACes_SI_Config_REQ, cellId=-1.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACes_SI_Config_REQ
PCO Type	CSAP
Comment	Applicable Rel-6 or later To configure the SS to enable / disable to report the reception of Scheduling Information in MAC-es PDU's via primitive CMAC_MACes_SI_IND. At the SS initialization, the default mode is SI reporting disabled. cellId=-1.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        sI_reportEnable         ENUMERATED {disable(0), enable(1)}  DEFAULT disable
}
```

7.3.2.2.17k CMAC_MACi_Config (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_Config_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACi_Config_REQ being successful.
Type Definition	

```
SEQUENCE {
        nodeB_Id            INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_Config_REQ
PCO Type	CSAP
Comment	
Type Definition	

```
SEQUENCE    {
    nodeB_Id            INTEGER(0..63),
    configMessage       CHOICE  {
                            setup       MACiConfig,
                            reconfig    MACiConfig,
                            reset       NULL,
                            release     SS_ActivationTime
                                }
}
```

ASN.1 Type Definition	
Type Name	MACiConfig
Comment	If the macHeaderManipulation field is 'NormalMacHeader' in lCH_Mappinglist, then data received on the E-DCH (MAC_i PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, and the MACis PDU shall be passed to the MAC_is together with the relevant LCH_ID, length, F, CFN and subframe number. If the macHeaderManipulation field field is 'OmitMacHeader', then data received on the E-DCH (MAC-i PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, then the MAC-i layer shall deliver the MAC-is PDU, SI and the related CFN, subframe number to the MAC-is entity. connectedToMAC_is field is used to provide the possibility that the E-DCH-MACdFlows from only one MAC-i entity are connected to the MAC_is entity in the inter node B soft handover test cases. When MAC-i is configured in enhanced FACH UL using commonMac_i_r8, the MAC-i entity is always connected to MAC-is. In DC-HSUPA configuration, two MAC-i entities are connected to the MAC-is entity. The IEs lCH_Mappinglist and e_DCHMacdFlows can be OMITted when changing the serving cell MAC-i without modification of MAC-i configurations. It will be applied in EDCH SHO. ss_DRX_MAC_Info presence indicates UL DRX shall be applied.
Type Definition	

```
CHOICE  {
    mAC_i_r8    SEQUENCE {          -- Rel-8 or later
        activationTime      SS_ActivationTime,
        lCH_Mappinglist     LCH_MappingList     OPTIONAL,
        e_DCHMacdFlows      E_DCHMACdFlows      OPTIONAL,
        connectedToMAC_is   BOOLEAN DEFAULT TRUE,
                            -- can be set to FALSE in inter nodeB SHO
        ss_DRX_MAC_Info     SS_DRX_MAC_Info     OPTIONAL
    },
    commonMac_i_r8  SEQUENCE    {
        activationTime      SS_ActivationTime,
        lCH_Mappinglist     LCH_MappingList             OPTIONAL,
        e_DCHMacdFlows      CommonE_DCHMACdFlows        OPTIONAL,
        additional_E_DCH_TransmitBackoff    INTEGER (0..15),
        max_CCCH_ResourceAllocation         ENUMERATED {
                    tti8(0), tti12(1), tti16(2), tti20(3), tti24(4), tti32(5),
                    tti40(6), tti80(7)},
        max_PeriodForCollisionResolution    INTEGER (8..24)
    },
    relAspTypeExtension         BIT STRING  -- Rel-10 or later
}
```

7.3.2.2.17l CMAC_MACi_NodeB_CellMapping (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_NodeB_CellMapping_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACi_NodeB_CellMapping_REQ being successful.
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63)
}	

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_NodeB_CellMapping_REQ
PCO Type	CSAP
Comment	To put a set of cells under the control of a MAC_i entity indicated by nodeB_Id, which is configured by CMAC_MAC_i_Config_REQ. This ASP establishes the routing relation between E-DCH related channels in these cells with a MAC_i entity. A cell is mapped to only one NodeB, and the cellId allocation is unique in a test.
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63),
celllist SEQUENCE OF INTEGER (0..63)
}	

7.3.2.2.17m CMAC_MACis_Config (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACis_Config_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACis_Config_REQ being successful. cellId=-1 except when CCCH is configured to MAC-i is entity.
Type Definition	

SEQUENCE {
cellId INTEGER(-1..63)
}	

ASN.1 ASP Type Definition	
Type Name	CMAC_MACis_Config_REQ
PCO Type	CSAP
Comment	This ASP is used for creating and configuring, reconfiguring, resetting or releasing a MAC_is, a cell / nodeB-independent entity in the SS. cellId=-1 except when CCCH is configured to MAC-i is entity.
Type Definition	

SEQUENCE {
cellId INTEGER(-1..63),
configMessage CHOICE {
setup MACisConfig,
reconfig MACisConfig,
reset NULL,
release SS_ActivationTime}
}	

ASN.1 Type Definition	
Type Name	MACisConfig
Comment	MACisConfig establishes the mapping between logical channels and E-DCH_MACd_Flows. When the macTestMode is TRUE, the re-ordering entity shall not eliminate the duplicated packets, but passes them to RLC. macTestMode = "TRUE" is used for testing the retransmission function of HARQ process.
Type Definition	

```
CHOICE  {
    mACis_r8    SEQUENCE    {                           -- Rel-8 or later
            activationTime      SS_ActivationTime,
            lCHMappinglist      LCH_MappingList,
            macTestMode         BOOLEAN DEFAULT FALSE
    },
    mACis_r9    SEQUENCE    {                           -- Rel-9 or later
            activationTime      SS_ActivationTime,
            lCHMappinglist      LCH_MappingList,
            macTestMode         BOOLEAN DEFAULT FALSE,
            tSN_FieldExtension  BOOLEAN DEFAULT FALSE   -- Used in DC-HSUPA
    },
    relAspTypeExtension         BIT STRING  -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	LCH_MappingList
Comment	
Type Definition	

```
SEQUENCE (SIZE (1..31)) OF LCH_Mapping
```

ASN.1 Type Definition	
Type Name	LCH_Mapping
Comment	Both SRBs and RBs can be mapped onto E-DCH. The mechanism for control of MAC header manipulation (macHeaderManipulation) is applied to individual logical channels to be mapped on E-DCH. Typically, the SRBs are configured in 'NormalMacHeader" mode while the RBs in user plane can be configured either in 'NormalMacHeader" or in "OmitMacHeader" mode. If the value of macHeaderManipulation field is 'NormalMacHeader', then data received on the E-DCH MACd flows supporting this logical channel shall have its MAC header inspected to determine the appropriate routing, and removed as normal. The MACis SDU shall be passed to the appropriate logical channel. If the value of macHeaderManipulation field is 'OmitMacHeader', then data received on the E-DCH MACd flows supporting this logical channel shall have it's MAC header inspected to determine the appropriate routing, then the MAC_is layer shall deliver the MAC-is SDU, LCH_ID, Length, F,SI and the related CFN, subframe number, HARQ process identity to the appropriate logical channel. The TTCN receives these fields by RLC_TR_MACis_DATA_IND, then these fields can be checked by the TTCN. HARQ ID = CFN mod 4 for TTI=10ms; HARQ ID = (5*CFN + subframe number) mod 8 for TTI=2ms
Type Definition	

```
SEQUENCE {
        macHeaderManipulation               MAC_HeaderManipulation,
        logicalChannelIdentity              LogicalChannelIdentity,
        e_DCH_MAC_d_FlowIdentity            E_DCH_MAC_d_FlowIdentity,
        rlc_PDU_Size    CHOICE  {
            flexibleSize                        RLC_PDU_SizeConstraint,
            fixedSize                           RLC_PDU_SizeList
        },
        includeInSchedulingInfo             BOOLEAN,
        mac_LogicalChannelPriority          MAC_LogicalChannelPriority,
        logicalChannelType                  LogicalChannelType,
        rB_Identity                         INTEGER (-31..32)   OPTIONAL
}
```

7.3.2.2.17n CMAC_MACi_AG (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_AG_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACi_AG_REQ being successful.
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63)
}	

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_AG_REQ
PCO Type	CSAP
Comment	The hARQProcId shall be converted to the nearest CFN (and subframe number if TTI = 2 ms) by the SS, and the Absolute Grant is sent in that CFN (and subframe number if TTI = 2 ms).
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63),
grantType ENUMERATED {primary(0), secondary(1)},
absoluteGrantValue BIT STRING(SIZE(5)),
absoluteGrantScope BIT STRING(SIZE(1)),
hARQProcId INTEGER (0..7),
activationTime SS_ActivationTime
}	

7.3.2.2.17o CMAC_MACi_AckNack (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_AckNack_CNF
PCO Type	CSAP
Comment	To Confirm CMAC_i_AckNack_REQ
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63)
}	

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_AckNack_REQ
PCO Type	CSAP
Comment	To request the SS to set operation mode of the Ack/Nack function for the HARQ process hARQProcId. The harqProcId, between 0 to 3 for 10 ms TTI or 0 to 7 for 2 ms TTI, is individually applied to the configuration for the normal / nack mode. If the special hARQProcId -1 is used, all active HARQ processes (0..3 for 10 ms TTI and 0..7 for 2 ms TTI) will be configured according to ackNackFunction. At the SS initialization Ack/Nack function is in normal operation mode.
Type Definition	

SEQUENCE {
nodeB_Id INTEGER(0..63),
hARQProcId INTEGER (-1|0..7),
ackNackFunction AckNackFunction
}	

7.3.2.2.17p CMAC_MACi_E_TFC_Restriction (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_E_TFC_Restriction_CNF
PCO Type	CSAP
Comment	For MAC emulator to report that a previous attempt of restricting TFCs have been successful.
Type Definition	

```
SEQUENCE    {
            nodeB_Id            INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_E_TFC_Restriction_REQ
PCO Type	CSAP
Comment	To request to configure MACi entity. The field restrictAllowedTFCs is provided to allow the E-TFCI to be restricted. The IE fullE_TFCS will be used to remove any previous E_TFCS restriction configured.
Type Definition	

```
SEQUENCE {
        nodeB_Id                        INTEGER (0..63),
        restrictAllowedTFCs         CHOICE {
                                        e_TFCS_Restriction      E_TFCS_Restriction,
                                        fullE_TFCS              NULL }
}
```

7.3.2.2.17q CMAC_MACi_RG (Rel-8 or later)

NOTE: These ASPs are currently not used in ATSs

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_RG_CNF
PCO Type	CSAP
Comment	Confirm a previous CMAC_MACi_RG_REQ being successful.
Type Definition	

```
SEQUENCE {
        nodeB_Id                INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_RG_REQ
PCO Type	CSAP
Comment	For non-serving RL the value for relativeGrant is limited to "down" and "hold". The SS shall convert the hARQProcId to the nearest CFN (and subframe number if TTI = 2 ms) by the SS and send the Relative Grant in that CFN (and subframe number if TTI = 2 ms).
Type Definition	

```
SEQUENCE    {
            nodeB_Id            INTEGER(0..63),
            relativeGrant       ENUMERATED{up(0), down(1), hold(2)},
            hARQProcId          INTEGER (0..7),
            activationTime      SS_ActivationTime
}
```

7.3.2.2.17r Void

7.3.2.2.17s CMAC_MACis_SI_IND

ASN.1 ASP Type Definition	
Type Name	CMAC_MACis_SI_IND
PCO Type	CSAP
Comment	This ASP is used for MACis delivering scheduling information in MAC_is testing, cellId=-1. cellId is set to the received cell if the sI_ReportReceivedCellId is enabled in CMAC_MACis_SI_Config_REQ.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER (-1..63),
    cfn                         INTEGER (0..255),
    subframe                    INTEGER (0..4|7),
                                -- 0..4 when TTI=2ms, 7 when TTI=10ms
    uePowerHeadRoom             BIT STRING (SIZE(5)),
    totalE_DCHBufferStatus      BIT STRING (SIZE(5)),
    highestPriorityLogChBS      BIT STRING (SIZE(4)),
    highestPriorityLogChId      BIT STRING (SIZE(4))
}
```

7.3.2.2.17t CMAC_MACis_SI_Config (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MACis_SI_Config_CNF
PCO Type	CSAP
Comment	Applicable Rel-8 or later To Confirm CMAC_MACis_SI_Config_REQ, cellId=-1.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACis_SI_Config_REQ
PCO Type	CSAP
Comment	Applicable Rel-8 or later To configure the SS to enable / disable to report the reception of Scheduling Information in MAC-is PDU's via primitive CMAC_MACis_SI_IND. At the SS initialization, the default mode is SI reporting disabled cellId=-1.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        sI_reportEnable         ENUMERATED {disable(0), enable(1)}  DEFAULT disable,
        sI_ReportReceivedCellId     ENUMERATED {disable(0), enable(1)}  DEFAULT disable
                                -- Used in DC-HSUPA
}
```

7.3.2.2.17u CMAC_MBMS_ConfigInfo (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CMAC_MBMS_ConfigInfo_CNF
PCO Type	CSAP
Comment	To confirm CMAC_MBMS_ConfigInfo_REQ. The routingInfo indicates the physical channel which carries logical channel of type: MCCH, MSCH.
Type Definition	

```
SEQUENCE    {
            cellId                          INTEGER(0..63),
            routingInfo                     RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MBMS_ConfigInfo_REQ
PCO Type	CSAP
Comment	To provide the SS MCCH or MSCH configuration information. The routingInfo indicates the physical channel which carries logical channel of type : MCCH or MSCH. This ASP shall be called after the ASP CMAC_Config_REQ used for MCCH or MSCH configuration.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(0..63),
            routingInfo             RoutingInfo,
            mCCH_ConfigInfo         MBMS_MCCH_ConfigurationInfo_r6  OPTIONAL,
            mSCH_ConfigInfo         MBMS_MSCH_ConfigurationInfo_r6  OPTIONAL
}
```

7.3.2.2.18 CMAC_PAGING_Config

ASN.1 ASP Type Definition	
Type Name	CMAC_PAGING_Config_CNF
PCO Type	CSAP
Comment	To confirm to setup the paging message
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(0..63),
            routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_PAGING_Config_REQ
PCO Type	CSAP
Comment	To request MAC layer to send the Paging message on the specified configuration.
Type Definition	

```
SEQUENCE     {
                cellId                      INTEGER(0..63),
                routingInfo                 RoutingInfo,
                ratType                     RatType,
                configMessage               CmacPagingConfigReq
}
```

ASN.1 Type Definition	
Type Name	CmacPagingConfigReq
Comment	The IE t_pich_T_sccpch is obsolete for the purpose of the UE conformance test in all Releases. The timing relation of PICH / S-CCPCH and PICH/HS-SCCH are specified in 3GPP TS 25.211 [40], subclauses 7.1, 7.2 and 7.2A. A desired clean correction is to remove this IE. However, for the backwards /forwards compatibility, the proposed solution is to set this IE always to FALSE. The SS can ignore this IE, but shall behave according to the corresponding core spec.
Type Definition	

```
SEQUENCE  {
            pI_BitMapInfo       CHOICE {
                e18                 BIT STRING (SIZE (18)),
                e36                 BIT STRING (SIZE (36)),
                e72                 BIT STRING (SIZE (72)),
                e144                BIT STRING (SIZE (144))
                                        },
            dRX_CycleLength     INTEGER         {3..9},
            iMSI                SEQUENCE (SIZE (6..15)) OF  Digit,
            t_pich_T_sccpch     BOOLEAN         --  T_pich>T_sccpch then FALSE
}
```

7.3.2.2.19 CMAC_Restriction

ASN.1 ASP Type Definition	
Type Name	CMAC_Restriction_CNF
PCO Type	CSAP
Comment	For MAC emulator to report that a previous attempt of restricting TFCs have been successful.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_Restriction_REQ
PCO Type	CSAP
Comment	To request to configure MAC entity. The field restrictAllowedTFCs is provided to allow the UL and/or DL SS TFCS to be restricted for a specific transport channel. This information only needs to be sent to the MAC layer, since it is the MAC layer's responsibility to determine the set of valid TFCs each TTI.
Type Definition	

```
SEQUENCE {
        cellId                      INTEGER (-1..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        restrictAllowedTFCs         TFC_Restriction
}
```

ASN.1 Type Definition	
Type Name	TFC_Restriction
Comment	This type is used to specify the allowed TFCs within the current TFCS. A TFC restriction is applicable until a subsequent TFC restriction is applied. TFC restrictions are not cumulative, so each TFC restriction completely replaces the previous TFC restriction. The downlink restriction can be used to ensure that the SS uses a specific TFC for transmission of data, by only allowing the 'No data' TFC, and the 'desired' TFC. It may also be necessary to include one or more 'signalling only' TFCs to allow signalling to occur. The uplink restriction can be used to verify that the UE has used a specific TFC. Any data received by the SS using a forbidden TFCI shall be discarded.
Type Definition	

```
SEQUENCE {
        ulTFCI_Restriction          TFC_Subset OPTIONAL,
        dlTFCI_Restriction          TFC_Subset OPTIONAL
}
```

Detailed Comments	SS requirements for downlink. 1. The SS MAC layer shall not use a restrictednon-allowed TFC for DL. 2. The SS MAC layer shall not use a TFC that requires the SS RLC layer to provide padding PDUs (3GPP TS 25.322 [18]) 3. In the case that there is data pending on one or more RLC entities, but not enough to use one of the allowed TFCs: a. The SS MAC layer shall use the 'No data' TFC until there is enough data in the RLC to use another allowed TFC. b. The SS RLC layer shall buffer the data until there is enough data in the RLC entities for the MAC layer to use an allowed TFC other than the 'No data' TFC for transmission of the data. NOTE: The TTCN author is responsible for ensuring: 1. The SDU discard function is not configured for TM and UM entities in the UE, and is configured to no_discard for AM entities in the UE. 2. That RLC SDUs that are expected to be sent in the same TTI (due to a TFC restriction) are sent as quickly as possible to minimize the number of 'no data' TFCs used by the MAC layer, and the amount of buffering that must be performed by the RLC layer. SS requirements for uplink: The SS shall discard all data received using a restricted non-allowed TFC.

7.3.2.2.20 CMAC_SecurityMode_Config

ASN.1 ASP Type Definition	
Type Name	CMAC_SecurityMode_Config_CNF
PCO Type	CSAP
Comment	To confirm to configure the MAC security mode
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_SecurityMode_Config_REQ
PCO Type	CSAP
Comment	To request to configure the MAC security mode. If there are several CMAC_Ciphering_Activate_REQ follow this ASP, the SS shall take a serial of specified actions on the same contents in this ASP at the activation time indicated in each CMAC_Ciphering_Activate_REQ.
Type Definition	

```
SEQUENCE {
        cellId                  INTEGER(-1..63),
        macCipheringInfo        SecurityInfo
}
```

7.3.2.2.21 CMAC_SequenceNumber

ASN.1 ASP Type Definition	
Type Name	CMAC_Sequence_Number_CNF
PCO Type	CSAP
Comment	To return the requested counter sequence number on MAC-d DCH. The physicalChannelIdentity of DPCH applies to routingInfo.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        count_C_MSB_UL          COUNT_C_MSB ,
        count_C_MSB_DL          COUNT_C_MSB
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_SequenceNumber_REQ
PCO Type	CSAP
Comment	To request the MAC layer to return current counter sequence numbers. The physicalChannelIdentity of DPCH applies to routingInfo.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

7.3.2.2.22 CMAC_SYSINFO_Config

ASN.1 ASP Type Definition	
Type Name	CMAC_SYSINFO_Config_CNF
PCO Type	CSAP
Comment	To confirm to setup the system information block
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_SYSINFO_Config_REQ
PCO Type	CSAP
Comment	To request MAC layer to send the BCCH message on the specified configuration.
Type Definition	

```
SEQUENCE     {
                cellId                       INTEGER(0..63),
                routingInfo                  RoutingInfo,
                ratType                      RatType,
                configMessage                CmacSysinfoConfigReq
}
```

ASN.1 Type Definition	
Type Name	CmacSysinfoConfigReq
Comment	
Type Definition	

```
SEQUENCE    {

        sg_REP                  INTEGER     (2..12),
                                -- Repetition period is the sg_REP-th power of 2.
        sg_POS                  INTEGER     (0..2047),
                                -- The position of each segment is 2 * sg_POS.
        bcch_ModificationTime   BCCH_ModificationTime   OPTIONAL
}
```

7.3.2.2.22a CRLC_Bind_TestData_TTI

ASN.1 ASP Type Definition	
Type Name	CRLC_Bind_TestData_TTI_CNF
PCO Type	CSAP
Comment	To confirm the request of binding subsequent data sending RLC_TR_TestDataReq on the different DL RBs in the same TTI.
Type Definition	

```
SEQUENCE {
            cellId                      INTEGER(-1..63),
            result                      ENUMERATED{failure(0), success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Bind_TestData_TTI_REQ
PCO Type	CSAP
Comment	To request binding subsequent data sending RLC_TR_TestDataReq on the different DL RBs in the same TTI. On the request, the transmission of the test data is temporarily suppressed on those radio bearers which follow subsequently this CRLC_Bind_TestData_TTI_REQ and have 'numOfDiffRb' different RB IDs. Having received the number 'numOfDiffRb' of RLC_TR_TestDataReq, the SS RLC sends the test data on those RBs in the same TTI according to the allowed DL TFCS.
Type Definition	

```
SEQUENCE {
            cellId                  INTEGER(-1..63),
            numOfDiffRb             INTEGER(2..6)  -- Number of different RB IDs
}
```

7.3.2.2.22b CRLC_BindTestDataInOneMAChs_MACehs_PDU (Rel-5 or later)

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInOneMAChs_MACehs_PDU_CNF
PCO Type	CSAP
Comment	To confirm the request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH in the same MAC-hs/MAC-ehs PDU.
Type Definition	

```
SEQUENCE{
    cellId          INTEGER(-1..63),
    routingInfo     RoutingInfo,            -- RB ID desired to be given
    result          ENUMERATED{failure(0), success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInOneMAChs_MACehs_PDU_REQ
PCO Type	CSAP
Comment	To request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH in the same MAC-hs/MAC-ehs PDU. On the request, the transmission of the test data is temporarily suppressed on the radio bearers till 'numOfSDU's' are received by RLC layer on the Radio Bearer. After receiving all SDU's the RLC layer submits to MAC such that all of them are sent in one MAC-hs/ MAC-ehs PDU.
Type Definition	

```
SEQUENCE{
    cellId          INTEGER(-1..63),
    routingInfo     RoutingInfo,            -- RB ID desired to be given
    numOfSDUs       INTEGER                 -- Number of RLC SDU's
}
```

7.3.2.2.22c CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows (Rel-7 or later)

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows_CNF
PCO Type	CSAP
Comment	To confirm the request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH.
Type Definition	

```
SEQUENCE{
    cellId          INTEGER(-1..63),
    routingInfo     RoutingInfo,            -- RB ID desired to be given
    result          ENUMERATED{failure(0), success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInMultipleMACehs_PDU_MultiFlows_REQ
PCO Type	CSAP
Comment	To request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH in two MAC-ehs PDUs, one for each primary and secondary flow. On the request, the transmission of the test data is temporarily suppressed on the radio bearer till all SDUs for all flows are received by RLC layer on the Radio Bearer. After receiving all SDU's the RLC layer submits to MAC such that all of them are sent in two MAC-ehs PDUs.
Type Definition	

```
SEQUENCE{
    cellId                      INTEGER(-1..63),
    routingInfo                 RoutingInfo,    -- RB ID desired to be given
    primaryFlowNumOfSDUs        INTEGER,
        -- Number of RLC SDU's for primary flow of serving cell
    secondaryFlowNumOfSDUs      INTEGER     OPTIONAL,
        -- Number of RLC SDU's for secondary flow of serving cell
    secPrimaryFlowNumOfSDUs     INTEGER     OPTIONAL,
        -- Number of RLC SDU's for secondary cell primary flow  Rel-9 or later
    secSecondaryFlowNumOfSDUs   INTEGER     OPTIONAL,
        -- Number of RLC SDU's for secondary cell secondary flow    Rel-9 or later
    relAspTypeExtension
        BIT STRING  (CONTAINING BindTestDataInMultipleMACehs_r10OrLaterExtensionType )
        OPTIONAL    -- Rel-10 or later
}
```

7.3.2.2.23 CRLC_Ciphering_Activate

ASN.1 ASP Type Definition	
Type Name	CRLC_Ciphering_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the ciphering
Type Definition	

```
SEQUENCE {
            cellId                      INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Ciphering_Activate_REQ
PCO Type	CSAP
Comment	To request to start orrestart downlink ciphering or uplink deciphering. Each call of the ASP includes one RLC SN in rb-DL-CiphActivationTimeInfo for the corresponding rb-identity. Initialize the 20 MSB of HFN component of COUNT-C to the START value stored. For RLC_UM COUNT-C: - If the value of incHFN is set to "NotInc" the SS initialiszes the remaining LSBs of HFN component in UM COUNT-C to zero. - If the value of incHFN is set to "Inc" the SS initializes the remaining LSBs of HFN component in UM COUNT-C to zero, then increments the HFN by one. For RLC_AM COUNT-C: - If the value of incHFN is set to "NotInc" no further action is needed. - If the value of incHFN is set to "Inc" the SS increments the HFN by one.
Type Definition	

```
SEQUENCE {
            cellId                      INTEGER(-1..63),
            ratType                     RatType,
            cn_DomainIdentity           CN_DomainIdentity,
            ciphActivationInfo          CiphActivationInfo,
            incHFN                      RLC_IncMode
}
```

ASN.1 Type Definition	
Type Name	CiphActivationInfo
Comment	DL or UL ciphering activation info If RB is omitted in rB_UL_CiphActivationTimeInfo the SS takes no action on this RB and the ciphering configuration keeps unchanged on this RB. CipheringModeCommand = dummy NULL means no ciphering.
Type Definition	

```
CHOICE {
        cipheringModeInfo              CipheringModeInfo,
        rb_UL_CipheringActivationTimeInfo   RB_ActivationTimeInfoList,
        cipheringModeInfo_r7           CipheringModeInfo_r7 -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	RLC_IncMode
Comment	
Type Definition	

```
ENUMERATED{notInc(0), inc(1)}
```

7.3.2.2.24 CRLC_Config

ASN.1 ASP Type Definition	
Type Name	CRLC_Config_CNF
PCO Type	CSAP
Comment	For RLC emulator to confirm that a previous attempt to establish, re_configure or release a radio bearer has been successful.
Type Definition	

```
SEQUENCE  {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Config_REQ
PCO Type	CSAP
Comment	To request to setup, reconfigure or release RLC entity
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        configMessage               CrlcConfigReq,
        activationTime              SS_ActivationTime OPTIONAL  -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	CrlcConfigReq
Comment	To request to setup, re_configure release RLC entity The Stop parameter indicates that the RLC entity shall not transmit or receive RLC PDUs. The Continue parameter indicates that the RLC entity shall continue transmission and reception of RLC PDUs. When the RLC entity is stopped, the all protocol parameters, such as the protocol variables, RLC timers and status are not affected. Triggered polls and status transmissions are delayed until the RLC entity is continued.
Type Definition	

```
CHOICE  {
       setup                        RBInfo,
       reconfigure                  RBInfo,
       release                      NULL,
       sS_stop                      NULL,
       sS_continue                  NULL
}
```

ASN.1 Type Definition	
Type Name	RBInfo
Comment	
Type Definition	

```
SEQUENCE {
              sS_rlc_Info                SS_RLC_Info          OPTIONAL,
              sS_rlc_Info_r8             SS_RLC_Info_r8OrLater    OPTIONAL,
                                         -- Rel-8 or Later
              rB_LogCH_Mapping           RB_LogCH_Mapping
              relAspTypeExtension        BIT STRING OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	RB_LogCH_Mapping
Comment	Provide mapping information between RB, logical channel and CN domain. When the logical channel is MTCH, the logicalChannelIdentity shall be consistent with MBMS_LogicalChIdentity in MBMS_PTM_RBInformation_N and MBMS_PTM_RBInformation_C being sent to the UE.
Type Definition	

```
SEQUENCE {
    uLlogicalChannelIdentity                LogicalChannelIdentity  OPTIONAL,
    dLlogicalChannelIdentity                LogicalChannelIdentity  OPTIONAL,
    logicalChannelType                      LogicalChannelType      OPTIONAL,
    cn_DomainIdentity                       CN_DomainIdentity       OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_RLC_Info
Comment	UL and DL have been swapped intentionally in this type definition. This is to maximize re-use of the type definitions in 3GPP TS 25.331 [21] which are intended to configure a UE, where UL is transmission, and DL is reception. For the SS, UL is reception, and DL is transmission. For example, consider configuring a DL AM RLC entity (transmitter) in the SS. The transmission parameters to be configured include PollingInformation, Transmission-RLC-Discard etc. If the DL-AM-RLC-Mode type definition is used to configure this entity, it is only possible to configure reception parameters such as StatusInformation, and receiving window size. By swapping UL and DL, it is possible to configure the DL AM RLC entity using the existing type definition UL-AM-RLC-Info, which contains all of the required transmission parameters. When uM_SN_DeliveryMode is set to configured, the RLC entity does not concatenate nor segment RLC SDUs (see 3GPP TS 25.322 [18], subclause 8.2). If the IE useSpecialValueOfHEField is set to true, the last octet of the PDU is the last octet of an SDU and there is no SDU concatenation inside the PDU. Applicable for Rel-99 to Rel-7
Type Definition	

```
SEQUENCE {
            sS_ul_RLC_Mode          DL_RLC_Mode              OPTIONAL,
            sS_dl_RLC_Mode          SS_DL_RLC_Mode           OPTIONAL,
            rlc_OneSidedReEst       BOOLEAN     DEFAULT FALSE,
            altE_bitInterpretation  ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for UM RLC mode of Rel-7 or later
            useSpecialValueOfHEField ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for AM RLC mode of Rel-7 or later
            uM_SN_DeliveryMode  ENUMERATED { nonConfigured(0), configured(1)}
                           DEFAULT nonConfigured
            -- applicable for UM RLC mode of Rel-7 or later
}
```

Type Name	SS_RLC_Info_r8OrLater
Comment	Applicable for Rel-8 or Later. UL and DL have been swapped intentionally in this type definition. This is to maximize re-use of the type definitions in 3GPP TS 25.331 [21], which are intended to configure a UE, where UL is transmission, and DL is reception. For the SS, UL is reception, and DL is transmission. For example, consider configuring a DL AM RLC entity (transmitter) in the SS. The transmission parameters to be configured include PollingInformation, Transmission-RLC-Discard etc. If the DL-AM-RLC-Mode type definition is used to configure this entity, it is only possible to configure reception parameters such as StatusInformation, and receiving window size. By swapping UL and DL, it is possible to configure the DL AM RLC entity using the existing type definition UL-AM-RLC-Info, which contains all of the required transmission parameters. When uM_SN_DeliveryMode is set to configured, the RLC entity does not concatenate nor segment RLC SDUs (see 3GPP TS 25.322 [18], subclause 8.2). If the IE useSpecialValueOfHEField is set to true, the last octet of the PDU is the last octet of an SDU and there is no SDU concatenation inside the PDU.

Type Definition

```
CHOICE {
   r8 SEQUENCE  {
        sS_ul_RLC_Mode          DL_RLC_Mode_r7          OPTIONAL,
        sS_dl_RLC_Mode          SS_DL_RLC_Mode          OPTIONAL,
        rlc_OneSidedReEst       BOOLEAN     DEFAULT FALSE,
        altE_bitInterpretation  ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for UM RLC mode
        useSpecialValueOfHEField ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for AM RLC mode
        uM_SN_DeliveryMode  ENUMERATED { nonConfigured(0), configured(1)}
                            DEFAULT nonConfigured
            -- applicable for UM RLC mode of Rel-7 or later
   },
   relAspTypeExtension      BIT STRING
                            (CONTAINING SS_RLC_Info_r10OrLaterExtensionType)
                            -- Rel-10 or later
}
```

ASN.1 Type Definition

Type Name	SS_DL_RLC_Mode
Comment	"dl_UM_outOfSeqDelivery" is present only for the DL_RLC entity connected to MCCH, and in the configuration with dl_UM_outOfSeqDelivery present the UM RLC can transmit RLC PDU containing SDU of ACCESS INFORMATION message out of sequence when it is necessary Maximum one among dl_RLC_PDU_size & dl_PayloadSize shall be included. For RLC UM configuration, with altE_bitInterpretation set to TRUE, neither dl_PayloadSize nor dl_RLC_PDU_size can be present.

Type Definition

```
SEQUENCE    {
    dl_PayloadSize              PayloadSize     OPTIONAL,
    dl_RLCModeInfo              UL_RLC_Mode,
    dl_UM_RLC_LI_size           DL_UM_RLC_LI_size   OPTIONAL,
                                -- only for UM RLC configuration of Rel-5 or later
    dl_UM_outOfSeqDelivery      UM_RLC_OutOSeqDelivery_Info_r6 OPTIONAL,
                                -- Rel-6 or later
    dl_RLC_PDU_size     CHOICE {
        fixedSize       OctetModeRLC_SizeInfoType1,
        flexibleSize    SS_FlexibleSize
        } OPTIONAL      -- Only for AM RLC Configuration of Rel-7 or later
}
```

ASN.1 Type Definition

Type Name	PayloadSize
Comment	

Type Definition

```
INTEGER (0..4992)
```

ASN.1 Type Definition	
Type Name	SS_FlexibleSize
Comment	Rel-7 or later If max_RLC_DataField_Size is present, SS shall guarantee that the size of data field of DL RLC PDU does not exceed the size specified in Bytes.
Type Definition	

```
SEQUENCE    {
    li_Size ENUMERATED { size7 (0), size15 (1)},    -- Size of length indicator
    max_RLC_DataField_Size INTEGER (1..1503)    OPTIONAL
        - Maximum size of data field of RLC PDU (25.322, 9.2.2.9 and 25.433, 9.2.1.38c)
}
```

7.3.2.2.25 CRLC_Integrity_Activate

ASN.1 ASP Type Definition	
Type Name	CRLC_integrity_Activate_CNF
PCO Type	CSAP
Comment	To confirm to activate or inactivate the integrity protection
Type Definition	

```
SEQUENCE {
            cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Integrity_Activate_REQ
PCO Type	CSAP
Comment	To request to start or to modify the downlink or uplink integrity protection. The ASP shall be called before send SECURITY MODE COMMAND. It activates the integrity on all SRBs in DL. The SS initializes the 20 MSB of HFN component of COUNT-I to the START value stored and set the remaining LSBs of HFN component in COUNT-I to zero. If integrityModeCommand in ASP is set to "startIntegrityProtection", the SS shall start the downlink integrity protection from the first downlink RRC message. If the integrityModeCommand in ASP is set to "modify", the SS shall start the downlink integrity protection at the RRC message sequence number specified in "dl_IntegrityProtActivationInfo".
Type Definition	

```
SEQUENCE {
            cellId                          INTEGER(-1..63),
            cn_DomainIdentity               CN_DomainIdentity,
            integrityActivationInfo         IntegrityActivationInfo
}
```

ASN.1 Type Definition	
Type Name	IntegrityActivationInfo
Comment	DL or UL integrity activation info At the RRC message sequence numbers specified in the ul_IntegProtActivationInfo the SS shall initialize COUNT-I for the SRB's indicated in the ul_IntegrityProtActivationInfo and start using the new configuration on uplink for the indicated SRB's. If the START value is omitted in the CRLC_SecurityMode_Config_REQ above COUNT-I initialization shall not be performed.
Type Definition	

```
CHOICE {
        integrityProtectionModeInfo     IntegrityProtectionModeInfo,
        ul-IntegProtActivationInfo      IntegrityProtActivationInfoList,
        integrityProtectionModeInfo_r7  IntegrityProtectionModeInfo_r7 -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	IntegrityProtActivationInfoList
Comment	List of SS IntegrityProtActivationInfo
Type Definition	

```
SEQUENCE (SIZE (1..maxRB ) ) OF SS_IntegrityProtActivationTimeInfo
```

ASN.1 Type Definition	
Type Name	SS_IntegrityProtActivationTimeInfo
Comment	Omitting rrc_MessageSequenceNumber means activation time set to "now".
Type Definition	

```
SEQUENCE {
        rb_Identity                 INTEGER (-31..32),
        rrc_MessageSequenceNumber   RRC_MessageSequenceNumber   OPTIONAL
}
```

7.3.2.2.26 CRLC_Integrity_Failure

ASN.1 ASP Type Definition	
Type Name	CRLC_Integrity_Failure_IND
PCO Type	CSAP
Comment	RLC emulator reports the occurrences of a failure in integrity protection, i.e. reception of an integrity-protected RLC AM/UM SDU containing a non-matching X-MAC value compared to the desired.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(-1..63),
            routingInfo             RoutingInfo,
            failureCause            ENUMERATED { codeNotMatched(0) }
            -- the enumerated types of failure cause field is ffs
}
```

7.3.2.2.26a CRLC_MAC_I_Mode

ASN.1 ASP Type Definition	
Type Name	CRLC_MAC_I_Mode_CNF
PCO Type	CSAP
Comment	Confirm a previous CRLC_MAC_I_Mode_REQ being successful.
Type Definition	

```
SEQUENCE {
        cellId              INTEGER(-1..63),
        srbId               INTEGER(0..4)
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_MAC_I_Mode_REQ
PCO Type	CSAP
Comment	To set the MAC-I calculation mode. The ASP does not affect the UL integrity calculation. If mode = normal, the SS generates the correct MAC-I. If mode = erroneous, the SS generates any wrong MAC-I value different from the one it shall be. As default, when the integrity protection is jswitched on the SS enters the normal MAC-I calculation mode.
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(-1..63),
            srbId               INTEGER (0..4),
            mode                ENUMERATED {normal(0), erroneous(1)}
}
```

7.3.2.2.26b CRLC_NotAckNxtRxSDU

ASN.1 ASP Type Definition	
Type Name	CRLC_NotAckNxtRxSDU_CNF
PCO Type	CSAP
Comment	To confirm that the next received SDU has not been acknowledged.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_NotAckNxtRxSDU_REQ
PCO Type	CSAP
Comment	To request that the next received SDU is not acknowledged. The received SDU is passed to the upper layers.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        mode                    ENUMERATED{start(0)}
}
```

7.3.2.2.26c CRLC_ProhibitRLC_Ack

The use of the pair of ASPs should be restricted to each start of SRB3 Uplink ciphering only. The SS behaviours are not specified if the ASPs are used in any other procedures.

ASN.1 ASP Type Definition	
Type Name	CRLC_ProhibitRLC_Ack_CNF
PCO Type	CSAP
Comment	To confirm that the reception of a CRLC_ProhibitRLC_Ack_REQ.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        supportFlag             SupportFlag     DEFAULT noNeed
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_ProhibitRLC_Ack_REQ
PCO Type	CSAP
Comment	To request the SS to prohibit/Continue acknowledging RLC SDUs.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        mode                    ENUMERATED{prohibit(0), continue(1)}
}
```

ASN.1 Type Definition	
Type Name	SupportFlag
Comment	The default value noNeed indicates that the SS does not perform the operation mentioned in CRLC_ProhibitRLC_Ack_REQ, but performs the suspension / resume of UL RLC PDU data. If the non default values are taken, the SS has either prohibited, or continued acknowledging RLC SDUs.
Type Definition	

```
ENUMERATED {ackProhibited(0), ackContinued(1), noNeed (2)}
```

7.3.2.2.26d CRLC_ReportDataReceivedCellId (Rel-9 or later)

ASN.1 ASP Type Definition	
Type Name	CRLC_ReportReceivedCellId_CNF
PCO Type	CSAP
Comment	To confirm to activate or deactivate the received data cellId.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER(-1..63),
    routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_ReportReceivedCellId_ REQ
PCO Type	CSAP
Comment	Rel-9 or later. To request to start or stop reporting the received cellId in the test data ASPs: RLC_AM_TestDataInd, RLC_UM_TestDataInd and RLC_TR_TestDataInd. When activated, the IE cellId in the test data ASPs indicates the physical cellId on which the data is received, i.e. cellId=-1 is not used.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER(-1..63),
    routingInfo                 RoutingInfo,
    reportReceivedCellId        ENUMERATED { activate(0), deactivate(1)}
}
```

7.3.2.2.27 CRLC_Resume

ASN.1 ASP Type Definition	
Type Name	CRLC_Resume_CNF
PCO Type	CSAP
Comment	To confirm the resume request
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Resume_REQ
PCO Type	CSAP
Comment	To request to resume data transmission. If the SS implemented the optional suspension of UL data PDUs, then the processing in the UL of data PDUs shall be resumed. Any suspended UL control PDUs and Piggybacked Status shall be preceded or resumed.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo
}
```

7.3.2.2.27a CRLC_RRC_MessageSN

ASN.1 ASP Type Definition	
Type Name	CRLC_RRC_MessageSN_CNF
PCO Type	CSAP
Comment	To return the counter I values (HFN and RRC message sequence number) for sending the next DL RRC message or for receiving the next UL RRC message on the concerned SRB. COUNT_I_MSB is the 28 MSB of the COUNT-I (HFN)
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        count_I_MSB_UL          COUNT_I_MSB,
        count_I_LSB_UL          RRC_SequenceNumber,
        count_I_MSB_DL          COUNT_I_MSB,
        count_I_LSB_DL          RRC_SequenceNumber
}
```

ASN.1 Type Definition	
Type Name	COUNT_I_MSB
Comment	28 bits long
Type Definition	

```
INTEGER (0..268435455)
```

ASN.1 Type Definition	
Type Name	RRC_SequenceNumber
Comment	4 bits long
Type Definition	

```
INTEGER (0..15)
```

ASN.1 ASP Type Definition	
Type Name	CRLC_RRC_MessageSN_REQ
PCO Type	CSAP
Comment	To request the SS to return the values in COUNT-I for sending the next DL RRC message or for receiving the next UL RRC message on the concerned SRB.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo
}
```

7.3.2.2.28 CRLC_SecurityMode_Config

ASN.1 ASP Type Definition	
Type Name	CRLC_SecurityMode_Config_CNF
PCO Type	CSAP
Comment	To confirm to configure the RLC security mode If several subsequent CRLC_Integrity_Activate_REQ or CRLC_Ciphering_Activate_REQ follow this ASP, the SS shall take a serial of specified actions on the same contents in this ASP at the activation time indicated in each CRLC_Integrity (or Ciphering)_Activate_REQ.
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_SecurityMode_Config_REQ
PCO Type	CSAP
Comment	To request to configure the RLC security mode
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        rlcSecurityInfo         SecurityInfo
}
```

ASN.1 Type Definition	
Type Name	SecurityInfo
Comment	The integrityKey is not applicable to MAC
Type Definition	

```
SEQUENCE{
        Cn_DomainIdentity           CN_DomainIdentity,
        startValue                  START_VALUE             OPTIONAL,
        cipheringKey                BITSTRING(128)          OPTIONAL,
        integrityKey                BITSTRING(128)          OPTIONAL,
        gsmCipheringKey             BITSTRING(64)           OPTIONAL
}
```

Detailed Comments	When the SS receives SecurityInfo, the SS first stores the contents. The SecurityInfo contents is not activated until receiving the subsequent ASP, CRLC_Ciphering_Activate_REQ, CMAC_Ciphering_Activate_REQ or CRLC_Integrity_Activate_REQ. Omitted fields of SecurityInfo shall not be affected by the subsequent ASP at the activation time. EXAMPLE: Omitting of startValue indicates not to re-initialize the relevant COUNT-C or COUNT-I, omitting of cipheringKey indicates that the current ciphering key is valid.

7.3.2.2.28a CRLC_SetRRC_MessageSN

ASN.1 ASP Type Definition	
Type Name	CRLC_SetRRC_MessageSN_CNF
PCO Type	CSAP
Comment	To confirm the RRC message sequence number setting request
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_SetRRC_MessageSN_REQ
PCO Type	CSAP
Comment	To request the SS to set the RRC message sequence number in COUNT-I to the value specified in this ASP. The ASP is used to initialize SS RRC SN.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        count_I_LSB_UL              RRC_SequenceNumber      OPTIONAL,
        count_I_LSB_DL              RRC_SequenceNumber      OPTIONAL
}
```

7.3.2.2.28b CRLC_Set_Count_I

ASN.1 ASP Type Definition	
Type Name	CRLC_Set_Count_I_CNF
PCO Type	CSAP
Comment	To confirm the count_I_MSB and the RRC message sequence number setting request
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Set_Count_I_REQ
PCO Type	CSAP
Comment	To request the SS to set the 28 MSB and 4 LSB (RRC message sequence number) in COUNT-I according to the parameter values specified in this ASP. Parameters omitted in this ASP shall leave the corresponding bits in the SS COUNT-I unchanged. Typically the parameters count_I_MSB_UL and count_I_MSB_DL are omitted. They are only applied in a few specific security test cases requiring restoration of the used integrity context. NOTE: The 28 MSBs are initialized with the UE-provided START value plus 8 bits set to 0, using a different ASP (CRLC_SecurityMode_Config_REQ).
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        count_I_LSB_UL              RRC_SequenceNumber      OPTIONAL,
        count_I_LSB_DL              RRC_SequenceNumber      OPTIONAL,
        count_I_MSB_UL              COUNT_I_MSB             OPTIONAL,
        count_I_MSB_DL              COUNT_I_MSB             OPTIONAL
}
```

.

7.3.2.2.29 CRLC_SequenceNumber

ASN.1 ASP Type Definition	
Type Name	CRLC_Sequence_Number_CNF
PCO Type	CSAP
Comment	To return the requested counter sequence number to which the next DL PDU to be sent or the expected UL PDU to be received. The length of count_C_MSB_UL/DL and count_C_LSB_UL/DL are according to the long and short sequence number in 3GPP TS 33.102 [25], subclause 6.6.4.1.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        count_C_MSB_UL              COUNT_C_MSB,
        count_C_LSB_UL              RLC_SequenceNumber,
        count_C_MSB_DL              COUNT_C_MSB,
        count_C_LSB_DL              RLC_SequenceNumber
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_SequenceNumber_REQ
PCO Type	CSAP
Comment	To request the RLC layer to return current counter sequence numbers to which the next DL PDU to be sent or the expected UL PDU to be received.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo
}
```

