TSG-RAN meeting #18   **RP-020682**
New Orleans, US 3-6 December 2002

3GPP TSG-RAN WG2 Meeting #33   *Tdoc R2-023269*
Sophia Antipolis, France, 12-15 November 2002

Title:	LS on HSDPA parameter value ranges
Source:	RAN2
To:	RAN1
Cc:	RAN
Release:	Rel-5

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Attachments: R2-023211 Proposed CR 1793 to 25.331 (Rel-5) on HSDPA parameter value ranges

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1. Description:

The attached CR was presented in RAN2#33 as an effort to finalize the HSDPA related RRC signalling in 25.331. The CR is acceptable from RAN2 point of view. In order to have this CR approved in RAN#18, it was proposed that RAN1 reviews (by email) the L1 related parameter value ranges. In case no problems are foreseen in RAN1, this CR, together with the corresponding CRs to NBAP and RNSAP will be brought to RAN#18 for approval.

2. Action:

To RAN1:

ACTION: RAN2 kindly asks RAN1 to review the L1 related parameter value ranges in the attached CR.

3. Date of Next RAN2 Meeting:

RAN2_34   17 – 21 February 2003   Sophia Antipolis, France.

<div align="right">*CR-Form-v7*</div>

CHANGE REQUEST

| ⌘ | **25.331** CR **1793** | ⌘ **rev** | **-** | ⌘ | Current version: | **5.2.0** | ⌘ |

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME **X** Radio Access Network **X** Core Network ☐

Title: ⌘	HSDPA parameter value ranges	
Source: ⌘	Nokia	
Work item code: ⌘	HSDPA-L23	**Date:** ⌘ 07/11/2002
Category: ⌘	**F**	**Release:** ⌘ Rel-5

Use *one* of the following categories:
F (correction)
A (corresponds to a correction in an earlier release)
B (addition of feature),
C (functional modification of feature)
D (editorial modification)
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use *one* of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘	Some HSDPA parameter value ranges are missing from the specification.

Summary of change: ⌘	- MAC-hs window size: values 4,6,8,12,16,24,32 are deemed sufficient. - T1 timer: Granularity could be 10 ms steps up to 100 ms and 20 ms after that up to 200 ms. - HARQ process memory size: The minimum transport block size for FDD is 137 bits (+24 bit CRC), when this is encoded with rate 1/3 turbo code we get 483+12=495 bits which is about 62 bytes. The minimum HARQ process memory could then be 100 bytes per process.The maximum transport block size is 28776 bits for 15 code UE. Since this is really the absolute maximum with HSDPA (not realistic), it is suggested that 32000 bits = 4000 bytes is enough as maximum HARQ memory per process. Thus the value range for this could be (100,200,...,2000,2200,2400,...,4000) bytes, i.e., with 100 byte steps up to 2000 bytes and then in 200 byte steps. - Remaining FFS removed. - Default Power offset between HS-PDSCH and P-CPICH is proposed to be (-6..13 dB by step of 0.5 dB). This value range has been proposed in RAN WG1 email reflector.

Consequences if not approved: ⌘	Some HSDPA parameter value ranges remain unspecified.

Clauses affected: ⌘	10.3.5.1a, 10.3.5.7a, 10.3.6.40a, 11.3

	Y	N		
Other specs ⌘		X	Other core specifications	⌘
Affected:		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.6.5.5a   Added or reconfigured MAC-d flow

If the IE "Added or reconfigured MAC-d flow" is included, the UE shall:

1> set the release timer for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "T1";

1> set the MAC-hs receiver window size for each of the MAC-hs queues in the MAC-hs entity to the value in the corresponding IE "MAC-hs window size";

1> apply the indicated mapping between MAC-d flows and MAC-hs queues; and

1> configure MAC-hs with the mapping between MAC-d PDU sizes index and allowed MAC-d PDU sizes as indicated, potentially replacing already existing MAC-d PDU sizes.

10.3.5.1a   Added or reconfigured MAC-d flow

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
MAC-hs queue list	OP	<1 to maxQueue ID>			REL-5
>MAC-hs queue Id	MP		Integer(1..8)		REL-5
>MAC-d Flow Identity	MP		MAC-d Flow Identity 10.3.5.7c		REL-5
>T1	MP		Integer(FFS 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200)	Timer (in milliseconds) when PDUs are released to the upper layers even though there are outstanding PDUs with lower TSN values.	REL-5
>MAC-hs window size	MP		Integer(4, 6, 8, 12, 16, 24, 32)		REL-5
>MAC-d PDU size Info	OP	<1 to max MACdPDU sizes>		Mapping of the different MAC-d PDU sizes configured for the HS-DSCH to the MAC-d PDU size index in the MAC-hs header.	REL-5
>>MAC-d PDU size	MP		Integer (1..5000)		REL-5
>>MAC-d PDU size index	MP		Integer(0..7)		REL-5

10.3.5.7a   HARQ Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
Number of Processes	MP		Integer (1..8)		REL-5
CHOICE *Memory Partitioning*	MP				REL-5
>Implicit				UE shall apply memory partitioning of equal size across all HARQ processes	REL-5
>Explicit					REL-5
>>Memory size	MP	<1 to maxHProc ess>			REL-5
>>>Process Memory size	MP		FFSInteger(100 .. 2000 by step of 100, 2000 .. 4000 by step of 200)	Memory size in kbytesNumber of soft channel bytes	REL-5

10.3.6.40a Measurement Feedback Info

Information Element/Group name	Need	Multi	Type and reference	Semantics description	Version
CHOICE *mode*	MP				REL-5
>FDD					REL-5
>>POhsdsch	MP		Real(-6 .. 13 by step of 0.5) ~~Integer (-x..0) FFS~~	Default Power offset between HS-PDSCH and P-CPICH/S-CPICH. In dB.	REL-5
>>CQI Feedback cycle, k	MP		Integer (0, 2, 10, 20, 40, 80, 160)~~([0, 1, 5, 10, 20, 40, 80])~~	~~Multiples of 2 ms intervals. Value 10 corresponds to 20 ms~~In milliseconds.	REL-5
>>CQI repetition factor	MP		Integer (1..4)		REL-5
>>Δ_{CQI}	OP		Integer (0..8)	Refer to quantization of the power offset in [28]	REL-5
>TDD				(no data)	REL-5