7.3.2.2.29a CRLC_SendContinuousData_TTI

ASN.1 ASP Type Definition	
Type Name	CRLC_SendContinuousData_CNF
PCO Type	CSAP
Comment	Confirm sending data in every TTI on each requested RB
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        result                      ENUMERATED{failure(0), success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_SendContinuousData_REQ
PCO Type	CSAP
Comment	To request sending data in every TTI on each RB identified. After the CMAC_Restriction_REQ, the TFC under test will be the one corresponding to the maximum CTFC value in the Restricted list, so that SS can select the number of Transport blocks and the size of Transport blocks on individual Transport channels derived from this CTFC. SS shall take care about all kind of discard info in all RLC modes and the final goal is that the DL TFCs under test shall be selected in downlink for sending data on the request RBs in each TTI.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        rabTxInfo                   RabTxInfo
}
```

ASN.1 Type Definition	
Type Name	RabTxInfo
Comment	Provide test data, number of RBs, and RB Tx info of each RB (RB id, SDU size and number of SDUs) to be transmitted in consecutive TTIs
Type Definition	

```
SEQUENCE {
        testData                BIT STRING (SIZE (8..163840)),
        rbTxInfoList            SEQUENCE (SIZE (1..6)) OF RbTxInfo
}
```

ASN.1 Type Definition	
Type Name	RbTxInfo
Comment	Info on RB id and the actual DL test data size (SDU_Size * number of SDUs). The actual test data is extracted from the first (SDU_Size * number of SDUs) bits in the raw testData buffer. SS shall transmit the actual test data in every TTI. The value nomOfSdu = T / TTI , whereby T=1200 is the duration of the data transmitting in the RAB test, taking into account the test tolerance (+50 %) of the UE loop back delay (< 800 ms).
Type Definition	

```
SEQUENCE {
        rB_Identity             INTEGER     (-31..32),
        sduSize                 INTEGER     (1..163840),
        nomOfSdu                INTEGER     (0..255) -- 0 is set for no data on this RB
}
```

7.3.2.2.30 CRLC_Status

ASN.1 ASP Type Definition	
Type Name	CRLC_Status_IND
PCO Type	CSAP
Comment	To report the occurrence of certain events to RRC. NOTE: The possible event types to be defined for this ASP is FFS.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(-1..63),
            routingInfo             RoutingInfo,
            ratType                 RatType,
            statusInd               CrlcStatusInd
}
```

ASN.1 Type Definition	
Type Name	CrlcStatusInd
Comment	
Type Definition	

```
ENUMERATED  {
            dataLinkFailure (0)
            maxRESET        (1),
            sDUDiscarded    (2)
            -- More event types are to be added here
}
```

7.3.2.2.31 CRLC_Suspend

ASN.1 ASP Type Definition	
Type Name	CRLC_Suspend_CNF
PCO Type	CSAP
Comment	To confirm the suspension of data transmission. The parameter vt indicates either the value of the Send State Variable VT(S) for AM, or the value of Data State Varialble VT(US) for UM.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(-1..63),
            routingInfo             RoutingInfo,
            vt                      RLC_SequenceNumber
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_Suspend_REQ
PCO Type	CSAP
Comment	To request the suspension of data transmission. The parameter n indicates that an RLC entity will not send a PDU with "Sequence Number"≥VT(S)+N for AM and "Sequence Number"≥VT(US)+N for UM, where N is a non-negative integer. Optionally an SS may start immediate suspension of processing of data PDUs in the UL. The UL control PDUs and Piggybacked Status may optionally be processed.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER(-1..63),
            routingInfo             RoutingInfo,
            n                       RLC_SequenceNumber
}
```

7.3.2.2.31a CRLC_MTCH_Scheduling (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	CRLC_MTCH_Scheduling_CNF
PCO Type	CSAP
Comment	To confirm the CRLC_MTCH_Scheduling_REQ
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(-1..63),
        routingInfo         RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_MTCH_Scheduling_REQ
PCO Type	CSAP
Comment	Applied to the RLC entity carrying MTCH. MBMS serviceSchedulingInfo can contain a list of MBMS ServiceSchedulingInfo for multiple consecutive scheduling periods of discountinous MBMS services. mSCH_REPconfiguration provides the timing of scheduling periods. serviceShedulingInfos provides a list of SS_ServiceSchedulingInfo corresponding to multiple scheduling periods. On or after the start and within the duration of a MBMS session, the RLC behaves as normal entity. Outside of these ranges the RLC regards the buffer occupancy as being zero, prohibiting the MAC from requesting PDU's. The same is valid for the service silence period (noServcieData). Each call of the ASP replaces the existing whole scheduling information list or creates a new scheduling information list if the list does not exist. The absence of IE mSCH_REPconfiguration and schedulingInfoInfos indicates continuous MBMS services. The SS shall delete the existing scheduling information list if it has existed. The RLC entity behaves as normal.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        mSCH_REPconfiguration       MSCH_REPconfiguration           OPTIONAL,
        serviceShedulingInfos       ServiceSchedulingInfoList       OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	ServiceSchedulingInfoList
Comment	Multiple ServiceSchedulingInfo can be submitted to the SS. Each ServiceSchedulingInfo corresponds to a MSCH scheduling period.
Type Definition	

```
SEQUENCE (SIZE(1.. MaxNumMSCHMsgs))OF SS_ServiceSchedulingInfo
```

ASN.1 Type Definition	
Type Name	SS_ServiceSchedulingInfo
Comment	The IE is applied to the discontinuous MBMS service and contains pairs of "start" and "duration" within a scheduling period. The start value indicates the start of the service transmission in number of 4-frames relative to: either the 1st TTI on which the MBMS SCHEDULING INFORMATION message of the corresponding scheduling period is sent if MSCH is configured; or the IE scheduledSFN value in MSCH_REPconfiguration if MSCH is not configured. The duration value indicates how long the service is transmitted in unit of 4-frames. noServiceData is applied to the scheduling period when no MBMS service data are sent on that MTCH.
Type Definition	

```
CHOICE {
        mbms_ServiceTransmInfoList          MBMS_ServiceTransmInfoList,
        noServiceData                       NULL
}
```

7.3.2.2.32 CBMC_Config

ASN.1 ASP Type Definition	
Type Name	CBMC_Config_CNF
PCO Type	CSAP
Comment	To confirm the BMC configuration, reconfiguration or release.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(0..63),
            routingInfo                 RoutingInfo         -- RBid
}
```

ASN.1 ASP Type Definition	
Type Name	CBMC_Config_REQ
PCO Type	CSAP
Comment	To request the configuration, reconfiguration or release of BMC.
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(0..63),
        routingInfo                 RoutingInfo,            -- RBid
        configMessage               CHOICE {
            setup                       BMC_SchedulingInfo,
            release                     NULL}
}
```

7.3.2.2.32b DEC_PERbitstring

ASN.1 ASP Type Definition	
Type Name	DEC_PERbitstring_CNF
PCO Type	ExternalAsn1Codec
Comment	To receive the decoded BIT STRING.
Type Definition	

```
SEQUENCE    {
    containedType       ContainedType
}
```

ASN.1 ASP Type Definition	
Type Name	DEC_PERbitstring_REQ
PCO Type	ExternalAsn1Codec
Comment	To request decoding of the BITSTRING recived from UE in receivedBITSTRING with the type specified in containingType.
Type Definition	

```
SEQUENCE    {
    receivedBITSTRING           BIT STRING,
    containingType              ContainingPERbitstringType
}
```

ASN.1 PDU Type Definition	
Type Name	ContainedType
Comment	
Type Definition	

```
CHOICE  {
ue_CapabilityContainer_IEs                  UE_CapabilityContainer_IEs,
rrcConnectionSetupComplete_r3_add_ext_IEs   RRCConnectionSetupComplete_r3_add_ext_IEs,
ueCapabilityInformation_r3_add_ext_IEs      UECapabilityInformation_r3_add_ext_IEs,
interRATHandoverInfo_r3_add_ext             InterRATHandoverInfo_r3_add_ext_IEs,
interRATHandoverInfo                        InterRATHandoverInfo,
uE_RadioAccessCapabilityInfo                UE_RadioAccessCapabilityInfo
}
```

ASN.1 Type Definition	
Type Name	ContainingPERbitstringType
Comment	
Type Definition	

```
ENUMERATED
{
    ue_CapabilityContainer_IEs                  (0),
    rrcConnectionSetupComplete_r3_add_ext_IEs   (1),
    ueCapabilityInformation_r3_add_ext_IEs      (2),
    interRATHandoverInfo_r3_add_ext_IEs     (3),
    interRATHandoverInfo                        (4),
    uE_RadioAccessCapabilityInfo                (5)
}
```

ASN.1 ASP Type Definition	
Type Name	DEC_PERbitstringEUTRA_CNF
PCO Type	ExternalAsn1Codec
Comment	Rel-9 or later To receive the decoded BIT STRING.
Type Definition	

```
SEQUENCE
{
  containedType ContainedEUTRA_Type
}
```

ASN.1 ASP Type Definition	
Type Name	DEC_PERbitstringEUTRA_REQ
PCO Type	ExternalAsn1Codec
Comment	Rel-9 or later To request decoding of the BITSTRING received from UE in receivedBITSTRING with an E-UTRA type specified in containingType.
Type Definition	

```
SEQUENCE {
  receivedBITSTRING BIT STRING,
  containingType ContainingPER_BitstringEUTRA_Type
}
```

ASN.1 PDU Type Definition	
Type Name	ContainedEUTRA_Type
Comment	
Type Definition	

```
CHOICE {
  ue_EUTRA_Capability  UE_EUTRA_Capability  -- defined in 36.331
}
```

ASN.1 Type Definition	
Type Name	ContainingPER_BitstringEUTRA_Type
Comment	
Type Definition	

```
ENUMERATED {
  uE_EUTRA_Capability (0)
}
```

7.3.2.2.32c ENC_PERbitstring

ASN.1 ASP Type Definition	
Type Name	ENC_PERbitstring_CNF
PCO Type	ExternalAsn1Codec
Comment	To receive the encoded BIT STRING.
Type Definition	

```
SEQUENCE    {
    encodedBITSTRING        BIT STRING
}
```

ASN.1 ASP Type Definition	
Type Name	ENC_PERbitstring_REQ
PCO Type	ExternalAsn1Codec
Comment	To request encoding of asn.1 PDU or IE.
Type Definition	

```
CHOICE  {
    mcchMessage                     MCCH_Message,
    radioBearerSetup_r7_add_ext     RadioBearerSetup_r7_add_ext_IEs
}
```

7.3.2.2.33 RLC_TR_DATA

ASN.1 ASP Type Definition	
Type Name	RLC_TR_DATA_REQ
PCO Type	DSAP
Comment	To request to transmit DATA using transparent mode.
Type Definition	

```
SEQUENCE    {
                cellId                  INTEGER(-1..63),
                routingInfo             RoutingInfo,
                tM_Message              CHOICE  {
                        dL_DCCH_Message             DL_DCCH_Message,
                        dL_CCCH_Message             DL_CCCH_Message,
                        pCCH_Message                PCCH_Message,
                        dL_SHCCH_Message            DL_SHCCH_Message,
                        bCCH_FACH_Message           BCCH_FACH_Message,
                        bCCH_BCH_Message            BCCH_BCH_Message }
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_TR_DATA_IND
PCO Type	DSAP
Comment	To indicate to receive DATA using transparent mode.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo,
            tM_Message                  CHOICE  {
                        uL_DCCH_Message             UL_DCCH_Message,
                        uL_CCCH_Message             UL_CCCH_Message,
                        uL_SHCCH_Message            UL_SHCCH_Message}
}
```

7.3.2.2.34 RLC_AM_DATA

ASN.1 ASP Type Definition	
Type Name	RLC_AM_DATA_REQ
PCO Type	DSAP
Comment	To request to transmit DATA using acknowledged mode.
Type Definition	

```
SEQUENCE    {
            cellId                  INTEGER (-1..63),
            routingInfo             RoutingInfo,
            confirmationRequest     AmConfirmationRequest,
            aM_Message              CHOICE  {
                        dL_DCCH_Message             DL_DCCH_Message,
                        dL_CCCH_Message             DL_CCCH_Message,
                        pCCH_Message                PCCH_Message,
                        dL_SHCCH_Message            DL_SHCCH_Message,
                        bCCH_FACH_Message           BCCH_FACH_Message,
                        bCCH_BCH_Message            BCCH_BCH_Message,
                        invalid_dL_DCCH_Message     Invalid_DL_DCCH_Message}
}
```

ASN.1 Type Definition	
Type Name	AmConfirmationRequest
Comment	If the noConfirmationRequested option is used, then an RLC_AM_DATA_CNF is not expected from the RLC AM entity. If the confirmationRequested option is used, then the RLC AM entity is being requested to provide an RLC_AM_DATA_CNF primitive containing the same Mui value.
Type Definition	

```
CHOICE {
            noConfirmationRequest       NULL,
            confirmationRequested       Mui
}
```

ASN.1 Type Definition	
Type Name	Mui
Comment	
Type Definition	

```
INTEGER {0..4095}
```

ASN.1 ASP Type Definition	
Type Name	RLC_AM_DATA_IND
PCO Type	DSAP
Comment	To indicate to receive DATA using acknowledged mode.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo,
            integrityResult             IntegrityResult,
            aM_Message                  CHOICE  {
                        uL_DCCH_Message             UL_DCCH_Message,
                        uL_CCCH_Message             UL_CCCH_Message,
                        uL_SHCCH_Message            UL_SHCCH_Message}
}
```

ASN.1 Type Definition	
Type Name	IntegrityResult
Comment	
Type Definition	

```
CHOICE   {
            integrityNotUsed        NULL,
            integrityUsed           IntegrityStatus
}
```

ASN.1 Type Definition	
Type Name	IntegrityStatus
Comment	
Type Definition	

```
ENUMERATED {
            i_pass(0), i_fail(1)
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_AM_DATA_CNF
PCO Type	DSAP
Comment	For RLC emulator to report to the upper layer that a previously transmitted SDU has been acknowledged correctly by the UE
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(-1..63),
        routingInfo         RoutingInfo,
        mui                 Mui
}
```

7.3.2.2.34a RLC_UM_ACCESSinfo (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_UM_ACCESSinfo_REQ
PCO Type	DSAP
Comment	To request to transmit ACCESS INFORMATION messages using unacknowledged mode. This ASP is valid for the RLC entity configured for the logical channel MCCH. When an RLC_UM_ACCESSinfo_REQ with uM_Messages present is received the ongoing transmission of ACCESS INFORMATION, if any, shall be stopped in the modification period indicated by startingTime. At the same time, the SS starts transmitting the ACCESS INFORMATION messages passed by the ASP, then repeats the transmission in each next modification period. When an RLC_UM_ACCESSinfo_REQ without uM_Messages is received the SS stops the ongoing ACCESS INFORMATION transmission at the modification period specified by startingTime.
Type Definition	

```
SEQUENCE    {
        cellId          INTEGER(-1..63),
        routingInfo     RoutingInfo,
        startingTime    INTEGER(0..4095),
                        -- pointing to the first frame of a modification
        uM_Messages     AI_MsgList OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	AI_MsgList
Comment	AI_MsgList is an ordered list of AI messages. The order corresponds to the AI_Msg transmission timing in a modification period. A modification period can have 1, 2, 4 or 8 access information periods depending on MCCH configuration. The size of the list shall be consistent with the MCCH configuration.
Type Definition	

```
SEQUENCE (SIZE(1|2|4|8))OF AI_Msg
```

ASN.1 Type Definition	
Type Name	AI_Msg
Comment	The aI_Message is sent on the first TTI of the access information period. If the corresponding aI_Message is empty there is no ACCESS INFORMATION scheduled for that access information period.
Type Definition	

```
CHOICE {
    aI_Message              MBMSAccessInformation,
    aI_EmptyMsg             NULL
}
```

7.3.2.2.34b RLC_UM_CriticalMCCHMsg (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_UM_CriticalMCCHMsg_REQ
PCO Type	DSAP
Comment	To request to transmit critical MCCH messageList using unacknowledged mode. This ASP is valid only for the RLC entity configured for the logical channel MCCH. When an RLC_UM_CriticalMCCHMsg_REQ with non-empty uM_Messages is received the SS stops ongoing critical MCCH information transmission in the modification period indicated by startingTime. At the same time, the SS starts transmitting the set of critical MCCH messageList passed by the ASP in the same order as they appear in the uM_MessageList, and then repeats the transmission in each next repetition period until another RLC_UM_CriticalMCCHMsg_REQ is received to modify the critical messages at start of the next modification period. When an RLC_UM_CriticalMCCHMsg_REQ without uM_Messages is received the SS stops the ongoing critical MCCH message transmission at the modification period specified by startingTime. If specialLI is set to TRUE all SUDs sent within the RLC_UM_CriticalMCCHMsg_REQ have the special LI set to indicate beginning of the RLC SDU.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo,
        startingTime            INTEGER(0..4095),
                                -- pointing to the first frame of a modification
        uM_Messages             MCCH_MessageList OPTIONAL,
        specialLI               BOOLEAN DEFAULT FALSE
}
```

ASN.1 Type Definition	
Type Name	MCCH_MessageList
Comment	MBMSAccessInformation shall not be included in the MCCH_MessageList.
Type Definition	

```
SEQUENCE (SIZE(1..maxNumMCCHMsgs))OF MCCH_MessageType
```

ASN.1 Type Definition	
Type Name	maxNumMCCHMsgs
Comment	For covering the configuration with 20 neighbouring cells
Type Definition	

```
INTEGER (25)
```

7.3.2.2.34c RLC_TR_SeqOfRlcPdus

ASN.1 ASP Type Definition	
Type Name	RLC_TR_SeqOfRlcPdus_REQ
PCO Type	DSAP
Comment	To request to transmit a sequence of RLC PDUs using transparent mode: The first PDU is sent in the frame at startingTime, the other PDUs are subsequently sent in the following frames. This primitive can be used e.g. to send fully coded RLC PDUs of critical messages at the beginning of a repetition period. Each sequence of RLC PDUs is sent just once i.e. not repeated at the beginning of the next repetition period. Therefore the sequence may also contain Access Information. Furthermore the sequence may contain corrupted PDUs.
Type Definition	

```
SEQUENCE    {
        cellId          INTEGER(-1..63),
        routingInfo     RoutingInfo,
        startingTime    INTEGER(0..4095),
                        -- pointing to the first frame of a modification
        seqOfPdus       MCCH_RlcPduList
}
```

ASN.1 Type Definition	
Type Name	MCCH_RlcPduList
Comment	Each RLC PDU is completely encoded and consists of RLC UM header and RLC SDU
Type Definition	
SEQUENCE (SIZE(1..maxNumMCCHRlcPdus)) OF BIT STRING	

ASN.1 Type Definition	
Type Name	maxNumMCCHRlcPdus
Comment	Maximum number of RLC PDUs in RLC tests of MCCH
Type Definition	
INTEGER (64)	

7.3.2.2.35 RLC_UM_DATA

ASN.1 ASP Type Definition	
Type Name	RLC_UM_DATA_REQ
PCO Type	DSAP
Comment	To request to transmit DATA using unacknowledged mode.
Type Definition	

```
SEQUENCE    {
            cellId                   INTEGER(-1..63),
            routingInfo              RoutingInfo,
            uM_Message                CHOICE {
                        dL_DCCH_Message             DL_DCCH_Message,
                        dL_CCCH_Message             DL_CCCH_Message,
                        pCCH_Message                PCCH_Message,
                        dL_SHCCH_Message            DL_SHCCH_Message,
                        bCCH_FACH_Message           BCCH_FACH_Message,
                        bCCH_BCH_Message            BCCH_BCH_Message
                        invalid_dL_DCCH_Message Invalid_DL_DCCH_Message},
            specialLI                    BOOLEAN
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_UM_DATA_IND
PCO Type	DSAP
Comment	To indicate to receive DATA using unacknowledged mode.
Type Definition	

```
SEQUENCE    {
            cellId                   INTEGER(-1..63),
            routingInfo              RoutingInfo,
            integrityResult          IntegrityResult,
            uM_Message                CHOICE {
                        uL_DCCH_Message             UL_DCCH_Message,
                        uL_CCCH_Message             UL_CCCH_Message,
                        uL_SHCCH_Message            UL_SHCCH_Message}
}
```

7.3.2.2.35a RLC_UM_MSCH_Msg (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_UM_MSCH_Msg_REQ
PCO Type	DSAP
Comment	To request to transmit MSCH_MessageList using unacknowledged mode. The ASP is applied to the RLC entity configured for the logical channel MSCH.
Type Definition	

```
SEQUENCE    {
        cellId                       INTEGER(-1..63),
        routingInfo                  RoutingInfo,
        mSCH_REPconfiguration        MSCH_REPconfiguration,
        uM_Messages                  MSCH_MessageList
}
```

ASN.1 Type Definition	
Type Name	MSCH_REPconfiguration
Comment	MSCH_REPconfiguration describes how the scheduled data to be transmitted. If MSCH is configured MSCH_REPconfiguration specifies when series of MSCH scheduling repetitions start and how long the scheduling period is. The scheduledSFN fulfils: scheduledSFN = ((SFNss / MSCH_REP + 1) * MSCH_REP + MSCH_OFF + (SCTO / 10ms)) mod 4096, where SFNss is the value of currentSFN provided by SS via CPHY_SFN_CNF. The SS shall start sending the 1st SCHEDULING INFORMATION message on the frame indicated by scheduledSFN and successively send the remaining MSCH messages in the list on the 1st TTI of every mSCH_REP. If MSCH is not configured the scheduledSFN fulfils: scheduledSFN = (SFNss + (SCTO / 10ms)) mod 4096, mSCH_REP is omitted.
Type Definition	

```
SEQUENCE    {
        scheduledSFN        INTEGER(0..4095),
        mSCH_REP            ENUMERATED { sp32(0), sp64(1), sp128(2), sp256(3), sp512(4), 
sp1024(5) } OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	MSCH_MessageList
Comment	Multiple MSCH messages can be submitted to the SS. Every scheduling period a new message in the sequence is transmitted according to the appearing order in the sequence.
Type Definition	

```
SEQUENCE (SIZE(1.. maxNumMSCHMsgs))OF SS_MSCH_Message
```

ASN.1 Type Definition	
Type Name	SS_MSCH_Message
Comment	noSend of SS_MSCH_Message is applied to the scheduling period when no MBMS service data are sent on all MTCH.
Type Definition	

```
CHOICE {
        mSCH_Message                MSCH_MessageType,
        noSend                      NULL}
```

ASN.1 Type Definition	
Type Name	maxNumMSCHMsgs
Comment	Covering a sufficiently long duration of multiple MSCH scheduling periods for test
Type Definition	

```
INTEGER (64)
```

7.3.2.2.36 RLC_TR_MACesDATA_IND (Rel-6 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_TR_MACesDATA_IND
PCO Type	DSAP
Comment	This ASP is used for MACes delivering data in MAC_es testing. The IE cellId = -1, The routingInfo is RB identity, corresponding to RLC in TM, (tsc_RB_DTCH_E_DCH_MAC0(-20), tsc_RB_DTCH_E_DCH_MAC1(-21), or tsc_RB_DTCH_E_DCH_MAC2(-22)). The cfn and subframe indicate the CFN and sub-frame number on which the mACesSDUs (RLC PDUs) were received. The ddi, tsn and n are the reported values in the header of each MAC-es PDU that carries the mACesSDUs. If SI is received together with other MACes PDUs in a MAC-e PDU but without a special DDI associated, the SS shall split SI from MACes data and the latter ones are delivered with the ASP.
Type Definition	

```
SEQUENCE    {
            cellId              INTEGER(-1..63),
            routingInfo         RoutingInfo,
            cfn                 INTEGER (0..255),
            subframe            INTEGER (0..4|7), -- Value 7 applied when TTI=10ms
            happyBit            ENUMERATED {happy(0), unhappy(1)},
            ddi                 INTEGER (0..62),
            tsn                 INTEGER (0..63),
            n                   INTEGER (0..63),
            mACesSDUs           MACesSDU_List
}
```

ASN.1 Type Definition	
Type Name	MACesSDU_List
Comment	
Type Definition	

```
SEQUENCE (SIZE (1..63)) OF MACesSDU
```

ASN.1 Type Definition	
Type Name	MACesSDU
Comment	
Type Definition	

```
BIT STRING      -- RLC PDU in TM
```

7.3.2.2.36a RLC_TR_MACisDATA_IND (Rel-8 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_TR_MACisDATA_IND
PCO Type	DSAP
Comment	This ASP is used for MACis delivering data in MAC_is testing. The IE cellId = -1, the routingInfo is RB identity, corresponding to RLC in TM. The cfn and subframe indicate the CFN and sub-frame number on which the mACisSDUs (RLC PDUs) were received. The LCH_Id, length, F are the reported values in the header of each MAC-is SDU. The SS, tsn are the reported values in the header of each MAC-is PDU that carries the mACisSDUs.
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(-1..63),
        routingInfo         RoutingInfo,
        cfn                 INTEGER (0..255),
        subframe            INTEGER (0..4|7), -- Value 7 applied when TTI=10ms
        happyBit            ENUMERATED {happy(0), unhappy(1)},
        mACi_Header         MACi_HeaderList_Type,
        ss                  INTEGER (0.. 3),
        tsn                 INTEGER (0..63),
        mACisSDUs           MACisSDU_List
}
```

ASN.1 Type Definition	
Type Name	MACi_HeaderList_Type
Comment	
Type Definition	

```
SEQUENCE (SIZE (1..63)) OF MACi_Header_Type
```

ASN.1 Type Definition	
Type Name	MACi_Header_Type
Comment	
Type Definition	

```
SEQUENCE    {
        lCH_ID              INTEGER (0..15),
        length              INTEGER (0..2047)   OPTIONAL,
        f                   INTEGER (0..1)      OPTIONAL,
        cRC_Present         BOOLEAN DEFAULT FALSE,
        eRNTI               BIT STRING (SIZE (16)) OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	MACisSDU_List
Comment	
Type Definition	

```
SEQUENCE (SIZE (1..63)) OF MACisSDU
```

ASN.1 Type Definition	
Type Name	MACisSDU
Comment	
Type Definition	

```
BIT STRING      -- RLC PDU in TM
```

7.3.2.2.36b RLC_TR_MACisDATA_ExtTSN_IND (Rel-9 or later)

ASN.1 ASP Type Definition	
Type Name	RLC_TR_MACisDATA_ExtTSN _IND
PCO Type	DSAP
Comment	Rel-9 or later This ASP is used for MACis delivering data in MAC_is testing when extended TSN is configured. The IE cellId is set to the received cell , the routingInfo is RB identity, corresponding to RLC in TM. The cfn and subframe indicate the CFN and sub-frame number on which the mACisSDUs (RLC PDUs) were received. The LCH_Id, length, F are the reported values in the header of each MAC-is SDU. The SS, tsn are the reported values in the header of each MAC-is PDU that carries the mACisSDUs.
Type Definition	

```
SEQUENCE    {
        cellId              INTEGER(0..63),
        routingInfo         RoutingInfo,
        cfn                 INTEGER (0..255),
        subframe            INTEGER (0..4|7), -- Value 7 applied when TTI=10ms
        happyBit            ENUMERATED {happy(0), unhappy(1)},
        mACi_Header         MACi_HeaderList_Type,
        ss                  INTEGER (0.. 3),
        tsn                 INTEGER (0..16383),
        mACisSDUs           MACisSDU_List
}
```

7.3.2.3 Specific ASP and IE definitions for 1.28 Mcps TDD (Rel-4 or later)

The ASP definitions in 7.3.2.2 are applied to 1.28 Mcps TDD with the exceptions.

- The ASP definition CPHY_AICH_AckModeSet is not applied.

- Specific IE definitions in this clause replace the definitions in clause 7.3.2.2.

7.3.2.3.1 Specific ASP definitions

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Config_REQ
PCO Type	CSAP
Comment	Applicable Rel-4 or later To request to setup the cell parameter. The unit of tcell is chip; the unit of sfnOffset is frame number; the primary scambling code number of the cell is 16*primaryScramblingCode_SS; the unit of dLTxAttenuationLevel is dB.
Type Definition	

```
SEQUENCE {
    cellId                                  INTEGER (0..63),
    sfnOffset                               INTEGER (0 .. 4095),
    frequencyInfo                           FrequencyInfo,
    cellTxPowerLevel                        CellTxPowerLevel,
    dLTxAttenuationLevel                    INTEGER(0..30 |123),
    cellParametersID                        CellParametersID,
    timeSlotConfigurationList_LCR           TimeSlotConfigurationList_LCR,
    dwPCHInfo                               DwPCHInfo,
    transmissionDiversityApplied            ENUMERATED {notApplied (0),applied (1)}OPTIONAL,
    secondaryFrequencyInfo                  SecondaryFrequencyInfoList OPTIONAL,
    upPCHposition                           UpPCHposition_LCR OPTIONAL,
    relAspTypeExtension                     BIT STRING OPTIONAL -- Rel-10 or later
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_AckNack_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later To Confirm CPHY_HS_SICH_AckNack_REQ
Type Definition	

```
SEQUENCE{
    cellId      INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_AckNack_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To request for Start or Stop of reporting Ack/Nack received on the SICH for the HARQ process hARQProcessId. At the SS initialization reporting of Ack/Nack is in "STOP" state
Type Definition	

```
SEQUENCE{
    cellId                    INTEGER(0..63),
    ratType                   RatType,
    ackNackReportReq          AckNackReportReq,
    hARQProcessId             INTEGER(0..7)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_AckNack_IND
PCO Type	CSAP
Comment	Applicable Rel-5 or later SS reports the HARQ-ACK information received on HS_DPCCH, each received Ack/Nack generates a CPHY_HS_DPCCH_AckNack_IND
Type Definition	

```
SEQUENCE
{
    cellId              INTEGER(0..63),
    ratType             RatType,
    hARQ_ACKInfo        ENUMERATED {ack(0), nack (1)},
    hARQProcessId       INTEGER(0..7)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_CQI_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later. To Confirm CPHY_HS_SICH_CQI_REQ
Type Definition	

```
SEQUENCE{
    cellId      INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_CQI_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later. To enable the SS to start reporting N times of the CQI value received on the HS-SICH. At the SS initialization reporting of CQI values is disabled
Type Definition	

```
SEQUENCE{
    cellId                  INTEGER(0..63),
    ratType                 RatType,
    cQIReport               ENUMERATED {startRep (0),stopRep (1) }
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_HS_SICH_CQI_IND
PCO Type	CSAP
Comment	Applicable Rel-5 or later. SS generates the indication when the CQI information is received on HS_SICH after invocation of ASP CPHY_HS_SICH_CQI_REQ. This ASP is used for verifying whether the UE has configured the HS-DSCH and starts reception of HS-DSCH. (3GPP TS 25.331 [21], subclause 8.6.6.34)
Type Definition	

```
SEQUENCE {
    cellId                  INTEGER(0..63),
    ratType                 RatType,
    rMS                     ENUMERATED {qpsk (0),qam16 (1) },
    rTB                     INTEGER(0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_TFRCconfigure_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later. Confirm a previous CMAC_MAChs_TFRCconfigure_REQ being successful.
Type Definition	

```
SEQUENCE {
    cellId  INTEGER(-1..63)
}
```

Type Name	CMAC_MAChs_TFRCconfigure_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later To configure the TFRC selection in the MAC-hs entity If explicitlyConfigured is selected in `tfrcConfigMode`, the SS shall use all the parameter values specified to configure a correct transport format and radio resources. If sS_Configured is selected, the parameter value range is specified. SS shall dynamically select the suitable values for the parameters "modulationScheme", "dLTimeslotandCode", "noOfChannelisationCodes ", tbSizeIndexOnHS_SCCH", "redundancyVersion" and "hs_PDSCH_TxPower" according to UE's capability category and CQI information reported by the UE. MaxnoofDLtsLCR=6

Type Definition

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    tfrcConfigMode      CHOICE {
        explicitlyConfigured            SEQUENCE {
            modulationScheme                ModulationScheme,
            noOfTimeSlots                   B5,
            startCode                       HS_ChannelisationCode_LCR,
            stopCode                        HS_ChannelisationCode_LCR,
            noOfCodesPerTimeslot            INTEGER (0..16),
            tbSizeIndexOnHS_SCCH            INTEGER (0..63),
            redundancyVersions              RedundancyVersionList,
            hs_PDSCH_TxPower                DL_TxPower  -- default offset related
                                                        -- to p-PCCPCH
            },
        sS_Configured       SEQUENCE {
            numofTimeslots                  INTEGER (0..6),
            startCode                       HS_ChannelisationCode_LCR,
            stopCode                        HS_ChannelisationCode_LCR,
            numofCodesPerTimeslot           INTEGER (0..16),
            iniHS_PDSCH_TxPower             DL_TxPower  -- default offset related
                                                        -- to p-PCCPCH
            }
        }
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_MACehs_TFRCconfigure_REQ
PCO Type	CSAP
Comment	Applicable Rel-8 or later To configure the TFRC selection in the MAC-hs entity, If explicitlyConfigured is selected in `tfrcConfigMode`, the SS shall use all the parameter values specified to configure a correct transport format and radio resources. This configuration is used for HS-SCCH associated HS-DSCH transmission. If sS_Configured is selected, the parameter value range is specified. SS shall dynamically select the suitable values for the parameters "modulationScheme", "channelisationCodeOffset", "noOfChannelisatonCodes ", .tbSizeIndexOnHS_SCCH", "redundancyVersion" and "hs_PDSCH_TxPower" according to UE's capability category and CQI information reported by the UE. As sps_Information_TDD128 and MIMO cannot be simultaneously configured, only one among sps_Information_TDD128 and mimoStatus can be present. When both are absent non MIMO, non sps_Information_TDD128 is configured. If minimumInterTTIinterval is set to 1, Data is sent every TTI. If it is set to 2, every TTI with Data shall be followed by at least 1 TTI without Data. If it is set to 3, every TTI with Data shall be followed by at least 2 TTI without Data. This field needs to be set as per UE category as defined in Table 5.1a of 25.306.

Type Definition

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    tfrcConfigMode      CHOICE {
        explicitlyConfigured SEQUENCE {
            modulationScheme        ModulationScheme,
            noOfTimeSlots           B5,
            startCode               HS_ChannelisationCode_LCR,
            stopCode                HS_ChannelisationCode_LCR,
            noOfCodesPerTimeslot    INTEGER (0..16),
            tbSizeIndexOnHS_SCCH    INTEGER (0..63),
            redundancyVersions      RedundancyVersionList,
            hs_PDSCH_TxPower        DL_TxPower --default offset related to p-PCCPCH
            },
        sS_Configured SEQUENCE {
            numofTimeslots          INTEGER (0..6),
            startCode               HS_ChannelisationCode_LCR,
            stopCode                HS_ChannelisationCode_LCR,
            numofCodesPerTimeslot   INTEGER (0..16),
            iniHS_PDSCH_TxPower     DL_TxPower --default offset related to p-PCCPCH
            mimoStatus              BOOLEAN             DEFAULT FALSE,
            sps_Information_TDD128  SPS_Information_TDD128_r8   OPTIONAL
            },
        relAspTypeExtension     BIT STRING -- Rel-10 or later
        },
    activationTime              SS_ActivationTime   OPTIONAL,
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_HARQprocAssign_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later. To assign a HARQ process for handling next one MAC-hs PDU transmission. In normal operation a suitable HARQ process is, without TTCN intervening, selected by HARQ entity in the MAC-hs to service the MAC-hs PDU and the HARQ process identifier is set accordingly. This ASP provides TTCN the ability of selecting an HARQ process servicing the next one MAC-hs PDU which follows the ASP. After successful transmission the MAC-hs returns back to normal operation.

Type Definition

```
SEQUENCE {
    cellId          INTEGER(-1..63),
    harqProcessId   INTEGER(0..7)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_HARQprocAssign_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later. Confirm a previous CMAC_MAChs_HARQprocAsign_REQ being successful.
Type Definition	

```
SEQUENCE {
    cellId      INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_Reset_REQ
PCO Type	CSAP
Comment	Applicable Rel-5 or later. To reset the MAC-hs entity.
Type Definition	

```
SEQUENCE {
    cellId      INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MAChs_Reset_CNF
PCO Type	CSAP
Comment	Applicable Rel-5 or later. Confirm a previous CMAC_MAChs_Reset_REQ being successful.
Type Definition	

```
SEQUENCE {
    cellId      INTEGER(-1..63)
}
```

Type Name	CMAC_MACe_AG_REQ
PCO Type	CSAP
Comment	Applicable Rel-7 or later.
Type Definition	

```
SEQUENCE {
    nodeB_Id                    INTEGER(0..63),
    absoluteGrantValue          BIT STRING(SIZE(5)),
    ChannelisationCode          UL_TS_ChannelisationCode,
    TRRI                        BIT STRING(SIZE(5)),
    RDI                         INTEGER(0..7),
    ECSN                        INTEGER(0..7),
    EI                          INTEGER(0..3),
    ENI                         INTEGER(0..7),
    hARQProcId                  INTEGER(0..7),
    activationTime              SS_ActivationTime
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_SI_Config_CNF
PCO Type	CSAP
Comment	Applicable Rel-7 or later To confirm CMAC_MACe_SI_Config_REQ, cellId=-1.
Type Definition	

```
SEQUENCE    {
    cellId          INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_SI_Config_REQ
PCO Type	CSAP
Comment	Applicable Rel-7 or later To configure the SS to enable / disable to report the reception of Scheduling Information in MAC-es PDU's via primitive CMAC_MACe_SI_IND. At the SS initialization, the default mode is SI reporting disabled. cellId=-1.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    sI_reportEnable     ENUMERATED {disable(0), enable(1)}  DEFAULT disable
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACe_SI_IND
PCO Type	CSAP
Comment	This ASP is used for MAC-e delivering scheduling information in MAC-e testing. cellId=-1. If the SI was sent alone in a MAC-e PDU or sent together with other MAC-e PDU in a MAC-e PDU but without a special DDI associated the value of specialDDIpresense is set to absent; If the SI was sent together with other MAC-es PDU in a MAC-e PDU with a special DDI (DDI 63) associated the specialDDIpresence is set to present.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER(-1..63),
    cfn                         INTEGER (0..255),
    subframe                    INTEGER (0..1),
    specialDDIpresence          ENUMERATED {absent (0), present (1)},
    sNPL                        BIT STRING (SIZE(5)),
    uePowerHeadRoom             BIT STRING (SIZE(5)),
    totalE_DCHBufferStatus      BIT STRING (SIZE(5)),
    highestPriorityLogChBS      BIT STRING (SIZE(4)),
    highestPriorityLogChId      BIT STRING (SIZE(4))
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_TR_MACesDATA_IND
PCO Type	DSAP
Comment	This ASP is used for MACes delivering data in MAC_es testing. The IE cellId = -1, The routingInfo is RB identity, corresponding to RLC in TM, (tsc_RB_DTCH_E_DCH_MAC0(-20), tsc_RB_DTCH_E_DCH_MAC1(-21), or tsc_RB_DTCH_E_DCH_MAC2(-22)). The cfn and subframe indicate the CFN and sub-frame number on which the mACesSDUs (RLC PDUs) were received. The ddi, tsn and n are the reported values in the header of each MAC-es PDU that carries the mACesSDUs. If SI is received together with other MACes PDUs in a MAC-e PDU but without a special DDI associated, the SS shall split SI from MACes data and the latter ones are delivered with the ASP.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    routingInfo         RoutingInfo,
    cfn                 INTEGER (0..255),
    subframe            INTEGER (0..1),
    ddi                 INTEGER (0..62),
    tsn                 INTEGER (0..63),
    n                   INTEGER (0..63),
    mACesSDUs           MACesSDU_List
}
```

Type Name	CMAC_MACi_AG_REQ
PCO Type	CSAP
Comment	Applicable Rel-8 or later.
Type Definition	

```
SEQUENCE {
    nodeB_Id                    INTEGER(0..63),
    absoluteGrantValue          BIT STRING(SIZE(5)),
    ChannelisationCode          UL_TS_ChannelisationCode,
    TRRI                        BIT STRING(SIZE(5)),
    RDI                         INTEGER(0..7),
    ECSN                        INTEGER(0..7),
    EI                          INTEGER(0..3),
    ENI                         INTEGER(0..7),
    hARQProcId                  INTEGER(0..7),
    activationTime              SS_ActivationTime
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_SI_Config_CNF
PCO Type	CSAP
Comment	Applicable Rel-8 or later. To confirm CMAC_MACi_SI_Config_REQ, cellId=-1.
Type Definition	

```
SEQUENCE    {
    cellId          INTEGER(-1..63)
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_SI_Config_REQ
PCO Type	CSAP
Comment	Applicable Rel-8 or later To configure the SS to enable / disable to report the reception of Scheduling Information in MAC-is PDU's via primitive CMAC_MACi_SI_IND. At the SS initialization, the default mode is SI reporting disabled. cellId=-1.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    sI_reportEnable     ENUMERATED {disable(0), enable(1)}  DEFAULT disable
}
```

ASN.1 ASP Type Definition	
Type Name	CMAC_MACi_SI_IND
PCO Type	CSAP
Comment	Applicable Rel-8 or later This ASP is used for MAC-e delivering scheduling infomation in MAC-i testing. cellId=-1. If the SI was sent alone in a MAC-e PDU or sent together with other MAC-i PDU in a MAC-i PDU but without a special DDI associated the value of specialDDIpresense is set to absent; If the SI was sent together with other MAC-is PDU in a MAC-i PDU with a special DDI (DDI 63) associated the specialDDIpresence is set to present.
Type Definition	

```
SEQUENCE    {
    cellId                      INTEGER(-1..63),
    cfn                         INTEGER (0..255),
    subframe                    INTEGER (0..1),
    sNPL                        BIT STRING (SIZE(5)),
    uePowerHeadRoom             BIT STRING (SIZE(5)),
    totalE_DCHBufferStatus      BIT STRING (SIZE(5)),
    highestPriorityLogChBS      BIT STRING (SIZE(4)),
    highestPriorityLogChId      BIT STRING (SIZE(4))
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_TR_MACisDATA_IND
PCO Type	DSAP
Comment	Applicable Rel-8 or later This ASP is used for MACis delivering data in MAC_is testing. The IE cellId = -1, The routingInfo is RB identity, corresponding to RLC in TM, (tsc_RB_DTCH_E_DCH_MAC0(-20), tsc_RB_DTCH_E_DCH_MAC1(-21), or tsc_RB_DTCH_E_DCH_MAC2(-22)). The cfn and subframe indicate the CFN and sub-frame number on which the mACisSDUs (RLC PDUs) were received. The ddi, tsn and n are the reported values in the header of each MAC-is PDU that carries the mACisSDUs. If SI is received together with other MACis PDUs in a MAC-i PDU but without a special DDI associated, the SS shall split SI from MACes data and the latter ones are delivered with the ASP.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(-1..63),
    routingInfo         RoutingInfo,
    cfn                 INTEGER (0..255),
    subframe            INTEGER (0..1),
    mACi_Header         MACi_HeaderList_Type,
    ss                  INTEGER (0.. 3),
    tsn                 INTEGER (0..63),
    mACisSDUs           MACisSDU_List
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Setup_REQ
PCO Type	CSAP
Comment	To request to setup the associated transport channels and the Radio Link itself.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER (0..63),
    secondaryFrequency  UARFCN OPTIONAL,
    routingInfo         RoutingInfo,
    ratType             RatType,
    setupMessage        CphyRlSetupReq
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Modify_REQ
PCO Type	CSAP
Comment	To request to modify the Radio Link HardHandover (PhysicalChannelReconfig) ChannelisationCodeChange FrequencyChange PhysicalChannelModifyForTrCHReconfig Re_Synchronized HardHandover
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER (0..63),
    secondaryFrequency  UARFCN OPTIONAL,
    routingInfo         RoutingInfo,
    ratType             RatType,
    setupMessage        CphyRlSetupReq
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_UpPCH_IND
PCO Type	CSAP
Comment	To indicate SS the UpPCH and PRACH received from the UE. sync_UL is the summary of sync UL UE sent in a period. pRACH is the summary of PRACH UE sent in a period.
Type Definition	

```
SEQUENCE    {
    cellId                  INTEGER(0..63),
    sync_UL                 INTEGER(0..256),
    pRACH                   INTEGER(0..256)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_FPACH_REQ
PCO Type	CSAP
Comment	To request for Start or Stop of FPACH to reponse UpPCH received. If send_FPACH is FALSE, SS should not send FPACH to UE, else SS should send FPACH.If fPACH_Channel_Code is FALSE, SS should send FPACH to UE with wrong channel code, else SS should send FPACH with correct channel code.If signature is FALSE, SS should send FPACH to UE with wrong signature, else SS should send FPACH with correct signature. If subFrame_Number is FALSE, SS should send FPACH to UE with wrong subFrame Number, else SS should send FPACH with correct subFrame Number.
Type Definition	

```
SEQUENCE    {
    cellId              INTEGER(0..63),
    send_FPACH          BOOLEAN,
    fPACH_Channel_Code  BOOLEAN,
    signature           BOOLEAN,
    subFrame_Number     BOOLEAN
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Tx_Timing_Modify_REQ
PCO Type	CSAP
Comment	Applicable to Rel-4 or later for LCR TDD To request to modify Tx timing of a cell. The unit of tcell is 0.125 chip.
Type Definition	

```
SEQUENCE    {
    cellId  INTEGER (0..63),
    tcell   INTEGER(0..127)
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_Cell_Tx_Timing_Modify_CNF
PCO Type	CSAP
Comment	Applicable to Rel-4 or later for LCR TDD The confirmation to the CPHY_Cell_Tx_Timing_Modify_REQ
Type Definition	

```
SEQUENCE    {
    cellId  INTEGER (0..63)
}
```

ASN.1 ASP Type Definition	
Type Name	RLC_AM_DATA_CNF
PCO Type	DSAP
Comment	For RLC emulator to report to the upper layer that a previously transmitted SDU has been acknowledged correctly by the UE
Type Definition	

```
SEQUENCE {
    cellId                   INTEGER(-1..63),
    secondaryFrequency       UARFCN OPTIONAL,
    routingInfo              RoutingInfo,
    mui                      Mui
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_RL_Release_REQ
PCO Type	CSAP
Comment	To request to release the Radio Link
Type Definition	

```
SEQUENCE    {
    cellId                   INTEGER(0..63),
    routingInfo              RoutingInfo,
    activationTime           SS_ActivationTime OPTIONAL
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_CNF
PCO Type	CSAP
Comment	To confirm to release tthe Radio Link
Type Definition	

```
SEQUENCE {
    cellId          INTEGER (0..63),
    routingInfo     RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_TrCH_Release_REQ
PCO Type	CSAP
Comment	To request to release the Radio Link
Type Definition	

```
SEQUENCE    {
    cellId                   INTEGER(0..63),
    routingInfo              RoutingInfo,
    trchConfigType           TrchConfigType,
    activationTime           SS_ActivationTime OPTIONAL
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInOneMAChs_PDU_CNF
PCO Type	CSAP
Comment	To confirm the request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH in the same MAChs PDU.
Type Definition	

```
SEQUENCE {
    cellId          INTEGER(-1..63),
    routingInfo     RoutingInfo, --RB ID desired to be given
    result          ENUMERATED{failure(0), success(1)}
}
```

ASN.1 ASP Type Definition	
Type Name	CRLC_BindTestDataInOneMAChs_PDU_REQ
PCO Type	CSAP
Comment	To request of binding subsequent data sending RLC_TR/UM/AM_TestDataReq on the specified RB mapped on HS-DSCH in the same Mac-HS PDU. On the request, the transmission of the test data is temporarily suppressed on the radio bearers till 'numOfSDU's' are received by RLC layer on the Radio Bearer. After receiving all SDU's the RLC layer submits to MAC such that all of them are sent in one MAC-Hs PDU.
Type Definition	

```
SEQUENCE {
    cellId          INTEGER(-1..63),
    routingInfo     RoutingInfo, --RB ID desired to be given
    numOfSDUs       INTEGER -- Number of RLC SDU's
}
```

ASN.1 ASP Type Definition	
Type Name	CPHY_E_RUCCH_IND
PCO Type	CSAP
Comment	To indicate the E-RNTI received from UE in E-RUCCH.
Type Definition	

```
SEQUENCE{
    cellId  INTEGER(0..63),
    e_RNTI  E_RNTI
}
```

7.3.2.3.2 Specific IE definitions

ASN.1 Type Definition	
Type Name	CphyRlModifyReq
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
        activationTime                  SS_ActivationTime,
        physicalChannelInfo             CHOICE {
                secondaryCCPCHInfo          SecondaryCCPCHInfo,
                pRACHInfo                   PRACHInfo,
                dPCHInfo                    DPCHInfo,
                dPCHInfo_r5                 DPCHInfo_r5 OrLater,
                hS_DPSCHInfo                HS_DPSCHInfo_r5OrLater,
                e_DCHInfo                   SS_E_DCH_Info_r7,
                e_DCH_Non_ScheduledTransGrantInfo  SS_Non_ScheduledTransGrantInfoTDD,
                e_AGCHInfo                  SS_E_AGCH_Info,
                e_HICHInfo                  SS_E_HICH_Info,
                mBMS_MICHInfo               SS_MBMS_MICHConfigurationInfo_r6,
                relAspTypeExtension         BIT STRING -- Rel-10 or later
                                                },
        trchConfigToFollow                  BOOLEAN     DEFAULT TRUE,
        relAspTypeExtension                 BIT STRING OPTIONAL -- Rel-10 or later
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>CphyRlSetupReq</td></tr>
<tr><td>Comment</td><td>Applicable Rel-4 or later for LCR TDD
[1] To request to setup the Radio Link;
[2] Physical channel of FPACH is defined inside PRACHInfo.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2">

```
SEQUENCE {
    physicalChannelInfo     CHOICE {
        primaryCCPCHInfo        PrimaryCCPCHInfo,
        secondaryCCPCHInfo      SecondaryCCPCHInfo,
        pRACHInfo               PRACHInfo,
        pICHInfo                PICHInfo,
        dPCHInfo                DPCHInfo,
        pDSCHInfo               PDSCHInfo,
        pUSCHInfo               PUSCHInfo,
        dPCHInfo_r5             DPCHInfo_r5 OrLater,
        hS_DPSCHInfo            HS_DPSCHInfo_r5OrLater,
        e_DCHInfo               SS_E_DCH_Info_r7,
        e_DCH_Non_ScheduledTransGrantInfo  SS_Non_ScheduledTransGrantInfoTDD,
        e_AGCHInfo              SS_E_AGCH_Info,
        e_HICHInfo              SS_E_HICH_Info,
        mBMS_MICHInfo           SS_MBMS_MICHConfigurationInfo_r6,
        relAspTypeExtension     BIT STRING -- Rel-10 or later
    },
    activationTime          SS_ActivationTime OPTIONAL,
    trchConfigToFollow      BOOLEAN DEFAULT TRUE,
    relAspTypeExtension     BIT STRING OPTIONAL -- Rel-10 or later
}
```

</td></tr>
</table>

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>CmacConfigReq</td></tr>
<tr><td>Comment</td><td>To request to configure MAC.
The IE associatedPhychConfigToFollow should be set to TRUE when there is a associated physical channel configuration to follow (e.g configuration of PICH or MICH),
The implementation of the IE "associatedPhychConfigToFollow" can be left to the SS either to wait for the associated physical channel before MAC is configured or to continue the configuration of MAC without waiting for the associated physical channel.
If Dual Cell is configured, IE servingAndSecondaryCellActivation is included.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2">

```
SEQUENCE {
    activationTime      SS_ActivationTime,
    uE_Info             UE_Info,
    trCHInfo            TrCHInfo,
    trCH_LogCHMapping   TrCH_LogCHMappingList1,
    associatedPhychConfigToFollow   SEQUENCE (SIZE(1..4)) OF INTEGER OPTIONAL,
    relAspTypeExtension BIT STRING OPTIONAL -- Rel-10 or later
}
```

</td></tr>
</table>

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>PrimaryCCPCHInfo</td></tr>
<tr><td>Comment</td><td>Applicable Rel-4 or later for LCR TDD</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2">

```
SEQUENCE {
    sctd_Indicator          ENUMERATED {notApplied (0), applied (1)},
    tstd_Indicator          ENUMERATED {notApplied (0), applied (1)},
    commonTimeSlotInfo      CommonTimeslotInfo,
    dL_TxPower_PCCPCH       DL_TxPower_PCCPCH,
    relAspTypeExtension     BIT STRING OPTIONAL -- Rel-10 or later
}
```

</td></tr>
</table>

ASN.1 Type Definition	
Type Name	SecondaryCCPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD The range for powerOffsetOfTFCI_PO1 is 0-6 dB, 0.25 dB per step.
Type Definition	

```
SEQUENCE {
    tstd_Indicator          ENUMERATED {notApplied (0), applied (1)},
    sctd_Indicator          ENUMERATED {notApplied (0), applied (1)},
    dl_TxPower              DL_TxPower,
    commonTimeSlotInfo      CommonTimeslotInfoSCCPCH,
    channelisationCode      SCCPCH_ChannelisationCodeList,
    individualTimeslotInfo  IndividualTimeslotInfo_LCR_r4,
    powerOffsetOfTFCI_PO1   INTEGER (0..24) OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	PRACHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE {
    pRACH_RACH_Info_LCR_r4          PRACH_RACH_Info_LCR_r4,
    accessServiceClass_TDD_LCR      AccessServiceClass_TDD_LCR_r4,
    fPACH_Power                     DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 is 0 dB to 6 dB, 0,25 dB per step.
Type Definition	

```
SEQUENCE {
    dl_CommonInformation            DL_CommonInformation_r4,
    dl_DPCH_InfoPerRL               DL_DPCH_InfoPerRL_r4,
    powerOffsetOfTFCI_PO1           INTEGER (0..24),
    powerOffsetOfTPC_PO2            INTEGER (0..24),
    dl_TxPower                      DL_TxPower,
    dl_TxPowerMax                   DL_TxPower,
    dl_TxPowerMin                   DL_TxPower,
    dL_TimeslotISCPInfoLCR          TimeslotListWithISCP
}
```

ASN.1 Type Definition	
Type Name	DL_DPCHInfo_r5
Comment	Applicable Rel-4 or later for LCR TDD The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 is 0 dB to 6 dB, 0,25 dB per step.
Type Definition	

```
SEQUENCE {
    dl_CommonInformation            DL_CommonInformation_r5,
    dl_DPCH_InfoPerRL               DL_DPCH_InfoPerRL_r5,
    powerOffsetOfTFCI_PO1           INTEGER (0..24),
    powerOffsetOfTPC_PO2            INTEGER (0..24),
    dl_TxPower                      DL_TxPower,
    dl_TxPowerMax                   DL_TxPower,
    dl_TxPowerMin                   DL_TxPower,
    dL_TimeslotISCPInfoLCR          TimeslotListWithISCP
}
```

ASN.1 Type Definition	
Type Name	PDSCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE {
    pdsch_Identity          PDSCH_Identity,
    pdsch_Info              PDSCH_Info_r4,
    pdsch_PowerControlInfo  PDSCH_PowerControlInfo  OPTIONAL,
    dl_TxPower              DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	HS_DSCHMACdFlows
Comment	Applicable Rel-5 or later. Within the ACK/NACK repetition period indicated by ackNackRepetitionFactor the SS shall not transmit MAC-hs PDU's on HS-PDSCH.
Type Definition	

```
SEQUENCE        {
    harqInfo                            HARQ_Info                   OPTIONAL,
    addOrReconfMACdFlow                 SS_AddOrReconfMAC_dFlow     OPTIONAL,
    harqInfo_r7                         HARQ_Info_r7                OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	CommonOrDedicatedTFS
Comment	Applicable Rel-4 or later for LCR TDD Transport Format Set
Type Definition	

```
SEQUENCE    {
    tfsMode CHOICE {
        dedicatedTransChTFS     DedicatedTransChTFS,
        commonTransChTFS        CommonTransChTFS,
        commonTransChTFS_LCR    CommonTransChTFS_LCR
    }
}
```

ASN.1 Type Definition	
Type Name	DL_TxPower_PCCPCH
Comment	Applicable Rel-4 or later for LCR TDD Absolute Tx Power of PCCPCH
Type Definition	

```
INTEGER (-60..-30 )
```

ASN.1 Type Definition	
Type Name	DPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    ul_DPCHInfo     UL_DPCHInfo OPTIONAL,
    dl_DPCHInfo     DL_DPCHInfo OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	DwPCH_Power
Comment	Applicable Rel-4 or later for LCR TDD DwPCH_power = power * 10 Unit dBm, Range -15dBm .. +40 dBm, Step +0.1dB
Type Definition	

```
INTEGER (-150..400)
```

ASN.1 Type Definition	
Type Name	DwPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    tstd_Indicator      ENUMERATED {notApplied (0),applied (1)},
    dwPCH_Power         DwPCH_Power
}
```

ASN.1 Type Definition	
Type Name	four_PICH_pI_BitmapInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
CHOICE  {
    e88     BIT STRING (SIZE (88)),
    e176    BIT STRING (SIZE (176)),
    e352    BIT STRING (SIZE (352))
}
```

ASN.1 Type Definition	
Type Name	two_PICH_pI_BitmapInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
CHOICE  {
    e44     BIT STRING (SIZE (44)),
    e88     BIT STRING (SIZE (88)),
    e176    BIT STRING (SIZE (176))
}
```

ASN.1 Type Definition	
Type Name	PDSCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    pdsch_Identity          PDSCH_Identity,
    pdsch_Info              PDSCH_Info_r4,
    pdsch_PowerControlInfo  PDSCH_PowerControlInfo OPTIONAL,
    dl_TxPower              DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PICHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    Pichinfo            PICH_Info_LCR_r4,
    dl_TxPower          PICH_PowerOffset,
    sccpchId_associated INTEGER (0..32)
}
```

ASN.1 Type Definition	
Type Name	PRACHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    pRACH_RACH_Info_LCR_r4      PRACH_RACH_Info_LCR_r4,
    accessServiceClass_TDD_LCR  AccessServiceClass_TDD_LCR_r4,
    fPACH_Power                 DL_TxPower
}
```

ASN.1 Type Definition	
Type Name	PrimaryCCPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    sctd_Indicator          ENUMERATED {NotApplied(0),Applied(1)},
    tstd_Indicator          ENUMERATED {NotApplied(0),Applied(1)},
    commonTimeSlotInfo      CommonTimeslotInfo,
    dL_TxPower_PCCPCH       DL_TxPower_PCCPCH
}
```

ASN.1 Type Definition	
Type Name	PUSCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    pusch_Identity          PUSCH_Identity,
    pusch_Info              PUSCH_Info_r4,
    pusch_PowerControlInfo  PUSCH_PowerControlInfo_r4 OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	RatType
Comment	Applicable Rel-4 or later for LCR TDD To select route between each channels
Type Definition	

```
ENUMERATED  {
    fdd(0),
    tdd128(1)
}
```

ASN.1 Type Definition	
Type Name	SecondaryCCPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    tstd_Indicator          ENUMERATED {NotApplied(0),Applied(1)},
    sctd_Indicator          ENUMERATED {NotApplied(0),Applied(1)},
    dl_TxPower              DL_TxPower,
    commonTimeSlotInfo      CommonTimeslotInfoSCCPCH,
    channelisationCode      SCCPCH_ChannelisationCodeList,
    individualTimeslotInfo  IndividualTimeslotInfo_LCR_r4,
    powerOffsetOfTFCI_PO1   INTEGER (0..24) OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_UL_TransportChannelType
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
ENUMERATED  {
    dch(0),
    rach(1),
    usch(2),
    edch(3)  -- Rel-6 or later
}
```

ASN.1 Type Definition	
Type Name	TimeSlotConfiguration_LCR
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    timeSlotLCR         TimeslotNumber_LCR_r4,
    timeSlotStatus      ENUMERATED {active (0), notActive (1)},
    timeSlotDirection   ENUMERATED {downlink (0), uplink (1)}
}
```

ASN.1 Type Definition	
Type Name	TimeSlotConfigurationList_LCR
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	
`SEQUENCE (SIZE (1..maxTS_LCR)) OF TimeSlotConfiguration_LCR`	

ASN.1 Type Definition	
Type Name	TimeslotListWithISCP_LCR
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE (SIZE (1..maxTS ) ) OF
    TimeslotWithISCP_LCR
```

ASN.1 Type Definition	
Type Name	TimeslotWithISCP_LCR
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    Timeslot        TimeslotNumber_LCR_r4,
    timeslotISCP    TimeslotISCP
}
```

ASN.1 Type Definition	
Type Name	UL_DPCHInfo
Comment	Applicable Rel-4 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    uL_DPCH_Info    UL_DPCH_Info_r4
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCH_ChannelisationCodeInfo_LCR
Comment	
Type Definition	

```
SEQUENCE {
    timeslotNumber      TimeslotNumber_LCR_r4,
    startCode           HS_ChannelisationCode_LCR,
    stopCode            HS_ChannelisationCode_LCR
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r5OrLater
Comment	Applicable Rel-5 or later for LCR TDD When CHY_RL_Setup_REQ is called with CHOICE of hS_PDSCHInfo HS_PDSCH and HS-SCCH shall be configured in SS. The following HS-DSCH related parameters are passed to the SS implicitly by HSDSCH_physical_layer_category: - Maximum number of HS-DSCH codes can be received by UE, - Minimum inter-TTI interval, - Maximum number of bits of an HS-DSCH transport block within an HS-DSCH TTI - Total number of soft channel bits". HSDSCH_physical_Layer_category is also used for interpretation of the meaning of CQI value. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured.

Type Definition

```
CHOICE  {
    r5  SEQUENCE {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower,
                                    -- offset related to pilot bits on DL-DPCCH
        hs_PDSCHChannelisationCodeInfo  SEQUENCE (SIZE (1..maxPDSCHtimeslot ) )
                                        OF HS_PDSCH_ChannelisationCodeInfo_LCR,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE
        },
    r6  SEQUENCE {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r6,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower,
                                    -- offset related to pilot bits on DL-DPCCH
        hs_PDSCHChannelisationCodeInfo  SEQUENCE (SIZE (1..maxPDSCHtimeslot))
                                        OF HS_PDSCH_ChannelisationCodeInfo_LCR,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE
        },
    r7  HS_PDSCHInfo_r7,
    r8  HS_PDSCHInfo_r8,
    r9  HS_PDSCHInfo_r9,
    relAspTypeExtension BIT STRING  -- Rel-10 or later
}
```

Type Name	HS_PDSCHInfo_r7
Comment	Rel-7 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of ss_DTX_Info makes DL DRX to be enabled. Presence of hs_scch_LessInfo makes HS-SCCH less operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. MIMO and HS-SCCH less operation do not co-exist. MIMO is not applicable for non DCH states. The two IE “hSDSCHPhysicalLayerCategory” and “hsdsch_physical_layer_category_ext” are mutually exclusive. One of the IE shall be present in the SS configuration. The IE “hsdsch_physical_layer_category_ext” is present when MAC-ehs is configured. If commonOrDedicated_H_RNTI is omitted, HS-SCCHless is to be applied. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. In common_HS_PDSCH_Info, hs_DPCCHToFollow is set to FALSE unless HS-DPCCH is required in specific configuration.

Type Definition

```
CHOICE  {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        h_RNTI                      H_RNTI,
        dlHSPDSCHInformation        DL_HSPDSCH_Information_r7,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_PDSCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxPDSCHtimeslot ) ) OF
                                    HS_PDSCH_ChannelisationCodeInfo_LCR,
        ss_DTX_Info                 DRX_Info    OPTIONAL,
        mimo_Parameters             MIMO_Parameters_r7      OPTIONAL,
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE
        },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI    H_RNTI  OPTIONAL,
        bcchSpecific_H_RNTI         H_RNTI,
        hs_scch_SystemInfo          HS_SCCH_SystemInfo,
        hs_dsch_PagingSystemInformation HS_DSCH_PagingSystemInformation OPTIONAL,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE
        },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r8
Comment	Applicable Rel-8 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of controlChannelDRXInfo_TDD128 makes DL DRX to be enabled. Presence of sps_Information_TDD128 makes SPS operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. MIMO and HS-SCCH less operation do not co-exist. MIMO is not applicable for non DCH states. The three IE "hSDSCHPhysicalLayerCategory", "hsdsch_physical_layer_category_ext" and "hsdsch_physical_layer_category_ext2" are mutually exclusive. One of the IE shall be present in the SS configuration. The IE If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. Presence of ss_HS_DSCH_DtxCellFach makes HS-DSCH DRX operation enabled and SS shall transmit any requested HS-SCCH and HS-DSCH only in occasions when UE will be listening. hs_PDSCHChannelisationCodeInfo present in TDD configurations.
Type Definition	

```
CHOICE  {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory     HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext OPTIONAL,
        multiCarrier_physical_layer_category
                    MultiCarrier_HSDSCH_physical_layer_category OPTIONAL,
        multiCarrier_physicallayer_category_extension
                    MultiCarrier_HSDSCH_physical_layer_category_extension   OPTIONAL,
        h_RNTI                          H_RNTI,
        dlHSPDSCHInformation            DL_HSPDSCH_Information_r8,
        sttd_Indicator                  BOOLEAN,
        hs_SCCH_TxPower                 DL_TxPower, -- offset related to CPICH
        mimo_Parameters                 MIMO_Parameters_r8      OPTIONAL,
        hs_PDSCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxPDSCHtimeslot ) )
                                    OF HS_PDSCH_ChannelisationCodeInfo_LCR OPTIONAL,
        hs_DPCCHToFollow                BOOLEAN DEFAULT TRUE,
        controlChannelDRXInfo_TDD128    ControlChannelDRXInfo_TDD128_r8     OPTIONAL,
        sps_Information_TDD128          SPS_Information_TDD128_r8           OPTIONAL
    },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI            H_RNTI  OPTIONAL,
        bcchSpecific_H_RNTI                 H_RNTI,
        hs_scch_SystemInfo_tdd128           HS_SCCH_SystemInfo_TDD128 OPTIONAL,,
        hs_pdsch_MidambleConfiguration
                                    HS_PDSCH_Midamble_Configuration_TDD128 OPTIONAL,
        hs_dsch_PagingSystemInformation_tdd128
                                    HS_DSCH_PagingSystemInformation_TDD128  OPTIONAL,
        sttd_Indicator                      BOOLEAN,
        hs_SCCH_TxPower                     DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow                    BOOLEAN DEFAULT TRUE,
        ss_HS_DSCH_DtxCellFach              HS_DSCH_DrxCellfach_info_TDD128 OPTIONAL
    },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	HS_PDSCHInfo_r9
Comment	Applicable Rel-9 or later. Choice of hS_PDSCH_Info will be used for configuring HSD-DSCH with 64QAM and/or CPC. Choice of common_HS_PDSCH_Info will be used for Enhanced Cell_FACH. commonOrDedicated_H_RNTI indicates, the H-RNTI that will be used by UE (either dedicated H-RNTI if provided in RRC message, or selected common H-RNTI transmitted in SIB5). The transmission of BCCH on HS-DSCH is performed by using BCCH specific H-RNTI on the first indexed HS-SCCH code indicated in system information broadcast. Presence of controlChannelDRXInfo_TDD128 makes DL DRX to be enabled. Presence of sps_Information_TDD128 makes SPS operation enabled. Presence of mimo_Parameters indicate MIMO is to be started. The IEs “hSDSCHPhysicalLayerCategory”, “hsdsch_physical_layer_category_ext”, are mutually exclusive. One of the IE shall be present in the SS configuration. The IE If commonOrDedicated_H_RNTI is omitted, HS-SCCHless is to be applied. If hs_DPCCHToFollow is FALSE, the hs_DPCCHInd IE shall not be present when ul_DPCHInfo is configured or reconfigured. Presence of ss_HS_DSCH_DtxCellFach makes HS-DSCH DRX operation enabled and SS shall transmit any requested HS-SCCH and HS-DSCH only in occasions when UE will be listening. hs_PDSCHChannelisationCodeInfo present in TDD configurations.

Type Definition

```
CHOICE {
    hS_PDSCH_Info   SEQUENCE    {
        hSDSCHPhysicalLayerCategory     HSDSCH_physical_layer_category OPTIONAL,
        hsdsch_physical_layer_category_ext
                                        HSDSCH_physical_layer_category_ext OPTIONAL,
        multiCarrier_physical_layer_category
                    MultiCarrier_HSDSCH_physical_layer_category OPTIONAL,
        multiCarrier_physicallayer_category_extension
                    MultiCarrier_HSDSCH_physical_layer_category_extension   OPTIONAL,
        h_RNTI                          H_RNTI,
        dlHSPDSCHInformation            DL_HSPDSCH_Information_r9,
        sttd_Indicator                  BOOLEAN,
        hs_SCCH_TxPower                 DL_TxPower, -- offset related to CPICH
        mimo_Parameters                 MIMO_Parameters_r9      OPTIONAL,
        hs_PDSCHChannelisationCodeInfo SEQUENCE (SIZE (1..maxPDSCHtimeslot ) )
                                        OF HS_PDSCH_ChannelisationCodeInfo_LCR OPTIONAL,
        hs_DPCCHToFollow                BOOLEAN DEFAULT TRUE,
        controlChannelDRXInfo_TDD128    ControlChannelDRXInfo_TDD128_r8     OPTIONAL,
        sps_Information_TDD128          SPS_Information_TDD128_r8           OPTIONAL
    },
    common_HS_PDSCH_Info    SEQUENCE    {
        hsdsch_physical_layer_category_ext  HSDSCH_physical_layer_category_ext,
        commonOrDedicated_H_RNTI        H_RNTI                          OPTIONAL,
        bcchSpecific_H_RNTI             H_RNTI,
        hs_scch_SystemInfo_tdd128       HS_SCCH_SystemInfo_TDD128 OPTIONAL,,
        hs_pdsch_MidambleConfiguration  HS_PDSCH_Midamble_Configuration_TDD128 OPTIONAL,
        hs_dsch_PagingSystemInformation_tdd128
                                    HS_DSCH_PagingSystemInformation_TDD128  OPTIONAL,
        sttd_Indicator              BOOLEAN,
        hs_SCCH_TxPower             DL_TxPower, -- offset related to CPICH
        hs_DPCCHToFollow            BOOLEAN DEFAULT TRUE,
        ss_HS_DSCH_DtxCellFach      HS_DSCH_DrxCellfach_info_TDD128 OPTIONAL
        },
    spare2  SEQUENCE    {},
    spare3  SEQUENCE    {}
}
```

ASN.1 Type Definition	
Type Name	SS_E_DCH_Info_r7
Comment	Applicable Rel-7 or later for LCR TDD

Type Definition

```
SEQUENCE    {
    e_RUCCH_Info    E_RUCCH_Info OPTIONAL,
    e_PUCH_Info     SS_E_PUCH_Info OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_E_AGCH_Info
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
CHOICE  {
    r7 SEQUENCE {
            e_AGCH_ID_TDD           INTEGER (0..255),
        e_AGCHInfo              E_AGCH_Information_r7,
        e_AGCH_PowerOffset      INTEGER (0..255),
        -- Range and Step are FFS (25.433, 9.2.2.13If)
        -- Offset relative to P-CPICH
        maximum_E_AGCH_Power    INTEGER (-350..150),
        carrier_Frequency       UARFCN OPTIONAL,
        e_RNTI                  E_RNTI OPTIONAL,
        ss_DTX_Info         DRX_Info OPTIONAL
    },
    r8 SEQUENCE { -- Rel-8 or later
        e_AGCH_ID_TDD           INTEGER (0..255),
        e_AGCHInfo              E_AGCH_Information_r8,
        e_AGCH_PowerOffset      INTEGER (0..255),
        -- Range and Step are FFS (25.433, 9.2.2.13If)
        -- Offset relative to P-CPICH
        maximum_E_AGCH_Power    INTEGER (-350..150),
        carrier_Frequency       UARFCN OPTIONAL,
        e_RNTI                  E_RNTI OPTIONAL,
        ss_E_AGCH_Drx_Info      E_AGCH_DRX_Info_TDD128 OPTIONAL
    },
    relAspTypeExtension         BIT STRING  -- Rel-10 or later
}
```

ASN.1 Type Definition	
Type Name	SS_E_HICH_Info
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    n_E_HICH                INTEGER (4..15 ),
    maximum_E_HICH_Power    INTEGER (-350..150),
    e_HICHInfoList          SS_E_HICH_Info_List
}
```

ASN.1 Type Definition	
Type Name	E_DCHMACdFlows
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    harq_Info                       ENUMERATED {rv0 (0), rvtable (1)},
    addReconf_MAC_d_FlowList_r7     E_DCH_AddReconf_MAC_d_FlowList_r7 OPTIONAL
    -- Rel-7 or later
}
```

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>MACeConfig</td></tr>
<tr><td>Comment</td><td>Applicable Rel-7 or later for LCR TDD
If the macHeaderManipulation field is 'NormalMacHeader' in ddiMappingList, then data received on the E-DCH (MAC_e PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, and the MACes PDU shall be passed to the MAC_es together with the relevant DDI, N, CFN and subframe number.
If the macHeaderManipulation field field is 'OmitMacHeader', then data received on the E-DCH (MAC_e PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, then the MAC_e layer shall delivery the MAC-es PDU, SI and the related CFN, subframe number to the MAC_es entity.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>SEQUENCE   {
    activationTime   SS_ActivationTime,
    ddiMappinglist   DDI_MappingList OPTIONAL,
    e_DCHMacdFlows   E_DCHMACdFlows OPTIONAL
}</pre></td></tr>
</table>

<table>
<tr><th colspan="2">ASN.1 Type Definition</th></tr>
<tr><td>Type Name</td><td>MACiConfig</td></tr>
<tr><td>Comment</td><td>If the macHeaderManipulation field is 'NormalMacHeader' in lCH_Mappinglist, then data received on the E-DCH (MAC_i PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, and the MACis PDU shall be passed to the MAC_is together with the relevant LCH_ID, length, F, CFN and subframe number.

If the macHeaderManipulation field field is 'OmitMacHeader', then data received on the E-DCH (MAC-i PDU) shall have it's MAC header inspected to de-multiplex and to determine the appropriate routing, then the MAC-i layer shall deliver the MAC-is PDU, SI and the related CFN, subframe number to the MAC-is entity.

connectedToMAC_is field is used to provide the possibility that the E-DCH-MACdFlows from only one MAC-i entity are connected to the MAC_is entity in the inter node B soft handover test cases. When MAC-i is configured in enhanced FACH UL using commonMac_i_r8, the MAC-i entity is always connected to MAC-is.

The IEs lCH_Mappinglist and e_DCHMacdFlows can be OMITted when changing the serving cell MAC-i without modification of MAC-i configurations. It will be applied in EDCH SHO.

ss_DRX_MAC_Info presence indicates UL DRX shall be applied.</td></tr>
<tr><th colspan="2">Type Definition</th></tr>
<tr><td colspan="2"><pre>CHOICE {
    mAC_i_r8   SEQUENCE {   -- Rel-8 or later
        activationTime   SS_ActivationTime,
        lCH_Mappinglist   LCH_MappingList   OPTIONAL,
        e_DCHMacdFlows   E_DCHMACdFlows   OPTIONAL,
        connectedToMAC_is   BOOLEAN DEFAULT TRUE
                            -- can be set to FALSE in inter nodeB SHO
    },
    commonMac_i_r8 SEQUENCE   {
        activationTime   SS_ActivationTime,
        lCH_Mappinglist   LCH_MappingList   OPTIONAL,
        e_DCHMacdFlows   CommonE_DCHMACdFlows   OPTIONAL
    },
    relAspTypeExtension   BIT STRING -- Rel-10 or later
}</pre></td></tr>
</table>

ASN.1 Type Definition	
Type Name	SS_E_PUCH_Info
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    LTGI_Presence                   BOOLEAN,
    e_TFCS_Info                     E_TFCS_Info,
    snpl_ReportType                 ENUMERATED {type1(0), type2(1)},
    prxBASEdes                      INTEGER (-112..-50 ),
    beaconPLEst                     BOOLEAN OPTIONAL,
    tpc_StepSize                    TPC_StepSizeTDD,
    pebase_PowerControlGAP          PowerControlGAP OPTIONAL,
    ul_SynchronisationParameters    UL_SynchronisationParameters_r4 OPTIONAL,
    minimum_Allowed_Code_Rate       INTEGER (0..63 ),
    maximum_Allowed_Code_Rate       INTEGER (0..63 ),
    maximumNumOfRetransSchedInfo    INTEGER (0..15 ),
    retransTimerForSchedInfo        ENUMERATED {ms10(0), ms15(1), ms20(2), ms25(3),
                                    ms30(4),
                                ms35(5), ms40(6), ms45(7), ms50(8), ms55(9), ms60(10),
                                ms65(11), ms70(12), ms75(13), ms80(14), ms85(15),
                                ms90(16), ms95(17), ms100(18), ms110(19), ms120(20),
                                ms140(21), ms160(22), ms200(23), ms240(24), ms280(25),
                                ms320(26), ms400(27), ms480(28), ms560(29)},
    powerOffsetForSchedInfo     INTEGER (0..6 ) OPTIONAL,
    e_DCH_phyLayCategory        INTEGER (1..6 ) OPTIONAL,
    e_PUCH_TS_Information_per_UARFCN
                    SEQUENCE    (SIZE (1..maxTS_LCR_1 ) ) OF SS_E_PUCH_Timeslot_Info,
    carrier_Frequency   UARFCN OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	SS_E_PUCH_Timeslot_Info
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    timeslotNumber          TimeslotNumber_LCR_r4,
    midambleAllocationMode  CHOICE
    {
        defaultMidamble     NULL,
        ueSpecificMidamble  INTEGER (0..15 )
    },
    midambleConfiguration   INTEGER (1..8 ),
    channelisation_Code     UL_TS_ChannelisationCode
}
```

ASN.1 Type Definition	
Type Name	SS_Non_ScheduledTransGrantInfoTDD
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
CHOICE  {
    tdd384_768 SEQUENCE {
        timeslotResourceRelatedInfo BIT STRING (SIZE (13 ) ),
        powerResourceRelatedInfo    INTEGER (1..32 ),
        activationTime              ActivationTime,
        repetitionPeriodAndLength   RepetitionPeriodAndLength OPTIONAL,
        codeResourceInfo            UL_TS_ChannelisationCode
        },
    tdd128 SEQUENCE {
        n_E_UCCH                    INTEGER (1..8 ) OPTIONAL,
        n_E_HICH                    INTEGER (4..15 ) OPTIONAL,
        timeslotResourceRelatedInfo BIT STRING (SIZE (5 ) ),
        powerResourceRelatedInfo    INTEGER (1..32 ),
        activationTime              ActivationTime,
        sfnNum                      INTEGER (0..1 ),
        repetitionPeriodAndLength   RepetitionPeriodAndLength OPTIONAL,
        codeResourceInfo            UL_TS_ChannelisationCode,
        e_HICH_Info     SEQUENCE    {
            e_HICH_ID_TDD                   INTEGER (0..255 ),
            signature_Sequence_Group_Index  INTEGER (0..19 )
            }
        }
}
```

ASN.1 Type Definition	
Type Name	SS_E_HICH_Info_LCR
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    {
    e_HICH_ID_TDD       INTEGER (0..255),
    e_HICH_Type         ENUMERATED {scheduled (0), non_scheduled(1)},
    e_HICHInfo          E_HICH_Information_LCR,
    carrier_Frequency   UARFCN OPTIONAL,
    e_HICH_PowerOffset  INTEGER (0..255)
    -- PowerOffset = -32 + offset * 0.25
    -- Unit dB, Range -32dB .. +31.75dB, Step +0.25dB
    -- (25.433, 9.2.2.13Id), offset relative to P-CPICH
}
```

ASN.1 Type Definition	
Type Name	SS_E_HICH_Info_List
Comment	Applicable Rel-7 or later for LCR TDD
Type Definition	

```
SEQUENCE    (SIZE (1..maxNumE_HICH ) ) OF SS_E_HICH_Info_LCR
```

ASN.1 Type Definition	
Type Name	E_TFCS_Restriction
Comment	Applicable Rel-7 or later for LCR TDD The E_TFCS restriction is a list of E-TFCIs, and can be used to verify that the UE has used a specific TFC. Any data received by the SS using a forbidden TFCI shall be discarded.
Type Definition	

```
SEQUENCE OF INTEGER (0..63)
```

ASN.1 Type Definition	
Type Name	SS_RLC_Info
Comment	Applicable to Rel-4, Rel-5, Rel-6, Rel-7 for LCR TDD. UL and DL have been swapped intentionally in this type definition. This is to maximize re-use of the type definitions in 3GPP TS 25.331 [21] which are intended to configure a UE, where UL is transmission, and DL is reception. For the SS, UL is reception, and DL is transmission. For example, consider configuring a DL AM RLC entity (transmitter) in the SS. The transmission parameters to be configured include PollingInformation, Transmission-RLC-Discard etc. If the DL-AM-RLC-Mode type definition is used to configure this entity, it is only possible to configure reception parameters such as StatusInformation, and receiving window size. By swapping UL and DL, it is possible to configure the DL AM RLC entity using the existing type definition UL-AM-RLC-Info, which contains all of the required transmission parameters. When uM_SN_DeliveryMode is set to configured, the RLC entity does not concatenate nor segment RLC SDUs (see 3GPP TS 25.322 [18], subclause 8.2). If the IE useSpecialValueOfHEField is set to true, the last octet of the PDU is the last octet of an SDU and there is no SDU concatenation inside the PDU. sS_ul_PayloadSize is applied to RB0 RLC UL configuration; if it is omitted in the configuration the dl_PayloadSize is applied to UL RLC entity.
Type Definition	

```
SEQUENCE {
            sS_ul_RLC_Mode          DL_RLC_Mode             OPTIONAL,
            sS_ul_PayloadSize       PayloadSize             OPTIONAL,
            sS_dl_RLC_Mode          SS_DL_RLC_Mode          OPTIONAL,
            rlc_OneSidedReEst       BOOLEAN     DEFAULT FALSE,
            altE_bitInterpretation  ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for UM RLC mode of Rel-7 or later
            useSpecialValueOfHEField ENUMERATED {false (0), true (1)} DEFAULT false,
            -- applicable only for AM RLC mode of Rel-7 or later
            uM_SN_DeliveryMode  ENUMERATED { nonConfigured(0), configured(1)}
                            DEFAULT nonConfigured
            -- applicable for UM RLC mode of Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	CmacPagingConfigReq
Comment	
Type Definition	

```
SEQUENCE {
    pI_BitMapInfo   CHOICE {
        two_PICH_frame          two_PICH_pI_BitmapInfo,
        four_PICH_frame         four_PICH_pI_BitmapInfo
    },
    dRX_CycleLength         INTEGER (3..9),
    iMSI                    IMSI_GSM_MAP,
    t_pich_T_sccpch         BOOLEAN     -- T_pich > T_sccpch then FALSE
}
```

ASN.1 Type Definition	
Type Name	CommonE_DCHMACdFlows
Comment	Rel-7 or later
Type Definition	

```
SEQUENCE {
        harq_Info                   ENUMERATED {rv0 (0), rvtable (1)},
        addReconfMAC_d_FlowList     Common_E_DCH_MAC_d_FlowsList
}
```

ASN.1 Type Definition	
Type Name	PRACH_MeasurementReport
Comment	sfn is included if reportSFN is TRUE in CPHY_PRACH_Measurement_REQ.
Type Definition	

```
SEQUENCE {
    sync_UL_Code        BIT STRING(SIZE (8)),
    sfn                 INTEGER (0..4095) OPTIONAL -- Rel-8 or later
}
```

ASN.1 Type Definition	
Type Name	SecondaryFrequencyInfo
Comment	
Type Definition	

```
SEQUENCE {
    frequencyInfo           UARFCN,
    dLTxAttenuationLevel    INTEGER(0..30)
}
```

ASN.1 Type Definition	
Type Name	SecondaryFrequencyInfoList
Comment	
Type Definition	

```
SEQUENCE (SIZE(1..maxNumOfSecondFrequency)) OF SecondaryFrequencyInfo
```

ASN.1 Type Definition	
Type Name	RL_Information
Comment	The range for powerOffsetOfTPC_PO2 and powerOffsetOfTFCI_PO1 and powerOffsetOfPILOT_PO3 is 0 dB to 6 dB, 0,25 dB per step. The IE cfnTgtSfnFrameOffset is applied when adding another RL or moving the UE to another cell in DCH state in the timing-maintained hard handover or in the softhandover. The cfnTgtSfnFrameOffset is defined as being the time difference between the CFN and the SFN of the cell in which the RL is to be added. The use of cfnTgtSfnFrameOffset and DOFF (Default DPCH Offset Value) is mutually exclusive. The IE cfnTgtSfnFrameOffset is omitted when configuring the 1st RL, or configuring the RL in the timing re-initialized hard handover where the required synchronization information is provided in defaultDPCH_offsetValue in DL_CommonInformation. In addition, TmTgt value is provided to dpch_FrameOffset in DL_DPCH_InfoPerRL_r5 or DL_DPCH_InfoPerRL_r6 as CFNchipOffset_Tgt. TmTgt can be observed by the UE, or calculated by the TTCN. If it is calculated, TmTgt = (DOFF*512 + 38400 + TCell_Ref - TCell_Tgt) Mod 38400. dL_TimeslotISCPInfoLCR present in TDD configuration.

Type Definition