11.3 Information element definitions

```
-- **************************************************
--
--      TRANSPORT CHANNEL INFORMATION ELEMENTS (10.3.5)
--
-- **************************************************

AddOrReconfMAC-dFlow    ::=             SEQUENCE {
    mac-hs-Queue-List                   MAC-hs-Queue-List   OPTIONAL
}

AllowedTFC-List ::=                     SEQUENCE (SIZE (1..maxTFC)) OF
                                            TFC-Value

AllowedTFI-List ::=                     SEQUENCE (SIZE (1..maxTF)) OF
                                            INTEGER (0..31)

BitModeRLC-SizeInfo ::=         CHOICE {
    sizeType1                           INTEGER (0..127),
    -- Actual value sizeType2 = (part1 * 8) + 128 + part2
    sizeType2                       SEQUENCE {
        part1                           INTEGER (0..15),
        part2                           INTEGER (1..7)                  OPTIONAL
    },
    -- Actual value sizeType3 = (part1 * 16) + 256 + part2
    sizeType3                       SEQUENCE {
        part1                           INTEGER (0..47),
        part2                           INTEGER (1..15)                 OPTIONAL
    },
    -- Actual value sizeType4 = (part1 * 64) + 1024 + part2
    sizeType4                       SEQUENCE {
        part1                           INTEGER (0..62),
        part2                           INTEGER (1..63)                 OPTIONAL
    }
}

-- Actual value BLER-QualityValue = IE value * 0.1
BLER-QualityValue ::=                   INTEGER (-63..0)

ChannelCodingType ::=           CHOICE {
    -- noCoding is only used for TDD in this version of the specification,
    -- otherwise it should be ignored
    noCoding                        NULL,
```

```
    convolutional                     CodingRate,
    turbo                             NULL
}

CodingRate ::=                     ENUMERATED {
                                       half,
                                       third }

CommonDynamicTF-Info ::=           SEQUENCE {
    rlc-Size                           CHOICE {
        fdd                                SEQUENCE {
            octetModeRLC-SizeInfoType2        OctetModeRLC-SizeInfoType2
        },
        tdd                                SEQUENCE {
            commonTDD-Choice                  CHOICE {
                bitModeRLC-SizeInfo               BitModeRLC-SizeInfo,
                octetModeRLC-SizeInfoType1       OctetModeRLC-SizeInfoType1
            }
        }
    },
    numberOfTbSizeList                 SEQUENCE (SIZE (1..maxTF)) OF
                                           NumberOfTransportBlocks,
    logicalChannelList                 LogicalChannelList
}

CommonDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    commonTDD-Choice                   CHOICE {
        bitModeRLC-SizeInfo               BitModeRLC-SizeInfo,
        octetModeRLC-SizeInfoType1       OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList           NumberOfTbSizeAndTTIList,
    logicalChannelList                 LogicalChannelList
}

CommonDynamicTF-InfoList ::=       SEQUENCE (SIZE (1..maxTF)) OF
                                       CommonDynamicTF-Info

CommonDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
                                       CommonDynamicTF-Info-DynamicTTI

CommonTransChTFS ::=               SEQUENCE {
    tti                                CHOICE {
        tti10                             CommonDynamicTF-InfoList,
        tti20                             CommonDynamicTF-InfoList,
        tti40                             CommonDynamicTF-InfoList,
        tti80                             CommonDynamicTF-InfoList,
        dynamic                           CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information            SemistaticTF-Information
}

CommonTransChTFS-LCR ::=           SEQUENCE {
    tti                                CHOICE {
        tti5                              CommonDynamicTF-InfoList,
        tti10                             CommonDynamicTF-InfoList,
        tti20                             CommonDynamicTF-InfoList,
        tti40                             CommonDynamicTF-InfoList,
        tti80                             CommonDynamicTF-InfoList,
        dynamic                           CommonDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information            SemistaticTF-Information
}

CPCH-SetID ::=                     INTEGER (1..maxCPCHsets)

CRC-Size ::=                       ENUMERATED {
                                       crc0, crc8, crc12, crc16, crc24 }

DedicatedDynamicTF-Info ::=        SEQUENCE {
    rlc-Size                           CHOICE {
        bitMode                           BitModeRLC-SizeInfo,
        octetModeType1                   OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeList                 SEQUENCE (SIZE (1..maxTF)) OF
    NumberOfTransportBlocks,
    logicalChannelList                 LogicalChannelList
}
```

```
DedicatedDynamicTF-Info-DynamicTTI ::= SEQUENCE {
    rlc-Size                            CHOICE {
        bitMode                             BitModeRLC-SizeInfo,
        octetModeType1                      OctetModeRLC-SizeInfoType1
    },
    numberOfTbSizeAndTTIList            NumberOfTbSizeAndTTIList,
    logicalChannelList          LogicalChannelList
}


DedicatedDynamicTF-InfoList ::=     SEQUENCE (SIZE (1..maxTF)) OF
                                    DedicatedDynamicTF-Info

DedicatedDynamicTF-InfoList-DynamicTTI ::= SEQUENCE (SIZE (1..maxTF)) OF
                                    DedicatedDynamicTF-Info-DynamicTTI

DedicatedTransChTFS ::=             SEQUENCE {
    tti                                 CHOICE {
        tti10                               DedicatedDynamicTF-InfoList,
        tti20                               DedicatedDynamicTF-InfoList,
        tti40                               DedicatedDynamicTF-InfoList,
        tti80                               DedicatedDynamicTF-InfoList,
        dynamic                             DedicatedDynamicTF-InfoList-DynamicTTI
    },
    semistaticTF-Information             SemistaticTF-Information
}

-- The maximum allowed size of DL-AddReconfTransChInfo2List sequence is 16
DL-AddReconfTransChInfo2List ::=    SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                    DL-AddReconfTransChInformation2

-- The maximum allowed size of DL-AddReconfTransChInfoList sequence is 16
DL-AddReconfTransChInfoList ::=     SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                    DL-AddReconfTransChInformation

-- The maximum allowed size of DL-AddReconfTransChInfoList-r4 sequence is 16
DL-AddReconfTransChInfoList-r4 ::=  SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                    DL-AddReconfTransChInformation-r4

-- The maximum allowed size of DL-AddReconfTransChInfoList-r5 sequence is 16
DL-AddReconfTransChInfoList-r5 ::=  SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                    DL-AddReconfTransChInformation-r5


-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of messages other than: Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation ::=  SEQUENCE {
    dl-TransportChannelType             DL-TrCH-Type,
    dl-transportChannelIdentity         TransportChannelIdentity,
    tfs-SignallingMode                  CHOICE {
        explicit-config                     TransportFormatSet,
        sameAsULTrCH                        UL-TransportChannelIdentity
    },
    dch-QualityTarget                   QualityTarget                           OPTIONAL,
    -- dummy is not used in this version of the specification and should be ignored.
    dummy                               TM-SignallingInfo                       OPTIONAL
}

DL-AddReconfTransChInformation-r4 ::=   SEQUENCE {
    dl-TransportChannelType             DL-TrCH-Type,
    dl-transportChannelIdentity         TransportChannelIdentity,
    tfs-SignallingMode                  CHOICE {
        explicit-config                     TransportFormatSet,
        sameAsULTrCH                        UL-TransportChannelIdentity
    },
    dch-QualityTarget                   QualityTarget                           OPTIONAL
}

DL-AddReconfTransChInformation-r5 ::=   SEQUENCE {
    dl-TransportChannelType             DL-TrCH-Type-r5,
    dl-transportChannelIdentity         TransportChannelIdentity,
    tfs-SignallingMode                  CHOICE {
        explicit-config                     TransportFormatSet,
        sameAsULTrCH                        UL-TransportChannelIdentity,
        hsdsch                              HSDSCH-Info
    },
    dch-QualityTarget                   QualityTarget                           OPTIONAL
}
```

```
-- ASN.1 for IE "Added or Reconfigured DL TrCH information"
-- in case of Radio Bearer Release message and
-- Radio Bearer Reconfiguration message
DL-AddReconfTransChInformation2 ::= SEQUENCE {
    dl-TransportChannelType             DL-TrCH-Type,
    transportChannelIdentity            TransportChannelIdentity,
    tfs-SignallingMode                  CHOICE {
        explicit-config                     TransportFormatSet,
        sameAsULTrCH                        UL-TransportChannelIdentity
    },
    qualityTarget                       QualityTarget                  OPTIONAL
}

DL-CommonTransChInfo ::=            SEQUENCE {
    sccpch-TFCS                         TFCS                           OPTIONAL,
    -- modeSpecificInfo should be optional. A new version of this IE should be defined
    -- to be used in later versions of messages using this IE
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            dl-Parameters                      CHOICE {
                dl-DCH-TFCS                        TFCS,
                sameAsUL                           NULL
            }                                                          OPTIONAL
        },
        tdd                                SEQUENCE {
            individualDL-CCTrCH-InfoList       IndividualDL-CCTrCH-InfoList
                                                                       OPTIONAL
        }
    }
}

DL-CommonTransChInfo-r4 ::=        SEQUENCE {
    sccpch-TFCS                         TFCS                           OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            dl-Parameters                      CHOICE {
                dl-DCH-TFCS                        SEQUENCE {
                    tfcs                               TFCS            OPTIONAL
                },
                sameAsUL                           NULL
            }                                                          OPTIONAL
        },
        tdd                                SEQUENCE {
            individualDL-CCTrCH-InfoList       IndividualDL-CCTrCH-InfoList
                                                                       OPTIONAL
        }
    }    OPTIONAL
}

DL-DeletedTransChInfoList ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
                                       DL-TransportChannelIdentity

DL-DeletedTransChInfoList-r5 ::=   SEQUENCE (SIZE (1..maxTrCH)) OF
                                       DL-TransportChannelIdentity-r5

DL-TransportChannelIdentity ::=         SEQUENCE {
    dl-TransportChannelType                DL-TrCH-Type,
    dl-TransportChannelIdentity            TransportChannelIdentity
}

DL-TransportChannelIdentity-r5 ::=      SEQUENCE {
    dl-TransportChannelType                DL-TrCH-Type-r5
}

DL-TrCH-Type ::= ENUMERATED {dch, dsch}

DL-TrCH-Type-r5 ::=                CHOICE {
    dch                                    TransportChannelIdentity,
    dsch                                   TransportChannelIdentity,
    hsdsch                                 MAC-d-FlowIdentity
}

DRAC-ClassIdentity ::=             INTEGER (1..maxDRACclasses)

DRAC-StaticInformation ::=         SEQUENCE {
    transmissionTimeValidity               TransmissionTimeValidity,
    timeDurationBeforeRetry                TimeDurationBeforeRetry,
```

```
    drac-ClassIdentity              DRAC-ClassIdentity
}

DRAC-StaticInformationList ::=      SEQUENCE (SIZE (1..maxTrCH)) OF
                                        DRAC-StaticInformation

ExplicitTFCS-Configuration ::=      CHOICE {
    complete                        TFCS-ReconfAdd,
    addition                        TFCS-ReconfAdd,
    removal                         TFCS-RemovalList,
    replacement                     SEQUENCE {
        tfcsRemoval                     TFCS-RemovalList,
        tfcsAdd                         TFCS-ReconfAdd
    }
}

GainFactor ::=                      INTEGER (0..15)

GainFactorInformation ::=           CHOICE {
    signalledGainFactors                SignalledGainFactors,
    computedGainFactors                 ReferenceTFC-ID
}

HSDSCH-Info ::=                     SEQUENCE {
    harqInfo                            HARQ-Info              OPTIONAL,
    mac-hsResetIndicator                BOOLEAN,
    addOrReconfMAC-dFlow                AddOrReconfMAC-dFlow   OPTIONAL
}

HARQ-Info ::=                       SEQUENCE {
    numberOfProcesses                   INTEGER (1..8),
    memoryPartitioning                  CHOICE {
        implicit                            NULL,
        explicit                            SEQUENCE (SIZE (1..maxHProcesses)) OF
                                                HARQMemorySize
    }
}
```