```
SEQUENCE    {
    powerOffsetOfTFCI_PO1           INTEGER (0..24),
    powerOffsetOfTPC_PO2            INTEGER (0..24),
    powerOffsetOfPILOT_PO3          INTEGER (0..24),
    dl_TxPower                      DL_TxPower,
    dl_TxPowerMax                   DL_TxPower,
    dl_TxPowerMin                   DL_TxPower,
    cfnTgtSfnFrameOffset            CfnTgtSfnFrameOffset    OPTIONAL,
    dL_TimeslotISCPInfoLCR          TimeslotListWithISCP    OPTIONAL
}
```

7.3.3 TTCN primitives

7.3.3.1 UTRAN TTCN primitives

The tables below show the primitives that are used for RLC, BMC ,RB and PDCP tests, these primitives are defined in TTCN tabular form.

ASP Name	RLC_TR_TestDataReq	
PCO Type	DSAP	
Comments	To request the transmission of unstructered data using transparent mode in the downlink direction. TTCN writter is requires to send data according to the transport block size allowed.	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	RLC_TR_TestDataInd	
PCO Type	DSAP	
Comments	To indicate the reception of unstructered data using transparent mode in the uplink direction	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	RLC_UM_TestDataReq	
PCO Type	DSAP	
Comments	To request the transmission of unstructered data using unacknowledged mode in the downlink direction	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	RLC_UM_TestDataInd	
PCO Type	DSAP	
Comments	To indicate the reception of unstructered data using unacknowledged mode in the uplink direction	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	RLC_UM_ScheduledDataReq	
PCO Type	DSAP	
Comments	The ASP is used to request the transmission of unstructured data using unacknowledged mode in the downlink direction. The CFN/Subframe indicates the CFN and sub-frame values on which the Data is transmitted.	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
cFN	ActivationTime	
subframe	Subframe_Type	
data	PDU	
Detailed Comments		

ASP Name	RLC_UM_ScheduledDataInd	
PCO Type	DSAP	
Comments	The ASP is used to indicate the reception of unstructured data using unacknowledged mode in the uplink direction. The CFN/Subframe indicates the CFN and sub-frame values on which the Data is received. If an SDU is segmented into multiple PDUs, the CFN/Subframe of the last PDU is to be reported.	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
cFN	ActivationTime	
subframe	Subframe_Type	
data	PDU	
Detailed Comments		

ASP Name	RLC_AM_TestDataReq	
PCO Type	DSAP	
Comments	To request the transmission of unstructered data using acknowledged mode in the downlink direction	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	RLC_AM_TestDataInd	
PCO Type	DSAP	
Comments	To indicate the reception of unstructered data using acknowledged mode in the uplink direction	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB identity (RB3 or RB4)
data	PDU	
Detailed Comments		

ASP Name	BMC_DataReq	
PCO Type	BSAP	
Comments	The ASP is used to request the transmission of unstructured BMC data or scheduling message, using unacknowledged mode and the BMC PCO in the downlink direction.	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
routingInfo	RoutingInfo	
data	PDU	
Detailed Comments		

ASP Name	BMC_DataCnf	
PCO Type	BSAP	
Comments	The ASP is used to confirm the previous reception of BMC_DataReq	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
routingInfo	RoutingInfo	
Detailed Comments		

ASP Name	RLC_HandoverReq	
PCO Type	DSAP	
Comments	The ASP is used to request the transmission of the HandoverFromUTRANCommand_GSM message using acknowledged operation (AM). The Meta PDU in turn consists of 2 components. 1) The ASN.1 PER encoded HandoverFromUTRANCommand, without any 1 bit to 7 bits of padding. 2) The GSM Handover command. The SS shall take care of inserting the MAC and RLC sequence number of Integrity check info, as in the case of other RRC DL PDU's	
Parameter Name	**Parameter Type**	**Comments**
cellId	INTEGER	
rB_Id	SS_RB_Identity	RB Identity
msg	PDU	HandoverFromUTRANCommandGSM message
Detailed Comments	This ASP is sent to RRC integrity emulation for generation of the correct IntegrityCheckInfo value.	

ASP Name	DEC_BitstringToStructure_REQ	
PCO Type	ExternalStructureCodec	
Comments	To request the decoding of the BITSTRING received from UE in receivedBITSTRING with the structure type specified in containingType: 0: classmark2 1: classmark3 2: mSRadioAccessCapability 3: geranIu	
Parameter Name	**Parameter Type**	**Comments**
receivedBITSTRING	BITSTRING	
containingStructureType	INTEGER	0: classmark2 1: classmark3 2: mSRadioAccessCapability 3: geranIu
Detailed Comments		

ASP Name	DEC_BitstringToStructure_CNF	
PCO Type	ExternalStructureCodec	
Comments		
Parameter Name	**Parameter Type**	**Comments**
classmark2	MS_Clsmk2	
classmark3	MSCLSMK3	
msRadioAccessCap	MS_RadioAccessCapList	
gERANIu_RadioAccessCap	GERANIu_RadioAccessCap	
Detailed Comments		

The TTCN tabular format applies to the primitive definitions.

7.3.4 GERAN PCO and ASP definitions

7.3.4.1 PCO Type definitions

7.3.4.1.1 PCO type for data transmission and reception in GERAN

Table 7.3.4.1.1: Declaration of the G_DSAP PCO Type

PCO Type Definition	
PCO Type	G_DSAP
Role	LT
Comment	DATA transmission and reception

7.3.4.1.2 PCO type for configuration and control in GERAN

Table 7.3.4.1.2: Declaration of the G_CSAP PCO Type

PCO Type Definition	
PCO Type	G_CSAP
Role	LT
Comment	Transmission and reception of control primitives

7.3.4.2 PCO definitions

7.3.4.2.1 PCOs for data transmission and reception in GERAN

7.3.4.2.1.1 PCO for data transmission and reception through GERAN L2

Table 7.3.4.2.1.1: Declaration of G_L2 PCO

PCO Type Definition	
PCO Name	G_L2
PCO Type	G_DSAP
Role	LT
Comment	Control and observation point of GERAN L3 messages and user data

7.3.4.2.1.2 PCO for data transmission and reception through GPRS RLC

Table 7.3.4.2.1.2: Declaration of G_RLC PCO

PCO Type Definition	
PCO Name	G_RLC
PCO Type	G_DSAP
Role	LT
Comment	Control and observation point of GPRS GRR signalling messages

7.3.4.2.1.3 PCO for data transmission and reception through GPRS LLC

Table 7.3.4.2.1.3: Declaration of LLC PCO

PCO Type Definition	
PCO Name	G_LLC
PCO Type	G_DSAP
Role	LT
Comment	Control and observation point of GPRS GMM signalling messages

7.3.4.2.1.4 Void

7.3.4.2.2 PCOs for control primitives transmission and reception in GERAN

7.3.4.2.2.1 PCO for GERAN L1control primitives transmission and reception

Table 7.3.4.2.2.1: Declaration of G_CL1 PCO

PCO Type Definition	
PCO Name	G_CL1
PCO Type	G_CSAP
Role	LT
Comment	Control GERAN Physical Layer (L1)

7.3.4.2.2.2 PCO for GERAN L2 control primitives transmission and reception

Table 7.3.4.2.2.2: Declaration of G_CL2 PCO

PCO Type Definition	
PCO Name	G_CL2
PCO Type	G_CSAP
Role	LT
Comment	Control GERAN L2

7.3.4.2.2.3 PCO for GPRS RLC control primitives transmission and reception

Table 7.3.4.2.2.3: Declaration of G_CRLC PCO

PCO Type Definition	
PCO Name	G_CRLC
PCO Type	G_CSAP
Role	LT
Comment	Control GPRS RLC/MAC layer

7.3.4.2.2.4 PCO for GPRS LLC control primitives transmission and reception

Table 7.3.4.2.2.4: Declaration of G_CLLC PCO

PCO Type Definition	
PCO Name	G_CLLC
PCO Type	G_CSAP
Role	LT
Comment	Control GPRS LLC layer

7.3.4.2.2.5 Void

7.3.4.3 GERAN ASP Definitions

7.3.4.3.1 ASPs for data transmission and reception in GERAN

7.3.4.3.1.1 ASPs for data transmission and reception through GERAN L2

ASP Name	G_L2_DATA_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used to send L3 signalling message on the signalling channels or user data on the traffic channels to the UE/MS in acknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame on which this message is sent. This field is not applicable and the SS shall ignore it if the field t2 of rfn is coded as '11111'B.
msg	PDU	Signalling message or user data to be sent
Detailed Comments	Parameter rfn is only used in the test cases that require L3 message to be sent on specified frame number.	

ASP Name	G_L2_DATA_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive a L3 signalling message on the signalling channels or user data on the traffic channels from the UE/MS in acknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame carrying the message
msg	PDU	Signalling message or user data received
Detailed Comments		

ASP Name	G_L2_L2Estab_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive an indication of that L2 multiple frame operation on the specified channel has been established.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: FACCH/H, SDCCH/8 and SDCCH/4, This field shall be coded as 15 if it is not applicable.
sAPI	SAPI	0,3
establish_mode	OCTETSTRING[1]	
rfn	RFN	The reduced frame number of the first frame carries the L2 SABM frame
msg	PDU	this field is present only when the establish mode is CoRes (collision resolution)
Detailed Comments	see 3GPP TS 44.006 [42], clauses 7.1.1 and 7.1.3	

ASP Name	G_L2_UNITDATA_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used to send L3 signalling message on the signalling channels or send user data on the traffic channels to the UE/MS in unacknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame on which this message is sent. This field is not applicable and the SS shall ignore it if the field t2 of rfn is coded as '11111'B.
msg	PDU	Signalling message or user data to be sent
Detailed Comments	Parameter fn is only used in the test cases that require specific L3 message to be sent on specified frame number.	

ASP Name	G_L2_UNITDATA_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive a L3 signalling message on the signalling channels or user data on the traffic channels from the UE/MS in unacknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame carrying the message
msg	PDU	Signalling message or user data received
Detailed Comments		

ASP Name	G_L2_ACCESS_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive a random access or handover access burst on the specified channel.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	RACH, FACCH, SDCCH/8, SDCCH/4. RACH is used for random access burst; others are used for handover access burst
subChannel	SubChannelNumber	Valid only for logical channel types: FACCH/H, SDCCH/8, SDCCH/4. This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame carrying the burst
burst	PDU	Random access burst or handover access burst
Detailed Comments		

ASP Name	G_L2_Paging_REQ		
PCO Type	G_DSAP		
Comments	The ASP is used to send a paging message on the specified paging group of the specified paging channel to the UE/MS, when the UE/MS is in idle mode or the UE/MS not supporting SPLIT_PG_CYCLE on CCCH is in GPRS attached mode.		
Parameter Name		**Parameter Type**	**Comments**
cellId		CellId	
sAPI		SAPI	0
physicalChId		PhysicalChId	Channel identifier of the right CCCH_GROUP
g_LogicChType		G_LogicChType	PCH
pagingGroup		PAGING_GROUP	
pagingMode		PagingMode	0-normal paging; 1-extended paging; 2-paging reorganization.
msg		PDU	Paging message
Detailed Comments	The SS is required to send valid layer 3 messages continuously on all paging subchannels on CCCH where paging can appear. For "normal paging" the SS send the paging message in the specified pagingGroup; For "extended paging" " the SS send the paging message in the specified pagingGroup and in the "next but one" position on the PCH, following the block corresponding to pagingGroup; For "paging reorganization" the SS send the paging message in all paging subchannels. The required 51-multiframe occurs when: pagingGroup div (N div BS_PA_MFRMS) = (FN div 51) mod (BS_PA_MFRMS) The index to the required paging block in the 51-multiframe determined above: Paging block index = pagingGroup mod (N div BS_PA_MFRMS) N = (9-BS_AG_BLKS_RES) * BS_PA_MFRMS CCCH not combined or N = (3-BS_AG_BLKS_RES) * BS_PA_MFRMS CCCH + SDCCH combined		

ASP Name	G_L2_PagingGPRS_REQ		
PCO Type	G_DSAP		
Comments	The ASP is used to send a paging message on the specified paging group of the specified paging channel to the UE/MS, when the UE/MS supporting SPLIT_PG_CYCLE on CCCH is in GPRS attached mode.		
Parameter Name		**Parameter Type**	**Comments**
cellId		CellId	
sAPI		SAPI	0
physicalChId		PhysicalChId	Channel identifier of the right CCCH_GROUP
g_LogicChType		G_LogicChType	PCH
pagingGroup		PAGING_GROUP	
pagingMode		PagingMode	0-normal paging; 1-extended paging; 2-paging reorganization.
splitPGcycleCode		INTEGER	0 -- No Split Paging, 1..32 -- Split Paging
msg		PDU	Paging message
Detailed Comments	The SS is required to send valid layer 3 messages continuously on all paging subchannels on CCCH where paging can appear. For "normal paging" the SS send the paging message in the specified pagingGroup; For "extended paging" " the SS send the paging message in the specified pagingGroup and in the "next but one" position on the PCH, following the block corresponding to pagingGroup; For "paging reorganization" the SS send the paging message in all paging subchannels. The required 51-multiframe occurs when: pagingGroup div (M div 64) = (FN div 51) mod 64 The index to the required paging block in the 51-multiframe determined above: Paging block index = pagingGroup mod (M div 64) M = (9-BS_AG_BLKS_RES) × 64 CCCH not combined or M = (3-BS_AG_BLKS_RES) × 64 CCCH + SDCCH combined		
NOTE: This ASP may not be implemented if the MS/UE does not support SPLIT_PG_CYCLE on CCCH.			

Type Name	CellId
Type Definition	INTEGER
Type Encoding	
Comments	

Type Name	SAPI
Type Definition	INTEGER
Type Encoding	
Comments	Service access point identifier for GERAN L2 and LLC

Type Name	PhysicalChId
Type Definition	INTEGER(0..31)
Type Encoding	
Comments	Physical channel identifier in GERAN

Type Name	G_LogicChType
Type Definition	INTEGER
Type Encoding	
Comments	GERAN logical channel type: 0-BCCH; 1-RACH; 2-PCH; 3-AGCH; 4-SDCCH/4; 5-SACCH/C4; 6-SDCCH/8; 7-SACCH/C8; 8-TCH/F; 9-FACCH/F; 10-SACCH/TF; 11-TCH/H; 12-FACCH/H; 13-SACCH/TH; 14-Void; 15-PRACH; 16-PPCH; 17-PAGCH; 18-PDTCH/F; 19-PACCH/F; 20-PTCCH/F; 21-E-TCH/F; 22-E-IACCH/F; 23-E-FACCH/F; 24-SACCH/M; 25-SACCH/MD

Type Name	SubChannelNumber
Type Definition	INTEGER
Type Encoding	
Comments	Subchannel number for TCH/H, FACCH/H, SACCH/TH, SDCCH/4, SDCCH/C4, SDCCH/8 and SDCCH/C8. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); For SDCCH/4 and SACCH/C4 value is (0..3).

Type Name	PAGING_GROUP
Type Definition	INTEGER
Type Encoding	
Comments	3GPP TS 05.02 or 3GPP TS 45.002 [31], clauses 6.5.2 and 6.5.6

Type Name	PagingMode
Type Definition	INTEGER
Type Encoding	
Comments	0 - normal paging; 1 - extended paging; 2 - paging reorganization.

Type Name	RFN		
Encoding Variation			
Comments	The reduced frame number, its range is 0 -- 42431 (FN modulo 42432) about 195.8 s		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
t1_	BITSTRING[5]		(FN div 1326) mod 32
t3	BITSTRING[6]		FN mod 51
t2	BITSTRING[5]		FN mod 26
Detailed Comments	see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.38. The reduced frame number, FN modulo 42432 can be calculated in the following formula: 51 × ((t3 - t2) mod 26) + t3 + 1326 × t1_. RFN is used for starting time and TBF starting time.		

ASP Name	G_L2_Release_CNF	
PCO Type	G_DSAP	
Comments	This ASP from L2, indicates that the multiple frame operation release was successful. This means that the UA message was received in response to L2 DISC command.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
releaseMode	BITSTRING[1]	0 = normal release; 1 = local release.
Detailed Comments		

ASP Name	G_L2_Release_REQ	
PCO Type	G_DSAP	
Comments	This ASP requests L2 to send Layer 2 DISC command on the indicated SAPI.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0 or 3
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
releaseMode	BITSTRING[1]	0 = normal release; 1 = local release.
Detailed Comments		

ASP Name	G_L2_Release_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive an indication of the termination of an established multiple frame operation or an indication of an unsuccessful establishment attempt.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); for SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3).
releaseMode	BITSTRING[1]	0 = normal release; 1 = local end release
outstanding_Indicator	BOOLEAN	whether or not there are outstanding acknowledgements or unsolved G_L2_DATA_REQ primitives.
Detailed Comments		

ASP Name	G_L2_SYSINFO_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used to send system information messages to the lower layer emulator.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
sAPI	SAPI	0
physicalChId	PhysicalChId	
g_LogicChType	G_LogicChType	BCCH or SACCH
instanceIndex	INTEGER	To indicate the instance of the system information messages. For SYSTEM INFORMATION Type 2ter, 18, 19, 20 the value is (0..7); for type 14, 15 the value is (0..3); for type 2quater the value is (0..15); for all other type the value is 0.
sysInfoType	SysInfoType	SYSTEM INFORMATION Type 5, 5bis, 5ter, and 6 are sent on SACCH, the other SYSTEM INFORMATION 's are sent on BCCH.
BCCHExt	B1	'0' indicates message sent on BCCH Norm, '1' indicates message sent on BCCH Ext. Only valid for SI 2quater, 7, 8, 13, 15, 16, 17. Default value '0'
msg	PDU	This field contains SYSTEM INFORMATION message. See 3GPP TS 44.018 [43], clause 9.1.31 to clause 9.1.43h for SYSTEM INFORMATION message definitions.
Detailed Comments	The lower layer emulator shall store the SYSTEM INFORMATION's, and transmit them periodically according to the rules specified in clause 6.3.1.3 of 3GPP TS 05.02 or 3GPP TS 45.002 [31]. The msg shall override the same type system information message previous stored in the lower layer emulator.	

Type Name	SysInfoType
Type Definition	INTEGER
Type Encoding	
Comments	25--SYSTEM INFORMATION TYPE 1 26--SYSTEM INFORMATION TYPE 2 2 -- SYSTEM INFORMATION TYPE 2bis 3 -- SYSTEM INFORMATION TYPE 2ter 7 -- SYSTEM INFORMATION TYPE 2quater 27--SYSTEM INFORMATION TYPE 3 28--SYSTEM INFORMATION TYPE 4 29--SYSTEM INFORMATION TYPE 5 5 -- SYSTEM INFORMATION TYPE 5bis 6 -- SYSTEM INFORMATION TYPE 5ter 30--SYSTEM INFORMATION TYPE 6 31--SYSTEM INFORMATION TYPE 7 24--SYSTEM INFORMATION TYPE 8 4 -- SYSTEM INFORMATION TYPE 9 0 -- SYSTEM INFORMATION TYPE 13 61--SYSTEM INFORMATION TYPE 16 62--SYSTEM INFORMATION TYPE 17 64--SYSTEM INFORMATION TYPE 18 65--SYSTEM INFORMATION TYPE 19 66--SYSTEM INFORMATION TYPE 20 67—SYSTEM INFORMATION TYPE 15

7.3.4.3.1.2 ASPs for data transmission and reception through GERAN RLC

ASP Name	G_RLC_ControlMsg_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used to transmit a RLC/MAC control message to the UE/MS on the specified channel.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	
g_LogicChType	G_LogicChType	PACCH
tBF_Direction	INTEGER	1-downlink TBF; 0-uplink TBF
tFI	TFI	Temporary flow identity
rRBP	RRBP	Relative reserved block period
s_P_Bit	S_P_Bit	Supplementary/polling bit
rfn	RFN	The reduced frame number of the first frame on which this message is sent. This field is not applicable and the SS shall ignore it if the field t2 of rfn is coded as '11111'B.
pagingGroup	PAGING_GROUP	this field shall be omitted
pagingMode	PagingMode	this field shall be omitted
msg	PDU	Down link RLC/MAC control message
Detailed Comments	This ASP provides values for "RRBP" and "S/P" fields in MAC header for TTCN controlling the response from the UE, the value for "PayloadType" and "USF" fields in MAC header shall be filled by the SS. If a RLC/MAC control message can not be fitted into one RLC/MAC control block, the SS RLC/MAC entity shall take the responsibility of segmentation of the message, and set the correct "PayloadType" and optional octet1 (and optional octet2).	

Type Name	RRBP
Type Definition	BITSTRING[2]
Type Encoding	
Comments	3GPP TS 04.60 or 3GPP TS 44.060 [32], clause 10.4.5

Type Name	S_P_Bit
Type Definition	BITSTRING[1]
Type Encoding	
Comments	0 - RRBP field is not valid; 1 - RRBP field is valid.

ASP Name	G_RLC_ControlMsg_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive an uplink RLC/MAC control block sent by the UE/MS on the specified channel.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	
g_LogicChType	G_LogicChType	PACCH or PDTCH
tBF_Direction	INTEGER	1 - downlink TBF; 0 - uplink TBF
tFI	TFI	Temporary flow identity
rfn	RFN	The reduced frame number of the frame carrying the message
msg	PDU	Uplink RLC/MAC control message
Detailed Comments	Logical channel type PDTCH is valid for PACKET ENHANCED MEARSUREMENT REPORT message only.	

7.3.4.3.1.3 ASPs for data transmission and reception through GERAN LLC

ASP Name	G_LLC_UNITDATA_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used to send L3 PDU to the UE/MS in LLC unconfirmed transmission.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	
tLLI	TLLI	
sAPI	SAPI	
protectMode	BITSTRING[1]	0 -- unprotected; 1 -- protected
cipherMode	BITSTRING[1]	0 -sent without encryption; 1 -sent with encryption
msg	PDU	L3 PDU
Detailed Comments	3GPP TS 04.64 or 3GPP TS 44.064 [33], clause 8.4.1 After the ciphering function is started in the SS by G_CLLC_Assign_REQ, the SS shall encrypt the "msg" when cipherMode = '1', and the SS shall not encrypt the "msg" if cipherMode = '0'.	

Type Name	LLMEId
Type Definition	INTEGER
Type Encoding	
Comments	The identifier of the Logical Link Management Entity in SGSN

ASP Name	G_LLC_UNITDATA_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive a L3 PDU from the UE/MS in LLC unconfirmed transmission.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	
tLLI	TLLI	
sAPI	SAPI	
msg	PDU	L3 PDU
Detailed Comments	3GPP TS 04.64 or 3GPP TS 44.064 [33], clause 8.4.2	

ASP Name	G_LLC_XID_RES	
PCO Type	G_DSAP	
Comments	The ASP is used to send to the UE/MS the negotiated XID parameters agreed by the SS.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	
tLLI	TLLI	
sAPI	SAPI	
xID_Info	XID_Info	the negotiated XID parameters agreed by the SS
Detailed Comments		

Type Name	XID_Info
Type Definition	OCTETSTRING
Type Encoding	
Comments	Exchange Identification Information

ASP Name	G_LLC_XID_IND	
PCO Type	G_DSAP	
Comments	The ASP is used to receive the XID requested by the UE/MS.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	
tLLI	TLLI	
sAPI	SAPI	
xID_Info	XID_Info	the XID parameters requested by the UE/MS
Detailed Comments		

ASP Name	G_LLC_NULL
PCO Type	G_DSAP
Comments	Please refer to TS 36.523-3 [62], clause 6.4.2 for the definition. This ASP is not used in ATSs in TTCN2.

7.3.4.3.1.4 Void

7.3.4.3.1.5 ASPs for data transmission and reception through GERAN DTM

ASP Name	G_L2_GTTP_REQ	
PCO Type	G_DSAP	
Comments	The ASP is used for DTM to send an LLC signalling message on the DCCH in acknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
SAPI	SAPI	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
protectMode	BITSTRING[1]	0 -- unprotected; 1 -- protected
cipherMode	BITSTRING[1]	0 - sent without encryption; 1 - sent with encryption
skipIndicator	B4	GTTP header, unciphered
GTTPProtocolDiscriminator	B4	GTTP header, unciphered
msgType	B8	GTTP header, unciphered
TLLI	TLLI	GTTP header, unciphered
gmmSmPDULength	Length	GTTP header, unciphered
gmmSmPDU	PDU	GMM or SM PDU - ciphered
Detailed Comments	Ciphering must be started in the SS by G_CLLC_Assign_REQ , and also by either G_CL1_CipheringControl_REQ, G_CL1_CipherModeModify_REQ, or G_CL1_CreateBasicPhyCh_REQ. When cipherMode = '1' the SS shall encrypt the "LLCPDU", using the algorithm specified in px_GPRS_CipherAlg, and then encrypt the whole outgoing message using the algorithm specified in px_GSM_CipherAlg. The SS shall not encrypt the message at all if cipherMode = '0'.	

ASP Name	G_L2_GTTP_IND	
PCO Type	G_DSAP	
Comments	The ASP is used for DTM to receive an LLC signalling message on DCCH acknowledged mode.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
SAPI	SAPI	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	The reduced frame number of the first frame carrying the message
TLLI	TLLI	
gmmSmPDU	PDU	Deciphered GMM or SM signalling message received
Detailed Comments	If ciphering is used, the SS will take care to ensure the "LLC PDU" is deciphered	

7.3.4.3.2 ASPs for control primitive transmission and reception in GERAN

7.3.4.3.2.1 ASPs for configuration and control of GERAN L1

ASP Name	G_CL1_CreateCell_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to create a cell in GERAN	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
baseId	BITSTRING[6]	base transceiver station identity code = NCC+BCC. see 3GPP TS 23.003 [6]
timingAdvance	BITSTRING[8]	The SS sets the timing of uplink direction in advance of downlink direction timing by this value.
Detailed Comments		

ASP Name	G_CL1_CreateCell_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_CreateCell_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The cell created
Detailed Comments		

ASP Name	G_CL1_DeleteCell_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to delete a cell in GERAN	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The cell to be deleted
Detailed Comments		

ASP Name	G_CL1_DeleteCell_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_DeleteCell_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The cell deleted
Detailed Comments		

ASP Name	G_CL1_CreateBasicPhyCh_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to create a basic physical channel in GERAN	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The cell which the channel to be created belongs to
physicalChId	PhysicalChId	identifier of the physical channel in the SS.
channelCombination	ChannelCombination	Logical channels combined onto the basic physical channel.
frqInfo	FrqInfo	Parameters for Description of the physical channel in frequency domain
timeSlot	TN	The timeslot number of the physical channel
tsc	TSC	Training sequence code. For common control and broadcast channels the value of tsc must be equal to BCC (base station colour code)
channelSpecificInfo	ChannelSpecificInfo	Specific parameters related to individual channel
txPower	TX_Power	The transmission power level in dBμVemf()
bandIndicator	BITSTRING[1]	Parameter for DCS or PCS frequency band selection. A value 0 for frqInfo.arfcn interpreted as DCS1800. A value 1 for frqInfo.arfcn interpreted as PCS1900. If omitted, the value in frqInfo.arfcn interpreted as DCS1800.
Detailed Comments	The value of channelCombination permitted currently: 1 TCH/F + FACCH/F + SACCH/TF 2 TCH/H(0,1) + FACCH/H(0,1) + SACCH/TH(0,1) 3 TCH/H(0,0) + FACCH/H(0,1) + SACCH/TH(0,1) + TCH/H(1,1) 4 FCCH + SCH + BCCH + CCCH 5 FCCH + SCH + BCCH + CCCH + SDCCH/4(0..3) + SACCH/C4(0..3) 6 BCCH + CCCH 7 SDCCH/8(0..7) + SACCH/C8(0.. 7) 8 TCH/F + FACCH/F + SACCH/M 9 TCH/F + SACCH/M 10 TCH/FD + SACCH/MD 11 Void 12 Void 13 PDTCH/F+PACCH/F+PTCCH/F 18 E-TCH/F + E-IACCH/F + E-FACCH/F + SACCH/TF 19 E-TCH/F + E-IACCH/F + E-FACCH/F + SACCH/M 20 E-TCH/F + E-IACCH/F + SACCH/M 21 E-TCH/FD + E-IACCH/F + SACCH/MD	

ASP Name	G_CL1_CreateBasicPhyCh_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_CreateBasicPhyCh_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The cell which the created channel belongs to
physicalChId	PhysicalChId	The physical channel created.
Detailed Comments		

Type Name	FrqInfo		
Encoding Variation			
Comments	Parameters for Description of basic physical channel in frequency domain.		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
h	BITSTRING[1]		h=1:hopping channel h=0: non-hopping channel
spr	BITSTRING [3]		'000'B
spr1	BITSTRING [2]		'00'B if h = 0, otherwise OMIT
maio	BITSTRING [6]		mobile allocation index offset if h = 1, otherwise OMIT
hsn	BITSTRING [6]		hopping sequence number if h = 1, otherwise OMIT
arfcn	BITSTRING [10]		absolute RF channel number if h = 0, otherwise OMIT
hoppingFreqList	FrequencyList		hopping frequency list if h = 1, otherwise OMIT. The definition see 3GPP TS 44.018 [43] or 3GPP TS 04.18, clause 10.5.2.13
Detailed Comments			

Type Name	ChannelSpecificInfo		
Encoding Variation			
Comments	Parameters for individual channel		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
dedCH_Info	DedCH_Info		Parameters for dedicated channel. Valid for combination:1, 2, 3, 5, 7, 8, 9, 10
cCCH_Info	CCCH_Info		Parameters for common control channels: PCH, SCH, etc. Valid for combination: 4, 5, 6
Detailed Comments			

Type Name	DedCH_Info		
Encoding Variation			
Comments	Parameters for dedicated channel		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
chMod	ChMode		Definition see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.6
cipherMode	CipherModeSetting		Definition see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.9
cipherKey	BITSTRING[64]		
powerLevel	BITSTRING[5]		Initial MS uplink transmission power level. This value is used in the L1 header of SACCH.
timingAdvance	BITSTRING[8]		Initial timing advance. This value is used in the L1 header of SACCH. This field shall be set to the same value as in timingAdvance of G_CL1_CreateCell_REQ.
Detailed Comments	In addition to ciphering algorithm the cipherMode specifies the initial ciphering mode of the physical channel in both transmission and receiving direction by startingCiph bit. During ciphering mode setting procedure the ciphering mode of receiving direction can be changed by G_CL1_CipheringControl_REQ.		

Type Name	CCCH_Info		
Encoding Variation			
Comments	Parameters for common control channels		
Element Name	Type Definition	Field Encoding	Comments
bS_PA_MFRMS	BITSTRING[3]		the number of 51-multiframes between transmissions of paging messages. Definition see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.11
bS_AG_BLKS_RES	BITSTRING[3]		the number of blocks on each common control channel reserved for access grant messages. Definition see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.11
Detailed Comments			

Type Name	MultiSlotAllocation		
Encoding Variation			
Comments	Used in multi-slot configuration		
Element Name	Type Definition	Field Encoding	Comments
tN0	BOOLEAN		TRUE - time slot 0 is allocated; FALSE -- not allocated
channelCombination0	ChannelCombination		Channel combination for time slot 0; not applicable if tN0 = FALSE
tN1	BOOLEAN		TRUE - time slot 1 is allocated; FALSE -- not allocated
channelCombination 1	ChannelCombination		Channel Combination for time slot 1; not applicable if tN1 = FALSE
tN2	BOOLEAN		TRUE - time slot 2 is allocated; FALSE -- not allocated
channelCombination 2	ChannelCombination		Channel Combination for time slot 2; not applicable if tN2 = FALSE
tN3	BOOLEAN		TRUE - time slot 3 is allocated; FALSE -- not allocated
channelCombination 3	ChannelCombination		Channel Combination for time slot 3; not applicable if tN3 = FALSE
tN4	BOOLEAN		TRUE - time slot 4 is allocated; FALSE -- not allocated
channelCombination 4	ChannelCombination		Channel Combination for time slot 4; not applicable if tN4 = FALSE
tN5	BOOLEAN		TRUE - time slot 5 is allocated; FALSE -- not allocated
channelCombination 5	ChannelCombination		Channel Combination for time slot 5; not applicable if tN5 = FALSE
tN6	BOOLEAN		TRUE - time slot 6 is allocated; FALSE -- not allocated
channelCombination 6	ChannelCombination		Channel Combination for time slot 6; not applicable if tN6 = FALSE
tN7	BOOLEAN		TRUE - time slot 7 is allocated; FALSE -- not allocated
channelCombination 7	ChannelCombination		Channel Combination for time slot 7; not applicable if tN7 = FALSE
Detailed Comments	Multislot configuration is referred to 3GPP TS 05.02 or 3GPP TS 45.002 [31], clause 6.4.2. The timeslot for which G_CL1_CreateBasicPhyCh_REQ has set the channel combination shall be set to FALSE.		

ASP Name	G_CL1_CipheringControl_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to set the ciphering mode of the physical channel in receiving direction, the kc and ciphering algorithm was set by the G_CL1_CreateBasicPhyCh_REQ for the physical channel before calling the ASP.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
rcvCipherMode	BITSTRING[1]	Ciphering Mode in SS receiving direction: 0→ not ciphered 1→ ciphered
Detailed Comments	For GSM dedicated physical channel, the ciphering mode of the SS shall be changed in three steps: (3GPP TS 44.018 [43], clause 3.4.7) Before the SS sending CIPHERING MODE COMMAND the SS is transmitting and receiving in old ciphering mode (for example, not ciphered), after the SS sending CIPHERING MODE COMMAND the SS changes its receiving ciphering mode to new ciphering mode (for example, ciphered) and keeps transmitting in old ciphering mode; then after receiving CIPHERING MODE COMPLETE or any correct L2 frame in new ciphering mode the SS changes the transmitting ciphering mode to the new mode. TTCN writer shall use this ASP before sending the CIPHERING MODE COMMAND to ensure the ciphering mode of the physical channel, in sufficient time, according to the 3 step procedure outlined above.	

ASP Name	G_CL1_CipheringControl_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm that the G_CL1_CipheringControl_REQ is executed correctly.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
Detailed Comments		

ASP Name	G_CL1_ComingFN_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to request lower layer return the reduced frame number (FN modulo 42432) which is far enough in the future from current frame number and is able to carry L3 message on the specified channel. The requirement of "far enough" is that there is enough time left for TTCN to prepare a L3 message to send before that frame. The ASP could also be used in the calculation of a value for starting time	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
Detailed Comments		

ASP Name	G_CL1_ComingFN_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to receive the result of G_CL1_ComingFN_REQ.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
rfn	RFN	the reduced frame number (FN modulo 42432) which is about 0.7 seconds later than current frame number and is able to carry L3 message on the channel specified by "physicalChId"+"G_LogicChType"+"subChannel"
Detailed Comments		

ASP Name	G_CL1_DeleteChannel_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to delete a basic physical channel or an multi-slot configuration	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell which the channel to be deleted belongs to
physicalChId	PhysicalChId	The physical channel or the multi-slot configuration to be deleted.
Detailed Comments		

ASP Name	G_CL1_DeleteChannel_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_DeleteChannel_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell which the deleted channel belongs to
physicalChId	PhysicalChId	The physical channel or multi-slot configuration deleted.
Detailed Comments		

ASP Name	G_CL1_CipherModeModify_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to modify cipher mode of a dedicated channel	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
cipherMode	CipherModeSetting	The new cipher mode. Definition see 3GPP TS 04.18 or 3GPP TS 44.018 [43], clause 10.5.2.9
Detailed Comments		

ASP Name	G_CL1_CipherModeModify_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_CipherModeModify_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: TCH/H, FACCH/H, SACCH/TH, SDCCH/8, SACCH/C8, SDCCH/4, and SACCH/C4. For TCH/H, FACCH/H and SACCH/TH value is (0..1); For SDCCH/8 and SACCH/C8 value is (0..7); for SDCCH/4 and SACCH/C4 value is (0..3). This field is not applicable and the SS shall ignore it if this field is coded as 15.
Detailed Comments		

ASP Name	G_CL1_ChangePowerLevel_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to change the transmission power level of a physical channel	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell which the physical channel belongs to
physicalChId	PhysicalChId	Channel using the new transmission power level
txPower	TX_Power	The new transmission power level in dBμVemf()
Detailed Comments		

ASP Name	G_CL1_ChangePowerLevel_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CL1_ChangePowerLevel_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
physicalChId	PhysicalChId	The physical channel which uses the new transmission power level
Detailed Comments		

7.3.4.3.2.2 ASPs for configuration and control of GERAN L2

ASP Name	G_CL2_HoldPhyInfo_REQ	
PCO Type	G_CSAP	
Comments	The ASP commands the SS to hold the PHYSICAL INFORMATION message, which will be sent on PCO G_L2 following the current ASP. The PHYSICAL INFORMATION message shall be sent to the UE/MS within T3124 from the time when the SS has received n handover access bursts.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: FACCH/H, SDCCH/8 and SDCCH/4, This field is not applicable and the SS shall ignore it if this field is coded as 15.
n	INTEGER	The number of handover access bursts to be received
Detailed Comments	T3124 is defined in 3GPP TS 04.18 or 3GPP TS 44.018 [43], clauses 3.4.4.2.2 and 11.1.1	

ASP Name	G_CL2_HoldPhyInfo_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get a confirmation of the G_CL2_HoldPhyInfo_REQ.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	
subChannel	SubChannelNumber	Valid only for logical channel types: FACCH/H, SDCCH/8 and SDCCH/4. This field is not applicable and the SS shall ignore it if this field is coded as 15.
Detailed Comments		

ASP Name	G_CL2_MeasRptControl_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to enable or disable the reporting of received Measurement Reports to the TTCN	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
g_LogicChType	G_LogicChType	Valid only for logical channel types: SACCH/TF, SACCH/TH, SACCH/C8 and SACCH/C4
subChannel	SubChannelNumber	For SACCH/TH value is (0..1); for SACCH/C8 value is (0..7); for SACCH/C4 value is (0..3).
sendMeasRpts	BOOLEAN	Whether or not to report received Measurement Reports to the TTCN.
Detailed Comments	Per default, this will be set to FALSE	

ASP Name	G_CL2_MeasRptControl_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm that G_CL2_MeasRptControl_REQ was executed correctly	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
Detailed Comments		

ASP Name	G_CL2_Release_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used request the SS stop L2 transmission on a channel.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier
Detailed Comments		

ASP Name	G_CL2_Release_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm that the G_CL2_Release_REQ is executed correctly	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
physicalChId	PhysicalChId	Channel identifier

7.3.4.3.2.3 ASPs for configuration and control of GERAN RLC/MAC

ASP Name	G_CRLC_CreateRLC_MAC_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to create a RLC/MAC entity in GERAN RLC/MAC emulation module.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
Detailed Comments	One RLC/MAC entity per cell can exist, cellId will be used for couping LLC layer module to the RLC/MAC emulation module.. The packet channel description given in the ChannelSpecificInfo of G_CL1_CreateBasicPhyCh_REQ shall be used to configure this layer. This ASP shall be called after the G_CL1_CreateBasicPhyCh_REQ ASP.	

ASP Name	G_CRLC_CreateRLC_MAC_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm the G_CRLC_CreateRLC_MAC_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
Detailed Comments		

ASP Name	G_CRLC_DeleteRLC_MAC_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to delete a RLC/MAC entity in GERAN emulation module.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
Detailed Comments	This ASP is used to release any resource used for the RLC/MAC emulation entity in the SS.	

ASP Name	G_CRLC_DeleteRLC_MAC_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm the G_CRLC_CreateRLC_MAC_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	The identifier of the cell
Detailed Comments		

ASP Name	G_CRLC_UL_TBF_Config_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to configure a TBF used for uplink packet data transfer	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
tFI	TFI	
tBF_Mode	BITSTRING[1]	0 - GPRS; 1 - EGPRS
channelCoding	ChannelCoding	
tLLI_BlockChannelCoding	BITSTRING[1]	0 - CS-1 or MCS-1(EGPRS); 1 - same as channelCoding
rLC_Mode	BITSTRING[1]	0 - acknowledged mode; 1 - unacknowledged mode
startingTime	RFN	This field is not applicable and the SS shall ignore it if the field t2 of rfn is coded as '11111'B.
uSF_Rate	INTEGER	This parameter controls the speed of the UL TBF transferring data blocks by controlling the USF rate: 1---> implementation dependent. TTCN does not specify the USF generating rate; 2---> 10 USF's per second; 3---> 5 USF's per second; 4---> 1 USF per second; 5---> 1 USF per 2 seconds; 6---> 1 USF per 3 seconds; 7---> 1 USF per 4 seconds.
dynamicAllocation	dynamicAllocation	dynamic allocation and other parameters.
Detailed Comments	For GPRS channel coding can be: CS-1, CS-2, CS-3 and CS-4; For EGPRS channel coding can be : MCS-1, MCS-2, MCS-3, MCS-4, MCS-5, MCS-6, MCS-7, MCS-8, MCS-9, MCS-5-7 and MCS-6-9. Due to one cell currently has only one RLC/MAC emulation module, this ASP does not contain RLC/MAC identity parameter to indicate which RLC/MAC emulation module this TBF is established for, instead, the parameter cellId implicitly indicates the RLC/MAC module, which is created by G_CRLC_CreateRLC_MAC_REQ in the cell. The higher layer (LLC emulation module) uses rLC/MAC_MappingInfo (with type of CellId) to address the RLC/MAC emulation module to which it connects	

ASP Name	G_CRLC_UL_TBF_Config_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CRLC_UL_TBF_Config_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
tFI	TFI	
Detailed Comments		

Type Name	ChannelCoding
Type Definition	INTEGER
Type Encoding	
Comments	1 - CS-1; 2 - CS-2; 3 - CS-3; 4 -- CS-4; 5 - MCS-1; 6 - MCS-2; 7 - MCS-3; 8 - MCS-4; 9 - MCS-5; 10 - MCS-6; 11 - MCS-7; 12 - MCS-8; 13 - MCS-9; 14 - MCS-5-7; 15 - MCS-6-9.

Type Name	DynamicAllocation		
Encoding Variation			
Comments	Used for up link TBF; dynamic allocation or extended dynamic allocation		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
extendedAllocation	BITSTRING[1]		0 - dynamic allocation; 1 - extended dynamic allocation
uSFGranularity	BITSTRING[1]		0 - one block; 1 - four blocks
physicalChId	PhysicalChId		Single PDCH or multislot-configured PDCHs
tN0	BOOLEAN		TRUE - time slot 0 is allocated; FALSE -- not allocated
uSF_TN0	BITSTRING[3]		USF value for slot 0
tN1	BOOLEAN		TRUE - time slot 1 is allocated; FALSE -- not allocated
uSF_TN1	BITSTRING[3]		USF value for slot 1
tN2	BOOLEAN		TRUE - time slot 2 is allocated; FALSE -- not allocated
uSF_TN2	BITSTRING[3]		USF value for slot 2
tN3	BOOLEAN		TRUE - time slot 3 is allocated; FALSE -- not allocated
uSF_TN3	BITSTRING[3]		USF value for slot 3
tN4	BOOLEAN		TRUE - time slot 4 is allocated; FALSE -- not allocated
uSF_TN4	BITSTRING[3]		USF value for slot 4
tN5	BOOLEAN		TRUE - time slot 5 is allocated; FALSE -- not allocated
uSF_TN5	BITSTRING[3]		USF value for slot 5
tN6	BOOLEAN		TRUE - time slot 6 is allocated; FALSE -- not allocated
uSF_TN6	BITSTRING[3]		USF value for slot 6
tN7	BOOLEAN		TRUE - time slot 7 is allocated; FALSE -- not allocated
uSF_TN7	BITSTRING[3]		USF value for slot 7
Detailed Comments	The uSF_TNx field is not applicable when tNx = FALSE.		

ASP Name	G_CRLC_DL_TBF_Config_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to configure a TBF used for down link packet data transfer	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
tFI	TFI	
tBF_Mode	BITSTRING[1]	0 - GPRS; 1 - EGPRS
channelCoding	ChannelCoding	
rLC_Mode	BITSTRING[1]	0 - acknowledged mode; 1 - unacknowledged mode
timeSlotAllocation	TimeSlotAllocation	Downlink TBF time slot allocation
startingTime	RFN	This field is not applicable and the SS shall ignore it if the field t2 of rfn is coded as '11111'B.
dataBlockRate	INTEGER	This parameter controls the speed of the DL TBF sending RLC/MAC data blocks on the assigned PDCH's: 1---> implementation dependent. TTCN does not specify the data block rate; 2---> 10 data blocks per second; 3---> 5 data blocks per second; 4---> 1 data block per second; 5---> 1 data block per 2 seconds; 6---> 1 data block per 3 seconds; 7---> 1 data block per 4 seconds.
Detailed Comments	For GPRS channel coding can be: CS-1, CS-2, CS-3 and CS-4; For EGPRS channel coding can be : MCS-1, MCS-2, MCS-3, MCS-4, MCS-5, MCS-6, MCS-7, MCS-8, MCS-9, MCS-5-7 and MCS-6-9.	

ASP Name	G_CRLC_DL_TBF_Config_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to get the confirmation of a G_CRLC_DL_TBF_Config_REQ	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
tFI	TFI	
Detailed Comments		

Type Name	TimeSlotAllocation		
Encoding Variation			
Comments	Used for downlink and up link TBF		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
physicalChId	PhysicalChId		single PDCH or multislot-configured PDCHs
tN0	BOOLEAN		Timeslot 0; TRUE - allocated; FALSE - not allocated.
tN1	BOOLEAN		Timeslot 1; TRUE - allocated; FALSE - not allocated.
tN2	BOOLEAN		Timeslot 2; TRUE - allocated; FALSE - not allocated.
tN3	BOOLEAN		Timeslot 3; TRUE - allocated; FALSE - not allocated.
tN4	BOOLEAN		Timeslot 4; TRUE - allocated; FALSE - not allocated.
tN5	BOOLEAN		Timeslot 5; TRUE - allocated; FALSE - not allocated.
tN6	BOOLEAN		Timeslot 6; TRUE - allocated; FALSE - not allocated.
tN7	BOOLEAN		Timeslot 7; TRUE - allocated; FALSE - not allocated.
Detailed Comments			

7.3.4.3.2.4 ASPs for configuration and control of GERAN LLC

ASP Name	G_CLLC_CreateLLE_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to create an LLE (LLC Entity) in GERAN emulation part of the SS and connects the created LLE to the RLC/MAC emulation module pointed by rLC/MAC_MappingInfo..	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	Logical Layer Management Entity Id
rLC/MAC_MappingInfo	CellId	This parameter indicates the RLC/MAC emulation module in the cell, not the cell itself.
Detailed Comments	The RLC/MAC emulation module needs to be created prior to this ASP by G_CRLC_CreateRLC_MAC_REQ ASP.	

ASP Name	G_CLLC_CreateLLE_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm the G_CLLC_CreateLLE_REQ	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	The identifier of the cell Logical Layer Management Entity Id
Detailed Comments		

ASP Name	G_CLLC_DeleteLLE_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to delete an LLE (LLC Entity) in GERAN LLC emulation module.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	Logical Layer Management Entity Id
Detailed Comments		

ASP Name	G_CLLC_DeleteLLE_CNF	
PCO Type	G_CSAP	
Comments	The ASP is used to confirm the G_CLLC_DeleteLLE_REQ	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	Logical Layer Management Entity Id
Detailed Comments		

ASP Name	G_CLLC_Assign_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to assign, change, or unassign the TLLI, the ciphering key (Kc) and the ciphering algorithm of GERAN LLC emulation module.	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	Logical Layer Management Entity Id
oldTLLI	TLLI	OCTETSTRING[4]
newTLLI	TLLI	
cipherKey	BITSTRING[64]	
cipherAlgorithm	GPRS_CipherAlg	BITSTRING[3], see 3GPP TS 24.008 [9], clause 10.5.5.3
Detailed Comments	This ASP is used to assign, change, or unassign the TLLI, the ciphering key (Kc) and the ciphering algorithm. 1. The oldTLLI and newTLLI parameters shall be interpreted as follows: - If oldTLLI = all 1's and newTLLI ≠ all 1's then newTLLI is assigned and used when (re-)transmitting LLC frames. If an oldTLLI ≠ all 1's was assigned to the LLME, then oldTLLI is unassigned. Only newTLLI is accepted when received from the peer. It shall be treated as a TLLI change. If oldTLLI = all 1's was assigned to the LLME, then this shall be treated as a TLLI assignment, and this ASP shall be the first ASP sent to the SS in order to enable LLC to process requests from layer 3. - If oldTLLI ≠ all 1's and newTLLI ≠ all 1's then oldTLLI and newTLLI are assigned, and newTLLI shall be used when (re-)transmitting LLC frames. Both oldTLLI and newTLLI shall be accepted when received from the peer. It shall be treated as a TLLI change. - If oldTLLI ≠ all 1's and newTLLI = all 1's then oldTLLI shall be unassigned. It shall be treated as a TLLI unassignment, and this ASP shall be the last ASP sent to the SS in order to disable LLC to not process requests from layer 3 any longer. 2. Kc and Ciphering Algorithm are associated with newTLLI (and with oldTLLI if assigned): - If Ciphering Algorithm indicates no ciphering, then the ciphering function shall be disabled. - Otherwise, the ciphering function shall be enabled. If a Ciphering Algorithm was already associated with newTLLI or oldTLLI, then the new Kc shall replace the previous Kc, and Ciphering Algorithm shall replace the previous algorithm selection. All I frames, and UI frames with the E bit set to 1, shall use the new Kc and algorithm for ciphering. All unacknowledged I frames shall be ciphered using the new Kc and algorithm before retransmission. As an implementation option, the previous Kc and algorithm may be used to decipher received frames.	

ASP Name	G_CLLC_Assign_CNF	
PCO Type	G_CSAP	
Comments	the ASP is used to get confirmation of G_CLLC_Assign_REQ	
Parameter Name	**Parameter Type**	**Comments**
lLMEId	LLMEId	Logical Layer Management Entity Id
Detailed Comments		

7.3.4.3.2.5 Void

7.3.5 A-GPS Upper tester, PCO and ASP definitions

This clause is for A-GPS test model in Release 99, the A-GNSS test model is referred to 3GPP TS 36.571-4 [56].

7.3.5.1 Upper tester

In order to perform A-GPS test, an Upper Tester is defined to have two basic functional unites:

- Satellite simulator generating and broadcasting satellite signals;
- Assistance data source storing the data simulating a number of pre-defined GPS test scenarios.

Under the TTCN command, the upper tester loads a pre-defined or re-loads another pre-defined GPS test scenario to the satellite simulator. The generated satellite signals shall simulate a sufficient number satellites. The signal shall be sufficiently strong, in order to enable the UE to do the positioning measurement.

The SS also sends the GPS assistance data to the UE through RRC signalling to facilitate the UE acquiring and tracking satellites. Such assistance data shall be consistent to within ±2 seconds with the satellite signals generated.

The assistance data source shall provide the assistance data consistent to +1/-0 second with the GPS test scenario currently running in the satellite simulator (i.e. the data shall be up to 1 second in advance of the scenario); this allows for a further 2 seconds of latency in the SS.

7.3.5.2 SV PCO

The upper tester has an ASP interface through a PCO in type of SatS PCO defined in the table.

PCO Type Declarations	
PCO Type	SatS
Role	UT
Comments	PCO type used for the Satellite Simulator and the assistance data source in the upper tester

PCO Declarations	
PCO Name	SV
PCO Type	SatS
Role	UT
Comments	Carry control, configuration and GPS assistance data to/from satellite simulator and assistance data source in the upper tester

7.3.5.3 A-GPS Primitives

The primitives at SV PCO are used to

- load a pre-defined test scenario into the satellite simulator;
- start or stop generating and broadcasting satellite signals from the satellite simulator;
- retrieve the GPS assistance data from assistance data source, the table below is the summary of these primitives.

Primitive	Parameters	Use
Satellite_StartStop_REQ	Mode: start or stop	Start or stop generating satellite signals in the satellite simulator.
Satellite_StartStop_CNF	Null	Confirm the Satellite_StartStop_Req.
Load_ GPS_Scenario_REQ	GPS test scenario number	Requests to load a pre-defined test scenario into the satellite simulator
Load_ GPS_Scenario_CNF	Null	Confirm the load_GPS_Scenario_Req
Retri_GPS_AssistanceData_REQ	Indication of which assistance data elements to be retrieved	Request the assistance data source to provide the next (in time) valid GPS assistance data elements.
Retri_GPS_AssistanceData_CNF	GPS assistance data elements	Return the GPS assistance data retrieved

7.3.5.3.1 Control ASP Type Definition

ASN.1 ASP Type Definition	
Type Name	Satellite_StartStop_CNF
PCO Type	SatS
Comment	To confirm successful of Satellite_StartStop_REQ
Type Definition	