-- memory size range is FFS.
```
HARQMemorySize ::=                  ENUMERATED {
                                        hms100, hms200, hms300, hms400, hms500,
                                        hms600, hms700, hms800, hms900, hms1000,
                                        hms1100, hms1200, hms1300, hms1400, hms1500,
                                        hms1600, hms1700, hms1800, hms1900, hms2000,
                                        hms2200, hms2400, hms2600, hms2800, hms3000,
                                        hms3200, hms3400, hms3600, hms3800, hms4000 }
INTEGER (1..10000)
```

```
IndividualDL-CCTrCH-Info ::=        SEQUENCE {
    dl-TFCS-Identity                    TFCS-Identity,
    tfcs-SignallingMode                 CHOICE {
        explicit-config                     TFCS,
        sameAsUL                            TFCS-Identity
    }
}

IndividualDL-CCTrCH-InfoList ::=    SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        IndividualDL-CCTrCH-Info

IndividualUL-CCTrCH-Info ::=        SEQUENCE {
    ul-TFCS-Identity                    TFCS-Identity,
    ul-TFCS                             TFCS ,
    tfc-Subset                          TFC-Subset
}

IndividualUL-CCTrCH-InfoList ::=    SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                        IndividualUL-CCTrCH-Info

LogicalChannelByRB          ::=     SEQUENCE {
    rb-Identity                         RB-Identity,
    logChOfRb                           INTEGER (0..1)                OPTIONAL
}

LogicalChannelList ::=              CHOICE {
        allSizes                        NULL,
        configured                      NULL,
        explicitList                    SEQUENCE (SIZE (1..15)) OF
                                            LogicalChannelByRB
```

```
}

MAC-d-FlowIdentityDCHandHSDSCH ::=  SEQUENCE {
    dch-transport-ch-id             TransportChannelIdentity,
    hsdsch-transport-ch-id          MAC-d-FlowIdentity
}

MAC-d-FlowIdentity ::=              INTEGER (0..7)

MAC-d-PDU-SizeInfo-List ::=         SEQUENCE (SIZE(1.. maxMAC-d-PDUsizes)) OF
                                        MAC-d-PDUsizeInfo

--MAC-d-Pdu sizes need to be defined
MAC-d-PDUsizeInfo ::=               SEQUENCE{
    mac-d-PDU-Size                      INTEGER (1..5000),
    mac-d-PDU-Index                     INTEGER(0..7)
}

MAC-hs-Queue-List ::=               SEQUENCE (SIZE(1..maxQueueIDs)) OF
                                        MAC-hs-Queue

MAC-hs-Queue    ::=                 SEQUENCE {
    mac-hsQueueId                       INTEGER(1..8),
    mac-dFlowId                         MAC-d-FlowIdentity,
    reorderingReleaseTimer              T1-ReleaseTimer,
    mac-hsWindowSize                    MAC-hs-WindowSize,
    mac-d-PDU-SizeInfo-List             MAC-d-PDU-SizeInfo-List
}

MAC-hs-WindowSize   ::=             ENUMERATED {
                                        mws4, mws6, mws8, mws12, mws16, mws24, mws32 }

NumberOfTbSizeAndTTIList    ::=     SEQUENCE (SIZE (1..maxTF)) OF SEQUENCE {
        numberOfTransportBlocks            NumberOfTransportBlocks,
        transmissionTimeInterval           TransmissionTimeInterval
}

MessType ::=                        ENUMERATED {
                                        transportFormatCombinationControl }

Non-allowedTFC-List ::=             SEQUENCE (SIZE (1..maxTFC)) OF
                                        TFC-Value

NumberOfTransportBlocks::=          CHOICE {
    zero                               NULL,
    one                                NULL,
    small                              INTEGER (2..17),
    large                              INTEGER (18..512)
}

OctetModeRLC-SizeInfoType1 ::=      CHOICE {
    -- Actual size = (8 * sizeType1) + 16
    sizeType1                          INTEGER (0..31),
    sizeType2                          SEQUENCE {
        -- Actual size = (32 * part1) + 272 + (part2 * 8)
        part1                              INTEGER (0..23),
        part2                              INTEGER (1..3)              OPTIONAL
    },
    sizeType3                          SEQUENCE {
        -- Actual size = (64 * part1) + 1040 + (part2 * 8)
        part1                              INTEGER (0..61),
        part2                              INTEGER (1..7)              OPTIONAL
    }
}

OctetModeRLC-SizeInfoType2 ::=      CHOICE {
    -- Actual size = (sizeType1 * 8) + 48
    sizeType1                          INTEGER (0..31),
    -- Actual size = (sizeType2 * 16) + 312
    sizeType2                          INTEGER (0..63),
    -- Actual size = (sizeType3 *64) + 1384
    sizeType3                          INTEGER (0..56)
}

PowerOffsetInformation ::=          SEQUENCE {
    gainFactorInformation              GainFactorInformation,
    -- PowerOffsetPp-m is always absent in TDD
    powerOffsetPp-m                    PowerOffsetPp-m                          OPTIONAL
```

```
}

PowerOffsetPp-m ::=                 INTEGER (-5..10)

PreDefTransChConfiguration ::=      SEQUENCE {
    ul-CommonTransChInfo                UL-CommonTransChInfo,
    ul-AddReconfTrChInfoList            UL-AddReconfTransChInfoList,
    dl-CommonTransChInfo                DL-CommonTransChInfo,
    dl-TrChInfoList                     DL-AddReconfTransChInfoList
}

QualityTarget ::=                   SEQUENCE {
    bler-QualityValue                   BLER-QualityValue
}

RateMatchingAttribute ::=           INTEGER (1..hiRM)


ReferenceTFC-ID ::=                 INTEGER (0..3)

RestrictedTrChInfo ::=              SEQUENCE {
    ul-TransportChannelType             UL-TrCH-Type,
    restrictedTrChIdentity              TransportChannelIdentity,
    allowedTFI-List                     AllowedTFI-List            OPTIONAL
}

RestrictedTrChInfoList ::=          SEQUENCE (SIZE (1..maxTrCH)) OF
                                        RestrictedTrChInfo

SemistaticTF-Information ::=         SEQUENCE {
    -- TABULAR: Transmission time interval has been included in the IE CommonTransChTFS.
    channelCodingType                   ChannelCodingType,
    rateMatchingAttribute               RateMatchingAttribute,
    crc-Size                            CRC-Size
}

SignalledGainFactors ::=            SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            gainFactorBetaC                     GainFactor
        },
        tdd                                 NULL
    },
    gainFactorBetaD                     GainFactor,
    referenceTFC-ID                     ReferenceTFC-ID            OPTIONAL
}

SplitTFCI-Signalling ::=            SEQUENCE {
    splitType                           SplitType                  OPTIONAL,
    tfci-Field2-Length                  INTEGER (1..10)            OPTIONAL,
    tfci-Field1-Information             ExplicitTFCS-Configuration OPTIONAL,
    tfci-Field2-Information             TFCI-Field2-Information     OPTIONAL
}

SplitType ::=                       ENUMERATED {
                                        hardSplit, logicalSplit }

--Range for releasetimer is FFS.
T1-ReleaseTimer ::=                 ENUMERATED {
                                        rt10, rt20, rt30, rt40, rt50,
                                        rt60, rt70, rt80, rt90, rt100,
                                        rt120, rt140, rt160, rt180, rt200 }
INTEGER (1..100)

TFC-Subset ::=                      CHOICE {
    minimumAllowedTFC-Number            TFC-Value,
    allowedTFC-List                     AllowedTFC-List,
    non-allowedTFC-List                 Non-allowedTFC-List,
    restrictedTrChInfoList              RestrictedTrChInfoList,
    fullTFCS                            NULL
}

TFC-Subset-ID-With3b ::=            INTEGER (0..7)

TFC-Subset-ID-With5b ::=            INTEGER (0..31)

TFC-Subset-ID-With10b ::=           INTEGER (0..1023)
```

```
TFC-SubsetList ::=                  SEQUENCE (SIZE (1.. maxTFCsub)) OF SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            tfcs-ID                             TFCS-Identity           OPTIONAL
        }
    },
    tfc-Subset                      TFC-Subset
}

TFC-Value ::=                       INTEGER (0..1023)

TFCI-Field2-Information ::=         CHOICE {
    tfci-Range                          TFCI-RangeList,
    explicit-config                     ExplicitTFCS-Configuration
}

TFCI-Range ::=                      SEQUENCE {
    maxTFCIField2Value                  INTEGER (1..1023),
    tfcs-InfoForDSCH                    TFCS-InfoForDSCH
}

TFCI-RangeList ::=                  SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                    TFCI-Range

TFCS ::=                            CHOICE {
    normalTFCI-Signalling               ExplicitTFCS-Configuration,
    splitTFCI-Signalling                SplitTFCI-Signalling
}

TFCS-Identity ::=                   SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
    sharedChannelIndicator              BOOLEAN
}

TFCS-IdentityPlain ::=              INTEGER (1..8)

TFCS-InfoForDSCH ::=                CHOICE {
    ctfc2bit                            INTEGER (0..3),
    ctfc4bit                            INTEGER (0..15),
    ctfc6bit                            INTEGER (0..63),
    ctfc8bit                            INTEGER (0..255),
    ctfc12bit                           INTEGER (0..4095),
    ctfc16bit                           INTEGER (0..65535),
    ctfc24bit                           INTEGER (0..16777215)
}

TFCS-ReconfAdd ::=                  SEQUENCE{
    ctfcSize                            CHOICE{
        ctfc2Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc2                               INTEGER (0..3),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc4Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc4                               INTEGER (0..15),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc6Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc6                               INTEGER (0..63),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc8Bit                            SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc8                               INTEGER (0..255),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc12Bit                           SEQUENCE (SIZE(1..maxTFC)) OF SEQUENCE {
            ctfc12                              INTEGER (0..4095),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc16Bit                           SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc16                              INTEGER(0..65535),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        },
        ctfc24Bit                           SEQUENCE (SIZE (1..maxTFC)) OF SEQUENCE {