```
SEQUENCE    {
            confirm                 NULL
}
```

ASN.1 ASP Type Definition	
Type Name	Satellite_StartStop_REQ
PCO Type	SatS
Comment	To start or stop generating satellite signals in the satellite simulator "start" starts broadcasting satellite signals; "stop" stops broadcasting satellite signals If used for start (0), this ASP shall be called 2 s. after the ASP Load_GPS_Scenario_REQ for loading or reloading a pre-defined GPS test scenario.
Type Definition	

```
SEQUENCE    {
    satelliteSignals    ENUMERATED {startSatSignal (0), stopSatSignal (1)}
}
```

7.3.5.3.2 Data ASP Type Definition

ASN.1 ASP Type Definition	
Type Name	Load_ GPS_Scenario_CNF
PCO Type	SatS
Comment	To confirm the Load_GPS_Scenario_REQ
Type Definition	

```
SEQUENCE    {
        dummy               NULL
}
```

ASN.1 ASP Type Definition	
Type Name	Load_ GPS_Scenario_REQ
PCO Type	SatS
Comment	To request the upper tester to load the required pre-defined GPS test scenario.
Type Definition	

```
SEQUENCE    {
    gps_Scenario        INTEGER(0..31)
}
```

ASN.1 ASP Type Definition	
Type Name	Retri_GPS_AssistanceData_CNF
PCO Type	SatS
Comment	To return the next valid GPS assistance data elements as requested in the Retri_GPS_AssistanceData_REQ. The returned GPS assistance data (all or part) will be used as assistance data sent to UE in RRC messages for A-GPS positioning. The returned Almanac information is split into two fields: - Almanac for satellites 1 to 12:in 'assistanceData' together with other information; - Almanac for satellites 13 to 24: in 'almanacSat13To24'
Type Definition	

```
SEQUENCE    {
            assistanceData              UE_Positioning_GPS_AssistanceData,
            almanacSat13To24            AlmanacSatInfoList OPTIONAL
}
```

ASN.1 ASP Type Definition	
Type Name	Retri_GPS_AssistanceData_REQ
PCO Type	SatS
Comment	To request the GPS assistance data source to provide the next valid GPS assistance data elements, consistent with the running GPS test scenario. The parameter navModelAddDataRequest in the assistanceDataReq shall be omitted. Another three parameters, utcModelRequest, dgpsCorrectionsRequest and realTimeIntegrityRequest in the assistanceDataReq are not applicable and shall be set to "FALSE".
Type Definition	

```
SEQUENCE    {
    assistanceDataReq           UE_Positioning_GPS_AdditionalAssistanceDataRequest
}
```

7.3.6 ROHC test model and ASP

7.3.6.1 ROHC test method

The ROHC test architecture illustrates the relationship between various compressor and de-compressor entities. No de-compressor is implemented in PDCP on the uplink direction in the SS.

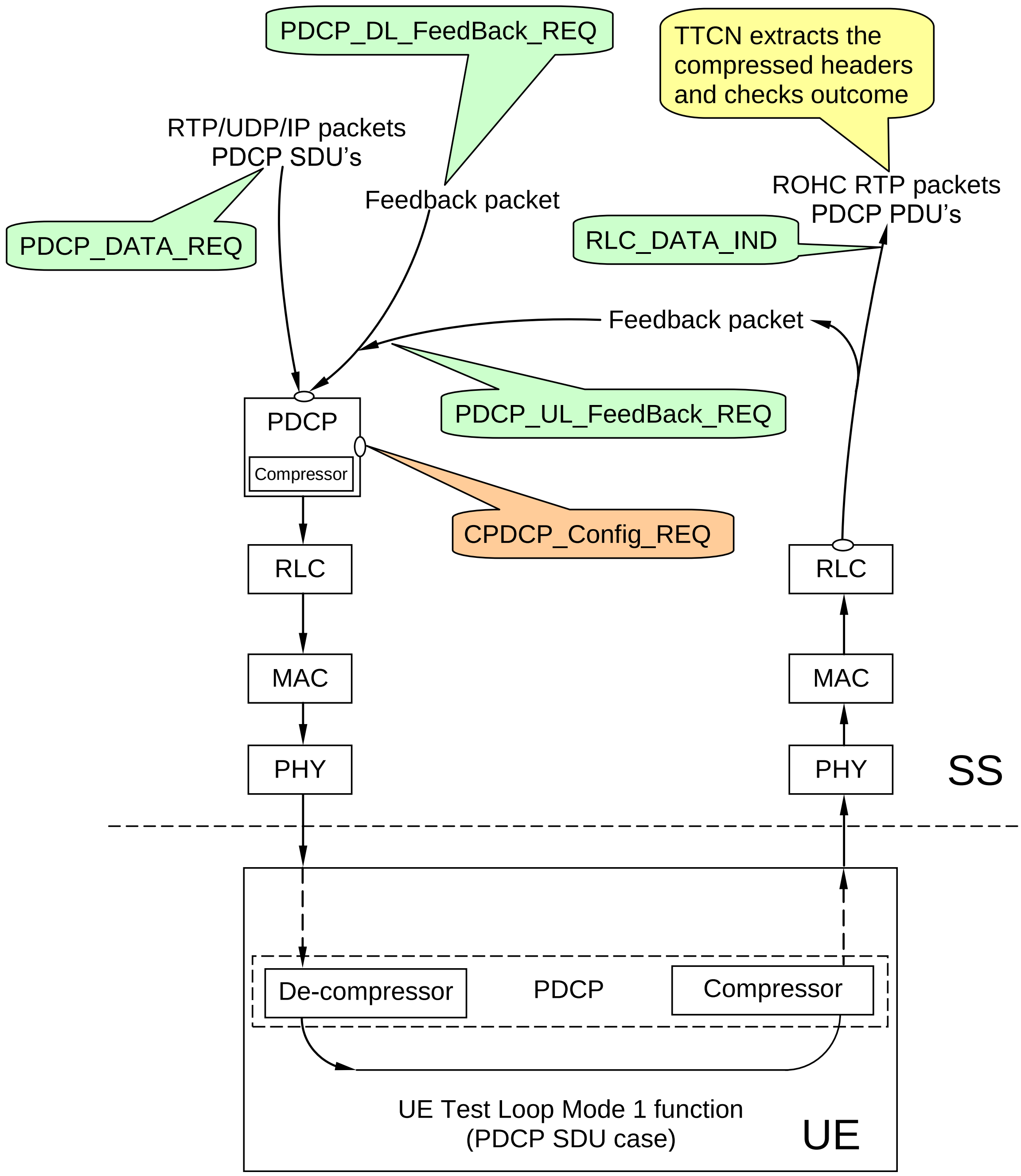

Figure 7.3.6.1: ROHC testing architecture

7.3.6.2 ASP and PCO for control primitives transmission and reception

7.3.6.2.1 PCO definition

Table 7.3.6.2.1: PCO CPDCP declaration

PCO Definition	
PCO Name	CPDCP
PCO Type	CSAP
Role	LT
Comment	Provide PDCP Layer configuration service

7.3.6.2.2 CPDCP_Config

ASN.1 ASP Type Definition	
Type Name	CPDCP_Config_CNF
PCO Type	CSAP
Comment	For PDCP emulator to report that a previous attempt to setup, reconfigure or release a logical channel is successful.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPDCP_Config_REQ
PCO Type	CSAP
Comment	To request to configure PDCP entity. Setup is used for creation of the PDCP instances or the PDCP resources. Release is used for free the all PDCP resources. The reconfiguration is to change the PDCP parameters. PDCP entity does not belong to a particular cell, the cellId shall assign the value -1. the routingInfo is RB identity which is used to connect this PDCP entity to the RLC entity with the same RB identity and it is also used for PDCP_DATA_REQ ASP to transmit data through this PDCP entity.
Type Definition	

```
SEQUENCE    {
            cellId                      INTEGER(-1..63),
            routingInfo                 RoutingInfo,
            ratType                     RatType,
            configMessage               CHOICE {
                setup                       SS_PDCP_Info,
                reconfigure                 SS_PDCP_InfoReconfig,
                release                     NULL
            }
}
```

ASN.1 Type Definition	
Type Name	SS_PDCP_Info
Comment	When configuring downlink direction of the SS, the UL_RFC3095-r4 shall be used; when configuring uplink direction of the SS the DL_RFC3095-r4 shall be used.
Type Definition	

```
SEQUENCE    {
        pDCP_ROHC_TargetMode    PDCP_ROHC_TargetMode OPTIONAL,
        pDCP_Info               PDCP_Info_r4,
        cSVoHS_Info             CS_HSPA_Information OPTIONAL    -- Rel-7 or later
}
```

ASN.1 Type Definition	
Type Name	SS_PDCP_InfoReconfig
Comment	When configuring downlink direction of the SS, the UL_RFC3095-r4 shall be used; when configuring uplink direction of the SS the DL_RFC3095-r4 shall be used.
Type Definition	

```
SEQUENCE    {
        pDCP_ROHC_TargetMode    PDCP_ROHC_TargetMode OPTIONAL,
        pDCP_Info               PDCP_InfoReconfig_r4,
        cSVoHS_Info             CS_HSPA_Information OPTIONAL    -- Rel_7 or later
}
```

7.3.6.2.3 CPDCP_ComProtocolControl

ASN.1 ASP Type Definition	
Type Name	CPDCP_ComProtocolControl_CNF
PCO Type	CSAP
Comment	For PDCP emulator to report that a previous attempt to control the compression protocol is successful.
Type Definition	

```
SEQUENCE    {
        cellId                  INTEGER(-1..63),
        routingInfo             RoutingInfo
}
```

ASN.1 ASP Type Definition	
Type Name	CPDCP_ComProtocolControl_REQ
PCO Type	CSAP
Comment	To request to reinitialize/context-relocate the compression protocol. PDCP entity does not belong to a particular cell; the cellId shall assign the value -1. The routingInfo is RB identity which is used to connect this PDCP entity to the RLC entity with the same RB identity and it is also used for PDCP_DATA_REQ ASP to transmit data through this PDCP entity. For reinitialization: - Configured compression parameters remain valid. - All compression state information is initialized. - The PDCP sequence numbers are not changed. - Actions specified in section 6.3.1 of RFC 3095 [54]. For contextRelocation: - initialize the context with the parameter in the ASP - valid for RFC3095 compression only
Type Definition	

```
SEQUENCE    {
        cellId                      INTEGER(-1..63),
        routingInfo                 RoutingInfo,
        ratType                     RatType,
        controlMessage              CHOICE {
            reinitialisation            NULL,
            contextRelocation           Context
        }
}
```

ASN.1 Type Definition	
Type Name	Context
Comment	Adapted from ASN1 type: RFC3095_Context_List
Type Definition	

```
SEQUENCE    (SIZE (1..maxRFC3095_CID)) OF SEQUENCE {
    dl_RFC3095_Context              DL_RFC3095_Context      OPTIONAL,
    ul_RFC3095_Context              UL_RFC3095_Context      OPTIONAL
}
```

ASN.1 Type Definition	
Type Name	DL_RFC3095_Context
Comment	For the compressor in the SS
Type Definition	

```
SEQUENCE    {
    rfc3095_Context_Identity        INTEGER (0..16383),
    dl_mode                         ENUMERATED {u, o, r},
    dl_ref_ir                       OCTET STRING ( SIZE (1..3000)),
    dl_ref_time                     INTEGER (0..4294967295)     OPTIONAL,
    dl_curr_time                    INTEGER (0..4294967295)     OPTIONAL,
    dl_syn_offset_id                INTEGER (0..65535)          OPTIONAL,
    dl_syn_slope_ts                 INTEGER (0..4294967295)     OPTIONAL,
    dl_dyn_changed                  BOOLEAN
}
```

ASN.1 Type Definition	
Type Name	UL_RFC3095_Context
Comment	For the de-compressor in the SS
Type Definition	

```
SEQUENCE    {
    rfc3095_Context_Identity            INTEGER (0..16383),
    ul_mode                             ENUMERATED {u, o, r},
    ul_ref_ir                           OCTET STRING ( SIZE (1..3000)),
    ul_ref_time                         INTEGER (0..4294967295)     OPTIONAL,
    ul_curr_time                        INTEGER (0..4294967295)     OPTIONAL,
    ul_syn_offset_id                    INTEGER (0..65535)          OPTIONAL,
    ul_syn_slope_ts                     INTEGER (0..4294967295)     OPTIONAL,
    ul_ref_sn_1                         INTEGER (0..65535)          OPTIONAL
}
```

7.3.6.3 ASP and PCO for data transmission and reception

7.3.6.3.1 PCO definition

Table 7.3.6.3.1: PCO PDCP declaration

PCO Type Definition	
PCO Name	PDCP
PCO Type	DSAP
Role	LT
Comment	Provide PDCP data transfer service

7.3.6.3.2 PDCP_DATA

ASP Name	PDCP_DATA_REQ	
PCO Type	DSAP	
Comments	To request to transmit data (PDCP SDU)	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
pDCP_SDU	PDU	IPv4/UDP/RTP or IPv6/UDP/RTP PDUs
Detailed Comments		

ASP Name	PDCP_DATA_IND	
PCO Type	DSAP	
Comments	To indicate to receive data (PDCP SDU)	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
pDCP_SDU	PDU	IPv4/UDP/RTP or IPv6/UDP/RTP PDUs
Detailed Comments		

7.3.6.3.3 PDCP_DL_FeedBack

ASP Name	PDCP_DL_FeedBack_CNF	
PCO Type	DSAP	
Comments	For the SS to confirm a previous PDCP_DL_FeedBack_REQ.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
Detailed Comments		

ASP Name	PDCP_DL_FeedBack_REQ	
PCO Type	DSAP	
Comments	To request the SS to send a feedback packet to the compressor in the UE.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
feedBackPacket1	FeedBackPacket1	either of feedBackPacket1 or feedBackPacket2 is presented
feedBackPacket2	FeedBackPacket2	
Detailed Comments		

ASP Name	PDCP_UL_FeedBack_CNF	
PCO Type	DSAP	
Comments	For the SS to confirm a previous PDCP_UL_FeedBack_REQ.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
Detailed Comments		

ASP Name	PDCP_UL_FeedBack_REQ	
PCO Type	DSAP	
Comments	To request the SS to pass a feedback packet received on uplink to the compressor in the SS. When a feedback packet is received at the uplink direction, TTCN uses this ASP to pass the received feedback packet to the downlink compressor of the SS	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Id	SS_RB_Identity	Radio bearer identifier
feedBackPacket1	FeedBackPacket1	either of feedBackPacket1 or feedBackPacket2 is presented
feedBackPacket2	FeedBackPacket2	
Detailed Comments		

Type Name	FeedBackPacket1		
Encoding Variation			
Comments	For ROHC RTP		
Element Name	**Type Definition**	**Field Encoding**	**Comments**
feedBackType	BITSTRING[5]		'11110'B
code	BITSTRING[3]		
size	OCTETSTRING[1]		Present if code = 0
addCIDpart1	BITSTRING[4]		Present if small CID and CID <>0; this shall be "1110"
addCIDpart2	BITSTRING[4]		Present if small CID and CID <>0; This is the CID value
largeCID	OCTETSTRING[1..2]		Present if large CID
sequenceNumber	BITSTRING[8]		
Detailed Comments			

Type Name	FeedBackPacket2		
Encoding Variation			
Comments	For ROHC RTP		
Element Name	Type Definition	Field Encoding	Comments
feedBackType	BITSTRING[5]		'11110'B
code	BITSTRING[3]		
size	OCTETSTRING[1]		Present if code = 0
addCIDpart1	BITSTRING[4]		Present if small CID and CID <>0; this shall be "1110"
addCIDpart2	BITSTRING[4]		Present if small CID and CID <>0; This is the CID value
largeCID	OCTETSTRING[1..2]		Present if large CID
ackType	BITSTRING[2]		0 = ACK; 1 = NACK; 2 = STATIC-NACK; 3 = reserved
mode	BITSTRING[2]		
sequenceNumber	BITSTRING[12]		
optioncode	BITSTRING[4]		
optionLength	BITSTRING[4]		Only 0 and 1 are valid values
optionData	BITSTRING[8]		Present if optionLength = 1
Detailed Comments	See section 5.7.6.1 of RFC 3095 [54] for the coding of optionalLength and optionalData		

7.3.7 Handling RLP for CS non-transparent data

After the establishment of a CS non-transparent data call during the test, the UE may attempt to initiate a Radio Link Protocol (RLP) connection or start XID exchange before the RLP connection if the UE has an RLP installed. The RLP frames exchanges shall be handled by the SS, in order to carry on the test. Otherwise, the UE may disconnect the CS call.

For the purpose of handling UE originated RLP frames the SS has installed an RLC codec. The RLP codec supports RLP Version 0,1, and 2, detects the version number at the first XID exchange. Without any prior XID exchange, the default version 0 applies. According to the RLP version number, the codec decodes / encodes U, S, I+S frames including header, information and FCS (Frame Check Sequence) fields. The RLP has a fixed bit frame size that is set to 576 bits. The SS RLP codec calculates the FCS value and inserts it in the FCS fields in each DL RLP frames. The FCS values in the UL frames are irrelevant in the TTCN. The I frames are decoded and acknowledged in TTCN, and the other RLP frames are decoded and discarded in the default behaviour trees in TTCN.

7.3.7.1 UTRAN cell

In a UTRAN cell, an RLP codec can be activated on the top of the SS TM RLC entity if the RLP protocol is applied to the UE. In addition of PCO TM, two new PCOs are defined. The PCO CRLP is used for the control and configuration of the RLP codec and the PCO RLP is used for the transferring of the RLP frames. PCO TM is not applied if PCO RLP is used in the test.

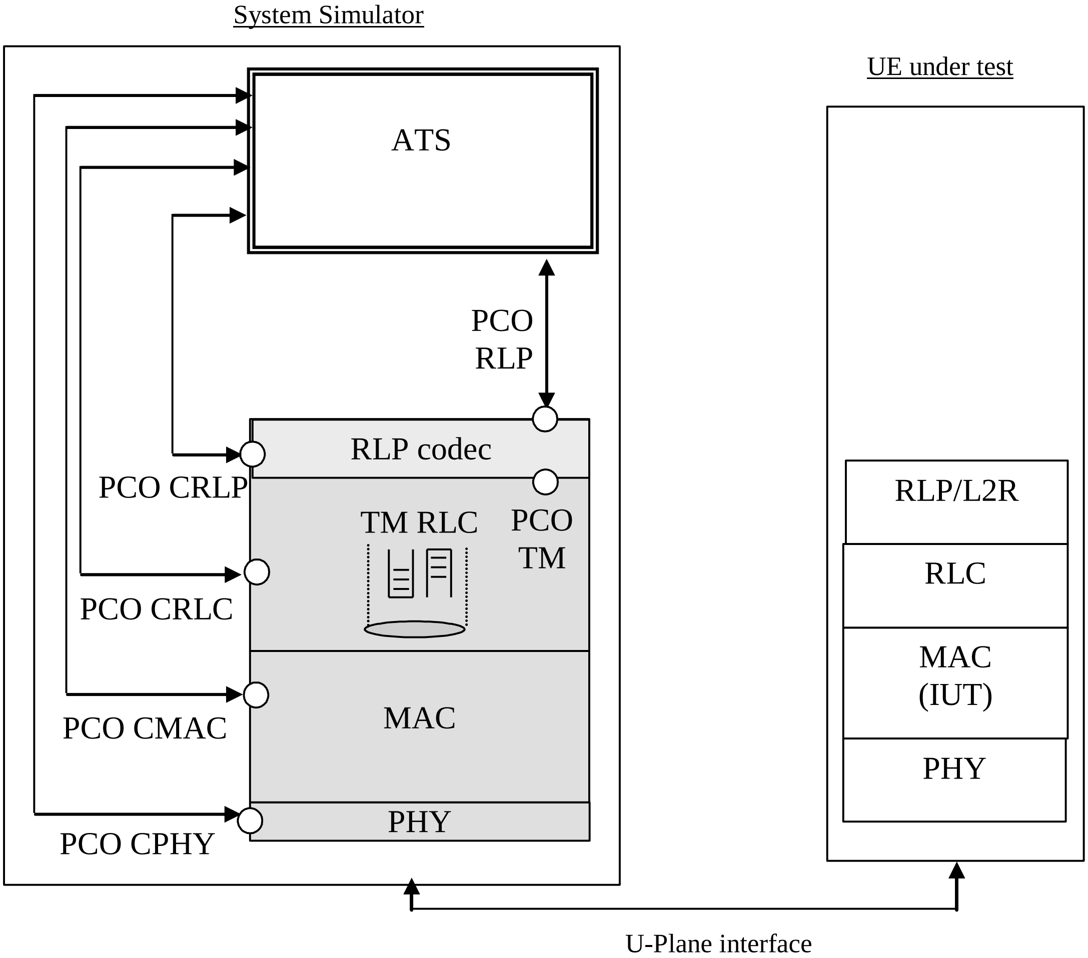

Figure 7.3.7.1: RLP codec model

An activate / deactivate command is required within the CRLP_Config_REQ to configure and activate the RLP codec and RLP PCO. The deactivate command switches off the RLP PCO and the SS discards all received RLP frames.

7.3.7.2 GERAN cell

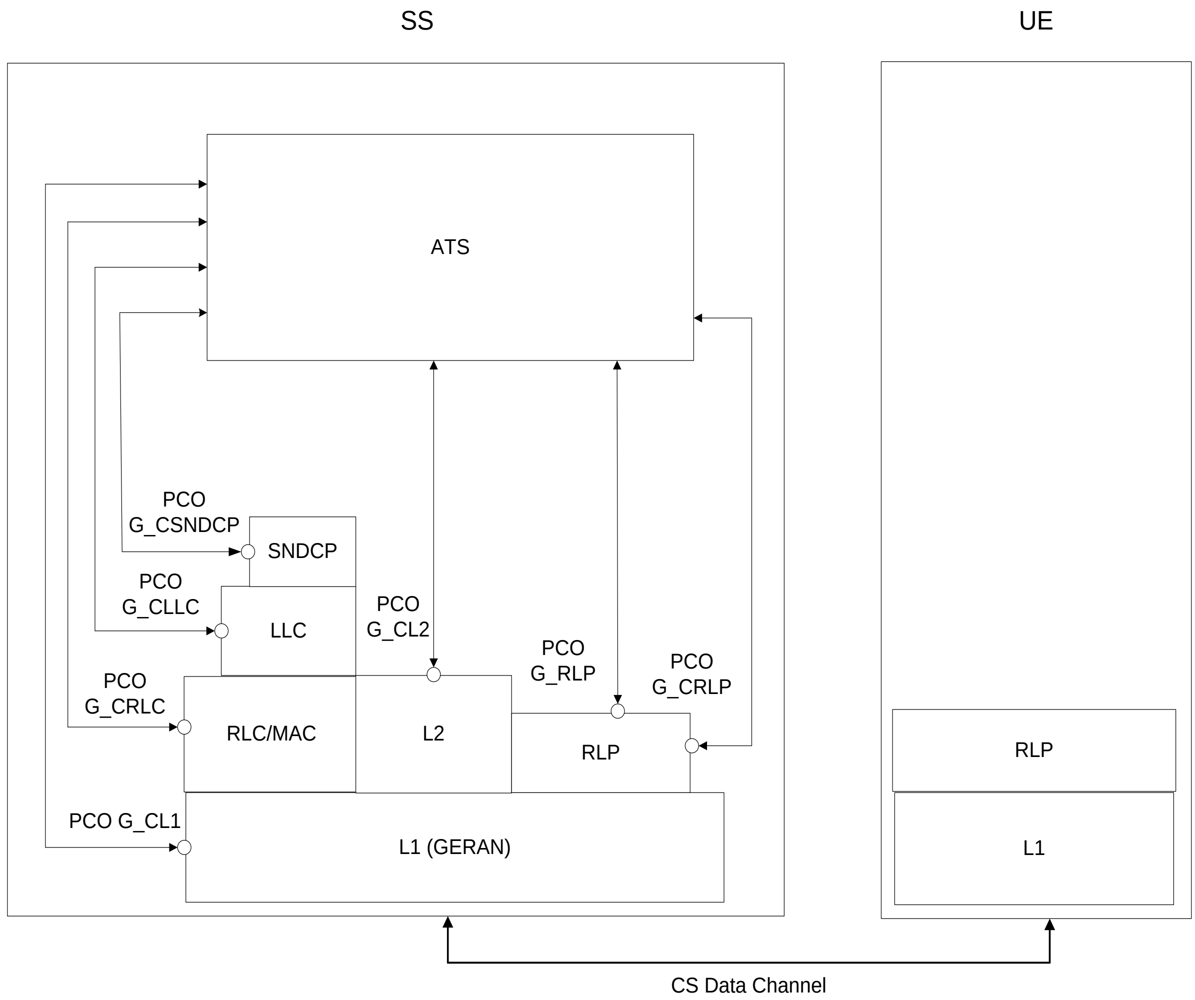

Figure 7.3.7.2: GERAN RLP codec model

After the establishment of a CS non-transparent data call in a GERAN cell during the test, the UE may attempt to initiate a Radio Link Protocol (RLP) connection or start XID exchange before the RLP connection if the UE has an RLP installed. The RLP frame exchanges shall be handled by the SS, in order to carry on the test. Otherwise, the UE may disconnect the CS call.

In a GERAN cell, an RLP codec can be activated on the traffic channel if the RLP protocol is applied to the UE. Two new PCOs are defined: G_CRLP is used for the control and configuration of the RLP codec and G_RLP is used for the transferring of the RLP frames in the GERAN cell.

For the purposes of interRAT handover testing, only the frame length of 576 bits is required. The 240 bits frame length and the REMAP function are not required.

7.3.7.3 ASP and PCO for control primitives

Table 7.3.7.3: PCO CRLP

PCO Definition	
PCO Name	CRLP
PCO Type	CSAP
Role	LT
Comment	Control RLP codec.

ASP Name	CRLP_Config_REQ	
PCO Type	CSAP	
Comments	The ASP is used to activate or deactivate the RLP codec.	
Parameter Name	Parameter Type	Comments
cellId	CellId	The cell which the RB identity belongs to
rB_Identity	SS_RB_Identity	Identifier of the RB identity in the SS
command	INTEGER	0: activate 1: deactivate
Detailed Comments		

ASP Name	CRLP_Config_CNF	
PCO Type	CSAP	
Comments	For RLP codec to confirm that a previous attempt to activate or deactivate has been successful.	
Parameter Name	Parameter Type	Comments
cellId	CellId	The cell which the RB identity belongs to
rB_Identity	SS_RB_Identity	Identifier of the RB identity in the SS
Detailed Comments		

PCO Definition	
PCO Name	G_CRLP
PCO Type	G_CSAP
Role	LT
Comment	Control RLP codec in GERAN cell

ASP Name	G_CRLP_Config_REQ	
PCO Type	G_CSAP	
Comments	The ASP is used to activate or deactivate the RLP agent in the GERAN cell and establish a pipe between the TTCN and the RLP agent on the TCH.	
Parameter Name	Parameter Type	Comments
cellId	CellId	The cell which the RB identity belongs to
channelId	PhysicalChId	Identifier of the TCH in the SS
command	INTEGER	0: activate 1: deactivate
Detailed Comments		

ASP Name	G_CRLP_Config_CNF	
PCO Type	G_CSAP	
Comments	For the RLP agent to confirm that a previous attempt to activate or deactivate has been successful.	
Parameter Name	Parameter Type	Comments
cellId	CellId	The cell which the TCH belongs to
channelId	PhysicalChId	Identifier of the TCH in the SS
Detailed Comments		

7.3.7.4 ASP and PCO for data transmission and reception

Table 7.3.7.4: PCO RLP declaration

PCO Type Definition	
PCO Name	RLP
PCO Type	DSAP
Role	LT
Comment	Carry RLP frame.

ASP Name	RLP_FrameReq	
PCO Type	DSAP	
Comments	The ASP is used to request the transmission of the RLP frame.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Identity	SS_RB_Identity	Identifier of the RB identity in the SS
data	PDU	Meta type PDU
Detailed Comments		

ASP Name	RLP_FrameInd	
PCO Type	DSAP	
Comments	The ASP is used to indicate the reception of an RLP frame.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
rB_Identity	SS_RB_Identity	Identifier of the RB identity in the SS
data	PDU	Meta type PDU
Detailed Comments		

PCO Type Definition	
PCO Name	G_RLP
PCO Type	G_DSAP
Role	LT
Comment	Carry RLP frame.

ASP Name	G_RLP_FrameReq	
PCO Type	G_DSAP	
Comments	The ASP is used to request the transmission of the RLP frame.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
channelId	PhysicalChId	Identifier of the TCH in the SS
data	PDU	Meta type PDU
Detailed Comments		

ASP Name	G_RLP_FrameInd	
PCO Type	G_DSAP	
Comments	The ASP is used to indicate the reception of an RLP frame.	
Parameter Name	**Parameter Type**	**Comments**
cellId	CellId	
channelId	PhysicalChId	Identifier of the TCH in the SS
data	PDU	Meta type PDU
Detailed Comments		

8 Design Considerations

8.1 Channel mapping

Figure 8.1 shows the channel type mapping that is used for the configuration of the SS.

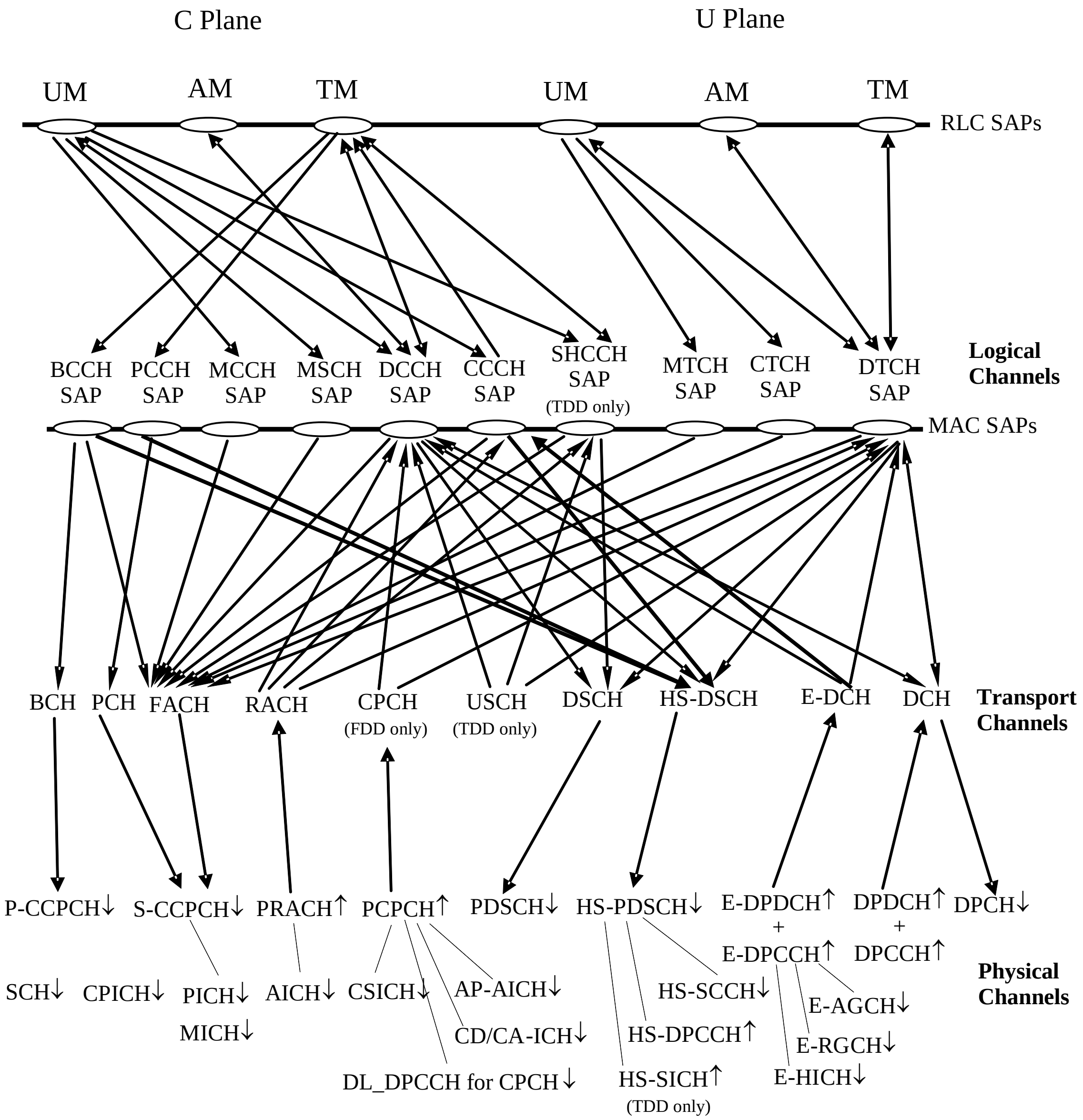

Figure 8.1: Channel mapping in SS-

8.2 Channel and RB identity

The TTCN addresses the TTCN tester by using a channel identifier:

- Either Physical channel identifier (PhyCh id); or
- Transport channel identifier (TrCh id); or
- Radio bearer identifier (RB id).

The selected channel identifier identifies uniquely:

- a channel within a cell;
- a total path of the address in the lower layers concerned.

Having taken out the cell id and PCO id (AM, UM and TM), a complete address, as RoutingInfo in the RRC ASP definition, should have at least five fields, CN domain id, RB id, LogCH id, TrCH id and PhyCH id. For simplified application of CHOICE of the routing information, a TTCN writer must carefully follow a number of rules assigning the channel identifiers.

General requirements:

- a structured scheme of planning all channel identifiers assigned;
- the scheme shall meet the requirements for all test cases in 3GPP TS 34.123-1 [1] including TDD channels;
- the scheme can apply to all radio bearer configurations in 3GPP TS 34.108 [3], clause 6.10;
- a clear multiplex mapping between a PhyCH id to TrCH ids and a TrCH id to LogCH ids, RB ids is needed.

Requirements on identification of RB in a test case:

- unique identification of the individual SRBs;
- unique identification of the individual sub-flows of a RABs in CS and PS domain.;
- an assigned RB id can represent UL and DL.

Requirements on identification of Logical Channel in a test case:

- it is an instance number of the individual logical channel; and
- uniquely identifies among all the Logical Channel mapped onto a Transport Channel.

Requirements on identification of Transport Channel in a test case:

- unique identification of the individual Transport Channel;
- assign different identities for UL and DL of a same Transport Channel type;
- the order of the Transport Channel id assigned in a cell shall follow the TFCS definitions in the 3GPP TS 34.108 [3], clause 6.10.

EXAMPLE: Transport Channel ids are assigned in the ascending order for (RABsubflow#1, RABsubflow#2, RABsubflow#3, 64kRAB, DCCH).

Requirements on identification of Physical Channel in a test case:

- unique identification of the individual Physical Channel;
- assign different identities for UL and DL of a same Physical Channel type;
- each S-CCPCH or PRACH has a unique identifier;
- for 2 Mbps PS data radio link (in case of demux of a Transport Channel), three DPCH are needed for high-speed data. A single Physical Channel id is assigned to a bundle of the three physical channels.

Table 8.2 shows which type of channel identity is chosen for the individual primitives. In table 8.2, the ASN.1 primitives use a CHOICE type for channel identity, while TTCN primitives use an explicit channel identity.

Table 8.2: Primitives and the associated channel identity type

Primitive name	Channel Identity	Releases
ASN.1 Primitives		
CPHY_AICH_AckModeSet_CNF	Physical Channel Identity	
CPHY_AICH_AckModeSet_REQ	Physical Channel Identity	
CPHY_Cell_Config_CNF	No Routing Info Field Present	
CPHY_Cell_Config_REQ	No Routing Info Field Present	
CPHY_Cell_Ini_CNF	No Routing Info Field Present	
CPHY_Cell_Ini_REQ	No Routing Info Field Present	
CPHY_Cell_TxPower_Modify_CNF	No Routing Info Field Present	
CPHY_Cell_TxPower_Modify_REQ	No Routing Info Field Present	
CPHY_Cell_Release_CNF	No Routing Info Field Present	
CPHY_Cell_Release_REQ	No Routing Info Field Present	
CPHY_DetectTFCI_CNF	Physical Channel Identity	
CPHY_DetectTFCI_IND	Physical Channel Identity	
CPHY_DetectTFCI_REQ	Physical Channel Identity	
CPHY_Frame_Number_CNF	Physical Channel Identity	
CPHY_Frame_Number_REQ	Physical Channel Identity	
CPHY_SFN_CNF	Physical Channel Identity	Rel-6 or later
CPHY_SFN_REQ	Physical Channel Identity	Rel-6 or later
CPHY_MBMS_MICH_q_CNF	Physical Channel Identity	Rel-6 or later
CPHY_MBMS_MICH_q_REQ	Physical Channel Identity	Rel-6 or later
CPHY_MBMS_NI_CNF	Physical Channel Identity	Rel-6 or later
CPHY_MBMS_NI_REQ	Physical Channel Identity	Rel-6 or later
CPHY_Out_of_Sync_IND	Physical Channel Identity	
CPHY_PRACH_Measurement_CNF	Physical Channel Identity	
CPHY_PRACH_Measurement_REQ	Physical Channel Identity	
CPHY_PRACH_Measurement_Report_IND	Physical Channel Identity	
CPHY_RL_Modify_CNF	Physical Channel Identity	
CPHY_RL_Modify_REQ	Physical Channel Identity	
CPHY_RL_Release_CNF	Physical Channel Identity	
CPHY_RL_Release_REQ	Physical Channel Identity	
CPHY_RL_Setup_CNF	Physical Channel Identity	
CPHY_RL_Setup_REQ	Physical Channel Identity	
CPHY_Sync_IND	Physical Channel Identity	
CPHY_TrCH_Config_CNF	Physical Channel Identity	
CPHY_TrCH_Config_REQ	Physical Channel Identity	
CPHY_TrCH_Release_CNF	Physical Channel Identity	
CPHY_TrCH_Release_REQ	Physical Channel Identity	
CPHY_HS_DPCCH_AckNack_CNF	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_AckNack_REQ	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_AckNack_IND	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_CQI_CNF	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_CQI_REQ	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_CQI_IND	No Routing Info Field Present	Rel-5 or later
CPHY_HS_DPCCH_CQI_DC_CNF	No Routing Info Field Present	Rel-8 or later
CPHY_HS_DPCCH_CQI_DC_REQ	No Routing Info Field Present	Rel-8 or later
CPHY_HS_DPCCH_CQI_DC_IND	No Routing Info Field Present	Rel-8 or later
CPHY_HS_DSCH_CRC_Mode_CNF	Physical Channel Identity	Rel-5 or later
CPHY_HS_DSCH_CRC_Mode_REQ	Physical Channel Identity	Rel-5 or later
CPHY_HS_SICH_AckNack_CNF	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_HS_SICH_AckNack_REQ	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_HS_SICH_AckNack_IND	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_HS_SICH_CQI_CNF	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_HS_SICH_CQI_REQ	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_HS_SICH_CQI_IND	No Routing Info Field Present	Rel-5 or later (LCR TDD)
CPHY_UL_PowerModify_CNF	Physical Channel Identity	
CPHY_UL_PowerModify_REQ	Physical Channel Identity	
CMAC_BMC_Scheduling_CNF	Physical Channel Identity	

Primitive name	Channel Identity	Releases
CMAC_BMC_Scheduling_REQ	Physical Channel Identity	
CMAC_Ciphering_Activate_CNF	Physical Channel Identity of DPCH	
CMAC_Ciphering_Activate_REQ	Physical Channel Identity of DPCH	
CMAC_Config_CNF	Physical Channel Identity	
CMAC_Config_REQ	Physical Channel Identity	
CMAC_FACH_MeasOccas_CNF	Physical Channel Identity	
CMAC_FACH_MeasOccas_REQ	Physical Channel Identity	
CMAC_PAGING_Config_CNF	Physical Channel Identity	
CMAC_PAGING_Config_REQ	Physical Channel Identity	
CMAC_Restriction_CNF	Physical Channel Identity	
CMAC_Restriction_REQ	Physical Channel Identity	
CMAC_SecurityMode_Config_CNF	No Routing Info Field Present (applies to all RB Ids)	
CMAC_SecurityMode_Config_REQ	No Routing Info Field Present (applies to all RB Ids)	
CMAC_SequenceNumber_CNF	Physical Channel Identity	
CMAC_SequenceNumber_REQ	Physical Channel Identity	
CMAC_SYSINFO_Config_CNF	RB Identity	
CMAC_SYSINFO_Config_REQ	RB Identity	
CMAC_MAChs_MACehs _Reset_CNF	No Routing Info Field Present	Rel-5 or later
CMAC_MAChs_MACehs _Reset_REQ	No Routing Info Field Present	Rel-5 or later
CMAC_MAChs_MACehs _HARQprocAsign_CNF	No Routing Info Field Present	Rel-5 or later
CMAC_MAChs_MACehs _HARQprocAsign_REQ	No Routing Info Field Present	Rel-5 or later
CMAC_MAChs_MACehs _TFRCconfigure_CNF	No Routing Info Field Present	Rel-5 or later
CMAC_MAChs_MACehs _TFRCconfigure_REQ	No Routing Info Field Present	Rel-5 or later
CMAC_MACehs_HS_SCCH_OrdersCNF	No Routing Info Field Present	Rel-7 or later
CMAC_MACehs_HS_SCCH_OrdersREQ	No Routing Info Field Present	Rel-7 or later
CMAC_MACe_Config_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_Config_REQ	Node B Identity	Rel-6 or later
CMAC_MACe_NodeB_CellMapping_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_NodeB_CellMapping_REQ	Node B Identity	Rel-6 or later
CMAC_MACi_NodeB_CellMapping_CNF	Node B Identity	Rel-8 or later
CMAC_MACi_NodeB_CellMapping_REQ	Node B Identity	Rel-8 or later
CMAC_MACes_Config_CNF	No Routing Info Field Present	Rel-6 or later
CMAC_MACes_Config_REQ	No Routing Info Field Present	Rel-6 or later
CMAC_MACis_Config_CNF	No Routing Info Field Present	Rel-8 or later
CMAC_MACis_Config_REQ	No Routing Info Field Present	Rel-8 or later
CMAC_MACi_Config_CNF	No Routing Info Field Present	Rel-8 or later
CMAC_MACi_Config_REQ	No Routing Info Field Present	Rel-8 or later
CMAC_MACe_AG_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_AG_REQ	Node B Identity	Rel-6 or later
CMAC_MACi_AG_CNF	Node B Identity	Rel-8 or later
CMAC_MACi_AG_REQ	Node B Identity	Rel-8 or later
CMAC_MACe_AckNack_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_AckNack_REQ	Node B Identity	Rel-6 or later
CMAC_MACi_AckNack_CNF	Node B Identity	Rel-8 or later
CMAC_MACi_AckNack_REQ	Node B Identity	Rel-8 or later
CMAC_MACe_RG_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_RG_REQ	Node B Identity	Rel-6 or later
CMAC_MACi_RG_CNF	Node B Identity	Rel-8 or later
CMAC_MACi_RG_REQ	Node B Identity	Rel-8 or later
CMAC_MACe_E_TFC_Restriction_CNF	Node B Identity	Rel-6 or later
CMAC_MACe_E_TFC_Restriction_REQ	Node B Identity	Rel-6 or later
CMAC_MACi_E_TFC_Restriction_CNF	Node B Identity	Rel-8 or later
CMAC_MACi_E_TFC_Restriction_REQ	Node B Identity	Rel-8 or later
CMAC_MACes_SI_IND	No Routing Info Field Present	Rel-6 or later
CMAC_MACes_SI_Config_CNF	No Routing Info Field Present	Rel-6 or later
CMAC_MACis_SI_IND	No Routing Info Field Present	Rel-8 or later
CMAC_MACis_SI_Config_CNF	No Routing Info Field Present	Rel-8 or later
CMAC_MBMS_ConfigInfo_CNF	Physical Channel Identity	Rel-6 or later
CMAC_MBMS_ConfigInfo_REQ	Physical Channel Identity	Rel-6 or later
CRLC_Bind_TestData_TTI_CNF	No Routing Info Field Present	

Primitive name	Channel Identity	Releases
CRLC_Bind_TestData_TTI_REQ	No Routing Info Field Present	
CRLC_Ciphering_Activate_CNF	No Routing Info Field Present (applies to all RB Ids)	
CRLC_Ciphering_Activate_REQ	No Routing Info Field Present (applies to all RB Ids)	
CRLC_MAC_I_Mode_CNF	RB Identity	
CRLC_MAC_I_Mode_REQ	RB Identity	
CRLC_Config_CNF	RB Identity	
CRLC_Config_REQ	RB Identity	
CRLC_Integrity_Activate_CNF	No Routing Info Field Present (applies to all RB Ids)	
CRLC_Integrity_Activate_REQ	No Routing Info Field Present (applies to all RB Ids)	
CRLC_Integrity_Failure_IND	RB Identity	
CRLC_NotAckNxtRxSDU_CNF	RB Identity	
CRLC_NotAckNxtRxSDU_REQ	RB Identity	
CRLC_ProhibitRLC_Ack_CNF	RB Identity	
CRLC_ProhibitRLC_Ack_REQ	RB Identity	
CRLC_Resume_CNF	RB Identity (applies to all suspended RB Ids)	
CRLC_Resume_REQ	RB Identity (applies to all suspended RB Ids)	
CRLC_RRC_MessageSN_CNF	RB Identity	
CRLC_RRC_MessageSN_REQ	RB Identity	
CRLC_SecurityMode_Config_CNF	No Routing Info Field Present (applies to all RB Ids)	
CRLC_SecurityMode_Config_REQ	No Routing Info Field Present (applies to all RB Ids)	
CRLC_SendContinuousData_CNF	No Routing Info Field Present	
CRLC_SendContinuousData_REQ	No Routing Info Field Present	
CRLC_SendTestDataInOneMAC_Hs_PDU_CNF	RB Identity	Rel-5 or later
CRLC_SendTestDataInOneMAC_Hs_PDU_REQ	RB Identity	Rel-5 or later
CRLC_SequenceNumber_CNF	RB Identity	
CRLC_SequenceNumber_REQ	RB Identity	
CRLC_SetRRC_MessageSN_CNF	RB Identity	
CRLC_SetRRC_MessageSN_REQ	RB Identity	
CRLC_Set_Count_I_CNF	RB Identity	
CRLC_Set_Count_I_REQ	RB Identity	
CRLC_Status_Ind	RB Identity	
CRLC_Suspend_CNF	RB Identity	
CRLC_Suspend_REQ	RB Identity	
CRLC_MTCH_Scheduling_REQ	RB Identity	Rel-6 or later
CRLC_MTCH_Scheduling_CNF	RB Identity	Rel-6 or later
CBMC_Config_CNF	RB Identity	
CBMC_Config_REQ	RB Identity	
RLC_AM_DATA_CNF	RB Identity	
RLC_AM_DATA_IND	RB Identity	
RLC_AM_DATA_REQ	RB Identity	
RLC_TR_DATA_IND	RB Identity	
RLC_TR_DATA_REQ	RB Identity	
RLC_UM_ACCESSinfo_REQ	RB Identity	Rel-6 or later
RLC_UM_CriticalMCCHMsg_REQ	RB Identity	Rel-6 or later
RLC_UM_DATA_IND	RB Identity	
RLC_UM_DATA_REQ	RB Identity	
RLC_UM_MSCH_Msg_REQ	RB Identity	Rel-6 or later
RLC_TR_MACesDATA_IND	RB Identity	Rel-6 or later
RLC_TR_MACisDATA_IND	RB Identity	Rel-8 or later
TTCN Primitives		
RLC_AM_TestDataInd	RB Identity	
RLC_AM_TestDataReq	RB Identity	
RLC_TR_TestDataInd	RB Identity	
RLC_TR_TestDataReq	RB Identity	
RLC_UM_TestDataInd	RB Identity	
RLC_UM_TestDataReq	RB Identity	
BMC_DataReq	RB Identity	

8.2.1 Physical channels

Table 8.2.1: Physical channel identities

Type	Min. No.	Current Config.	Identities (value assigned)	Direction	Comment
P-CCPCH	1	1	tsc_P_CCPCH (4)	downlink	Primary Common Control Physical Channel. For Broadcasting System Information messages, using the Primary Scrambling Code for the Cell.
P-CPICH	1	1	tsc_P_CPICH (0)	downlink	Primary Common Pilot Channel using the Primary Scrambling Code for the Cell.
S-CPICH	1	1	tsc_S_CPICH (3)	downlink	Secondary Common Pilot Channel, used as the phase reference for some RF tests.
P-SCH	1	1	tsc_P_SCH (1)	downlink	Primary Synchronization Channel
S-SCH	1	1	tsc_S_SCH (2)	downlink	Secondary Synchronization Channel
S-CCPCH	3	1	tsc_S_CCPCH1 (5) tsc_S_CCPCH2 (10) tsc_S_CCPCH3 (13)	downlink	Secondary Common Control Physical Channel.
PICH	1	1	tsc_PICH1 (6) tsc_PICH2 (11)	downlink	To identify whether the UE should access the PCCH for Paging Messages.
AICH	1	1	tsc_AICH1 (7) tsc_AICH2 (12)	downlink	General Acquisition Indicator Channel, can be used for: - Acquisition Indicator Channel, for PRACH - Access Preamble Acquisition Indicator Channel (AP-ICH), for PCPCH - Collision-Detection/Channel-Assignment Indicator Channel (CD/CA-ICH), for PCPCH
DPCH	3	1	tsc_DL_DPCH1 (26) tsc_DL_DPCH2 (27)	downlink	Downlink Physical Data Channel. Layer 1 signalling is transmitted only on the first DPCH. This number is for the First Cell. Additional Cells may define a lower number which should be at least 1.
DPDCH	1	1	tsc_UL_DPCH1 (20) tsc_UL_DPCH2 (21)	uplink	Uplink Dedicated Physical Channel. A single DPCCH associated with all the DPDCHs used for Layer 1 signalling.
PRACH	2	1	tsc_PRACH1 (8) tsc_PRACH2 (9)	uplink	Physical Random Access Channel.
PCPCH	1	FFS		uplink	Physical Common Packet Channel.
CSICH	1	FFS		downlink	CPCH Status Indicator Channel
HS-PDSCH	1		tsc_HSPDSCH(18)	downlink	Rel-5 or later High speed physical downlink shared channel
E-AGCH	1		tsc_E_AGCH (14)	downlink	Rel-6 or later E-DCH Absolute Grant Channel
E-HICH	1		tsc_E_HICH (15)	downlink	Rel-6 or later E-DCH HARQ Acknowledgement Indicator Channel
E-RGCH	1		tsc_E_RGCH (16)	downlink	Rel-6 or later E-DCH Relative Grant Channel
E-DPDCH	1		tsc_E_DPCH (22)	uplink	Rel-6 or later Enhanced Dedicated Physical Channel
F-DPCH	1		tsc_F_DPCH (28)	downlink	Rel-6 or later Fractional Dedicated Physical Channel
MICH	1		tsc_MICH (29)	downlink	Rel-6 or later MBMS notification Indicator Channel

The Physical Channel values 20 to 25 are assigned to uplink DPCHs and the values 26 to 31 are assigned to downlink DPCHs/ FDPCHs.

8.2.2 Transport channels

Table 8.2.2: Transport channel identities

Type	Min. No.	Current Config.	Identities (value assigned)	Direction	Comments
BCH	1	1	tsc_BCH1 (11)	downlink	
FACH	1	1	tsc_FACH1 (13) tsc_FACH2 (14) tsc_FACH3 (16) tsc_FACH4 (17) tsc_FACH5 (23)	downlink	
PCH	1	1	tsc_PCH1 (12) tsc_PCH2 (30)	downlink	
DCH	n	4	tsc_UL_DCH1 (1) tsc_UL_DCH2 (2) tsc_UL_DCH3 (3) tsc_UL_DCH4 (4) tsc_UL_DCH5 (5) tsc_UL_DCH6 (21)	uplink	tsc_UL_DCH1 for RAB1-1 or RAB1, tsc_UL_DCH2 for RAB1-2 or RAB2, tsc_UL_DCH3 for RAB1-3, tsc_UL_DCH4 RAB2, tsc_UL_DCH5 for SRB/RAB3, tsc_UL_DCH6 for SRB.
DCH	n	4	tsc_DL_DCH1 (6) tsc_DL_DCH2 (7) tsc_DL_DCH3 (8) tsc_DL_DCH4 (9) tsc_DL_DCH5 (10) tsc_DL_DCH6 (22)	downlink	tsc_DL_DCH1 for RAB1-1 or RAB1, tsc_DL_DCH2 for RAB1-2 or RAB2, tsc_DL_DCH3 for RAB1-3, tsc_DL_DCH4 for RAB2, tsc_DL_DCH5 for SRB, tsc_DL_DCH6 for SRB.
USCH	1	N/A	tsc_USCH1(20)	uplink	TDD only
DSCH	1	N/A	tsc_DSCH (19)	downlink	
RACH	2	1	tsc_RACH1 (15) tsc_RACH2 (31)	uplink	
CPCH	1	N/A	tsc_CPCH1(32)	uplink	
FAUSCH	N/A	N/A	tsc_FAUSCH1(18)	uplink	Not in Release 99
HSDSCH	1	1	N/A	downlink	Rel-5 or later
E-DCH	1	1	N/A	uplink	Rel-6 or later

8.2.2.1 Support of Default Configurations

In test cases using default configurations according to 3GPP TS 25.331 [21], clause 13.7, the configuration of the system simulator follows the same parameter values as defined for the UE side with the following exceptions:

- UL/DL transport channel ids;
- E-DCH MAC-d flow id / HS-DSCH MAC-d flow id.

As the transport channel identities and the MAC-d flow identities have the local significance, the TTCN implementations follow the test model.

8.2.3 Logical Channels

Table 8.2.3 shows the logical channels identities.

Table 8.2.3: Logical channel identities

Type	Min. No.	Current Config.	Identities (value assigned)	Direction	Comments
BCCH_BCH	1	1	tsc_BCCH1 (1)	downlink	
BCCH_FACH	1	1	tsc_BCCH6 (6)	downlink	
CCCH	1	1	tsc_DL_CCCH5 (5)	downlink	
CCCH	1	2	tsc_UL_CCCH5 (5) tsc_UL_CCCH_EFUL(15) tsc_UL_CCCH6 (6)	uplink	
DCCH	4	4	tsc_DL_DCCH1 (1) tsc_DL_DCCH2 (2) tsc_DL_DCCH3 (3) tsc_DL_DCCH4 (4) tsc_DL_DCCH5 (5)	downlink	tsc_DL_DCCH1 for SRB1, tsc_DL_DCCH2 for SRB2, tsc_DL_DCCH3 for SRB3, tsc_DL_DCCH4 for SRB4, tsc_DL_DCCH5 for SRB5
DCCH	4	4	tsc_UL_DCCH1 (1) tsc_UL_DCCH2 (2) tsc_UL_DCCH3 (3) tsc_UL_DCCH4 (4)	uplink	tsc_UL_DCCH1 for SRB1, tsc_UL_DCCH2 for SRB2, tsc_UL_DCCH3 for SRB3, tsc_UL_DCCH4 for SRB4
PCCH	1	2	tsc_PCCH1 (1) tsc_PCCH2 (2) tsc_PCCH_FACH (11)	downlink	
DTCH	n	4	tsc_UL_DTCH1 (7) tsc_UL_DTCH2 (8) tsc_UL_DTCH3 (9) tsc_UL_DTCH4 (10) tsc_UL_DTCH5 (13)	uplink	tsc_UL_DTCH1 for RAB1-1 or RAB 1, tsc_UL_DTCH2 for RAB1-2 or RAB 2, tsc_UL_DTCH3 for RAB1-3' tsc_UL_DTCH4 for RAB2, tsc_UL_DTCH5 for RAB3
DTCH	n	4	tsc_DL_DTCH1 (7) tsc_DL_DTCH2 (8) tsc_DL_DTCH3 (9) tsc_DL_DTCH4 (10)	downlink	tsc_DL_DTCH1for RAB1-1 or RAB 1, tsc_DL_DTCH2 for RAB1-2 or RAB 2, tsc_DL_DTCH3 for RAB-3, tsc_DL_DTCH4 for RAB2
CTCH	1	2	tsc_CTCH1 (11) tsc_CTCH2 (12)	downlink	
MTCH	1	4	tsc_MTCH1(1) tsc_MTCH2(2) tsc_MTCH3(3) tsc_MTCH4(4)	downlink	MBMS_LogicalChIdentity
MCCH	1	1	tsc_MCCH1(1)	downlink	One and only one for each cell
MSCH	0	1	tsc_MSCH1(1)	downlink	

8.2.4 Radio bearers

Table 8.2.4.1: Radio Bearers

Identities (value assigned)	Direction	Type	RLC mode	Service domain	Comments
tsc_RB_BCCH (-1)	downlink		TM	NA	BCCH-BCH
tsc_RB_PCCH (-2)	downlink		TM	NA	PCCH PCH
tsc_RB_BCCH_FACH (-3)	downlink		TM	NA	BCCH FACH
tsc_RB_2ndPCCH (-4)	downlink		TM	NA	Second PCCH PCH SCPCCH
tsc_RB_2ndCCCH (-5)	uplink		TM	NA	Second CCCH RACH PRACH
tsc_RB_MTCH_RLC_TR (-6)	downlink		TM	PS	Rel-6 or later For TM MTCH RLC tests
tsc_RB_UM_7_RLC (-10)	downlink	RAB	TM	CS	For UM RLC tests using 7 bit LIs
tsc_RB_UM_7_RLC (-10)	uplink	RAB	TM	CS	For UM RLC tests using 7 bit LIs
tsc_RB_UM_15_RLC (-11)	downlink	RAB	TM	CS	For UM RLC tests using 15 bit LIs
tsc_RB_UM_15_RLC (-11)	uplink	RAB	TM	CS	For UM RLC tests using 15 bit LIs
tsc_RB_AM_7_RLC (-12)	downlink	RAB	TM	CS	For AM RLC tests using 15 bit LIs

Identities (value assigned)	Direction	Type	RLC mode	Service domain	Comments
tsc_RB_AM_7_RLC (-12)	uplink	RAB	TM	CS	For AM RLC tests using 7 bit LIs
tsc_RB_AM_15_RLC (-13)	downlink	RAB	TM	CS	For AM RLC tests using 15 bit LIs
tsc_RB_AM_15_RLC (-13)	uplink	RAB	TM	CS	For AM RLC tests using 15 bit LIs
tsc_RB_DCCH_FACH_MAC (-14)	downlink	SRB3	TM	CS	For MAC tests using DCCH mapped to FACH
tsc_RB_DCCH_FACH_MAC (-14)	uplink	SRB3	TM	CS	For MAC tests using DCCH mapped to FACH
tsc_RB_DCCH_DCH_MAC (-15)	downlink	SRB3	TM	CS	For MAC tests using DCCH mapped to DCH
tsc_RB_DCCH_FACH_MAC (-15)	uplink	SRB3	TM	CS	For MAC tests using DCCH mapped to DCH
tsc_RB3_DCCH_RRC_(-16)	uplink	SRB3	AM	CS or PS	For RRC test cases to route UL NAS messages
tsc_RB_CCCH_FACH_MAC (-18)	downlink	SRB0	TM	CS or PS	For MAC test using downlink SRB0 on TM
tsc_RB_BCCH_FACH_RAB (-19)	downlink		TM	NA	BCCH FACH
tsc_RB_DTCH_E_DCH_MAC(-20)	uplink	RAB	TM	PS	For MAC_es_e tests
tsc_RB_DTCH_E_DCH_MAC1(-21)	uplink	RAB	TM	PS	For MAC_es_e tests
tsc_RB_DTCH_E_DCH_MAC2(-22)	uplink	RAB	TM	PS	For MAC_es_e tests
tsc_RB_MAC_HS(-25)	uplink	RAB	TM	PS	For MAC_hs/ehs tests
tsc_RB_MAC_HS(-25)	downlink	RAB	TM	PS	For MAC_hs/ehs tests
tsc_RB_MAC_ehs_26 (-26)	uplink	RAB	TM	PS	For MAC_ehs tests
tsc_RB_MAC_ehs_26 (-26)	downlink	RAB	TM	PS	For MAC_ehs tests
tsc_RB_MAC_ehs_27(-27)	uplink	RAB	TM	PS	For MAC_ehs tests
tsc_RB_MAC_ehs_27(-27)	downlink	RAB	TM	PS	For MAC_ehs tests
tsc_RB0 (0)	uplink	SRB0	TM	CS or PS	The service domain for which the most recent security negotiation took place. CCCH
tsc_RB0_EFUL(-28)	uplink	SRB0	TM	CS or PS	For CCCH on common E-DCH
tsc_RB0 (0)	downlink	SRB0	UM	CS or PS	CCCH
tsc_RB1 (1)	uplink	SRB1	UM	CS or PS	DCCH
tsc_RB1 (1)	downlink	SRB1	UM	CS or PS	DCCH
tsc_RB2 (2)	uplink	SRB2	AM	CS or PS	DCCH
tsc_RB2 (2)	downlink	SRB2	AM	CS or PS	DCCH
tsc_RB3 (3)	uplink	SRB3	AM	CS or PS	DCCH
tsc_RB3 (3)	downlink	SRB3	AM	CS or PS	DCCH
tsc_RB4 (4)	uplink	SRB4	AM	CS or PS	DCCH
tsc_RB4 (4)	downlink	SRB4	AM	CS or PS	DCCH
tsc_RB5 (5)	uplink		TM		DCCH
tsc_RB5 (5)	downlink		TM		DCCH
tsc_RB_MCCH(8)	downlink	SRB	UM	PS	Rei-6 or later
tsc_RB_MCCH_RLC_TR(-8)	downlink	SRB	TM	PS	Rel-6 or later
tsc_RB_MSCH(9)	downlink	SRB	UM	PS	Rel-6 or later
tsc_RB10 (10)	uplink	RAB#1-1	TM	CS	or RAB1
tsc_RB10 (10)	downlink	RAB#1-1	TM	CS	or RAB1
tsc_RB11 (11)	uplink	RAB#1-2	TM	CS	or RAB2
tsc_RB11 (11)	downlink	RAB#1-2	TM	CS	or RAB2
tsc_RB12 (12)	uplink	RAB#1-3	TM	CS	
tsc_RB12 (12)	downlink	RAB#1-3	TM	CS	
tsc_RB13 (13)	uplink	RAB#2	TM	CS	
tsc_RB13 (13)	downlink	RAB#2	TM	CS	
tsc_RB_MTCH1(14)	downlink	RAB	UM	PS	Rel-6 or later, media contents
tsc_RB_MTCH2(15)	downlink	RAB	UM	PS	Rel-6 or later, media contents
tsc_RB_MTCH3(16)	downlink	RAB	UM	PS	Rel-6 or later, media contents
tsc_RB17 (17)	uplink	RAB#2	AM	PS	Rel-5 or later, 2nd AM RAB for HS
tsc_RB17 (17)	downlink	RAB#2	AM	PS	Rel-5 or later, 2nd AM RAB for HS
tsc_RB20 (20)	uplink	RAB#1	AM	PS	
tsc_RB20 (20)	downlink	RAB#1	AM	PS	
tsc_RB21 (21)	uplink	RAB#2	UM	PS	
tsc_RB21 (21)	downlink	RAB#2	UM	PS	
tsc_RB22 (22)	uplink	RAB#2	AM	PS	
tsc_RB22 (22)	downlink	RAB#2	AM	PS	
tsc_RB23 (23)	uplink	RAB#2	AM	PS	2nd AM RAB for PS
tsc_RB23 (23)	downlink	RAB#2	AM	PS	2nd AM RAB for PS

Identities (value assigned)	Direction	Type	RLC mode	Service domain	Comments
tsc_RB24 (24)	uplink	RAB#2	AM	PS	2nd AM RAB for PS
tsc_RB24 (24)	downlink	RAB#2	AM	PS	2nd AM RAB for PS
tsc_RB25 (25)	uplink	RAB#1	AM	PS	Rel-5 or later: DTCH on DPCH associated HS-DSCH Rel-6 or later: DTCH on E-DCH
tsc_RB25 (25)	downlink	RAB#1	AM	PS	Rel-5 or later DTCH on HS-DSCH
tsc_RB26 (26)	uplink	RAB#1	UM	PS	Rel-5 or later
tsc_RB26 (26)	downlink	RAB#1	UM	PS	Rel-5 or later
tsc_RB27 (27)	uplink	RAB#2	UM	PS	Rel-5 or later
tsc_RB27 (27)	downlink	RAB#2	UM	PS	Rel-5 or later
tsc_RB28 (28)	uplink	RAB#3	AM	PS	Rel-5 or later
tsc_RB28 (28)	downlink	RAB#3	AM	PS	Rel-5 or later
tsc_RB29 (29)	downlink	SRB0	AM	PS	RB Id for Radio bearer that carries the 2nd CCCH in the DL
tsc_RB30 (30)	downlink		UM		CTCH FACH
tsc_RB31 (31)	downlink		UM		Second CTCH FACH

The RB values 0 to 5 are used for the signalling bearers. The values 10 to 15 are assigned to the CS RAB sub-flows. The values 15 to 29 are assigned to the PS RAB sub-flows. The value 30 is assigned to the CBSMS/BMC service.

Table 8.2.4.2: RB identities mapping between 34.123-1 & 34.123-3

RAB Combinations	34.123-1	34.123-3
Single CS RAB	RB5	tsc_RB10
	RB6	tsc_RB11
	RB7	tsc_RB12
Single PS RAB	RB5	tsc_RB20
	RB7	tsc_RB20
	RB8	tsc_RB20
CS+PS Multi RABs	RB5	tsc_RB10
	RB6	tsc_RB11, tsc_RB20
	RB7	tsc_RB12
	RB8	tsc_RB20
	RB9	tsc_RB22
CS+CS Multi RABs	RB5	tsc_RB10
	RB6	tsc_RB11
	RB7	tsc_RB12
	RB8	tsc_RB13
PS+PS Multi RABs	RB5	tsc_RB20
	RB6	tsc_RB22
	RB7	tsc_RB20
	RB8	tsc_RB24
Single PS (HSDPA/HSUPA) RAB	RB5	tsc_RB25
PS+PS Multi (HSDPA) RABs	RB5	tsc_RB26
	RB6	tsc_RB27
	RB7	tsc_RB25
	RB8	tsc_RB28
	RB9	tsc_RB17
Single PS (HSUPA) RAB	RB5	tsc_RB25
CS + PS Multi (HSDPA/HSUPA) RABs	RB5	tsc_RB10
	RB6	tsc_RB11, tsc_RB25
	RB7	tsc_RB12
	RB8	tsc_RB25
	RB9	tsc_RB17
PS (HSUPA) + Speech Multi RABs	RB5	tsc_RB10
	RB6	tsc_RB11
	RB7	tsc_RB12
	RB8	tsc_RB25
PS AM + PS AM Multi (HSUPA) RABs	RB5	tsc_RB25
	RB6	tsc_RB17

RAB Combinations	34.123-1	34.123-3
PS UM + PS AM Multi (HSUPA) RABs	RB5	tsc_RB27
	RB6	tsc_RB25
PS UM + PS AM + PS AM Multi (HSUPA) RABs	RB5	tsc_RB27
	RB6	tsc_RB25
	RB7	tsc_RB17

8.2.5 Scrambling and channelization codes

Table 8.2.5.1 shows the primary/secondary scrambling codes and the channelization codes for downlink channels.

Table 8.2.5.1: Primary/secondary scrambling codes and channelization codes for downlink channels

Type	Identities (value assigned)	Primary scrambling code	Secondary scrambling code	Channelization Code
P-CCPCH	tsc_P_CCPCH (4)	(px_PriScrmCode+ 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_P_CCPCH_ChC (256:1)
P-CPICH	tsc_P_CPICH (0)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_P_CPICH_ChC (256:0)
S-CPICH	tsc_S_CPICH (3)	(px_PriScrmCode + 50 × (cell No -1)) mod 512	NA	tsc_S_CPICH_ChC (256:12)
S-CCPCH	tsc_S_CCPCH1 (5)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA (carrying PCH)	tsc_S_CCPCH1_ChC (64:1 or 4 or 6 depending on the channels configuration) tsc_S_CCPCH1_ChC_MBMS (64:1) for MBMS testing
	tsc_S_CCPCH2 (10)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA (carrying PCH)	tsc_S_CCPCH2_ChC (64:1) tsc_S_CCPCH2_ChC_MBMS (256:9) for MBMS testing
	tsc_S_CCPCH3 (13)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA (carrying PCH)	tsc_S_CCPCH3_ChC (64:2) tsc_S_CCPCH3_ChC_MBMS (8:1 or 16:1 or 32:2 depending on the channels configuration) for MBMS testing
PICH	tsc_PICH1 (6)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_PICH1_ChC (256:2)
	tsc_PICH2 (11)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_PICH2_ChC (256:12)
AICH	tsc_AICH1 (7)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_AICH1_ChC (256:3)
	tsc_AICH2 (12)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_AICH2_ChC (256:13)

Type	Identities (value assigned)	Primary scrambling code	Secondary scrambling code	Channelization Code
DPCH	tsc_DL_DPCH1 (26)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	tsc_DL_DPCH1_2ndScrC (1) This value is related to the primary scrambling code of the cell	Depending on the configuration: tsc_DL_DPCH1_ChC_SRB (128:9) tsc_DL_DPCH1_ChC_Speech (128:0) tsc_DL_DPCH1_ChC_Streaming (32:0) tsc_DL_DPCH1_ChC_64k_CS (32:0) tsc_DL_DPCH1_ChC_64k_PS (32:0)
	tsc_DL_DPCH2 (27)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	tsc_DL_DPCH2_2ndScrC (1) This value is related to the primary scrambling code of the cell	Depending on the configuration: tsc_DL_DPCH2_ChC_SRB (256:1) tsc_DL_DPCH2_ChC_Speech (128:1) tsc_DL_DPCH2_ChC_Streaming (32:1) tsc_DL_DPCH2_ChC_64k_CS (32:1) tsc_DL_DPCH2_ChC_64k_PS (32:1)
HS-PDSCH	tsc_HSPDSCH(18)	Same as HS-SCCH	Same as HS-SCCH	Rel-5 or later SF= 16 Number of codes depending on the configuration, at most 15 codes
HS-SCCH	NA	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	-	Rel-5 or later tsc_HS_SCCH_ChC (128:7)
E-AGCH	tsc_E_AGCH (14)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	Rel-6 or later
E-HICH	tsc_E_HICH (15)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	Rel-6 or later
E-RGCH	tsc_E_RGCH (16)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	Rel-6 or later
F-DPCH	tsc_F_DPCH (28)	(px_PriScrmCode + 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	Rel-6 or later
MICH	tsc_MICH (29)	(px_PriScrmCode+ 50 × (cell No -1)) mod 512, (px_PriScrmCode+20+ 50 × (cell No -21)) mod 512 for MBMS testing	NA	tsc_MICH_ChC (256:8)

Table 8.2.5.2 shows the scrambling codes, the signatures and the spreading factors for uplink channels.

Table 8.2.5.2: Scrambling codes, signatures and spreading factor for uplink channels

Type	Identities (value assigned)	Scrambling code	Signature	Spreading factor
DPDCH	tsc_UL_DPCH1 (20)	(px_UL_ScramblingCode + 1000*(cell No -1)) MOD 16777216	NA	If only one DPDCH and depending on the configuration tsc_UL_DPDCH_SF_SRB (64) tsc_UL_DPDCH_SF_Speech (64) tsc_UL_DPDCH_SF_Streaming (16) tsc_UL_DPDCH_SF_64k_CS (16) tsc_UL_DPDCH_SF_64k_PS (16) If more than one DPDCH tsc_UL_DPDCH_SF_4 (4:1)
	tsc_UL_DPCH2 (21)	(px_UL_ScramblingCode + 1 000 × (cell No -1)) MOD 16 777 216	NA	If only one DPDCH and depending on the configuration tsc_UL_DPDCH_SF_SRB (64) tsc_UL_DPDCH_SF_Speech (64) tsc_UL_DPDCH_SF_Streaming (16) tsc_UL_DPDCH_SF_64k_CS (16) tsc_UL_DPDCH_SF_64k_PS (16) If more than one DPDCH tsc_UL_DPDCH_SF_4 (4:1)
PRACH	tsc_PRACH1 (8)	tsc_PRACH1_ScrC (0)	tsc_PRACH1_Signatures ('0000000011111111'B)	tsc_PRACH1_SF (64)
	tsc_PRACH2 (9)	tsc_PRACH2_ScrC (1)	tsc_PRACH2_Signatures ('0000000011111111'B)	tsc_PRACH2_SF (64)
HS-DPCCH	NA	Same as DPDCH	NA	Rel-5 or later Depending on the number of DPDCHs: If only one DPDCH: $C_{256,64}$; If 2 or 4 or 6 DPDCHs: $C_{256,1}$; If 3 or 5 DPDCHs: $C_{256,32}$.
E-DPCH	tsc_E_DPCH (22)	Same as DPDCH	NA	Rel-6 or later

8.2.6 MAC-d

MAC-d and the served RLC are cell-independent and are configured by using the cell-id = -1. During reconfigurations, cell changes and state transitions, the relevant counters in the RLC and MAC-d are maintained.

For the active set updating, the DL DCH with the same channel Id in the different cells are implicitly connected to form the DL multiple paths.

8.2.6.1 MAC-d configuration examples

The following example shows how the MAC and RLC ASP are used to configure different configurations.

The 1st parameter in ASP represents the cell identity: p_CellId corresponds to the current cell identity, tsc_CellDedicated corresponds to the cell independent (-1). The 2nd parameter represents the channel Id, this parameter is not needed in the CRLC ASP).

1. Cell_DCH_StandAloneSRB: configuration of DL/UL-DPCH1

```
CPHY!CPHY_RL_Setup_REQ      ( p_CellId, tsc_DL_DPCH1)              -- Cell concerned
CPHY?CPHY_RL_Setup_CNF      ( p_CellId, tsc_DL_DPCH1)              -- Cell concerned
CPHY!CPHY_TrCH_Config_REQ   ( p_CellId, tsc_DL_DPCH1)              -- Cell concerned
CPHY?CPHY_TrCH_Config_CNF   ( p_CellId, tsc_DL_DPCH1 )             -- Cell concerned
CMAC ! CMAC_Config_REQ      ( tsc_CellDedicated,  tsc_DL_DPCH1) -- Cell independent (-1)
CMAC ? CMAC_Config_CNF      ( tsc_CellDedicated, tsc_DL_DPCH1)      -- Cell independent (-1)
CPHY!CPHY_RL_Setup_REQ      ( p_CellId, tsc_UL_DPCH1)              -- Cell concerned
CPHY?CPHY_RL_Setup_CNF      ( p_CellId, tsc_UL_DPCH1)              -- Cell concerned
CPHY!CPHY_TrCH_Config_REQ   ( p_CellId, tsc_UL_DPCH1 )         -- Cell concerned
CPHY?CPHY_TrCH_Config_CNF   ( p_CellId, tsc_UL_DPCH1 )         -- Cell concerned
CMAC ! CMAC_Config_REQ      ( tsc_CellDedicated,  tsc_UL_DPCH1)    -- Cell independent (-1)
CMAC ? CMAC_Config_CNF      ( tsc_CellDedicated, tsc_UL_DPCH1 )    -- Cell independent (-1)
CRLC ! CRLC_Config_REQ      ( tsc_CellDedicated )              -- Cell independent (-1)
CRLC ? CRLC_Config_CNF      ( tsc_CellDedicated )              -- Cell independent (-1)
```

2. Cell_FACH: configuration of S-CCPCH1

```
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_S_CCPCH1)       -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_S_CCPCH1)       -- Cell concerned t
CPHY!CPHY_TrCH_Config_REQ       ( p_CellId, tsc_S_CCPCH1)           -- Cell concerned
CPHY ? CPHY_TrCH_Config_CNF     ( p_CellId, tsc_S_CCPCH1)           -- Cell concerned
CMAC ! CMAC_Config_REQ          ( p_CellId,  tsc_S_CCPCH1)  -- Cell concerned
CMAC ? CMAC_Config_CNF          ( p_CellId,  tsc_S_CCPCH1 )     -- Cell concerned
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_PICH1           -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_PICH1)          -- Cell concerned
CRLC ! CRLC_Config_REQ          ( tsc_CellDedicated )           -- Cell independent (-1)
CRLC ? CRLC_Config_CNF          ( tsc_CellDedicated )           -- Cell independent (-1)
```

3. Cell_FACH: configuration of P-CCPCH