            ctfc24                              INTEGER(0..16777215),
            powerOffsetInformation              PowerOffsetInformation      OPTIONAL
        }
    }
}
```

```
}

TFCS-Removal ::=                       SEQUENCE {
    tfci                               INTEGER (0..1023)
}

TFCS-RemovalList ::=                   SEQUENCE (SIZE (1..maxTFC)) OF
                                           TFCS-Removal

TimeDurationBeforeRetry ::=            INTEGER (1..256)

TM-SignallingInfo   ::=                SEQUENCE {
    messType                           MessType,
    tm-SignallingMode                  CHOICE {
        mode1                          NULL,
        mode2                              SEQUENCE {
            -- in ul-controlledTrChList, TrCH-Type is always DCH
            ul-controlledTrChList          UL-ControlledTrChList
        }
    }
}

TransmissionTimeInterval ::=          ENUMERATED {
                                           tti10, tti20, tti40, tti80 }

TransmissionTimeValidity ::=          INTEGER (1..256)

-- Range of TB size for hsdsch is ffs.
TransportBlockSize-r5 ::=             INTEGER (1..64000)

TransportChannelIdentity ::=          INTEGER (1..32)

TransportChannelIdentityDCHandDSCH   ::= SEQUENCE {
    dch-transport-ch-id                TransportChannelIdentity,
    dsch-transport-ch-id               TransportChannelIdentity
}


TransportFormatSet ::=                 CHOICE {
    dedicatedTransChTFS                DedicatedTransChTFS,
    commonTransChTFS                   CommonTransChTFS
}

TransportFormatSet-LCR ::=             CHOICE {
    dedicatedTransChTFS                DedicatedTransChTFS,
    commonTransChTFS-LCR               CommonTransChTFS-LCR
}

-- The maximum allowed size of UL-AddReconfTransChInfoList sequence is 16
UL-AddReconfTransChInfoList ::=       SEQUENCE (SIZE (1..maxTrCHpreconf)) OF
                                           UL-AddReconfTransChInformation

UL-AddReconfTransChInformation ::= SEQUENCE {
    ul-TransportChannelType            UL-TrCH-Type,
    transportChannelIdentity           TransportChannelIdentity,
    transportFormatSet                 TransportFormatSet
}

UL-CommonTransChInfo ::=               SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
    tfc-Subset                         TFC-Subset                         OPTIONAL,
    prach-TFCS                         TFCS                               OPTIONAL,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            ul-TFCS                        TFCS
        },
        tdd                                SEQUENCE {

            individualUL-CCTrCH-InfoList       IndividualUL-CCTrCH-InfoList
                                                                          OPTIONAL
        }
    }                                                                     OPTIONAL
}

UL-CommonTransChInfo-r4 ::=            SEQUENCE {
    -- TABULAR: tfc-subset is applicable to FDD only, TDD specifies tfc-subset in individual
    -- CCTrCH Info.
```

```
    tfc-Subset                          TFC-Subset                          OPTIONAL,
    prach-TFCS                          TFCS                                OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            ul-TFCS                             TFCS
        },
        tdd                                 SEQUENCE {
            individualUL-CCTrCH-InfoList    IndividualUL-CCTrCH-InfoList    OPTIONAL
        }
    }                                                                       OPTIONAL,
    tfc-SubsetList                      TFC-SubsetList                      OPTIONAL
}

-- In UL-ControlledTrChList, TrCH-Type is always DCH
UL-ControlledTrChList ::=           SEQUENCE (SIZE (1..maxTrCH)) OF
                                        TransportChannelIdentity

UL-DeletedTransChInfoList ::=       SEQUENCE (SIZE (1..maxTrCH)) OF
                                        UL-TransportChannelIdentity

UL-TransportChannelIdentity ::=     SEQUENCE {
    ul-TransportChannelType             UL-TrCH-Type,
    ul-TransportChannelIdentity         TransportChannelIdentity
}

UL-TrCH-Type ::= ENUMERATED {dch, usch}

-- **************************************************
--
--      PHYSICAL CHANNEL INFORMATION ELEMENTS (10.3.6)
--
-- **************************************************

ACK-NACK-repetitionFactor ::=       INTEGER(1..4)

AC-To-ASC-Mapping ::=               INTEGER (0..7)

AC-To-ASC-MappingTable ::=          SEQUENCE (SIZE (maxASCmap)) OF
                                        AC-To-ASC-Mapping

AccessServiceClass-FDD ::=          SEQUENCE {
    availableSignatureStartIndex        INTEGER (0..15),
    availableSignatureEndIndex          INTEGER (0..15),

    assignedSubChannelNumber            BIT STRING {
                                            b3(0),
                                            b2(1),
                                            b1(2),
                                            b0(3)
                                            }   (SIZE(4))
}

AccessServiceClass-TDD ::=          SEQUENCE {
    channelisationCodeIndices           BIT STRING {
                                            chCodeIndex7(0),
                                            chCodeIndex6(1),
                                            chCodeIndex5(2),
                                            chCodeIndex4(3),
                                            chCodeIndex3(4),
                                            chCodeIndex2(5),
                                            chCodeIndex1(6),
                                            chCodeIndex0(7)
                                            } (SIZE(8))             OPTIONAL,
    subchannelSize                      CHOICE {
        size1                               NULL,
        size2                               SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'
            subchannels                         ENUMERATED { subch0, subch1 }  OPTIONAL
        },
        size4                               SEQUENCE {
            subchannels                         BIT STRING {
                                                    subCh3(0),
                                                    subCh2(1),
                                                    subCh1(2),
                                                    subCh0(3)
                                                    } (SIZE(4))    OPTIONAL
        },
        size8                               SEQUENCE {
```

```
        subchannels                                 BIT STRING  {
                                                        subCh7(0),
                                                        subCh6(1),
                                                        subCh5(2),
                                                        subCh4(3),
                                                        subCh3(4),
                                                        subCh2(5),
                                                        subCh1(6),
                                                        subCh0(7)
                                                        } (SIZE(8))      OPTIONAL
        }
    }
}

AccessServiceClass-TDD-LCR-r4 ::=    SEQUENCE {
    availableSYNC-UlCodesIndics          BIT STRING {
                                                    sulCodeIndex7(0),
                                                    sulCodeIndex6(1),
                                                    sulCodeIndex5(2),
                                                    sulCodeIndex4(3),
                                                    sulCodeIndex3(4),
                                                    sulCodeIndex2(5),
                                                    sulCodeIndex1(6),
                                                    sulCodeIndex0(7)
                                                    } (SIZE(8))              OPTIONAL,
    subchannelSize                       CHOICE {
        size1                                NULL,
        size2                                SEQUENCE {
            -- subch0 means bitstring '01' in the tabular, subch1 means bitsring '10'.
            subchannels                          ENUMERATED  { subch0, subch1 }  OPTIONAL
        },
        size4                                SEQUENCE {
            subchannels                          BIT STRING  {
                                                        subCh3(0),
                                                        subCh2(1),
                                                        subCh1(2),
                                                        subCh0(3)
                                                        } (SIZE(4))         OPTIONAL
        },
        size8                                SEQUENCE {
            subchannels                          BIT STRING  {
                                                        subCh7(0),
                                                        subCh6(1),
                                                        subCh5(2),
                                                        subCh4(3),
                                                        subCh3(4),
                                                        subCh2(5),
                                                        subCh1(6),
                                                        subCh0(7)
                                                        } (SIZE(8))         OPTIONAL
        }
    }

}

AICH-Info ::=                        SEQUENCE {
    channelisationCode256                ChannelisationCode256,
    sttd-Indicator                       BOOLEAN,
    aich-TransmissionTiming              AICH-TransmissionTiming
}

AICH-PowerOffset ::=                 INTEGER (-22..5)

AICH-TransmissionTiming ::=          ENUMERATED {
                                        e0, e1 }

AllocationPeriodInfo ::=             SEQUENCE {
    allocationActivationTime             INTEGER (0..255),
    allocationDuration                   INTEGER (1..256)
}

-- Actual value Alpha = IE value * 0.125
Alpha ::=                            INTEGER (0..8)

AP-AICH-ChannelisationCode ::=       INTEGER (0..255)

AP-PreambleScramblingCode ::=        INTEGER (0..79)
```

```
AP-Signature ::=                        INTEGER (0..15)

AP-Signature-VCAM ::=                   SEQUENCE {
    ap-Signature                            AP-Signature,
    availableAP-SubchannelList              AvailableAP-SubchannelList OPTIONAL
}

AP-Subchannel ::=                       INTEGER (0..11)

ASCSetting-FDD ::=                          SEQUENCE {
    -- TABULAR: accessServiceClass-FDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available signature and sub-channels
    accessServiceClass-FDD                      AccessServiceClass-FDD  OPTIONAL
}

ASCSetting-TDD ::=                          SEQUENCE {
    -- TABULAR: accessServiceClass-TDD is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available channelisation codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD                      AccessServiceClass-TDD  OPTIONAL
}

ASCSetting-TDD-LCR-r4 ::=                        SEQUENCE {
    -- TABULAR: accessServiceClass-TDD-LCR is MD in tabular description
    -- Default value is previous ASC
    -- If this is the first ASC, the default value is all available SYNC_UL codes and
    -- all available sub-channels with subchannelSize=size1.
    accessServiceClass-TDD-LCR                      AccessServiceClass-TDD-LCR-r4   OPTIONAL
}

AvailableAP-Signature-VCAMList ::=  SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                    AP-Signature-VCAM

AvailableAP-SignatureList ::=       SEQUENCE (SIZE (1..maxPCPCH-APsig)) OF
                                    AP-Signature

AvailableAP-SubchannelList ::=      SEQUENCE (SIZE (1..maxPCPCH-APsubCh)) OF
                                    AP-Subchannel

AvailableMinimumSF-ListVCAM ::=     SEQUENCE (SIZE (1..maxPCPCH-SF)) OF
                                    AvailableMinimumSF-VCAM

AvailableMinimumSF-VCAM ::=         SEQUENCE {
    minimumSpreadingFactor              MinimumSpreadingFactor,
    nf-Max                              NF-Max,
    maxAvailablePCPCH-Number            MaxAvailablePCPCH-Number,
    availableAP-Signature-VCAMList      AvailableAP-Signature-VCAMList
}

AvailableSignatures ::=         BIT STRING {
                                signature15(0),
                                signature14(1),
                                signature13(2),
                                signature12(3),
                                signature11(4),
                                signature10(5),
                                signature9(6),
                                signature8(7),
                                signature7(8),
                                signature6(9),
                                signature5(10),
                                signature4(11),
                                signature3(12),
                                signature2(13),
                                signature1(14),
                                signature0(15)
                                }   (SIZE(16))

AvailableSubChannelNumbers ::=      BIT STRING {
                                    subCh11(0),
                                    subCh10(1),
                                    subCh9(2),
                                    subCh8(3),
                                    subCh7(4),
                                    subCh6(5),
                                    subCh5(6),
```

```
                                            subCh4(7),
                                            subCh3(8),
                                            subCh2(9),
                                            subCh1(10),
                                            subCh0(11)
                                            }    (SIZE(12))

BurstType ::=                     ENUMERATED {
                                            short1, long2 }

-- Actual value Bler-Target = IE value * 0.05
Bler-Target ::=                   INTEGER (-63..0)

CCTrCH-PowerControlInfo ::=       SEQUENCE {
    tfcs-Identity                         TFCS-Identity                    OPTIONAL,
    ul-DPCH-PowerControlInfo              UL-DPCH-PowerControlInfo
}

CCTrCH-PowerControlInfo-r4 ::=    SEQUENCE {
    tfcs-Identity                         TFCS-Identity                    OPTIONAL,
    ul-DPCH-PowerControlInfo              UL-DPCH-PowerControlInfo-r4
}

CD-AccessSlotSubchannel ::=       INTEGER (0..11)

CD-AccessSlotSubchannelList ::=   SEQUENCE (SIZE (1..maxPCPCH-CDsubCh)) OF
                                            CD-AccessSlotSubchannel

CD-CA-ICH-ChannelisationCode ::=  INTEGER (0..255)

CD-PreambleScramblingCode ::=     INTEGER (0..79)

CD-SignatureCode ::=              INTEGER (0..15)

CD-SignatureCodeList ::=          SEQUENCE (SIZE (1..maxPCPCH-CDsig)) OF
                                            CD-SignatureCode

CellAndChannelIdentity ::=        SEQUENCE {
    burstType                             BurstType,
    midambleShift                         MidambleShiftLong,
    timeslot                              TimeslotNumber,
    cellParametersID                      CellParametersID
    }

CellParametersID ::=              INTEGER (0..127)

Cfntargetsfnframeoffset ::=        INTEGER(0..255)

ChannelAssignmentActive ::=       CHOICE {
    notActive                             NULL,
    isActive                              AvailableMinimumSF-ListVCAM
}

ChannelisationCode256 ::=         INTEGER (0..255)

ChannelReqParamsForUCSM ::=       SEQUENCE {
    availableAP-SignatureList             AvailableAP-SignatureList,
    availableAP-SubchannelList            AvailableAP-SubchannelList         OPTIONAL
}

ClosedLoopTimingAdjMode ::=       ENUMERATED {
                                            slot1, slot2 }

CodeNumberDSCH ::=                INTEGER (0..255)

CodeRange ::=                     SEQUENCE {
    pdsch-CodeMapList                     PDSCH-CodeMapList
}

CodeWordSet ::=                   ENUMERATED {
                                            longCWS,
                                            mediumCWS,
                                            shortCWS,
                                            ssdtOff }

CommonTimeslotInfo ::=            SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
```

```
    secondInterleavingMode            SecondInterleavingMode,
    tfci-Coding                       TFCI-Coding                       OPTIONAL,
    puncturingLimit                   PuncturingLimit,
    repetitionPeriodAndLength         RepetitionPeriodAndLength         OPTIONAL
}

CommonTimeslotInfoSCCPCH ::=          SEQUENCE {
    -- TABULAR: secondInterleavingMode is MD, but since it can be encoded in a single
    -- bit it is not defined as OPTIONAL.
    secondInterleavingMode            SecondInterleavingMode,
    tfci-Coding                       TFCI-Coding                       OPTIONAL,
    puncturingLimit                   PuncturingLimit,
    repetitionPeriodLengthAndOffset   RepetitionPeriodLengthAndOffset   OPTIONAL
}

ConstantValue ::=                     INTEGER (-35..-10)

ConstantValueTdd ::=                  INTEGER (-35..10)

CPCH-PersistenceLevels ::=            SEQUENCE {
    cpch-SetID                        CPCH-SetID,
    dynamicPersistenceLevelTF-List    DynamicPersistenceLevelTF-List
}

CPCH-PersistenceLevelsList ::=        SEQUENCE (SIZE (1..maxCPCHsets)) OF
                                      CPCH-PersistenceLevels

CPCH-SetInfo ::=                      SEQUENCE {
    cpch-SetID                        CPCH-SetID,
    transportFormatSet                TransportFormatSet,
    tfcs                              TFCS,
    ap-PreambleScramblingCode         AP-PreambleScramblingCode,
    ap-AICH-ChannelisationCode        AP-AICH-ChannelisationCode,
    cd-PreambleScramblingCode         CD-PreambleScramblingCode,
    cd-CA-ICH-ChannelisationCode      CD-CA-ICH-ChannelisationCode,
    cd-AccessSlotSubchannelList       CD-AccessSlotSubchannelList       OPTIONAL,
    cd-SignatureCodeList              CD-SignatureCodeList              OPTIONAL,
    deltaPp-m                         DeltaPp-m,
    ul-DPCCH-SlotFormat               UL-DPCCH-SlotFormat,
    n-StartMessage                    N-StartMessage,
    n-EOT                             N-EOT,
    -- TABULAR: VCAM info has been nested inside ChannelAssignmentActive,
    -- which in turn is mandatory since it's only a binary choice.
    channelAssignmentActive           ChannelAssignmentActive,
    cpch-StatusIndicationMode         CPCH-StatusIndicationMode,
    pcpch-ChannelInfoList             PCPCH-ChannelInfoList
}

CPCH-SetInfoList ::=                  SEQUENCE (SIZE (1..maxCPCHsets)) OF
                                      CPCH-SetInfo

CPCH-StatusIndicationMode ::=         ENUMERATED {
                                      pa-mode,
                                      pamsf-mode }

-- FFS
CQI-RepetitionFactor ::=              INTEGER(1..4)

CSICH-PowerOffset ::=                 INTEGER (-10..5)

-- DefaultDPCH-OffsetValueFDD and DefaultDPCH-OffsetValueTDD corresponds to
-- IE "Default DPCH Offset Value" depending on the mode.
-- Actual value DefaultDPCH-OffsetValueFDD = IE value * 512
DefaultDPCH-OffsetValueFDD ::=        INTEGER (0..599)

DefaultDPCH-OffsetValueTDD ::=        INTEGER (0..7)

DeltaPp-m ::=                         INTEGER (-10..10)

DeltaCQI ::=                          INTEGER (0..8)

DeltaNACK ::=                         INTEGER (0..8)

DeltaACK ::=                          INTEGER (0..8)

-- Actual value DeltaSIR = IE value * 0.1
DeltaSIR ::=                          INTEGER (0..30)
```

```
DL-CCTrCh ::=                      SEQUENCE {
    tfcs-ID                           TFCS-IdentityPlain              DEFAULT 1,
    timeInfo                          TimeInfo,
    commonTimeslotInfo                CommonTimeslotInfo              OPTIONAL,
    dl-CCTrCH-TimeslotsCodes          DownlinkTimeslotsCodes         OPTIONAL,
    ul-CCTrChTPCList                  UL-CCTrChTPCList               OPTIONAL
}

DL-CCTrCh-r4 ::=                   SEQUENCE {
    tfcs-ID                           TFCS-IdentityPlain              DEFAULT 1,
    timeInfo                          TimeInfo,
    commonTimeslotInfo                CommonTimeslotInfo              OPTIONAL,
    tddOption                         CHOICE {
        tdd384                            SEQUENCE {
            dl-CCTrCH-TimeslotsCodes          DownlinkTimeslotsCodes  OPTIONAL
        },
        tdd128                            SEQUENCE {
            dl-CCTrCH-TimeslotsCodes          DownlinkTimeslotsCodes-LCR-r4   OPTIONAL
        }
    },
    ul-CCTrChTPCList                  UL-CCTrChTPCList       OPTIONAL
}

DL-CCTrChList ::=                  SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                      DL-CCTrCh

DL-CCTrChList-r4 ::=               SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                      DL-CCTrCh-r4

DL-CCTrChListToRemove ::=          SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                      TFCS-IdentityPlain

DL-CCTrChTPCList ::=               SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                       TFCS-Identity