```
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_P_CPICH )       -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_P_CPICH )       -- Cell concerned
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_P_SCH)      -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_P_SCH )         -- Cell concerned
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_P_SCH)      -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_S_SCH )         -- Cell concerned
CPHY!CPHY_RL_Setup_REQ          ( p_CellId, tsc_P_CCPCH)        -- Cell concerned
CPHY?CPHY_RL_Setup_CNF          ( p_CellId, tsc_P_CCPCH )       -- Cell concerned
CPHY!CPHY_TrCH_Config_REQ       ( p_CellId, tsc_P_CCPCH )       -- Cell concerned
CPHY?CPHY_TrCH_Config_CNF       ( p_CellId, tsc_P_CCPCH )           -- Cell concerned
CMAC!CMAC_Config_REQ            ( p_CellId, tsc_P_CCPCH)            -- Cell concerned
CMAC?CMAC_Config_CNF            ( p_CellId, tsc_P_CCPCH )           -- Cell concerned
CRLC! CRLC_Config_REQ           ( p_CellId)                         -- Cell concerned
CRLC? CRLC_Config_CNF           ( p_CellId)                         -- Cell concerned
```

8.2.7 Configuration of compressed mode

8.2.7.1 UE Side

Two IE are available for the configuration of the compressed mode for the UE.

a) DPCH_CompressedModeInfo.

b) DPCH_CompressedModeStatusInfo.

Compressed mode initiation at UE side can be divided into 2 steps:

a) Downloading compressed mode parameters.

b) Activating the compressed mode.

Both of them can be done in one shot.

8.2.7.2 SS Side

Compressed mode configuration at SS side shall be maintained the same status as that on the UE side. So there are 3 different types of compressed mode configuration states both on UE and SS side.

- Configuration of compressed mode parameters (Use of DPCH_CompressedModeInfo) without the activation.

- Configuration of compressed mode parameters and simultaneous activation (use of DPCH_CompressedModeInfo).

- Only activation (use of DPCH_CompressedModeStatusInfo).

If compressed mode parameters are to be downloaded to the UE without actually activation, it shall be configured on the SS side by any one of the following two procedures.

- If DPCH channel on which compressed mode is to be downloaded is not already configured, primitive "CPHY_RL_Setup_REQ", with "CphyRlSetupReq. PhysicalChannelInfo" which is of choice, chosen to dPCHInfo shall be called. The procedure is used to pre-configure all compressed patterns necessary for test, but deactivate the all patterns configured at the beginning of the test. This procedure has not been implemented in the TTCN.

- If DPCH channel on which compressed mode is to be downloaded is already configured, the primitive "CPHY_RL_Modify_REQ" with "CphyRlModifyReq. PhysicalChannelInfo" which is of choice, chosen to dPCHInfo shall be called. This procedure in generally used in the TTCN.

If compressed mode parameters are to be configured and simultaneously activated, the same procedure as for the configuration of compressed mode without activation shall be used.

Activation of the compressed mode, whose parameters are already configured shall be achieved by the primitive "CPHY_RL_Modify_REQ" with "CphyRlModifyReq. PhysicalChannelInfo" which is of choice, chosen to dpch_CompressedModeStatusInfo.

8.2.8 Use of U-RNTI and C-RNTI

The uRNTI and cRNTI are optional when configuring the MAC (CMAC_Config_REQ). Table 8.2.8.1 gives indication on when uRNTI and cRNTI are needed.

Table 8.2.8.1: cRNTI and uRNTI in CMAC-Config_REQ

	P-CCPCH	S-CCPCH with mapped DL-DCCH/DTCH (UE in cell_FACH)	S-CCPCH without mapped DL-DCCH/DTCH (UE in cell_DCH)	PRACH with mapped DL-DCCH/DTCH (UE in cell_FACH)	PRACH without mapped DL-DCCH/DTCH (UE in cell_DCH)	DPCH
uRNTI	-	Included	-	Omit	-	-
cRNTI	-	Included	-	Included	-	-
CMAC-Config_REQ	OMIT both	Download cRNTI and uRNTI	OMIT both	Download cRNTI	OMIT both	OMIT both

In the case of DL-DCCH/DTCH mapped on S-CCPCH, cRNTI and uRNTI are downloaded to the MAC layer. As default, SS MAC shall use cRNTI as UE id. At the CMAC configuration of the beginning of test cases, the RLC payload size is configured, as default on cRNTI for the MAC header calculation. If uRNTI is to be used the SS RLC payload size shall be reconfigured as cRNTI and uRNTI do not have the same length (16 bits and 32 bits respectively).

CELL UPDATE CONFIRM or URA UPDATE CONFIRM shall be sent on DCCH at the test for the ciphering reason except the periodic update without carrying the UE identity information. In this case the CELL UPDATE CONFIRM or URA UPDATE CONFIRM is sent on CCCH at the test.

Table 8.2.8.2: Relationship between cell update cause, UE state and RLC size reconfiguration

Cell update cause	UE State (before cell update)	CELL UPDATE CONFIRM	CRLC_Reconf RLC_Size Needed	Valid UE ID
Cell reselection	CELL_PCH / CELL_FACH	DCCH	Y	U_RNTI
Periodical cell update	CELL_PCH	DCCH or CCCH	Y (for DCCH)	U_RNTI
Periodical cell update	CELL_FACH	DCCH or CCCH	N	C_RNTI
Uplink data transmission	CELL_PCH / URA_PCH	DCCH	Y	U_RNTI
UTRAN paging response	CELL_PCH / URA_PCH	DCCH	Y	U_RNTI
Re-entered service area	CELL_PCH / URA_PCH	DCCH	Y	U_RNTI
Re-entered service area	CELL_FACH	DCCH	N	C_RNTI
Radio Link failure	CELL_DCH	DCCH	Y	U_RNTI
RLC_unrecoverable error	CELL_DCH / CELL_FACH	DCCH	Y N (selected the same cell in CELL_FACH)	U_RNTI C_RNTI

8.3 Channels configurations

8.3.1 Configuration of Cell_FACH

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH, CELL_PCH and URA_PCH. They need a minimum radio configuration for testing.

Table 8.3.1.1: Uplink configuration of Cell_FACH

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	AM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.1.2: Downlink configuration of Cell_FACH

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH1 (5)							

8.3.1a Configuration of Cell_FACH_NoDedicated

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states for a non serving cell without DCCH/DTCH.

Table 8.3.1a.1: Uplink configuration of Cell_FACH_NoDedicated

RB Identity	tsc_RB0 (0)
LogCh Type	CCCH
LogCh Identity	tsc_UL_CCCH5 (5)
RLC mode	TM
TrCH Type	RACH
TrCH identity	tsc_RACH1 (15)
PhyCh Type	PRACH
PhyCH identity	tsc_PRACH1 (8)

Table 8.3.1a.2: Downlink configuration of Cell_FACH_NoDedicated

RB Identity	tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	CCCH	BCCH	PCCH
LogCh Identity	tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	UM	TM	TM
MAC priority	1	6	1
TrCH Type	FACH		PCH
TrCH identity	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH		
PhyCH identity	tsc_S_CCPCH1 (5)		

8.3.2 Configuration of Cell_DCH_StandAloneSRB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1. 3. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to the RRC and NAS signalling tests in the DCH state without RAB.

Table 8.3.2.1: Uplink configuration of Cell_DCH_StandAloneSRB

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB0 (0)	
LogCh Type	DCCH	DCCH	DCCH	DCCH	CCCH	
LogCh Identity	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)	tsc_UL_CCCH5 (5)	
RLC mode	UM	AM	AM	AM	TM	AM
TrCH Type	DCH				RACH	
TrCH identity	tsc_UL_DCH5 (5)				tsc_RACH1 (15)	
PhyCh Type	DPDCH				PRACH	
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)	

Table 8.3.2.2: Downlink configuration of Cell_DCH_StandAloneSRB

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB0 (0)	tsc_RB_PCCH (-2)	
LogCh Type	DCCH	DCCH	DCCH	DCCH	CCCH	PCCH	
LogCh Identity	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_DL_CCCH5 (5)	tsc_PCCH1 (1)	
RLC mode	UM	AM	AM	AM	UM	TM	AM
MAC priority	1	2	3	4	1	1	1
TrCH Type	DCH				FACH	PCH	FACH
TrCH identity	tsc_DL_DCH5 (10)				tsc_FACH1 (13)	tsc_PCH1 (12)	tsc_FACH2 (14)
PhyCh Type	DPCH				Secondary CCPCH		
PhyCH identity	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)		

8.3.3 Configuration of Cell_DCH_Speech

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.4 and 6.10.2.4.1.5. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RRC and NAS signalling tests in the DCH state where a CS voice service, such as narrowband speech, emergency speech call or TS 61 for speech, is established.

Table 8.3.3.1: Uplink configuration of Cell_DCH_Speech

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	TM	TM	TM		
TrCH Type	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)		
PhyCh Type	DPDCH				PRACH
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.3.2: Downlink configuration of Cell_DCH_Speech

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	TM	TM	TM		
MAC priority	1	1	1		
TrCH Type	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)		
PhyCh Type	DPCH				Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)

8.3.4 Configuration of Cell_DCH_64kCS_RAB_SRB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.13 for the conversational unknown quality class. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RRC and NAS signalling tests in the DCH state where one of the following CS transparent data services is established:

- Multimedia call 28,8 kbit/s, 3,1 kHz Audio;
- Multimedia call 32 kbit/s, UDI;
- Multimedia call 33,6 kbit/s, 3,1 kHz Audio;
- Multimedia call 56 kbit/s, RDI;
- Multimedia call 64 kbit/s, UDI;
- Asynchronous 3,1 kHz Audio 28,8 kbit/s;
- Synchronous 3,1 kHz Audio 28,8 kbit/s;
- Synchronous V.110 UDI up to 56 kbit/s;
- BTM RDI 56 kbit/s;
- BTM UDI 64 bit/s.

Table 8.3.4.1: Uplink configuration of Cell_DCH_64kCS_RAB_SRB

RB Identity	tsc_RB10 (10)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.4.2: Downlink configuration of Cell_DCH_64kCS_RAB_SRB

RB Identity	tsc_RB10 (10)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	TM		
MAC priority	1		
TrCH Type	DCH		
TrCH identity	tsc_DL_DCH1 (6)		
PhyCh Type	DPCH		Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)		tsc_S_CCPCH1 (5)

8.3.5 Configuration of Cell_DCH_57_6kCS_RAB_SRB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.17 for the streaming unknown quality class. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RRC and NAS signalling tests in the DCH state where one of the following CS non-transparent data services is established:

- Asynchronous 3,1 kHz Audio up to 19,2 kbit/s;
- Asynchronous 3,1 kHz Audio modem auto-bauding;
- Asynchronous V.110 UDI up to 38,4 kbit/s, except 28,8 kbit/s;
- Asynchronous V.120 up to 56 kbit/s;
- Asynchronous PIAFS up to 64 kbit/s;
- Asynchronous FTM up to 64 kbit/s;
- Synchronous 3,1 kHz Audio up to 19,2 kbit/s;
- Synchronous V.110 UDI up to 56 kbit/s, except 28,8 kbit/s;
- Synchronous X.31 Flags Stuffing UDI up to 56 kbit/s;
- Synchronous V.120 up to 56 kbit/s;
- Synchronous BTM up to 64 kbit/s;
- TS61 FAX.

Table 8.3.5.1: Uplink configuration of Cell_DCH_57_6kCS_RAB_SRB

<table>
<tr><td>RB Identity</td><td>tsc_RB10
(10)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH
1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_UL_DCH1
(1)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPDCH</td><td>PRACH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.5.2: Downlink configuration of Cell_DCH_57_6kCS_RAB_SRB

<table>
<tr><td>RB Identity</td><td>tsc_RB10
(10)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>MAC priority</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DL_DCH1
(6)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.6 Configuration of Cell_RLC_DCH_RAB

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.1, 6.11.2, 6.11.3, and 6.11.4 for the RLC AM and UM tests with 7 and 15 bit length indicators. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The RB Ids used for the DTCH depend on the RLC mode and length indicator size being simulated (reference clause 6.5.2, RLC test method). Table 8.3.6.1 shows the test suite constants used for each RLC mode, and length indicator size.

Table 8.3.6.1: RB Ids used for DTCH depending on RLC mode and LI size

RLC mode	LI Size	TSC	RB Id
UM	7	tsc_RB_UM_7_RLC	-10
UM	15	tsc_RB_UM_15_RLC	-11
AM	7	tsc_RB_AM_7_RLC	-12
AM	15	tsc_RB_AM_15_RLC	-13

Table 8.3.6.2: Uplink configuration of Cell_RLC_DCH_RAB

RB Identity	See table 8.3.6.1	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.6.3: Downlink configuration of Cell_RLC_DCH_RAB

RB Identity	See table 8.3.6.1	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	TM		
MAC priority	1		
TrCH Type	DCH		
TrCH identity	tsc_DL_DCH1 (6)		
PhyCh Type	DPCH		Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)		tsc_S_CCPCH1 (5)

8.3.7 Configuration of Cell_FACH_BMC

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 without RAB/DTCH for uplink. A RB30/CTCH is configured. The configuration is applied to the BMC and CBSMS tests.

The uplink configuration of Cell_FACH_BMC is the same as the uplink configuration of Cell_FACH.

Table 8.3.7.1: Downlink configuration of Cell_FACH_BMC

RB Identity		tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	Tsc_RB30 (30)	tsc_RB_PCCH (-2)
LogCh Type		CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	CTCH	PCCH
LogCh Identity		tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	Tsc_CTCH (11)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	TM	UM	TM
MAC priority	1	1	2	3	4	5	6	7	1
TrCH Type	FACH	FACH							PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)							tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH								
PhyCH identity	tsc_S_CCPCH1 (5)								

8.3.8 Configuration of PS Cell_DCH_64kPS_RAB_SRB and Cell_PDCP_AM_RAB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.26. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RRC and NAS signalling tests in the DCH state where a PS RAB on DTCH is setup for the interactive or background service class. The configuration is applied to PDCP test cases in acknowledge mode.

Table 8.3.8.1: Uplink configuration of PS Cell_DCH_64kPS_RAB_SRB SRB and Cell_PDCP_AM_RAB

<table>
<tr><td>RB Identity</td><td>tsc_RB20
(20)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>AM</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_UL_DCH1
(1)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPDCH</td><td>PRACH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.8.2: Downlink configuration of PS Cell_DCH_64kPS_RAB_SRB SRB and Cell_PDCP_AM_RAB

<table>
<tr><td>RB Identity</td><td>tsc_RB20
(20)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DL_DCH1
(6)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.9 Configuration of Cell_Two_DTCH

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.6 to 6.10.2.4.1.11. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.9.1: Uplink configuration of Cell_Two_DTCH

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	TM	TM		
TrCH Type	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)		
PhyCh Type	DPCH			PRACH
PhyCH identity	tsc_UL_DPDCH1 (20)			tsc_PRACH1 (8)

Table 8.3.9.2: Downlink configuration of Cell_Two_DTCH

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	TM	TM		
MAC priority	1	1		
TrCH Type	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)		
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.10 Configuration of Cell_Single_DTCH (CS)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.12 to 6.10.2.4.1.22. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.10.1: Uplink configuration of Cell_Single_DTCH (CS)

RB Identity	tsc_RB10 (10)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.10.2: Downlink configuration of Cell_Single_DTCH (CS)

<table>
<tr><td>RB Identity</td><td>tsc_RB10
(10)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>MAC priority</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DL_DCH1
(6)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.11 Configuration of PS Cell_PDCP_UM_RAB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.26. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to PDCP test cases in unacknowledge mode.

Table 8.3.11.1: Uplink configuration of PS Cell_PDCP_UM_RAB

<table>
<tr><td>RB Identity</td><td>tsc_RB21
(21)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>UM</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_UL_DCH1
(1)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPDCH</td><td>PRACH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.11.2: Downlink configuration of PS Cell_PDCP_UM_RAB

<table>
<tr><td>RB Identity</td><td>tsc_RB21
(21)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>UM</td></tr>
<tr><td>MAC priority</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DL_DCH1
(6)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.12 Configuration of PS Cell_PDCP_AM_UM_RAB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.26. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to PDCP test cases using both the acknowledged and unacknowledged mode.

Table 8.3.12.1: Uplink configuration of PS Cell_PDCP_AM_UM_RAB

RB Identity	tsc_RB20 (20)	tsc_RB21 (21)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	UM		
TrCH Type	DCH			
TrCH identity	tsc_UL_DCH1 (1)			
PhyCh Type	DPDCH			PRACH
PhyCH identity	tsc_UL_DPCH1 (20)			tsc_PRACH1 (8)

Table 8.3.12.2: Downlink configuration of PS Cell_PDCP_AM_UM_RAB

RB Identity	tsc_RB20 (20)	tsc_RB21 (21)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	UM		
MAC priority	1	1		
TrCH Type	DCH			
TrCH identity	tsc_DL_DCH1 (6)			
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.13 Configuration of Cell_2SCCPCH_BMC

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 without RAB/DTCH for uplink. RB30/CTCH and RB31/CTCH as well as two PCCH are configured. The configuration is applied to the BMC and CBSMS tests.

Table 8.3.13.1: Uplink configuration of Cell_2SCCPCH_BMC

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	Tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	AM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.13.2: Downlink configuration of Cell_2SCCPCH_BMC: second S-CCPCH

RB Identity	Tsc_RB31 (31)	tsc_RB_2ndPCCH (-4)
LogCh Type	CTCH	PCCH
LogCh Identity	Tsc_CTCH2 (12)	tsc_PCCH2 (2)
RLC mode	UM	TM
MAC priority	1	1
TrCH Type	FACH	PCH
TrCH identity	tsc_FACH1 (13)	tsc_PCH2 (30)
PhyCh Type	Secondary CCPCH	
PhyCH identity	tsc_S_CCPCH2 (10)	

Table 8.3.13.3: Downlink configuration of Cell_2SCCPCH_BMC: first S-CCPCCH

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	Tsc_RB30 (30)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	CTCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (6)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	Tsc_CTCH1 (11)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	TM	UM	TM
MAC priority	1	1	2	3	4	5	6	7	1
TrCH Type	FACH	FACH							PCH
TrCH identity	Tsc_FACH2 (14)	tsc_FACH1 (13)							tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH								
PhyCH identity	tsc_S_CCPCH1 (5)								

8.3.14 Configuration of Cell_Four_DTCH_CS_PS, Cell_Four_DTCH_PS_CS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.40. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.14.1: Uplink configuration of Cell_Four_DTCH_CS_PS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlone SRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)	tsc_UL_DTCH4 (10)		
RLC mode	TM	TM	TM	AM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)	tsc_UL_DCH4 (4)		
PhyCh Type	DPDCH					PRACH
PhyCH identity	tsc_UL_DPCH1 (20)					tsc_PRACH1 (8)

Table 8.3.14.2: Downlink configuration of Cell_Four_DTCH_CS_PS, Cell_Four_DTCH_PS_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)		
RLC mode	TM	TM	TM	AM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	Tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)		
PhyCh Type	DPCH					Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)					tsc_S_CCPCH1 (5)

8.3.14a Configuration of Cell_Five_DTCH_CS_PS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.1.67. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.14a.1: Uplink configuration of Cell_Five_DTCH_CS_PS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)	tsc_RB22 (22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)	tsc_UL_DTCH4 (10)	tsc_UL_DTCH5 (13)		
RLC mode	TM	TM	TM	AM	AM		
MAC priority	1	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)	tsc_UL_DCH4 (4)	tsc_UL_DCH5 (5)		
PhyCh Type	DPDCH						PRACH
PhyCH identity	tsc_UL_DPCH1 (20)						tsc_PRACH1 (8)

Table 8.3.14a.2: Downlink configuration of Cell_Five_DTCH_CS_PS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB20 (20)	tsc_RB22 (22)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)	tsc_UL_DTCH5 (11)		
RLC mode	TM	TM	TM	AM	AM		
MAC priority	1	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	Tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)	tsc_DL_DCH5 (10)		
PhyCh Type	DPCH						Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)						tsc_S_CCPCH1 (5)

8.3.15 Configuration of Cell_Two_DTCH_CS_PS, Cell_Two_DTCH_PS_CS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.51 and 6.10.2.4.1.53. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.15.1:Uplink configuration of Cell_Two_DTCH_CS_PS, Cell_Two_DTCH_PS_CS

<table>
<tr><th>RB Identity</th><td>tsc_RB10
(10)</td><td>tsc_RB20
(20)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td><td>tsc_UL_DTCH2
(8)</td></tr>
<tr><th>RLC mode</th><td>TM</td><td>AM</td></tr>
<tr><th>TrCH Type</th><td>DCH</td><td>DCH</td></tr>
<tr><th>TrCH identity</th><td>tsc_UL_DCH1
(1)</td><td>tsc_UL_DCH2
(2)</td></tr>
<tr><th>PhyCh Type</th><td colspan="3">DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="3">tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.15.2: Downlink configuration of Cell_Two_DTCH_CS_PS

<table>
<tr><th>RB Identity</th><td>tsc_RB10
(10)</td><td>tsc_RB20
(20)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH1
(7)</td><td>tsc_DL_DTCH2
(8)</td></tr>
<tr><th>RLC mode</th><td>TM</td><td>AM</td></tr>
<tr><th>MAC priority</th><td>1</td><td>1</td></tr>
<tr><th>TrCH Type</th><td>DCH</td><td>DCH</td></tr>
<tr><th>TrCH identity</th><td>tsc_DL_DCH1
(6)</td><td>tsc_DL_DCH2
(7)</td></tr>
<tr><th>PhyCh Type</th><td colspan="3">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="3">tsc_DL_DPCH1
(20)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.16 Configuration of Cell_Four_DTCH_CS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.49. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.16.1: Uplink configuration of Cell_Four_DTCH_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB13 (13)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlone SRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (1)	tsc_UL_DTCH2 (2)	tsc_UL_DTCH3 (3)	tsc_UL_DTCH4 (4)		
RLC mode	TM	TM	TM	TM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (6)	tsc_UL_DCH2 (7)	tsc_UL_DCH3 (8)	tsc_UL_DCH4 (9)		
PhyCh Type	DPDCH					PRACH
PhyCH identity	tsc_UL_DPCH1 (20)					tsc_PRACH1 (8)

Table 8.3.16.2: Downlink configuration of Cell_Four_DTCH_CS

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB13 (13)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)		
RLC mode	TM	TM	TM	TM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)		
PhyCh Type	DPCH					Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)					tsc_S_CCPCH1 (5)

8.3.17 Configuration of Cell_DCH_MAC_SRB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1. 3. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1; except that RB3 is mapped on TM mode.

The configuration is applied to the MAC tests.

Table 8.3.17.1: Uplink configuration of Cell_DCH_MAC_SRB

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB_DCCH_DCH_MAC (-15)	tsc_RB4 (4)	tsc_RB0 (0)	
LogCh Type	DCCH	DCCH	DCCH	DCCH	CCCH	
LogCh Identity	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)	tsc_UL_CCCH5 (5)	
RLC mode	UM	AM	TM	AM	TM	AM
TrCH Type	DCH				RACH	
TrCH identity	tsc_UL_DCH5 (5)				tsc_RACH1 (15)	
PhyCh Type	DPDCH				PRACH	
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)	

Table 8.3.17.2: Downlink configuration of Cell_DCH_MAC_SRB

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB_DCCH_DCH_MAC (-15)	tsc_RB4 (4)	tsc_RB0 (0)	tsc_RB_PCCH (-2)	
LogCh Type	DCCH	DCCH	DCCH	DCCH	CCCH	PCCH	
LogCh Identity	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_DL_CCCH5 (5)	tsc_PCCH1 (1)	
RLC mode	UM	AM	TM	AM	UM	TM	AM
MAC priority	1	2	3	4	1	1	1
TrCH Type	DCH				FACH	PCH	FACH
TrCH identity	tsc_DL_DCH5 (10)				tsc_FACH1 (13)	tsc_PCH1 (12)	tsc_FACH2 (14)
PhyCh Type	DPCH				Secondary CCPCH		
PhyCH identity	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)		

8.3.18 Configuration of Cell_FACH_MAC_SRB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink; except that RB3 is mapped on TM mode.

The configuration is applied to the MAC tests.

Table 8.3.18.1: Uplink configuration of Cell_FACH_MAC_SRB

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB_DCCH_FACH_MAC (-14)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	TM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.18.2: Downlink configuration of Cell_FACH_MAC_SRB

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB_DCCH_FACH_MAC (-14)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (6)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	TM	AM	TM	TM
MAC priority	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH1 (5)							

8.3.19 Configuration of Cell_FACH_MAC_SRB0

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink; except that the downlink SRB0 is mapped on TM mode.

The configuration is applied to the MAC tests.

The uplink configuration of Cell_FACH_MAC_SRB0 is the same as the uplink configuration of Cell_FACH.

Table 8.3.19: Downlink configuration of Cell_FACH_MAC_SRB0

RB Identity	tsc_RB20 (20)	tsc_RB_CCCH_FACH_MAC (-18)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (6)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	TM	UM	AM	AM	AM	TM	TM
MAC priority	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH1 (5)							

8.3.20 Configuration of Cell_FACH_2SCCPCH_StandAlonePCH

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3] except the mapping of PCH, clause 6.10.2.4.4.1.1.1 for uplink.

The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_2SCCPCH_StandAlonePCH is the same as the uplink configuration of Cell_FACH.

Table 8.3.20: Downlink configuration of Cell_FACH_2SCCPCH_StandAlonePCH

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (6)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)							tsc_S_CCPCH1 (5)

8.3.21 Configuration of PS Cell_DCH_2AM_PS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.26 and 6.10.2.4.1.57. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 with 2 AM RAB and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to MAC and RAB test cases.

Table 8.3.21.1: Uplink configuration of Cell_DCH_2AM_PS

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	AM		
TrCH Type	DCH			
TrCH identity	tsc_UL_DCH1 (1)			
PhyCh Type	DPDCH			PRACH
PhyCH identity	tsc_UL_DPCH1 (20)			tsc_PRACH1 (8)

Table 8.3.21.2: Downlink configuration of Cell_DCH_2AM_PS

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	AM		
MAC priority	1	1		
TrCH Type	DCH			
TrCH identity	tsc_DL_DCH1 (6)			
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.21a Configuration of Cell_DCH_3AM_PS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.1.70. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.21a.1: Uplink configuration of Cell_DCH_3AM_PS

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	tsc_RB24 (24)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	AM	AM		
TrCH Type	DCH				
TrCH identity	tsc_UL_DCH1 (1)				
PhyCh Type	DPDCH				PRACH
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.21a.2: Downlink configuration of Cell_DCH_3AM_PS

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	tsc_RB24 (24)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	AM	AM	AM		
MAC priority	1	1	1		
TrCH Type	DCH				
TrCH identity	tsc_DL_DCH1 (6)				
PhyCh Type	DPCH				Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)

8.3.22 Configuration of PS Cell_DCH_2_PS_Call

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.56 and 6.10.2.4.1.58. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.22.1: Uplink configuration of Cell_DCH_2_PS_Call

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	AM		
TrCH Type	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)		
PhyCh Type	DPDCH			PRACH
PhyCH identity	tsc_UL_DPCH1 (20)			tsc_PRACH1 (8)

Table 8.3.22.2: Downlink configuration of Cell_DCH_2_PS_Call

RB Identity	tsc_RB20 (20)	tsc_RB22 (22)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	AM		
MAC priority	1	1		
TrCH Type	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)		
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.23 Configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg1

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_4_FACH Cnfg1 is the same as the uplink configuration of Cell_FACH.

Table 8.3.23.1: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg1: 1st & 2nd S-CCPCH

RB Identity		tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type		CCCH	BCCH	PCCH
LogCh Identity		tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode		UM	TM	TM
MAC priority		1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)			tsc_S_CCPCH1 (5)

Table 8.3.23.2: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg1: 3rd S-CCPCH

RB Identity	tsc_RB20 (20)	tsc_RB29 (29)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH_RAB (-19)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH6 (6)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH7 (7)
RLC mode	AM	UM	UM	AM	AM	AM	TM
MAC priority	1	1	2	3	4	5	6
TrCH Type	FACH	FACH					
TrCH identity	tsc_FACH4 (17)	tsc_FACH3 (16)					
PhyCh Type	Secondary CCPCH						
PhyCH identity	tsc_S_CCPCH3 (13)						

8.3.24 Configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg2

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_4_FACH Cnfg2 is the same as the uplink configuration of Cell_FACH.

Table 8.3.24.1: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg2: 2nd S-CCPCH

RB Identity	tsc_RB20 (20)	tsc_RB29 (29)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH_RAB (-19)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH6 (6)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH7 (7)
RLC mode	AM	UM	UM	AM	AM	AM	TM
MAC priority	1	1	2	3	4	5	6
TrCH Type	FACH	FACH					
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)					
PhyCh Type	Secondary CCPCH						
PhyCH identity	tsc_S_CCPCH2 (10)						

Table 8.3.24.2: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_Cnfg2: 1st & 3rd S-CCPCH

RB Identity		tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type		CCCH	BCCH	PCCH
LogCh Identity		tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode		UM	TM	TM
MAC priority		1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH4 (17)	tsc_FACH3 (16)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH3 (13)			tsc_S_CCPCH1 (5)

8.3.25 Configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH is the same as the uplink configuration of Cell_FACH.

Table 8.3.25.1: Downlink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH: 1st & 2nd S-CCPCH

RB Identity	tsc_RB30 (30)	tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	CTCH	CCCH	BCCH	PCCH
LogCh Identity	tsc_CTCH1 (11)	tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	UM	UM	TM	TM
MAC priority	7	1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)			tsc_S_CCPCH1 (5)

Table 8.3.25.2: Downlink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH: 3rd S-CCPCH

RB Identity	tsc_RB20 (20)	tsc_RB29 (29)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH_RAB (-19)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH6 (6)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (5)	tsc_BCCH7 (7)
RLC mode	AM	UM	UM	AM	AM	AM	TM
MAC priority	1	1	2	3	4	5	6
TrCH Type	FACH	FACH					
TrCH identity	tsc_FACH4 (17)	tsc_FACH3 (16)					
PhyCh Type	Secondary CCPCH						
PhyCH identity	tsc_S_CCPCH3 (13)						

8.3.26 Configuration of PS Cell_DCH_DSCH_PS_RAB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.2.1. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RAB signalling tests where a PS RAB on DTCH is setup for the interactive or background service class is mapped on to DSCH.

The uplink configuration is same in clause 8.3.8.

Table 8.3.26: Downlink configuration of PS Cell_DCH_DSCH_PS_RAB

<table>
<tr><td>RB Identity</td><td>tsc_RB20
(20)</td><td>Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td><td rowspan="6"></td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DSCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DSCH1
(19)</td></tr>
<tr><td>PhyCh Type</td><td>PDSCH</td><td>DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td>tsc_DL_PDSCH1
(16)</td><td>tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.27 Configuration of Cell_DCH_DSCH_CS_PS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.2.4. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

The Uplink configuration is similar to clause 8.3.14.

Table 8.3.27: Downlink configuration of Cell_DCH_DSCH_CS_PS

<table>
<tr><td>RB Identity</td><td>tsc_RB10
(10)</td><td>tsc_RB11
(11)</td><td>tsc_RB12
(12)</td><td>tsc_RB20
(20)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td><td>tsc_DL_DTCH2
(8)</td><td>tsc_DL_DTCH3
(9)</td><td>tsc_DL_DTCH4
(10)</td></tr>
<tr><td>RLC mode</td><td>TM</td><td>TM</td><td>TM</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td><td>DCH</td><td>DCH</td><td>DSCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_DL_DCH1
(6)</td><td>tsc_DL_DCH2
(7)</td><td>Tsc_DL_DCH3
(8)</td><td>tsc_DL_DSCH1
(19)</td></tr>
<tr><td>PhyCh Type</td><td colspan="3">DPCH</td><td>PDSCH</td><td>DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="3">tsc_DL_DPCH1
(20)</td><td>tsc_DL_PDSCH1
(16)</td><td>tsc_DL_DPCH1
(20)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.28 Configuration of Cell_FACH_2SCCPCH_StandAlonePCH_2a

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2a for downlink and 3GPP TS 34.108 [3] except the mapping of PCH, clause 6.10.2.4.4.2 for uplink. The configuration is applied to the RAB tests.

Table 8.3.28.1: Uplink configuration of Configuration of Configuration of Cell_FACH_2SCCPCH_StandAlonePCH_2a

RB Identity	tsc_RB24 (24)	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	tsc_UL_DTCH4 (10)	tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	AM	TM	UM	AM	AM	AM
TrCH Type	RACH						
TrCH identity	tsc_RACH1 (15)						
PhyCh Type	PRACH						
PhyCH identity	tsc_PRACH1 (8)						

Table 8.3.28.2: Downlink configuration of Cell_FACH_2SCCPCH_StandAlonePCH_2a

RB Identity	tsc_RB20 (20)	tsc_RB24 (24)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_2ndPCCH (-4)
LogCh Type	DTCH	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH4 (10)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	1	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)		tsc_FACH1(13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH								Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)								tsc_S_CCPCH1 (5)

8.3.29 Configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg1

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2a for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.2 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_4_FACH Cnfg1 is the same as the uplink configuration of Cell_FACH_2_SCCPCH_StandAlonePCH_2a.

Table 8.3.29.1: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg1: 1st & 2nd S-CCPCH

<table>
<tr><th>RB Identity</th><td></td><td></td><td>tsc_RB0 (0)</td><td>tsc_RB_BCCH_FACH (-3)</td><td>tsc_RB_PCCH (-2)</td></tr>
<tr><th>LogCh Type</th><td></td><td></td><td>CCCH</td><td>BCCH</td><td>PCCH</td></tr>
<tr><th>LogCh Identity</th><td></td><td></td><td>tsc_DL_CCCH5 (5)</td><td>tsc_BCCH6 (6)</td><td>tsc_PCCH1 (1)</td></tr>
<tr><th>RLC mode</th><td></td><td></td><td>UM</td><td>TM</td><td>TM</td></tr>
<tr><th>MAC priority</th><td></td><td></td><td>1</td><td>6</td><td>1</td></tr>
<tr><th>TrCH Type</th><td>FACH</td><td>FACH</td><td colspan="2">FACH</td><td>PCH</td></tr>
<tr><th>TrCH identity</th><td colspan="2">tsc_FACH2 (14)</td><td colspan="2">tsc_FACH1 (13)</td><td>tsc_PCH1 (12)</td></tr>
<tr><th>PhyCh Type</th><td colspan="4">Secondary CCPCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="4">tsc_S_CCPCH2 (10)</td><td>tsc_S_CCPCH1 (5)</td></tr>
</table>

Table 8.3.29.2: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg1: 3rd S-CCPCH

<table>
<tr><th>RB Identity</th><td>tsc_RB24 (24)</td><td>tsc_RB20 (20)</td><td>tsc_RB29 (29)</td><td>tsc_RB1 (1)</td><td>tsc_RB2 (2)</td><td>tsc_RB3 (3)</td><td>tsc_RB4 (4)</td><td>tsc_RB_BCCH_FACH_RAB (-19)</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td><td>CCCH</td><td>DCCH</td><td>DCCH</td><td>DCCH</td><td>DCCH</td><td>BCCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH4 (10)</td><td>tsc_DL_DTCH1 (7)</td><td>tsc_DL_CCCH6 (6)</td><td>tsc_DL_DCCH1 (1)</td><td>tsc_DL_DCCH2 (2)</td><td>tsc_DL_DCCH3 (3)</td><td>tsc_DL_DCCH4 (4)</td><td>tsc_BCCH7 (7)</td></tr>
<tr><th>RLC mode</th><td>AM</td><td>AM</td><td>UM</td><td>UM</td><td>AM</td><td>AM</td><td>AM</td><td>TM</td></tr>
<tr><th>MAC priority</th><td>1</td><td>1</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr>
<tr><th>TrCH Type</th><td colspan="2">FACH</td><td colspan="6">FACH</td></tr>
<tr><th>TrCH identity</th><td colspan="2">tsc_FACH4 (17)</td><td colspan="6">tsc_FACH3 (16)</td></tr>
<tr><th>PhyCh Type</th><td colspan="8">Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="8">tsc_S_CCPCH3 (13)</td></tr>
</table>

8.3.30 Configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg2

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2a for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.2 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_4_FACH Cnfg2 is the same as the uplink configuration of Cell_FACH_2_SCCPCH_StandAlonePCH_2a.

Table 8.3.30.1: Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg2: 2nd S-CCPCH

RB Identity	tsc_RB21 (24)	tsc_RB20 (20)	tsc_RB29 (29)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH_RAB (-19)
LogCh Type	DTCH	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH2 (10)	tsc_DL_DTCH1 (7)	tsc_DL_CCCH6 (6)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH7 (7)
RLC mode	AM	AM	UM	UM	AM	AM	AM	TM
MAC priority	1	1	1	2	3	4	5	6
TrCH Type	FACH	FACH	FACH					
TrCH identity	tsc_FACH2 (14)		tsc_FACH1 (13)					
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH2 (10)							

Table 8.3.30.2 Downlink configuration of Cell_FACH_3_SCCPCH_4_FACH_2a_Cnfg2: 1st & 3rd S-CCPCH

RB Identity			tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type			CCCH	BCCH	PCCH
LogCh Identity			tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode			UM	TM	TM
MAC priority			1	6	1
TrCH Type	FACH	FACH	FACH		PCH
TrCH identity	tsc_FACH4 (17)		tsc_FACH3 (16)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH				Secondary CCPCH
PhyCH identity	tsc_S_CCPCH3 (13)				tsc_S_CCPCH1 (5)

8.3.31 Configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH_2a

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.2 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH_2a is the same as the uplink configuration of Cell_FACH Cell_FACH_3_SCCPCH_4_FACH Cnfg1.

Table 8.3.31.1: Downlink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH_2a: 1st & 2nd S-CCPCH

RB Identity	tsc_RB30 (30)	tsc_RB0 (0)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	CTCH	CCCH	BCCH	PCCH
LogCh Identity	tsc_CTCH1 (11)	tsc_DL_CCCH5 (5)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	UM	UM	TM	TM
MAC priority	7	1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)			tsc_S_CCPCH1 (5)

Table 8.3.31.2 Downlink configuration of Cell_FACH_3_SCCPCH_3_FACH_CTCH_2a: 3rd S-CCPCH

RB Identity	tsc_RB24 (24)	tsc_RB20 (20)	tsc_RB29 (29)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH_RAB (-19)
LogCh Type	DTCH	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH4(10)	tsc_DL_DTCH1 (7)	tsc_DL_CCCH6 (6)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (5)	tsc_BCCH7 (7)
RLC mode	AM	AM	UM	UM	AM	AM	AM	TM
MAC priority	1	1	1	2	3	4	5	6
TrCH Type	FACH	FACH	FACH					
TrCH identity	tsc_FACH4 (17)		tsc_FACH3 (16)					
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH3 (13)							

8.3.32 Configuration of Cell_DCH_HS_DSCH (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.5.1 or 6.10.2.4.5.2. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those RRC and NAS signalling tests in the DCH state where a PS RAB on DTCH mapped on HS-DSCH is setup for the interactive or background service class.

Table 8.3.32.1: Uplink configuration of Cell_DCH_HS_DSCH

RB Identity	tsc_RB25 (25)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	AM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.32.2: Downlink configuration of Cell_DCH_HS_DSCH

RB Identity	tsc_RB25 (25)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	AM		
MAC priority	8		
TrCH Type	HS-DSCH		
TrCH identity /QueueID	0		
PhyCh Type	PDSCH	DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.32a Configuration of Cell_DCH_E_DPCH_PS

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.7.8. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.32a.1: Uplink configuration of Cell_DCH_E_DPCH_PS

RB Identity	tsc_RB25 (25)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	AM		
TrCH Type	E-DCH		
TrCH identity/Mac-d Flow Id	2		
PhyCh Type	E-DPDCH	DPDCH	PRACH
PhyCH identity	tsc_E_DPCH (22)	tsc_UL_DPCH1 (20)	tsc_PRACH1 (8)

Table 8.3.32a.2: Downlink configuration of PS Cell_DCH_E_DPCH_PS

RB Identity	tsc_RB25 (25)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	AM		
MAC priority	1		
TrCH Type	DCH		
TrCH identity	tsc_DL_DCH1 (6)		
PhyCh Type	DPCH		Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)		tsc_S_CCPCH1 (5)

8.3.33 Configuration of cell_One_DTCH_HS_DSCH_MAC (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.5.1. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those MAC-hs/MAC-ehs[Rel-7 or later] Signalling tests in the DCH state where a PS RAB on DTCH mapped on HS-DSCH is setup for the interactive or background service class.

Table 8.3.33.1: Uplink configuration of cell_One_DTCH_HS_DSCH_MAC

RB Identity	tsc_RB_MAC_HS (-25)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.33.2: Downlink configuration of Cell_DCH_HS_DSCH

RB Identity	tsc_RB_MAC_HS (-25)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	TM		
MAC priority	8		
TrCH Type	HS-DSCH		
TrCH identity /QueueID	0		
PhyCh Type	PDSCH	DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.33a Configuration of cell_Three_DTCH_1Q_HS_DSCH_MAC (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4f. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those MAC-ehs Signalling tests in the DCH state where a 3 PS RAB on DTCH mapped on HS-DSCH [1 MAC-ehs Queue] is setup for the interactive or background service class.

Table 8.3.33a.1: Uplink configuration of cell_Three_DTCH_1Q_HS_DSCH_MAC

RB Identity	tsc_RB_MAC_HS (-25)	tsc_RB_MAC_ehs_26 (-26)	tsc_RB_MAC_ehs_27 (-27)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	TM	TM	TM		
TrCH Type	DCH				
TrCH identity	tsc_UL_DCH1 (1)				
PhyCh Type	DPDCH				PRACH
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.33a.2: Downlink configuration of cell_Three_DTCH_1Q_HS_DSCH_MAC

RB Identity	tsc_RB_MAC_HS (-25)	tsc_RB_MAC_ehs_26 (-26)	tsc_RB_MAC_ehs_27 (-27)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	TM	TM	TM		
MAC priority	8	8	8		
TrCH Type	HS-DSCH				
TrCH identity /QueueID	0				
PhyCh Type	PDSCH			DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)			tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.33b Configuration of cell_Three_DTCH_3Q_HS_DSCH_MAC (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4f. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to those MAC-ehs Signalling tests in the DCH state where a 3 PS RAB on DTCH mapped on HS-DSCH [1 MAC-ehs Queue] is setup for the interactive or background service class.

The uplink configuration of cell_Three_DTCH_3Q_HS_DSCH_MAC is the same as the uplink configuration of cell_Three_DTCH_1Q_HS_DSCH_MAC

Table 8.3.33b: Downlink configuration of cell_Three_DTCH_3Q_HS_DSCH_MAC

RB Identity	Tsc_RB_MAC_HS (-25)	tsc_RB_MAC_ehs_26 (-26)	tsc_RB_MAC_ehs_27 (-27)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	TM	TM	TM		
MAC priority	8	8	8		
TrCH Type	HS-DSCH	HS-DSCH	HS-DSCH		
TrCH identity /QueueID	0	1	2		
PhyCh Type	PDSCH			DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)			tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.33c Configuration of Cell_E_HS_SRB_MAC_TM_RAB (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.3, with RAB configured in TM mode on SS side. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A14):

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

Table 8.3.33c.1: Uplink configuration of Cell_E_HS_SRB_MAC_TM_RAB

<table>
<tr><th>RB Identity</th><td>tsc_RB_DTCH_E_DCH_MAC1
(-21)</td><td rowspan="4">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>TM</td></tr>
<tr><th>TrCH Type</th><td colspan="2">E-DCH</td></tr>
<tr><th>TrCH identity/ Mac-d Flow Id</th><td>2</td><td>1</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">E-DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_E_DPCH
(22)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.33c.2: Downlink configuration of Cell_E_HS_SRB_MAC_TM_RAB

<table>
<tr><th>RB Identity</th><td>tsc_RB_DTCH_E_DCH_MAC1
(-21)</td><td rowspan="5">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>TM</td></tr>
<tr><th>MAC priority</th><td>8</td></tr>
<tr><th>TrCH Type</th><td colspan="2">HS-DSCH</td></tr>
<tr><th>TrCH identity / Mac-d Flow Id</th><td>0</td><td>1</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">PDSCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_HSPDSCH
(18)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.34 Configuration of Cell_2UM_3AM_DCH_HS_DSCH (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4a The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to MAC test case 7.1.5.2.

Table 8.3.34.1: Uplink configuration of Cell_2UM_3AM_DCH_HS_DSCH

<table>
<tr><th>RB Identity</th><td>tsc_RB26 (26)</td><td>tsc_RB27 (27)</td><td>tsc_RB25 (25)</td><td>tsc_RB28 (28)</td><td>tsc_RB17 (17)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1 (7)</td><td>tsc_UL_DTCH2 (8)</td><td>tsc_UL_DTCH3 (9)</td><td>tsc_UL_DTCH4 (10)</td><td>tsc_UL_DTCH5 (13)</td></tr>
<tr><th>RLC mode</th><td>UM</td><td>UM</td><td>AM</td><td>AM</td><td>AM</td></tr>
<tr><th>TrCH Type</th><td colspan="5">DCH</td></tr>
<tr><th>TrCH identity</th><td colspan="5">tsc_UL_DCH1 (1)</td></tr>
<tr><th>PhyCh Type</th><td colspan="6">DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="6">tsc_UL_DPCH1 (20)</td><td>tsc_PRACH1 (8)</td></tr>
</table>

Table 8.3.34.2: Downlink configuration of Cell_2UM_3AM_DCH_HS_DSCH

<table>
<tr><th>RB Identity</th><td>tsc_RB26 (26)</td><td>tsc_RB27 (27)</td><td>tsc_RB25 (25)</td><td>tsc_RB28 (28)</td><td>tsc_RB17 ()</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH1 (7)</td><td>tsc_DL_DTCH2 (8)</td><td>tsc_DL_DTCH3 (9)</td><td>tsc_DL_DTCH4 (10)</td><td>tsc_DL_DTCH5 (11)</td></tr>
<tr><th>RLC mode</th><td>UM</td><td>UM</td><td>AM</td><td>AM</td><td>AM</td></tr>
<tr><th>MAC priority</th><td>8</td><td>8</td><td>8</td><td>8</td><td>8</td></tr>
<tr><th>TrCH Type</th><td colspan="5">HS-DSCH</td></tr>
<tr><th>TrCH identity /QueueID</th><td colspan="2">0</td><td colspan="2">1</td><td>2</td></tr>
<tr><th>PhyCh Type</th><td colspan="5">PDSCH</td><td>DPCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="5">tsc_HSPDSCH (18)</td><td>tsc_DL_DPCH1 (26)</td><td>tsc_S_CCPCH1 (5)</td></tr>
</table>

8.3.35 Configuration of Cell_DCH_Speech_WAMR (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.62. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108[3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RAB test 14.2.62.

Table 8.3.35.1: Uplink configuration of Cell_DCH_Speech_WAMR

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	TM	TM		
TrCH Type	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)		
PhyCh Type	DPDCH			PRACH
PhyCH identity	tsc_UL_DPCH1 (20)			tsc_PRACH1 (8)

Table 8.3.35.2: Downlink configuration of Cell_DCH_Speech_WAMR

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB5 (5)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DCCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DCCH5 (5)		
RLC mode	TM	TM	TM		
MAC priority	1	1	5		
TrCH Type	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH6 (22)		
PhyCh Type	DPCH				Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)

8.3.36 Configuration of PS Cell_Four_DTCH_HS_CS and Cell_Four_DTCH_CS_HS (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.5.3 and 6.10.2.4.5.3a. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The uplink configuration is same in clause 8.3.14 except a HS-DPCCH shall be included in the UL_DPCH and tsc_RB25 shall be used instead of tsc_RB20.

Table 8.3.36: Downlink configuration of PS Cell_Four_DTCH_HS_CS and Cell_Four_DTCH_CS_HS

RB Identity	tsc_RB25 (25)	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH4 (10)	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	AM	TM	TM	TM		
MAC priority	8	1	1	1		
TrCH Type	HS_DSCH	DCH	DCH	DCH		
TrCH identity	N/A	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)		
PhyCh Type	HS-PDSCH	DPCH				Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (26)				tsc_S_CCPCH1 (5)

8.3.37 Configuration of PS Cell_Two_DTCH_HS_CS (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.5.4 and 6.10.2.4.5.4a. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The uplink configuration is same in clause 8.3.15 except a HS-DPCCH shall be included in the UL_DPCH and tsc_RB25 shall be used instead of tsc_RB20.

Table 8.3.37: Downlink configuration of PS Cell_Two_DTCH_HS_CS

RB Identity	tsc_RB25 (25)	tsc_RB10 (10)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH4 (10)	tsc_DL_DTCH1 (7)		
RLC mode	AM	TM		
MAC priority	8	1		
TrCH Type	HS_DSCH	DCH		
TrCH identity	N/A	tsc_DL_DCH1 (6)		
PhyCh Type	HS-PDSCH	DPCH		Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (20)		tsc_S_CCPCH1 (5)

8.3.38 Configuration of PS Cell_DCH_64kPS_RAB_SRB_HS (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.26. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

Table 8.3.38.1: Uplink configuration of PS Cell_DCH_64kPS_RAB_SRB_HS

<table>
<tr><th>RB Identity</th><td>tsc_RB25
(25)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>AM</td></tr>
<tr><th>TrCH Type</th><td>DCH</td></tr>
<tr><th>TrCH identity</th><td>tsc_UL_DCH1
(1)</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.38.2: Downlink configuration of PS Cell_DCH_64kPS_RAB_SRB SRB

<table>
<tr><th>RB Identity</th><td>tsc_RB25
(25)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>AM</td></tr>
<tr><th>MAC priority</th><td>8</td></tr>
<tr><th>TrCH Type</th><td>DCH</td></tr>
<tr><th>TrCH identity</th><td>tsc_DL_DCH1
(6)</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.39 Configuration of PS Cell_DCH_2AM_HS_DSCH (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.26 and 6.10.2.4.1.57. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 with 2 AM RAB and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to MAC and RAB test cases.

Table 8.3.39.1: Uplink configuration of Cell_DCH_2AM_HS_DSCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	AM		
TrCH Type	DCH	DCH		
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)		
PhyCh Type	DPDCH			PRACH
PhyCH identity	tsc_UL_DPCH1 (20)			tsc_PRACH1 (8)

Table 8.3.39.2: Downlink configuration of Cell_DCH_2AM_HS_DSCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	AM		
MAC priority	8	8		
TrCH Type	HS-DSCH	HS-DSCH		
TrCH identity /QueueID	0	1		
PhyCh Type	PDSCH		DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)		tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.39a Configuration of Cell_DCH_2AM_E_DPCH