DL-ChannelisationCode ::=          SEQUENCE {
    secondaryScramblingCode           SecondaryScramblingCode            OPTIONAL,
    sf-AndCodeNumber                  SF512-AndCodeNumber,
    scramblingCodeChange              ScramblingCodeChange               OPTIONAL
}

DL-ChannelisationCodeList ::=      SEQUENCE (SIZE (1..maxDPCH-DLchan)) OF
                                      DL-ChannelisationCode

DL-CommonInformation ::=           SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon        OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo           DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode                  TX-DiversityMode           OPTIONAL,
            ssdt-Information                  SSDT-Information           OPTIONAL
        },
        tdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueTDD OPTIONAL
        }
    }
}

DL-CommonInformation-r4 ::=        SEQUENCE {
    dl-DPCH-InfoCommon                DL-DPCH-InfoCommon        OPTIONAL,
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueFDD OPTIONAL,
            dpch-CompressedModeInfo           DPCH-CompressedModeInfo    OPTIONAL,
            tx-DiversityMode                  TX-DiversityMode           OPTIONAL,
            ssdt-Information                  SSDT-Information-r4         OPTIONAL
        },
        tdd                               SEQUENCE {
            tddOption                         CHOICE {
                tdd384                            NULL,
                tdd128                            SEQUENCE {
                    tstd-Indicator                    BOOLEAN
                }
            },
            defaultDPCH-OffsetValue           DefaultDPCH-OffsetValueTDD OPTIONAL
        }
    }
```

```
}

DL-CommonInformationPost ::=        SEQUENCE {
    dl-DPCH-InfoCommon                  DL-DPCH-InfoCommonPost
}

DL-CommonInformationPredef ::=      SEQUENCE {
    dl-DPCH-InfoCommon                  DL-DPCH-InfoCommonPredef    OPTIONAL
}

DL-CompressedModeMethod ::=         ENUMERATED {
                                        puncturing, sf-2,
                                        higherLayerScheduling }

DL-DPCH-InfoCommon ::=              SEQUENCE {
    cfnHandling                         CHOICE {
        maintain                            NULL,
        initialise                          SEQUENCE {
            cfntargetsfnframeoffset             Cfntargetsfnframeoffset        OPTIONAL
        }
    },
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo        OPTIONAL,
            powerOffsetPilot-pdpdch            PowerOffsetPilot-pdpdch,
            dl-rate-matching-restriction      Dl-rate-matching-restriction    OPTIONAL,
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot           SF512-AndPilot,
            positionFixedOrFlexible           PositionFixedOrFlexible,
            tfci-Existence                    BOOLEAN
        },
        tdd                                 SEQUENCE {
            dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo        OPTIONAL
        }
    }
}

DL-DPCH-InfoCommonPost ::=          SEQUENCE {
    dl-DPCH-PowerControlInfo            DL-DPCH-PowerControlInfo               OPTIONAL
}

DL-DPCH-InfoCommonPredef ::=        SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            -- TABULAR: The number of pilot bits is nested inside the spreading factor.
            spreadingFactorAndPilot           SF512-AndPilot,
            positionFixedOrFlexible           PositionFixedOrFlexible,
            tfci-Existence                    BOOLEAN
        },
        tdd                                 SEQUENCE {
            commonTimeslotInfo                CommonTimeslotInfo
        }
    }
}

DL-DPCH-InfoPerRL ::=               CHOICE {
    fdd                                 SEQUENCE {
        pCPICH-UsageForChannelEst          PCPICH-UsageForChannelEst,
        dpch-FrameOffset                   DPCH-FrameOffset,
        secondaryCPICH-Info                SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList          DL-ChannelisationCodeList,
        tpc-CombinationIndex               TPC-CombinationIndex,
        ssdt-CellIdentity                  SSDT-CellIdentity            OPTIONAL,
        closedLoopTimingAdjMode            ClosedLoopTimingAdjMode      OPTIONAL
    },
    tdd                                 SEQUENCE {
        dl-CCTrChListToEstablish           DL-CCTrChList                OPTIONAL,
        dl-CCTrChListToRemove              DL-CCTrChListToRemove        OPTIONAL
    }
}

DL-DPCH-InfoPerRL-r4 ::=            CHOICE {
    fdd                                 SEQUENCE {
        pCPICH-UsageForChannelEst          PCPICH-UsageForChannelEst,
        dpch-FrameOffset                   DPCH-FrameOffset,
        secondaryCPICH-Info                SecondaryCPICH-Info          OPTIONAL,
        dl-ChannelisationCodeList          DL-ChannelisationCodeList,
        tpc-CombinationIndex               TPC-CombinationIndex,
```

```
            ssdt-CellIdentity                    SSDT-CellIdentity               OPTIONAL,
            closedLoopTimingAdjMode              ClosedLoopTimingAdjMode         OPTIONAL
        },
        tdd                                  SEQUENCE {
            dl-CCTrChListToEstablish             DL-CCTrChList-r4                OPTIONAL,
            dl-CCTrChListToRemove                DL-CCTrChListToRemove           OPTIONAL
        }
}

DL-DPCH-InfoPerRL-PostFDD ::=                            SEQUENCE {
        pCPICH-UsageForChannelEst                PCPICH-UsageForChannelEst,
        dl-ChannelisationCode                    DL-ChannelisationCode,
        tpc-CombinationIndex                     TPC-CombinationIndex
}

DL-DPCH-InfoPerRL-PostTDD ::=             SEQUENCE {
    dl-DPCH-TimeslotsCodes                       DownlinkTimeslotsCodes
}

DL-DPCH-InfoPerRL-PostTDD-LCR-r4 ::=      SEQUENCE {
    dl-CCTrCH-TimeslotsCodes                     DownlinkTimeslotsCodes-LCR-r4
}

DL-DPCH-PowerControlInfo ::=             SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            dpc-Mode                                DPC-Mode
        },
        tdd                                     SEQUENCE {
            tpc-StepSizeTDD                         TPC-StepSizeTDD         OPTIONAL
        }
    }
}

DL-FrameType ::=                         ENUMERATED {
                                            dl-FrameTypeA, dl-FrameTypeB }

DL-HSPDSCH-Information ::=                SEQUENCE {
    hs-scch-Info                            HS-SCCH-Info,
    measurement-feedback-Info               Measurement-Feedback-Info    OPTIONAL
}

DL-InformationPerRL ::=                  SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                      PDSCH-SHO-DCH-Info      OPTIONAL,
            pdsch-CodeMapping                      PDSCH-CodeMapping        OPTIONAL
        },
        tdd                                     PrimaryCCPCH-Info
    },
    dl-DPCH-InfoPerRL                       DL-DPCH-InfoPerRL               OPTIONAL,
    sccpch-InfoforFACH                      SCCPCH-InfoForFACH             OPTIONAL
}

DL-InformationPerRL-r4 ::=               SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                      PDSCH-SHO-DCH-Info      OPTIONAL,
            pdsch-CodeMapping                      PDSCH-CodeMapping        OPTIONAL
        },
        tdd                                     PrimaryCCPCH-Info-r4
    },
    dl-DPCH-InfoPerRL                       DL-DPCH-InfoPerRL-r4            OPTIONAL,
    sccpch-InfoforFACH                      SCCPCH-InfoForFACH-r4          OPTIONAL,
    cell-id                                 CellIdentity                   OPTIONAL
}

DL-InformationPerRL-r5 ::=               SEQUENCE {
    modeSpecificInfo                        CHOICE {
        fdd                                     SEQUENCE {
            primaryCPICH-Info                       PrimaryCPICH-Info,
            pdsch-SHO-DCH-Info                      PDSCH-SHO-DCH-Info      OPTIONAL,
            pdsch-CodeMapping                      PDSCH-CodeMapping        OPTIONAL,
            servingHSDSCH-RL-indicator              BOOLEAN
        },
        tdd                                     PrimaryCCPCH-Info-r4
```

```
    },
    dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL-r4                OPTIONAL,
    sccpch-InfoforFACH              SCCPCH-InfoForFACH-r4              OPTIONAL,
    cell-id                         CellIdentity                      OPTIONAL
}

DL-InformationPerRL-List ::=        SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL

DL-InformationPerRL-List-r4 ::=     SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL-r4

DL-InformationPerRL-List-r5 ::=     SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL-r5

DL-InformationPerRL-ListPostFDD ::= SEQUENCE (SIZE (1..maxRL)) OF
                                    DL-InformationPerRL-PostFDD

DL-InformationPerRL-PostFDD ::=     SEQUENCE {
        primaryCPICH-Info               PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL-PostFDD
}

DL-InformationPerRL-PostTDD ::=     SEQUENCE {
    primaryCCPCH-Info               PrimaryCCPCH-InfoPost,
    dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL-PostTDD
}

DL-InformationPerRL-PostTDD-LCR-r4 ::=  SEQUENCE {
    primaryCCPCH-Info               PrimaryCCPCH-InfoPostTDD-LCR-r4,
    dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL-PostTDD-LCR-r4
}

DL-PDSCH-Information ::=            SEQUENCE {
    pdsch-SHO-DCH-Info              PDSCH-SHO-DCH-Info                 OPTIONAL,
    pdsch-CodeMapping              PDSCH-CodeMapping                 OPTIONAL
}

Dl-rate-matching-restriction ::=   SEQUENCE {
    restrictedTrCH-InfoList        RestrictedTrCH-InfoList           OPTIONAL
}

DL-TS-ChannelisationCode ::=       ENUMERATED {
                                    cc16-1, cc16-2, cc16-3, cc16-4,
                                    cc16-5, cc16-6, cc16-7, cc16-8,
                                    cc16-9, cc16-10, cc16-11, cc16-12,
                                    cc16-13, cc16-14, cc16-15, cc16-16 }

DL-TS-ChannelisationCodesShort ::= SEQUENCE {
    codesRepresentation            CHOICE {
        consecutive                    SEQUENCE {
            firstChannelisationCode        DL-TS-ChannelisationCode,
            lastChannelisationCode         DL-TS-ChannelisationCode
        },
        bitmap                         BIT STRING {
                                        chCode16-SF16(0),
                                        chCode15-SF16(1),
                                        chCode14-SF16(2),
                                        chCode13-SF16(3),