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.7.12. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.39a.1: Uplink configuration of Cell_DCH_2AM_E_DPCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	AM		
TrCH Type	E-DCH			
TrCH identity/Mac-d Flow Id	2	3		
PhyCh Type	E-DPDCH		DPDCH	PRACH
PhyCH identity	tsc_E_DPCH (22)		tsc_UL_DPCH1 (20)	tsc_PRACH1 (8)

Table 8.3.39a.2: Downlink configuration of PS Cell_DCH_2AM_E_DPCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	AM		
MAC priority	1	1		
TrCH Type	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)		
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.40 Configuration of Cell_Three_DTCH_5SRB (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.1.62. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

The uplink configuration is same in clause 8.3.3 Cell_DCH_Speech.

Table 8.3.40: Downlink configuration of Cell_Three_DTCH_5SRB

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB5 (5)	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DCCH	DCCH	DCCH	DCCH	DCCH	
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_DL_DCCH5 ()	
RLC mode	TM	TM	TM	UM	AM	AM	AM	TM	
MAC priority	1	1	1	1	2	3	4	5	
TrCH Type	DCH	DCH	DCH	DCH				DCH	
TrCH/ Q-identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)	tsc_DL_DCH5 (10)				tsc_DL_DCH6 (22)	
PhyCh Type	DPCH								Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)								tsc_S_CCPCH1 (5)

8.3.41 Configuration of Cell_Five_DTCH_CS_HS (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.5.7. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

Table 8.3.41.1: Uplink configuration of Cell_Five_DTCH_CS_HS and Cell_Five_DTCH_CS_HS

<table>
<tr><td>RB Identity</td><td>tsc_RB10 (10)</td><td>tsc_RB11 (11)</td><td>tsc_RB12 (12)</td><td>tsc_RB25 (25)</td><td>tsc_RB17 (17)</td><td rowspan="7">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH except TrCH Identity is tsc_UL_DCH6 (21)</td><td rowspan="7">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH1 (7)</td><td>tsc_UL_DTCH2 (8)</td><td>tsc_UL_DTCH3 (9)</td><td>tsc_UL_DTCH4 (10)</td><td>tsc_UL_DTCH5 (13)</td></tr>
<tr><td>RLC mode</td><td>TM</td><td>TM</td><td>TM</td><td>AM</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>DCH</td><td>DCH</td><td>DCH</td><td>DCH</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>tsc_UL_DCH1 (1)</td><td>tsc_UL_DCH2 (2)</td><td>tsc_UL_DCH3 (3)</td><td>tsc_UL_DCH4 (4)</td><td>tsc_UL_DCH5 (5)</td></tr>
<tr><td>PhyCh Type</td><td colspan="6">DPDCH</td><td>PRACH</td></tr>
<tr><td>PhyCH identity</td><td colspan="6">tsc_UL_DPCH1 (20)</td><td>tsc_PRACH1 (8)</td></tr>
</table>

Table 8.3.41.2: Downlink configuration of PS Cell_Five_DTCH_HS_CS and Cell_Five_DTCH_CS_HS

<table>
<tr><td>RB Identity</td><td>tsc_RB25 (25)</td><td>tsc_RB17 (17)</td><td>tsc_RB10 (10)</td><td>tsc_RB11 (11)</td><td>tsc_RB12 (12)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH4 (10)</td><td>tsc_DL_DTCH5 (11)</td><td>tsc_DL_DTCH1 (7)</td><td>tsc_DL_DTCH2 (8)</td><td>tsc_DL_DTCH3 (9)</td></tr>
<tr><td>RLC mode</td><td>AM</td><td>AM</td><td>TM</td><td>TM</td><td>TM</td></tr>
<tr><td>MAC priority</td><td>8</td><td>8</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>TrCH Type</td><td>HS_DSCH</td><td>HS_DSCH</td><td>DCH</td><td>DCH</td><td>DCH</td></tr>
<tr><td>TrCH identity</td><td>N/A</td><td>N/A</td><td>tsc_DL_DCH1 (6)</td><td>tsc_DL_DCH2 (7)</td><td>tsc_DL_DCH3 (8)</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">HS-PDSCH</td><td colspan="4">DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_HSPDSCH (18)</td><td colspan="4">tsc_DL_DPCH1 (26)</td><td>tsc_S_CCPCH1 (5)</td></tr>
</table>

8.3.41a Configuration of Cell_FiveDTCH_E_DPCH

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.7.15. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.41a.1: Uplink configuration of Cell_FiveDTCH_E_DPCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH4 (10)	tsc_UL_DTCH5 (13)	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	AM	TM	TM	TM		
TrCH Type	E-DCH		DCH	DCH	DCH		
TrCH identity/ Mac-d Flow Id	2	3	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)		
PhyCh Type	E-DPDCH		DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)		tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.41a.2: Downlink configuration of PS Cell_FiveDTCH_E_DPCH

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB25 (25)	tsc_RB17 (17)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)	tsc_UL_DTCH5 (13)		
RLC mode	TM	TM	TM	AM	AM		
MAC priority	1	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	Tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)	tsc_DL_DCH5 (10)		
PhyCh Type	DPCH						Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)						tsc_S_CCPCH1 (5)

8.3.42 Configuration of Cell_DCH_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.1. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB on DTCH mapped on E-DCH in uplink and HS-DSCH in downlink is setup for the streaming or interactive or background service class (A12).

The downlink configuration is same in clause 8.3.32 Cell_DCH_HS_DSCH.

Table 8.3.42: Uplink configuration of Cell_DCH_E_HS

<table>
<tr><th>RB Identity</th><td>tsc_RB25
(25)</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>AM</td></tr>
<tr><th>TrCH Type</th><td>E-DCH</td></tr>
<tr><th>TrCH identity/Mac-d Flow Id</th><td>2</td></tr>
<tr><th>PhyCh Type</th><td>E-DPDCH</td><td>DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td>tsc_E_DPCH
(22)</td><td>tsc_UL_DPCH1
(20)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

8.3.43 Configuration of Cell_DCH_dlSRB_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.2. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A13):

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on DCH.

The downlink configuration is same in clause 8.3.32 Cell_DCH_HS_DSCH.

Table 8.3.43: Uplink configuration of Cell_DCH_dlSRB_E_HS

<table>
<tr><th>RB Identity</th><td>tsc_RB25
(25)</td><td rowspan="4">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><th>RLC mode</th><td>AM</td></tr>
<tr><th>TrCH Type</th><td colspan="2">E-DCH</td></tr>
<tr><th>TrCH identity/ Mac-d Flow Id</th><td>2</td><td>1</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">E-DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_E_DPCH
(22)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

8.3.44 Configuration of Cell_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.3. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A14):

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

The uplink configuration is same in clause 8.3.43 Cell_DCH_dlSRB_E_HS. In the downlink F-DPCH is configured.

Table 8.3.44: Downlink configuration of Cell_E_HS

<table>
<tr><td>RB Identity</td><td>tsc_RB25
(25)</td><td rowspan="5">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>8</td></tr>
<tr><td>TrCH Type</td><td colspan="2">HS-DSCH</td></tr>
<tr><td>TrCH identity / Mac-d Flow Id</td><td>0</td><td>1</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">PDSCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_HSPDSCH
(18)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.45 Configuration of PS Cell_Four_DTCH_E_HS_CS and Cell_Four_DTCH_CS_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.4. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class:

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- CS RAB on DTCH are mapped on DCH in uplink and downlink.
- Uplink SRBs on DCCH are mapped on DCH.
- Downlink SRBs on DCCH are mapped on DCH.

The downlink configuration is same as in clause 8.3.36 Cell_Four_DTCH_HS_CS and Cell_Four_DTCH_CS_HS.

Table 8.3.45: Uplink configuration of Cell_Four_DTCH_E_HS_CS and Cell_Four_DTCH_CS_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlone SRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH4 (10)	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	TM	TM	TM		
MAC priority		1	1	1		
TrCH Type	E-DCH	DCH	DCH	DCH		
TrCH identity / Mac-d Flow Id	2	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)		
PhyCh Type	E-DPDCH	DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

8.3.45a Configuration of Cell_FourDTCH_E_DPCH

The configuration is based on 3GPP TS 34.108 [3], clauses 6.11.5.4.7.13. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to LCR TDD RB tests.

Table 8.3.45a.1: Uplink configuration of Cell_FourDTCH_E_DPCH

RB Identity	tsc_RB25 (25)	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH4 (10)	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	TM	TM	TM		
TrCH Type	E-DCH	DCH	DCH	DCH		
TrCH identity/Mac-d Flow Id	2	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)	tsc_UL_DCH3 (3)		
PhyCh Type	E-DPDCH	DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.45a.2: Downlink configuration of PS Cell_FourDTCH_E_DPCH

RB Identity	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB25 (25)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)	tsc_DL_DTCH4 (10)		
RLC mode	TM	TM	TM	AM		
MAC priority	1	1	1	1		
TrCH Type	DCH	DCH	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)	Tsc_DL_DCH3 (8)	tsc_DL_DCH4 (9)		
PhyCh Type	DPCH					Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (20)					tsc_S_CCPCH1 (5)

8.3.46 Configuration of Cell_2DCH_2AM_dlSRB_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.5.2. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A15):

- 2 AM PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on DCH.

The downlink configuration is same in clause 8.3.39 Cell_2DCH_2AM_HS_DSCH

Table 8.3.46: Uplink configuration of Cell_2DCH_2AM_dlSRB_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)		
RLC mode	AM	AM		
TrCH Type	E-DCH			
TrCH identity//Mac-d Flow Id	2	3	1	
PhyCh Type	E-DPDCH			PRACH
PhyCH identity	tsc_E_DPCH (22)			tsc_PRACH1 (8)

8.3.47 Configuration of Cell_E_HS_MAC_TM_RAB (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4c, with RAB configured in TM mode on SS side. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to MAC(e/es) signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A12):

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on DCH.
- Downlink SRBs on DCCH are mapped on DCH.

Table 8.3.47.1: Uplink configuration of Cell_E_HS_MAC_TM_RAB

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	E-DCH		
TrCH identity/Mac-d Flow Id	2		
PhyCh Type	E-DPDCH	DPDCH	PRACH
PhyCH identity	tsc_E_DPCH (22)	tsc_UL_DPCH1 (20)	tsc_PRACH1 (8)

Table 8.3.47.2: Downlink configuration of Cell_E_HS_MAC_TM_RAB

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	TM		
MAC priority	8		
TrCH Type	HS-DSCH		
TrCH identity /QueueID	0		
PhyCh Type	PDSCH	DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.48 Configuration of Cell_2DCH_MAC_2TM_dlSRB_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4d. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. (A13).

The configuration is applied to MAC(e/es) signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A15):

- 2 TM PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on DCH.

Table 8.3.48.1: Uplink configuration of Cell_2DCH_MAC_2TM_dlSRB_E_HS

<table>
<tr><th>RB Identity</th><td>tsc_RB_DTCH_E_DCH_MAC1 (-21)</td><td>tsc_RB_DTCH_E_DCH_MAC2 (-22)</td><td rowspan="4">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="5">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_UL_DTCH1
(7)</td><td>tsc_UL_DTCH2
(8)</td></tr>
<tr><th>RLC mode</th><td>TM</td><td>TM</td></tr>
<tr><th>TrCH Type</th><td colspan="3">E-DCH</td></tr>
<tr><th>TrCH identity//Mac-d Flow Id</th><td>2</td><td>3</td><td>1</td></tr>
<tr><th>PhyCh Type</th><td colspan="3">E-DPDCH</td><td>PRACH</td></tr>
<tr><th>PhyCH identity</th><td colspan="3">tsc_E_DPCH
(22)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.48.2: Downlink configuration of Cell_2DCH_MAC_2TM_dlSRB_E_HS

<table>
<tr><th>RB Identity</th><td>tsc_RB_DTCH_E_DCH_MAC1 (-21)</td><td>tsc_RB_DTCH_E_DCH_MAC2 (-22)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><th>LogCh Type</th><td>DTCH</td><td>DTCH</td></tr>
<tr><th>LogCh Identity</th><td>tsc_DL_DTCH1
(7)</td><td>tsc_DL_DTCH2
(8)</td></tr>
<tr><th>RLC mode</th><td>TM</td><td>TM</td></tr>
<tr><th>MAC priority</th><td>8</td><td>8</td></tr>
<tr><th>TrCH Type</th><td>HS-DSCH</td><td>HS-DSCH</td></tr>
<tr><th>TrCH identity /QueueID</th><td>0</td><td>1</td></tr>
<tr><th>PhyCh Type</th><td colspan="2">PDSCH</td><td>DPCH</td><td>Secondary CCPCH</td></tr>
<tr><th>PhyCH identity</th><td colspan="2">tsc_HSPDSCH
(18)</td><td>tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.49 Configuration of Cell_2DCH_1AM_1UM_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.6. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where a PS RAB is setup for the streaming or interactive or background service class and another UM PS Bearer is setup for conversational / unknown or speech (A16):

- 1 AM PS RAB and 1 UM PS RAB on DTCH are mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

In the downlink F-DPCH is configured.

Table 8.3.49.1: Uplink configuration of Cell_2DCH_1AM_1UM_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB27 (27)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH3 (9)		
RLC mode	AM	UM		
TrCH Type	E-DCH			
TrCH identity//Mac-d Flow Id	2	4	1	
PhyCh Type	E-DPDCH			PRACH
PhyCH identity	tsc_E_DPCH (22)			tsc_PRACH1 (8)

Table 8.3.49.2: Downlink configuration of Cell_2DCH_1AM_1UM_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB27 (27)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH3 (9)		
RLC mode	AM	UM		
MAC priority	8	8		
TrCH Type	HS-DSCH			
TrCH identity / Mac-d Flow Id	0	3	1	
PhyCh Type	PDSCH			Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)			tsc_S_CCPCH1 (5)

8.3.50 Configuration of Cell_3DCH_2AM_1UM_E_HS (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.7. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to RRC signalling tests in the DCH state where two PS RABs are setup for the streaming or interactive or background service class and another UM PS Bearer is setup for conversational / unknown or speech:

- 2 AM PS RABs and 1 UM PS RAB on DTCH are mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

In the downlink F-DPCH is configured.

Table 8.3.50.1: Uplink configuration of Cell_2DCH_1AM_1UM_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	tsc_RB27 (27)	Same as uplink configuration of Cell_DCH_StandAlon eSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAlon eSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH 2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	AM	UM		
TrCH Type	E-DCH				
TrCH identity//Mac-d Flow Id	2	3	4	1	
PhyCh Type	E-DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)				tsc_PRACH1 (8)

Table 8.3.50.2: Downlink configuration of Cell_2DCH_1AM_1UM_E_HS

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	tsc_RB27 (27)	Same as downlink configuration of Cell_DCH_StandAlon eSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAlone SRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	AM	AM	UM		
MAC priority	8	8	8		
TrCH Type	HS-DSCH				
TrCH identity / Mac-d Flow Id	0	2	3	1	
PhyCh Type	PDSCH				Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)				tsc_S_CCPCH1 (5)

8.3.51 Configuration of Cell_Four_DTCH_CS_E_HS_5SRB (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses6.10.2.4.6.8. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

The uplink configuration is same as in clause 8.3.45 Cell_Four_DTCH_E_HS_CS and Cell_Four_DTCH_CS_E_HS.

The downlink configuration is the same as in clause 8.3.52 Cell_Four_DTCH_HS_5SRB.

8.3.52 Configuration of Cell_Four_DTCH_HS_5SRB (Rel-5 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.5.8. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RB tests.

The uplink configuration is same in clause 8.3.36 Cell_Four_DTCH_HS_CS and Cell_Four_DTCH_CS_HS.

Table 8.3.52: Downlink configuration of Cell_Four_DTCH_HS_5SRB

RB Identity	tsc_RB25 (25)	tsc_RB10 (10)	tsc_RB11 (11)	tsc_RB12 (12)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB5 (5)	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH	DTCH	DCCH	DCCH	DCCH	DCCH	DCCH	
LogCh Identity	tsc_DL_DTCH 41 (107)	tsc_DL_DTCH 1 (7)	tsc_DL_DTCH 2 (8)	tsc_DL_DTCH 3 (9)	tsc_DL_DCCH 1 (1)	tsc_DL_DCCH 2 (2)	tsc_DL_DCCH 3 (3)	tsc_DL_DCCH 4 (4)	tsc_DL_DCCH 5 (5)	
RLC mode	AM	TM	TM	TM	UM	AM	AM	AM	TM	
MAC priority	8	1	1	1	1	2	3	4	5	
TrCH Type	HS-DSCH	DCH	DCH	DCH	DCH				DCH	
TrCH/ Q-identity	0	Tsc_DL_DCH 1 (6)	tsc_DL_DCH2 (7)	tsc_DL_DCH3 (8)	tsc_DL_DCH5 (10)				tsc_DL_DCH6 (22)	
PhyCh Type	PDSCH	DPCH								Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_DL_DPCH1 (26)								tsc_S_CCPCH1 (5)

8.3.53 Configuration of Cell_E_HS_StandAloneSRB/ Cell_E_HS_StandAloneSRB_NoConn (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.1a. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to stand-alone SRB RRC signalling tests in the DCH:

- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

Additionally UL-DPCCH and HS-DPCCH are configured in UL as well as F-DPCH is configured in DL.

Table 8.3.53.1: Uplink configuration of Cell_E_HS_StandAloneSRB/ Cell_E_HS_StandAloneSRB_NoConn

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DCCH	DCCH	DCCH	DCCH	
LogCh Identity	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)	
RLC mode	UM	AM	AM	AM	
TrCH Type	E-DCH				
TrCH identity / Mac-d Flow Id	tsc_E_DCH_MAC_d_FlowId_DCCH (1)				
PhyCh Type	E-DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)				tsc_PRACH1 (8)

Table 8.3.53.2: Downlink configuration of Cell_E_HS_StandAloneSRB/ Cell_E_HS_StandAloneSRB_NoConn

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DCCH	DCCH	DCCH	DCCH	
LogCh Identity	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	
RLC mode	UM	AM	AM	AM	
MAC priority	1	2	3	4	
TrCH Type	HS-DSCH				
TrCH identity / Mac-d Flow Id	tsc_HS_DSCH_MAC_d_FlowId_DCCH (1)				
PhyCh Type	HS-PDSCH				Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)				tsc_S_CCPCH1 (5)

8.3.54 MBMS channel configuration (Rel-6 or later)

The MBMS channel configurations are configured in addition to any existing configurations defined in clause 8.3.

8.3.54.1 Configuration cell_MBMS_MCCH (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.

The configuration is applied to the MBMS tests.

Table 8.3.54.1: cell_MBMS_MCCH

RB Identity	tsc_RB_MCCH (8)
LogCh Type	MCCH
LogCh Identity	tsc_MCCH1 (1)
RLC mode	UM
MAC priority	1
TrCH Type	FACH
TrCH identity	tsc_FACH3 (16)
PhyCh Type	Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)

8.3.54.2 Configuration cell_MBMS_MCCH_One_MTCH (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.

The configuration is applied to the MBMS tests.

Table 8.3.54.2: cell_MBMS_MCCH_One_MTCH

RB Identity	tsc_RB_MCCH (8)	tsc_RB_MTCH1 (14)
LogCh Type	MCCH	MTCH
LogCh Identity	tsc_MCCH1 (1)	tsc_MTCH1 (1)
RLC mode	UM	UM
MAC priority	1	1
TrCH Type	FACH	FACH
TrCH identity	tsc_FACH3 (16)	tsc_FACH4 (17)
PhyCh Type	Secondary CCPCH	Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)	tsc_S_CCPCH3 (13)

8.3.55 Configuration of PS Cell_DCH_64kPS_AM_RAB

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.1.26. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to MBMS tests in the DCH state where a PS RAB on DTCH is setup for the interactive or background service class.

Table 8.3.55.1: Uplink configuration of PS Cell_DCH_64kPS_AM_RAB

RB Identity	tsc_RB22 (22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH2 (8)		
RLC mode	AM		
TrCH Type	DCH		
TrCH identity	tsc_UL_DCH1 (1)		
PhyCh Type	DPDCH		PRACH
PhyCH identity	tsc_UL_DPCH1 (20)		tsc_PRACH1 (8)

Table 8.3.55.2: Downlink configuration of PS Cell_DCH_64kPS_AM_RAB

RB Identity	tsc_RB22 (22)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH2 (8)		
RLC mode	AM		
MAC priority	1		
TrCH Type	DCH		
TrCH identity	tsc_DL_DCH1 (6)		
PhyCh Type	DPCH		Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)		tsc_S_CCPCH1 (5)

8.3.56 Configuration of PS Cell_MBMS_PTPRB

The configuration is based on, clause 6.10.2.4.1.58. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to MBMS PTP RB test cases.

The uplink configuration is same in clause 8.3.2 Cell_DCH_StandAloneSRB.

Table 8.3.56: Downlink configuration of Cell_MBMS_PTPRB

RB Identity	tsc_RB21 (21)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH2 (8)		
RLC mode	UM		
MAC priority	1		
TrCH Type	DCH		
TrCH identity	tsc_DL_DCH2 (7)		
PhyCh Type	DPCH		Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)		tsc_S_CCPCH1 (5)

8.3.57 Configuration of PS Cell_MBMS_PTPRB_AM

The configuration is based on, clause 6.10.2.4.1.58. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to MBMS PTP RB test cases, with additional PS RAB established.

The uplink configuration is same in clause 8.3.8 Cell_DCH_64kPS_RAB_SRB and Cell_PDCP_AM_RAB.

Table 8.3.57: Downlink configuration of PS Cell_MBMS_PTPRB_AM

RB Identity	tsc_RB20 (20)	tsc_RB21 (21)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)		
RLC mode	AM	UM		
MAC priority	1	1		
TrCH Type	DCH	DCH		
TrCH identity	tsc_DL_DCH1 (6)	tsc_DL_DCH2 (7)		
PhyCh Type	DPCH			Secondary CCPCH
PhyCH identity	tsc_DL_DPCH1 (26)			tsc_S_CCPCH1 (5)

8.3.58 Configuration of Cell_FACH_MCCH_SRB / Cell_FACH_MCCH_NoDedicated

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.9 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the MBMS tests related in the states CELL_FACH, CELL_PCH and URA_PCH.

The uplink configuration is same in clause 8.3.1 Cell_FACH.

Table 8.3.58: Downlink configuration of Cell_FACH_MCCH_NoConn / Cell_FACH_MCCH_SRB / Cell_FACH_MCCH_NoDedicated

RB Identity	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_MCCH (8)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	MCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	Tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_MCCH1 (1)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	UM	TM
MAC priority	1	1	2	3	4	5	1	1
TrCH Type	FACH	FACH					FACH	PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)					tsc_FACH3 (16)	tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH1 (5)							

8.3.59 Configuration of Cell_DCH_MCCH_PS

The configuration is based on 3GPP TS 34.108 [3], clause . The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to the MBMS signalling tests in the DCH state.

The uplink configuration is same in clause 8.3.8 Cell_DCH_64kPS_RAB_SRB

Table 8.3.59: Downlink configuration of Cell_DCH_MCCH_PS

RB Identity	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB20 (20)	tsc_RB0 (0)	tsc_RB_PCCH (-2)	tsc_RB_MCCH (8)	
LogCh Type	DCCH	DCCH	DCCH	DCCH	DTCH	CCCH	PCCH	MCCH	
LogCh Identity	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_DL_DTCH1 (7)	tsc_DL_CCCH5 (5)	tsc_PCCH1 (1)	tsc_MCCH1 (1)	
RLC mode	UM	AM	AM	AM	AM	UM	TM	UM	AM
MAC priority	1	2	3	4	1	1	1	1	1
TrCH Type	DCH				DCH	FACH	PCH	FACH	FACH
TrCH identity	tsc_DL_DCH5 (10)				tsc_DL_DCH1 (6)	tsc_FACH1 (13)	tsc_PCH1 (12)	tsc_FACH3 (16)	tsc_FACH2 (16)
PhyCh Type	DPCH tsc_DL_DPCH1 (26)					Secondary CCPCH			
PhyCH identity						tsc_S_CCPCH1 (5)			

8.3.60 Configuration of PS Cell_DCH_1AM_2AM_HS_DSCH (Rel-6 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.5.10. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 with 2 AM RAB and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1. The configuration is applied to RAB test cases.

Table 8.3.60.1: Uplink configuration of Cell_DCH_1AM_2AM_HS_DSCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	tsc_RB28 (28)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	AM	AM			
TrCH Type	DCH	DCH			
TrCH identity	tsc_UL_DCH1 (1)	tsc_UL_DCH2 (2)			
PhyCh Type	DPDCH				PRACH
PhyCH identity	tsc_UL_DPCH1 (20)				tsc_PRACH1 (8)

Table 8.3.60.2: Downlink configuration of Cell_DCH_1AM_2AM_HS_DSCH

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)	tsc_RB28 (28)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	AM	AM	AM		
MAC priority	8	8	8		
TrCH Type	HS-DSCH	HS-DSCH	HS-DSCH		
TrCH identity /QueueID	0	2	3		
PhyCh Type	PDSCH			DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)			tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.61 Configuration of Cell_FACH_enhDL_PCH (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.4.3 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_PCH and URA_PCH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the PCH states where a PS RAB is setup for the interactive or background service class (A):

- PS RAB on DTCH is mapped on S-CCPCH in uplink and HS-DSCH in downlink.
- Downlink SRBs on DCCH are mapped on HS-DSCH;
- Uplink SRBs on DCCH are mapped on PRACH.

Table 8.3.61.1: Uplink configuration of Cell_FACH_enhDL_PCH

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	AM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.61.2: Downlink configuration of Cell_FACH_enhDL_PCH

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH_FACH (11)
RLC mode	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	8	1	2	3	4	5	1	1
TrCH Type	HS-DSCH	HS-DSCH	HS-DSCH				HS-DSCH	HS-DSCH
TrCH identity / Mac-d Flow Id	2	0	1				NA	NA
PhyCh Type	PDSCH							
PhyCH identity	tsc_HSPDSCH (18)							

8.3.62 Configuration of Cell_FACH_enhDL_PS (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.4.3 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the FACH state where a PS RAB is setup for the interactive or background service class (A):

- PS RAB on DTCH is mapped on PRACH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH and CCCH are mapped on PRACH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

Table 8.3.62.1: Uplink configuration of Cell_FACH_enhDL_PS

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	AM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.62.2: Downlink configuration of Cell_FACH_enhDL_PS

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)
RLC mode	AM	UM	UM	AM	AM	AM	TM
MAC priority	8	1	2	3	4	5	1
TrCH Type	HS-DSCH	HS-DSCH	HS-DSCH				HS-DSCH
TrCH identity / Mac-d Flow Id	2	0	1				NA
PhyCh Type	PDSCH						
PhyCH identity	tsc_HSPDSCH (18)						

8.3.63 Configuration of Cell_E_HS_UM (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clauses 6.10.2.4.6.9 and 6.10.2.4.6.10. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to signalling tests in the DCH state where a PS RAB is setup for CS voice over HSPA (A23):

- UM PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- SRBs on DCCH are mapped on E-DCH in uplink and HS-DSCH in downlink.

Table 8.3.63.1: Uplink configuration of Cell_E_HS_UM

RB Identity	tsc_RB26 (26)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	UM		
TrCH Type	E-DCH		
TrCH identity/ Mac-d Flow Id	2	1	
PhyCh Type	E-DPDCH		PRACH
PhyCH identity	tsc_E_DPCH (22)		tsc_PRACH1 (8)

Table 8.3.63.2: Downlink configuration of Cell_E_HS_UM

RB Identity	tsc_RB26 (26)	Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)		
RLC mode	UM		
MAC priority	8		
TrCH Type	HS-DSCH		
TrCH identity / Mac-d Flow Id	0	1	
PhyCh Type	PDSCH		Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)		tsc_S_CCPCH1 (5)

8.3.64 Configuration of Cell_FACH_enhDL_SRB (Rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.4.3 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the FACH state with a signalling connection:

- Uplink SRBs on DCCH are mapped on PRACH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

Table 8.3.64.1: Uplink configuration of Cell_FACH_enhDL_SRB

RB Identity	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	TM	UM	AM	AM	AM
TrCH Type	RACH				
TrCH identity	tsc_RACH1 (15)				
PhyCh Type	PRACH				
PhyCH identity	tsc_PRACH1 (8)				

Table 8.3.64.2: Downlink configuration of Cell_FACH_enhDL_SRB

RB Identity	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)
LogCh Type	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)
RLC mode	UM	UM	AM	AM	AM	TM
MAC priority	1	2	3	4	5	1
TrCH Type	HS-DSCH	HS-DSCH				HS-DSCH
TrCH identity / Mac-d Flow Id	0	1				NA
PhyCh Type	PDSCH					
PhyCH identity	tsc_HSPDSCH (18)					

8.3.65 Configuration of Cell_DCH_3TM_dlSRB_E_HS (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.2. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to MAC signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A26):

- 3 PS UM RAB on DTCH are mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on DCH.

Table 8.3.65.1: Uplink configuration of Cell_DCH_3TM_dlSRB_E_HS

RB Identity	tsc_RB_DTCH_E_DCH_MAC0 (-20)	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB_DTCH_E_DCH_MAC2 (-22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	tsc_UL_DTCH3 (9)		
RLC mode	TM	TM	TM		
TrCH Type	E-DCH				
TrCH identity//Mac-d Flow Id	2	3	4	1	
PhyCh Type	E-DPDCH				PRACH
PhyCH identity	tsc_E_DPCH (22)				tsc_PRACH1 (8)

Table 8.3.65.2: Downlink configuration of Cell_DCH_3TM_dlSRB_E_HS

RB Identity	tsc_RB_DTCH_E_DCH_MAC0 (-20)	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB_DTCH_E_DCH_MAC2 (-22)	Same as downlink configuration of Cell_DCH_StandAlone SRB on DPCH	Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH
LogCh Type	DTCH	DTCH	DTCH		
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)	tsc_DL_DTCH3 (9)		
RLC mode	TM	TM	TM		
MAC priority	8	8	8		
TrCH Type	HS-DSCH				
TrCH identity /QueueID	2	3	4		
PhyCh Type	PDSCH			DPCH	Secondary CCPCH
PhyCH identity	tsc_HSPDSCH (18)			tsc_DL_DPCH1 (26)	tsc_S_CCPCH1 (5)

8.3.66 Configuration of Cell_E_HS_TM (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.6.9 and 6.10.2.4.6.10. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to MAC(i/is) signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class (A27):

- TM PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- SRBs on DCCH are mapped on E-DCH in uplink and HS-DSCH in downlink.

Table 8.3.66.1: Uplink configuration of Cell_E_HS_TM

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH	Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH
LogCh Type	DTCH		
LogCh Identity	tsc_UL_DTCH1 (7)		
RLC mode	TM		
TrCH Type	E-DCH		
TrCH identity/ Mac-d Flow Id	2	1	
PhyCh Type	E-DPDCH		PRACH
PhyCH identity	tsc_E_DPCH (22)		tsc_PRACH1 (8)

Table 8.3.66.2: Downlink configuration of Cell_E_HS_TM

<table>
<tr><td>RB Identity</td><td>tsc_RB_DTCH_E_DCH_MAC1
(-21)</td><td rowspan="5">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>MAC priority</td><td>8</td></tr>
<tr><td>TrCH Type</td><td colspan="2">HS-DSCH</td></tr>
<tr><td>TrCH identity / Mac-d Flow Id</td><td>0</td><td>1</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">PDSCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_HSPDSCH
(18)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.3.67 Dual cell configurations (Rel-8 or later)

8.3.67.1 Configuration of cell_SecondaryDualCell_SRB (Rel-8 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where a PS RAB is setup with dual cell activated (A25):

- Downlink PS RAB is mapped on HS-DSCH in downlink.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

There is no uplink configuration. The related HS-DSCH serving cell is configured in cell_E_HS.

Table 8.3.67.1: Downlink cell_SecondaryDualCell_SRB

<table>
<tr><td>RB Identity</td><td>tsc_RB25
(25)</td><td rowspan="5">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>AM</td></tr>
<tr><td>MAC priority</td><td>8</td></tr>
<tr><td>TrCH Type</td><td colspan="2">HS-DSCH</td></tr>
<tr><td>TrCH identity / Mac-d Flow Id</td><td>0</td><td>1</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">PDSCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_HSPDSCH
(18)</td></tr>
</table>

8.3.67.2 Configuration of cell_SecondaryDualCell_RAB (Rel-8 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where a PS RAB is setup with dual cell activated:

- Downlink PS RAB is mapped on HS-DSCH in downlink.

There is no uplink configuration. The related HS-DSCH serving cell is configured in cell_DCH_HS_DSCH.

Table 8.3.67.2: Downlink cell_SecondaryDualCell_RAB

RB Identity	tsc_RB25 (25)
LogCh Type	DTCH
LogCh Identity	tsc_DL_DTCH1 (7)
RLC mode	AM
MAC priority	8
TrCH Type	HS-DSCH
TrCH identity / Mac-d Flow Id	0
PhyCh Type	PDSCH
PhyCH identity	tsc_HSPDSCH (18)

8.3.67.3 Configuration of cell_SecondaryDualCell_2RAB (Rel-8 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where 2 PS RAB is setup with dual cell activated:

- 2 Downlink PS AM RABs are mapped on HS-DSCH in downlink.

There is no uplink configuration. The related HS-DSCH serving cell is configured in Cell_DCH_2AM_HS_DSCH.

Table 8.3.67.3: Downlink cell_SecondaryDualCell_2RAB

RB Identity	tsc_RB25 (25)	tsc_RB17 (17)
LogCh Type	DTCH	DTCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)
RLC mode	AM	AM
MAC priority	8	8
TrCH Type	HS-DSCH	HS-DSCH
TrCH identity / Mac-d Flow Id	0	1
PhyCh Type	PDSCH	PDSCH
PhyCH identity	tsc_HSPDSCH (18)	tsc_HSPDSCH (18)

8.3.67.4 Configuration of cell_SecondaryDCU_dlSRB_RAB (Rel-9 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where 1 PS RAB is setup with dual cell HSUPA activated:

- The downlink configuration is the same as cell_SecondaryDualCell_RAB
- Uplink PS RAB is mapped on E-DCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.

The related HS-DSCH serving cell is configured in Cell_DCH_dlSRB_E_HS

Table 8.3.67.4.1: Uplink cell_SecondaryDCU_dlSRB_RAB

RB Identity	tsc_RB25 (25)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH
LogCh Type	DTCH	
LogCh Identity	tsc_UL_DTCH1 (7)	
RLC mode	AM	
TrCH Type	E-DCH	
TrCH identity/ Mac-d Flow Id	2	1
PhyCh Type	E-DPDCH	
PhyCH identity	tsc_E_DPCH (22)	

8.3.67.5 Configuration of cell_SecondaryDCU_dlSRB_2TM (Rel-9 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where 2 PS RAB is setup with dual cell HSUPA activated:

- 2 Downlink PS RABs are mapped on HS-DSCH in downlink.
- 2 Uplink PS RABs are mapped on E-DCH.
- Uplink SRBs on DCCH are mapped on E-DCH.

The related HS-DSCH serving cell is configured in Cell_2DCH_MAC_2TM_dlSRB_E_HS

Table 8.3.67.5.1: Uplink cell_SecondaryDCU_dlSRB_2TM

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB_DTCH_E_DCH_MAC2 (-22)	Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH
LogCh Type	DTCH	DTCH	
LogCh Identity	tsc_UL_DTCH1 (7)	tsc_UL_DTCH2 (8)	
RLC mode	TM	TM	
TrCH Type	E-DCH		
TrCH identity/ Mac-d Flow Id	2	3	1
PhyCh Type	E-DPDCH		
PhyCH identity	tsc_E_DPCH (22)		

Table 8.3.67.5.2: Downlink cell_SecondaryDCU_dlSRB_2TM

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB_DTCH_E_DCH_MAC2 (-22)
LogCh Type	DTCH	DTCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_DTCH2 (8)
RLC mode	TM	TM
MAC priority	8	8
TrCH Type	HS-DSCH	HS-DSCH
TrCH identity /QueueID	0	1
PhyCh Type	PDSCH	
PhyCH identity	tsc_HSPDSCH (18)	

8.3.67.6 Configuration of cell_SecondaryDCU_SRB_RAB (Rel-9 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where 1 PS RAB is setup with dual cell HSUPA activated:

- The downlink configuration is the same as cell_SecondaryDualCell_SRB
- The uplink configuration is the same as cell_SecondaryDCU_UlSRB_RAB

The related HS-DSCH serving cell is configured in Cell_E_HS

8.3.67.7 Configuration of cell_SecondaryDCU_dlSRB_TM (Rel-9 or later)

The configuration is applied the DCH state to the HS-DSCH secondary serving cell where 1 PS RAB is setup with dual cell HSUPA activated:

- 1 Downlink PS RAB is mapped on HS-DSCH in downlink.
- 1 Uplink PS RAB is mapped on E-DCH.
- Uplink SRBs on DCCH are mapped on E-DCH.

The related HS-DSCH serving cell is configured in Cell_E_HS_MAC_TM_dlSRB

Table 8.3.67.7.1: Uplink cell_SecondaryDCU_dlSRB_TM

<table>
<tr><td>RB Identity</td><td>tsc_RB_DTCH_E_DCH_MAC1 (-21)</td><td rowspan="4">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH1 (7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>TrCH Type</td><td colspan="2">E-DCH</td></tr>
<tr><td>TrCH identity/ Mac-d Flow Id</td><td>2</td><td>1</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">E-DPDCH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_E_DPCH (22)</td></tr>
</table>

Table 8.3.67.7.2: Downlink cell_SecondaryDCU_dlSRB_TM

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)
LogCh Type	DTCH
LogCh Identity	tsc_DL_DTCH1 (7)
RLC mode	TM
MAC priority	8
TrCH Type	HS-DSCH
TrCH identity /QueueID	0
PhyCh Type	PDSCH
PhyCH identity	tsc_HSPDSCH (18)

8.3.68 Enhanced FACH Uplink configurations (Rel-8 or later)

8.3.68.1 Configuration of Cell_FACH_UL_SRB and Cell_FACH_UL_SRB_NoConn (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.7.1 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the FACH state where a PS RAB is setup:

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH and CCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

The downlink configuration is same as in clause 8.3.64 Cell_FACH_enhDL_SRB

Table 8.3.68.1: Uplink configuration of Cell_FACH_UL_SRB or Cell_FACH_UL_SRB_NoConn

RB Identity	tsc_RB0 (0)	tsc_RB0_EFUL (0-28)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	CCCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	tsc_UL_CCCH5 (5)	tsc_UL_CCCH_EFUL5 (15)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	TM	TM	UM	AM	AM	AM
TrCH Type	RACH	E-DCH				
TrCH identity/ Mac-d Flow Id	tsc_RACH1 (15)	7	1			
PhyCh Type	PRACH	E-DPDCH				
PhyCH identity	tsc_PRACH1 (8)	tsc_E_DPCH (22)				

8.3.68.2 Configuration of Cell_FACH_UL_PS (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.7.1 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the FACH state where a PS RAB is setup:

- PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH and CCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

The downlink configuration is same as in clause 8.3.62 Cell_FACH_enhDL_PS.

Table 8.3.68.2: Uplink configuration of Cell_FACH_UL_PS

RB Identity	tsc_RB0 (0)	tsc_RB25 (25)	tsc_RB0_EFUL (0-28)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	CCCH	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	tsc_UL_CCCH5 (5)	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5_EFUL (15)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	TM	AM	TM	UM	AM	AM	AM
TrCH Type	RACH	E-DCH					
TrCH identity/ Mac-d Flow Id	tsc_RACH1 (15)	0	7	1			
PhyCh Type	PRACH	E-DPDCH					
PhyCH identity	tsc_PRACH1 (8)	tsc_E_DPCH (22)					

8.3.68.3 Configuration of Cell_FACH_UL_TM_PS (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.7.1 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH. They need a minimum radio configuration for testing.

The configuration is applied to RRC signalling tests in the FACH state where a PS RAB is setup:

- PS RAB in TM on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH and CCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on HS-DSCH.

Table 8.3.68.3.1: Uplink configuration of Cell_FACH_UL_TM_PS

RB Identity	tsc_RB0 (0)	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB0_EFUL (0-28)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	
LogCh Type	CCCH	DTCH	CCCH	DCCH	DCCH	DCCH	
LogCh Identity	tsc_UL_CCCH5 (5)	tsc_UL_DTCH1 (7)	tsc_UL_CCCH5_EFUL (15)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_
RLC mode	TM	TM	TM	UM	AM	AM	
TrCH Type	RACH	E-DCH					
TrCH identity/ Mac-d Flow Id	tsc_RACH1 (15)	0	7	1			
PhyCh Type	PRACH	E-DPDCH					
PhyCH identity	tsc_PRACH1 (8)	tsc_E_DPCH (22)					

Table 8.3.68.3.2: Downlink configuration of Cell_FACH_UL_TM_PS

RB Identity	tsc_RB_DTCH_E_DCH_MAC1 (-21)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)
RLC mode	TM	UM	UM	AM	AM	AM	TM
MAC priority	8	1	2	3	4	5	1
TrCH Type	HS-DSCH	HS-DSCH	HS-DSCH				HS-DSCH
TrCH identity / Mac-d Flow Id	2	0	1				NA
PhyCh Type	PDSCH						
PhyCH identity	tsc_HSPDSCH (18)						

8.3.68.4 Configuration of Cell_FACH_UL_NoDedicated (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.7.1 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink.

The configuration is applied to signalling tests in the enhanced FACH state for a non serving cell where:

- Uplink SRBs on CCCH are mapped on E-DCH.

The downlink configuration is same as in clause 8.3.1a Cell_FACH_NoDedicated

Table 8.3.68.4.1: Uplink configuration of Cell_FACH_UL_NoDedicated

RB Identity	tsc_RB0 (0)	tsc_RB0_EFUL (-28)
LogCh Type	CCCH	CCCH
LogCh Identity	tsc_UL_CCCH5 (5)	tsc_UL_CCCH_EFUL (15)
RLC mode	TM	TM
TrCH Type	RACH	E-DCH
TrCH identity/ Mac-d Flow Id	tsc_RACH1 (15)	7
PhyCh Type	PRACH	E-DPDCH
PhyCH identity	tsc_PRACH1 (8)	tsc_E_DPCH (22)

8.3.69 Configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PS (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_2_SCCPCH_CTCH enhDL_PS is the same as the uplink configuration of Cell_FACH_enhDL_PS.

Table 8.3.69.1: Downlink configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PS: 1st & 2nd S-CCPCH

RB Identity	tsc_RB30 (30)			
LogCh Type	CTCH			
LogCh Identity	tsc_CTCH1 (11)			
RLC mode	UM	UM	TM	TM
MAC priority	7	1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)			tsc_S_CCPCH1 (5)

Table 8.3.69.2: Downlink configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PS: HS-PDSCH

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)
RLC mode	AM	UM	UM	AM	AM	AM	TM
MAC priority	8	1	2	3	4	5	1
TrCH Type	HS-DSCH	HS-DSCH		HS-DSCH			HS-DSCH
TrCH identity / Mac-d Flow Id	2	0		1			NA
PhyCh Type	PDSCH						
PhyCH identity	tsc_HSPDSCH (18)						

8.3.70 Configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PCH (Rel-8 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RAB tests.

The uplink configuration of Cell_FACH_2_SCCPCH_CTCH enhDL_PCH is the same as the uplink configuration of Cell_FACH_enhDL_PCH.

Table 8.3.70.1: Downlink configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PCH: 1st & 2nd S-CCPCH

RB Identity	tsc_RB30 (30)			
LogCh Type	CTCH			
LogCh Identity	tsc_CTCH1 (11)			
RLC mode	UM	UM	TM	TM
MAC priority	7	1	6	1
TrCH Type	FACH	FACH		PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)		tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH			Secondary CCPCH
PhyCH identity	tsc_S_CCPCH2 (10)			tsc_S_CCPCH1 (5)

Table 8.3.70.2: Downlink configuration of Cell_FACH_2_SCCPCH_CTCHenhDL_PCH: HS-PDSCH

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH2 (2)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH_FACH (11)
RLC mode	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	8	1	2	3	4	5	1	1
TrCH Type	HS-DSCH	HS-DSCH		HS-DSCH			HS-DSCH	HS-DSCH
TrCH identity / Mac-d Flow Id	2	0		1			NA	NA
PhyCh Type	PDSCH							
PhyCH identity	tsc_HSPDSCH (18)							

8.3.71 Configuration of Cell_FACH_HS (rel-7 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.10.2.4.3.2.1.2 for downlink and 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1 for uplink. The configuration is applied to the RRC tests related in the states CELL_FACH, CELL_PCH and URA_PCH. They need a minimum radio configuration for testing.

Table 8.3.71.1: Uplink configuration of Cell_FACH_HS

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH
LogCh Identity	Tsc_UL_DTCH1 (7)	tsc_UL_CCCH5 (5)	tsc_UL_DCCH1 (1)	tsc_UL_DCCH2 (2)	tsc_UL_DCCH3 (3)	tsc_UL_DCCH4 (4)
RLC mode	AM	TM	UM	AM	AM	AM
TrCH Type	RACH					
TrCH identity	tsc_RACH1 (15)					
PhyCh Type	PRACH					
PhyCH identity	tsc_PRACH1 (8)					

Table 8.3.71.2: Downlink configuration of Cell_FACH_HS

RB Identity	tsc_RB25 (25)	tsc_RB0 (0)	tsc_RB1 (1)	tsc_RB2 (2)	tsc_RB3 (3)	tsc_RB4 (4)	tsc_RB_BCCH_FACH (-3)	tsc_RB_PCCH (-2)
LogCh Type	DTCH	CCCH	DCCH	DCCH	DCCH	DCCH	BCCH	PCCH
LogCh Identity	tsc_DL_DTCH1 (7)	tsc_DL_CCCH5 (5)	tsc_DL_DCCH1 (1)	tsc_DL_DCCH2 (2)	tsc_DL_DCCH3 (3)	tsc_DL_DCCH4 (4)	tsc_BCCH6 (6)	tsc_PCCH1 (1)
RLC mode	AM	UM	UM	AM	AM	AM	TM	TM
MAC priority	1	1	2	3	4	5	6	1
TrCH Type	FACH	FACH						PCH
TrCH identity	tsc_FACH2 (14)	tsc_FACH1 (13)						tsc_PCH1 (12)
PhyCh Type	Secondary CCPCH							
PhyCH identity	tsc_S_CCPCH1 (5)							

8.3.72 Configuration of Cell_E_HS_MAC_TM_dlSRB (Rel-9 or later)

The configuration is based on 3GPP TS 34.108 [3], clause 6.11.4d. The RB0/UM-CCCH is referred to 3GPP TS 34.108 [33], clause 6.10.2.4.3.2.1.2 and RB0/TM-CCCH is referred to 3GPP TS 34.108 [3], clause 6.10.2.4.4.1.1.1.

The configuration is applied to MAC(i/is) signalling tests in the DCH state where a PS RAB is setup for the interactive or background service class:

- 1 TM PS RAB on DTCH is mapped on E-DCH in uplink and HS-DSCH in downlink.
- Uplink SRBs on DCCH are mapped on E-DCH.
- Downlink SRBs on DCCH are mapped on DCH.

Table 8.3.72.1: Uplink configuration of Cell_E_HS_MAC_TM_dlSRB

<table>
<tr><td>RB Identity</td><td>tsc_RB_DTCH_E_DCH_MAC1 (-21)</td><td rowspan="4">Same as uplink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="6">Same as uplink configuration of Cell_DCH_StandAloneSRB on PRACH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_UL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>TrCH Type</td><td colspan="2">E-DCH</td></tr>
<tr><td>TrCH identity//Mac-d Flow Id</td><td>2</td><td>1</td></tr>
<tr><td>PhyCh Type</td><td colspan="2">E-DPDCH</td><td>PRACH</td></tr>
<tr><td>PhyCH identity</td><td colspan="2">tsc_E_DPCH
(22)</td><td>tsc_PRACH1
(8)</td></tr>
</table>

Table 8.3.72.2: Downlink configuration of Cell_E_HS_MAC_TM_dlSRB

<table>
<tr><td>RB Identity</td><td>tsc_RB_DTCH_E_DCH_MAC1 (-21)</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on DPCH</td><td rowspan="7">Same as downlink configuration of Cell_DCH_StandAloneSRB on sCCPCH</td></tr>
<tr><td>LogCh Type</td><td>DTCH</td></tr>
<tr><td>LogCh Identity</td><td>tsc_DL_DTCH1
(7)</td></tr>
<tr><td>RLC mode</td><td>TM</td></tr>
<tr><td>MAC priority</td><td>8</td></tr>
<tr><td>TrCH Type</td><td>HS-DSCH</td></tr>
<tr><td>TrCH identity /QueueID</td><td>0</td></tr>
<tr><td>PhyCh Type</td><td>PDSCH</td><td>DPCH</td><td>Secondary CCPCH</td></tr>
<tr><td>PhyCH identity</td><td>tsc_HSPDSCH
(18)</td><td>tsc_DL_DPCH1
(26)</td><td>tsc_S_CCPCH1
(5)</td></tr>
</table>

8.4 System information blocks scheduling

All SIBs specified in 3GPP TS 34.108 [3] are broadcast for all test cases in the present document. The repeat period of broadcasting of a complete SIB configuration is 64 frames (0,64 s) as the default configuration.

Except MIB and SB1, they have the highest scheduling rates, SIB7 has also a higher scheduling rate.

According to the default SIB contents in 3GPP TS 34.108 [3], SIB11 and SIB12 have 3 segments. SIB5/SIB5bis has 4 segments for FDD and 5 segments for 1.28 Mcps TDD. SIB 6 has 4 segments. MIB, SB1, SIB1, SIB2, SIB3, SIB4, SIB7 and SIB18 are not segmented, i.e. one segment for each. For the PDCP tests, SIB16 has 7 segments.

Use CMAC_SYSINFO_CONFIG_REQ, CMAC_SYSINFO_CONFIG_CNF and RLC_TR_DATA_REQ as interface to SS for broadcasting.

Two TSOs are defined, one for PER encoding function, the other for segmentation function. The TSOs shall be implemented in the tester.

8.4.1 Grouping SIBs for testing

The grouping of SIBs is defined in 3GPP TS 34.108 [3], clause 6.1.0a.1.

8.4.2 SIB configurations

SIB configurations are defined in 3GPP TS 34.108 [3], clause 6.1.0a.2.

8.4.3 Test SIB default schedule

The SIB default schedule is defined in 3GPP TS 34.108 [3], clause 6.1.0a.3.

8.4.3.1 Test SIB schedule for idle mode, measurement and Inter-RAT UTRAN to GERAN test cases

The SIB schedule is defined in 3GPP TS 34.108 [3], clause 6.1.0a.4.2.

8.4.4 Test SIB special schedule

8.4.4.1 Test SIB schedule for two S-CCPCH or two PRACH

The SIB schedule for two S-CCPCH or two PRACH is defined in 3GPP TS 34.108 [3], clause 6.1.0a.4.1.

8.4.4.2 Test SIB schedule for Inter-Rat Handover from GERAN to UTRAN Test

The SIB schedule for Inter-Rat Handover from GERAN to UTRAN Test is defined in 3GPP TS 34.108 [3], clause 6.1.0a.4.3.

8.4.5 Handling the transmission of SIB

According to the SIB repeat periods, SIBs need to be transmitted on a very regular basis during the operation of a test case. This transmission usually has no direct bearing on the operation of the test case, although the carried information ensures the correct configuration and operation of the UE during the test case.

To send this information repeatedly directly from each test case would make the test cases very complex to implement, difficult to understand and place real-time requirements upon them that are beyond the capabilities of most TTCN driven test engines.

Management of scheduling of System Information messages is performed by the system simulator. The SIB contents, usually determined in part by the individual tests, come from the TTCN test cases.

8.4.5.1 Delivery of System Information content

The content of the System Information messages is delivered as a fully encoded bit string to the TM-RLC SAP from the message content defined in the TTCN test case.

The IE 'SFNprime' in the SI messages is set to 0 by the TTCN, and the correct value of 'SFNprime' shall be inserted by the System Simulator prior to transmission of a SI message.

SI messages are ASN.1 packed encoded through a TTCN TSO and segmented another TTCN TSO into SIBs in the TTCN and sent only once to the TM-RLC SAP. Repetition of the SIB is the responsibility of the System Simulator lower layers.

SIBs are considered to be cached. That is, sending a SIB to the TM-RLC SAP will cause a previously sent copy of the SIB to be lost, and all future transmissions of the SIB will be the most recently sent version. This allows for the updating of System Information during the operation of a test case.

8.4.5.2 Scheduling of system Information blocks

The schedule for the transmission of SIBs is provided by the TTCN test case. It is sent using the CMAC_SYSINFO_CONFIG_REQ primitive sent to the CMAC SAP (CMAC_PCO).

Each CMAC_SYSINFO_CONFIG_REQ primitive carries scheduling information for the next SIB sent from the TTCN. Each primitive is followed by an associated SIB. Sending two CMAC_SYSINFO_CONFIG_REQ primitives in succession may cause an unspecified result.

8.4.5.3 Example of usage

The following example shows how the MIB, SB1 and all SIBs in subclause 8.4.3 are sent to the System Simulator lower layers for broadcasting. The 1st parameter in CMAC_SYSINFO_CONFIG_REQ represents the repeat period in power of 2. The 2nd parameter represents the repetition position. Two consecutive frames represent an available repetition position.

CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (3, 0)
TM_PCO:	MIB
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (4, 1)
TM_PCO:	SB1
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 2)
TM_PCO:	SIB7
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 3)
TM_PCO:	SIB6 (segment 1 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 5)
TM_PCO:	SIB6 (segment 2 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 6)
TM_PCO:	SIB6 (segment 3 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 7)
TM_PCO:	SIB6 (segment 4 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 10)
TM_PCO:	SIB7 + SIB3 (concatenation)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 11)
TM_PCO:	SIB1 + SIB2 (concatenation)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 13)
TM_PCO:	SIB12 (segment 1 of 3)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 14)
TM_PCO:	SIB12 (segment 2 of 3)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 15)
TM_PCO:	SIB12 (segment 3 of 3)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 18)
TM_PCO:	SIB7 + SIB18 (concatenation)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 19)
TM_PCO:	SIB5/SIB5bis (segment 1 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 21)
TM_PCO:	SIB5/SIB5bis (segment 2 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 22)
TM_PCO:	SIB5/SIB5bis (segment 3 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 23)
TM_PCO:	SIB5/SIB5bis (segment 4 of 4)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 26)
TM_PCO:	SIB7 + SIB4 (concatenation)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 27)
TM_PCO:	No segment
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 29)
TM_PCO:	SIB11 (segment 1 of 3)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 30)
TM_PCO:	SIB11 (segment 3 of 3)
CMAC_PCO:	CMAC_SYSINFO_CONFIG_REQ (6, 31)
TM_PCO:	SIB11 (segment 3 of 3)