                                        chCode12-SF16(4),
                                        chCode11-SF16(5),
                                        chCode10-SF16(6),
                                        chCode9-SF16(7),
                                        chCode8-SF16(8),
                                        chCode7-SF16(9),
                                        chCode6-SF16(10),
                                        chCode5-SF16(11),
                                        chCode4-SF16(12),
                                        chCode3-SF16(13),
                                        chCode2-SF16(14),
                                        chCode1-SF16(15)
                                        } (SIZE (16))
    }
}

DownlinkAdditionalTimeslots ::=    SEQUENCE {
    parameters                     CHOICE {
        sameAsLast                     SEQUENCE {
```

```
            timeslotNumber                     TimeslotNumber
        },
        newParameters                     SEQUENCE {
            individualTimeslotInfo            IndividualTimeslotInfo,
            dl-TS-ChannelisationCodesShort    DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkAdditionalTimeslots-LCR-r4 ::=  SEQUENCE {
    parameters                        CHOICE {
        sameAsLast                        SEQUENCE {
            timeslotNumber                    TimeslotNumber-LCR-r4
        },
        newParameters                     SEQUENCE {
            individualTimeslotInfo            IndividualTimeslotInfo-LCR-r4,
            dl-TS-ChannelisationCodesShort    DL-TS-ChannelisationCodesShort
        }
    }
}

DownlinkTimeslotsCodes ::=        SEQUENCE {
    firstIndividualTimeslotInfo       IndividualTimeslotInfo,
    dl-TS-ChannelisationCodesShort    DL-TS-ChannelisationCodesShort,
    moreTimeslots                     CHOICE {
        noMore                            NULL,
        additionalTimeslots               CHOICE {
            consecutive                       INTEGER (1..maxTS-1),
            timeslotList                      SEQUENCE (SIZE (1..maxTS-1)) OF
                                                  DownlinkAdditionalTimeslots
        }
    }
}

DownlinkTimeslotsCodes-LCR-r4 ::=   SEQUENCE {
    firstIndividualTimeslotInfo       IndividualTimeslotInfo-LCR-r4,
    dl-TS-ChannelisationCodesShort    DL-TS-ChannelisationCodesShort,
    moreTimeslots                     CHOICE {
        noMore                            NULL,
        additionalTimeslots               CHOICE {
            consecutive                       INTEGER (1..maxTS-LCR-1),
            timeslotList                      SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                  DownlinkAdditionalTimeslots-LCR-r4
        }
    }
}


DPC-Mode ::=                      ENUMERATED {
                                      singleTPC,
                                      tpcTripletInSoft }

-- Actual value DPCCH-PowerOffset = IE value * 2
DPCCH-PowerOffset ::=             INTEGER (-82..-3)


-- Actual value DPCCH-PowerOffset = 2 + (IE value * 4)
DPCCH-PowerOffset2 ::=            INTEGER (-28..-13)

DPCH-CompressedModeInfo ::=       SEQUENCE {
    tgp-SequenceList                  TGP-SequenceList
}

DPCH-CompressedModeStatusInfo ::=  SEQUENCE {
    tgps-Reconfiguration-CFN          TGPS-Reconfiguration-CFN,
    tgp-SequenceShortList             SEQUENCE (SIZE (1..maxTGPS)) OF
                                          TGP-SequenceShort
}

-- Actual value DPCH-FrameOffset = IE value * 256
DPCH-FrameOffset::=               INTEGER (0..149)

DSCH-Mapping ::=                  SEQUENCE {
    maxTFCI-Field2Value               MaxTFCI-Field2Value,
    spreadingFactor                   SF-PDSCH,
    codeNumber                        CodeNumberDSCH,
    multiCodeInfo                     MultiCodeInfo
}
```

```
DSCH-MappingList ::=                SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                        DSCH-Mapping

DSCH-RadioLinkIdentifier ::=        INTEGER (0..511)

DurationTimeInfo ::=                INTEGER (1..4096)

DynamicPersistenceLevel ::=         INTEGER (1..8)

DynamicPersistenceLevelList ::=     SEQUENCE (SIZE (1..maxPRACH)) OF
                                        DynamicPersistenceLevel

DynamicPersistenceLevelTF-List ::= SEQUENCE (SIZE (1..maxTF-CPCH)) OF
                                        DynamicPersistenceLevel

FACH-PCH-Information ::=            SEQUENCE {
    transportFormatSet                  TransportFormatSet,
    transportChannelIdentity            TransportChannelIdentity,
    ctch-Indicator                      BOOLEAN
}

FACH-PCH-InformationList ::=        SEQUENCE (SIZE (1..maxFACHPCH)) OF
                                        FACH-PCH-Information

-- Range of Feedback cycle is FFS.
Feedback-cycle ::=                  ENUMERATED {
                                        fc0, fc1, fc5, fc10, fc20, fc40, fc80 fc0, fc2, fc10, fc20,
fc40, fc80, fc160}

FPACH-Info-r4 ::=                   SEQUENCE {
    timeslot                            TimeslotNumber-LCR-r4,
    channelisationCode                  TDD-FPACH-CCode16-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    wi                                  Wi-LCR
}

FrequencyInfo ::=                   SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 FrequencyInfoFDD,
        tdd                                 FrequencyInfoTDD    }
}

FrequencyInfoFDD ::=                SEQUENCE {
    uarfcn-UL                           UARFCN              OPTIONAL,
    uarfcn-DL                           UARFCN
}

FrequencyInfoTDD ::=                SEQUENCE {
    uarfcn-Nt                           UARFCN
}

HS-ChannelisationCode ::=           ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

HS-ChannelisationCode-LCR ::=       ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

HS-SCCH-Info ::=                    SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-Codes,
        tdd                                 CHOICE {
            tdd384                              SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                    HS-SCCH-TDD384,
            tdd128                              SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                    HS-SCCH-TDD128
        }
    }
}

HS-SCCH-Codes ::=                   INTEGER (0..127)
```

```
HS-SCCH-TDD128 ::=                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-TDD128List

HS-SCCH-TDD128List ::=              SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    firstChannelisationCode             HS-ChannelisationCode-LCR,
    secondChannelisationCode            HS-ChannelisationCode-LCR,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8),
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD128
}

HS-SICH-Configuration-TDD128 ::=    SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    channelisationCode                  HS-ChannelisationCode-LCR,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8),
    nack-ack-power-offset               INTEGER (-7..8),
    power-level-HSSICH                  INTEGER (-120..-58),
    tpc-step-size                       ENUMERATED { s1, s2, s3 , spare1}
}

HS-SCCH-TDD384 ::=                  SEQUENCE (SIZE (1..maxHSSCCHs)) OF
                                                HS-SCCH-TDD384List

HS-SCCH-TDD384List ::=              SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  HS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        commonMidamble                      NULL
    },
    midambleconfiguration               MidambleConfiguration,
    bler-target                         Bler-Target,
    hs-sich-configuration               HS-SICH-Configuration-TDD384
}

HS-SICH-Configuration-TDD384 ::=    SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    channelisationCode                  HS-ChannelisationCode,
    midambleAllocationMode              CHOICE {
        defaultMidamble                     NULL,
        ueSpecificMidamble                  SEQUENCE {
            midambleShift                       MidambleShiftLong
        }
    },
    midambleconfiguration               MidambleConfiguration,
    nack-ack-power-offset               INTEGER (-7..8),
    -- Actual value ul-target-SIR = IE value * 0.5
    ul-target-SIR                       INTEGER (-22..40)
}




IndividualTimeslotInfo ::=          SEQUENCE {
    timeslotNumber                      TimeslotNumber,
    tfci-Existence                      BOOLEAN,
    midambleShiftAndBurstType           MidambleShiftAndBurstType
}

IndividualTimeslotInfo-LCR-r4 ::=   SEQUENCE {
    timeslotNumber                      TimeslotNumber-LCR-r4,
    tfci-Existence                      BOOLEAN,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    modulation                          ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                      ENUMERATED { zero, one, sixteenOverSF },
    additionalSS-TPC-Symbols            INTEGER(1..15)      OPTIONAL
```

```
}

IndividualTimeslotInfo-LCR-r4-ext ::=        SEQUENCE {
-- timeslotNumber and tfci-Existence is taken from IndividualTimeslotInfo.
-- midambleShiftAndBurstType in IndividualTimeslotInfo shall be ignored.
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    modulation                          ENUMERATED { mod-QPSK, mod-8PSK },
    ss-TPC-Symbols                      ENUMERATED { zero, one, sixteenOverSF }
}

IndividualTS-Interference ::=         SEQUENCE {
    timeslot                          TimeslotNumber,
    ul-TimeslotInterference           TDD-UL-Interference
}

IndividualTS-InterferenceList ::=     SEQUENCE (SIZE (1..maxTS)) OF
                                        IndividualTS-Interference

ITP ::=                               ENUMERATED {
                                        mode0, mode1 }

NidentifyAbort ::=  INTEGER (1..128)

MaxAllowedUL-TX-Power ::=             INTEGER (-50..33)

MaxAvailablePCPCH-Number ::=          INTEGER (1..64)

MaxPowerIncrease-r4 ::=               INTEGER (0..3)

MaxTFCI-Field2Value ::=               INTEGER (1..1023)

Measurement-Feedback-Info ::=         SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            pohsdsch                          Po-hsdsch,
            feedback-cycle                    Feedback-cycle,
            cqi-RepetitionFactor              CQI-RepetitionFactor,
            deltaCQI                          DeltaCQI
        },
        tdd                           NULL
    }
}

MidambleConfiguration ::=             ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType1and3 ::= ENUMERATED {ms4, ms8, ms16}

MidambleConfigurationBurstType2 ::=   ENUMERATED {ms3, ms6}

MidambleShiftAndBurstType ::=         SEQUENCE {
    burstType                         CHOICE {
        type1                             SEQUENCE {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                commonMidamble                      NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftLong
                }
            }
        },
        type2                             SEQUENCE {
            midambleConfigurationBurstType2     MidambleConfigurationBurstType2,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                commonMidamble                      NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftShort
                }
            }
        },
        type3                             SEQUENCE {
            midambleConfigurationBurstType1and3 MidambleConfigurationBurstType1and3,
            midambleAllocationMode              CHOICE {
                defaultMidamble                     NULL,
                ueSpecificMidamble                  SEQUENCE {
                    midambleShift                       MidambleShiftLong
                }
```

```
        }
      }
    }
}

MidambleShiftAndBurstType-LCR-r4 ::=    SEQUENCE {
    midambleAllocationMode              CHOICE {
        defaultMidamble                 NULL,
        commonMidamble                  NULL,
        ueSpecificMidamble              SEQUENCE {
            midambleShift                   INTEGER (0..15)
        }
    },
    -- Actual value midambleConfiguration = IE value * 2
    midambleConfiguration               INTEGER (1..8)
}

MidambleShiftLong ::=               INTEGER (0..15)


MidambleShiftShort ::=              INTEGER (0..5)

MinimumSpreadingFactor ::=          ENUMERATED {
                                        sf4, sf8, sf16, sf32,
                                        sf64, sf128, sf256 }

MultiCodeInfo ::=                   INTEGER (1..16)


N-EOT ::=                           INTEGER (0..7)

N-GAP ::=                           ENUMERATED {
                                        f2, f4, f8 }

N-PCH ::=                           INTEGER (1..8)

N-StartMessage ::=                  INTEGER (1..8)

NB01 ::=                            INTEGER (0..50)

NF-Max ::=                          INTEGER (1..64)

NumberOfDPDCH ::=                   INTEGER (1..maxDPDCH-UL)

NumberOfFBI-Bits ::=                INTEGER (1..2)

OpenLoopPowerControl-TDD ::=        SEQUENCE {
    primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power,
    -- alpha, prach-ConstantValue, dpch-ConstantValue and pusch-ConstantValue
    -- shall be ignored in 1.28Mcps TDD mode.
    alpha                               Alpha                       OPTIONAL,
    prach-ConstantValue                 ConstantValueTdd,
    dpch-ConstantValue                  ConstantValueTdd,
    pusch-ConstantValue                 ConstantValueTdd            OPTIONAL
}

OpenLoopPowerControl-IPDL-TDD-r4 ::=    SEQUENCE {
    ipdl-alpha                          Alpha,
    maxPowerIncrease                    MaxPowerIncrease-r4
}

PagingIndicatorLength ::=           ENUMERATED {
                                        pi4, pi8, pi16 }

PC-Preamble ::=                     INTEGER (0..7)

PCP-Length ::=                      ENUMERATED {
                                        as0, as8 }

PCPCH-ChannelInfo ::=               SEQUENCE {
    pcpch-UL-ScramblingCode             INTEGER (0..79),
    pcpch-DL-ChannelisationCode         INTEGER (0..511),
    pcpch-DL-ScramblingCode             SecondaryScramblingCode         OPTIONAL,
    pcp-Length                          PCP-Length,
    ucsm-Info                           UCSM-Info                       OPTIONAL
}

PCPCH-ChannelInfoList ::=           SEQUENCE (SIZE (1..maxPCPCHs)) OF
```

```
                                        PCPCH-ChannelInfo

PCPICH-UsageForChannelEst ::=       ENUMERATED {
                                        mayBeUsed,
                                        shallNotBeUsed }

PDSCH-CapacityAllocationInfo ::=    SEQUENCE {
    -- pdsch-PowerControlInfo is conditional on new-configuration branch below, if this
    -- selected the IE is OPTIONAL otherwise it should not be sent
    pdsch-PowerControlInfo              PDSCH-PowerControlInfo              OPTIONAL,
    pdsch-AllocationPeriodInfo          AllocationPeriodInfo,
    configuration                       CHOICE {
        old-Configuration                   SEQUENCE {
            tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
            pdsch-Identity                      PDSCH-Identity
        },
        new-Configuration                   SEQUENCE {
            pdsch-Info                          PDSCH-Info,
            pdsch-Identity                      PDSCH-Identity                  OPTIONAL
        }
    }
}

PDSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pdsch-AllocationPeriodInfo          AllocationPeriodInfo,
    configuration                       CHOICE {
        old-Configuration                   SEQUENCE {
            tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
            pdsch-Identity                      PDSCH-Identity
        },
        new-Configuration                   SEQUENCE {
            pdsch-Info                          PDSCH-Info-r4,
            pdsch-Identity                      PDSCH-Identity              OPTIONAL,
            pdsch-PowerControlInfo              PDSCH-PowerControlInfo      OPTIONAL
        }
    }
}

PDSCH-CodeInfo ::=                  SEQUENCE {
    spreadingFactor                     SF-PDSCH,
    codeNumber                          CodeNumberDSCH,
    multiCodeInfo                       MultiCodeInfo
}

PDSCH-CodeInfoList ::=              SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                        PDSCH-CodeInfo

PDSCH-CodeMap ::=                  SEQUENCE {
    spreadingFactor                     SF-PDSCH,
    multiCodeInfo                       MultiCodeInfo,
    codeNumberStart                     CodeNumberDSCH,
    codeNumberStop                      CodeNumberDSCH
}

PDSCH-CodeMapList ::=              SEQUENCE (SIZE (1..maxPDSCH-TFCIgroups)) OF
                                        PDSCH-CodeMap

PDSCH-CodeMapping ::=              SEQUENCE {
    dl-ScramblingCode                   SecondaryScramblingCode             OPTIONAL,
    signallingMethod                    CHOICE {
        codeRange                           CodeRange,
        tfci-Range                          DSCH-MappingList,
        explicit-config                     PDSCH-CodeInfoList,
        replace                             ReplacedPDSCH-CodeInfoList
    }
}

PDSCH-Identity ::=                 INTEGER (1..hiPDSCHidentities)


PDSCH-Info ::=                     SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo                  OPTIONAL,
    pdsch-TimeslotsCodes                DownlinkTimeslotsCodes              OPTIONAL
}

PDSCH-Info-r4 ::=                  SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
```

```
    commonTimeslotInfo                  CommonTimeslotInfo              OPTIONAL,
    tddOption                           CHOICE {
        tdd384                              SEQUENCE {
            pdsch-TimeslotsCodes                DownlinkTimeslotsCodes      OPTIONAL
        },
        tdd128                              SEQUENCE {
            pdsch-TimeslotsCodes                DownlinkTimeslotsCodes-LCR-r4   OPTIONAL
        }
    }
}

PDSCH-Info-LCR-r4 ::=               SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain              DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo              OPTIONAL,
    pdsch-TimeslotsCodes                DownlinkTimeslotsCodes-LCR-r4   OPTIONAL
}

PDSCH-PowerControlInfo ::=          SEQUENCE {
    tpc-StepSizeTDD                     TPC-StepSizeTDD                 OPTIONAL,
    ul-CCTrChTPCList                    UL-CCTrChTPCList                OPTIONAL
}

PDSCH-SHO-DCH-Info ::=              SEQUENCE {
    dsch-RadioLinkIdentifier            DSCH-RadioLinkIdentifier,
    rl-IdentifierList                   RL-IdentifierList               OPTIONAL
}

PDSCH-SysInfo ::=                   SEQUENCE {
    pdsch-Identity                      PDSCH-Identity,
    pdsch-Info                          PDSCH-Info,
    dsch-TFS                            TransportFormatSet              OPTIONAL,
    dsch-TFCS                           TFCS                            OPTIONAL
}

PDSCH-SysInfo-LCR-r4 ::=            SEQUENCE {
    pdsch-Identity                      PDSCH-Identity,
    pdsch-Info                          PDSCH-Info-LCR-r4,
    dsch-TFS                            TransportFormatSet              OPTIONAL,
    dsch-TFCS                           TFCS                            OPTIONAL
}

PDSCH-SysInfoList ::=               SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        PDSCH-SysInfo

PDSCH-SysInfoList-LCR-r4 ::=        SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        PDSCH-SysInfo-LCR-r4

PDSCH-SysInfoList-SFN ::=           SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        SEQUENCE {
    pdsch-SysInfo                           PDSCH-SysInfo,
    sfn-TimeInfo                            SFN-TimeInfo                OPTIONAL
}

PDSCH-SysInfoList-SFN-LCR-r4 ::=    SEQUENCE (SIZE (1..maxPDSCH)) OF
                                        SEQUENCE {
    pdsch-SysInfo                           PDSCH-SysInfo-LCR-r4,
    sfn-TimeInfo                            SFN-TimeInfo                OPTIONAL
}

PersistenceScalingFactor ::=        ENUMERATED {
                                        psf0-9, psf0-8, psf0-7, psf0-6,
                                        psf0-5, psf0-4, psf0-3, psf0-2 }

PersistenceScalingFactorList ::=    SEQUENCE (SIZE (1..maxASCpersist)) OF
                                        PersistenceScalingFactor

PI-CountPerFrame ::=                ENUMERATED {
                                        e18, e36, e72, e144 }

PichChannelisationCodeList-LCR-r4   ::=              SEQUENCE (SIZE (1..2)) OF
                                                        DL-TS-ChannelisationCode

PICH-Info ::=                       CHOICE {
    fdd                                 SEQUENCE {
        channelisationCode256               ChannelisationCode256,
        pi-CountPerFrame                    PI-CountPerFrame,
        sttd-Indicator                      BOOLEAN
    },
```

```
    tdd                                 SEQUENCE {
        channelisationCode                  TDD-PICH-CCode              OPTIONAL,
        timeslot                            TimeslotNumber              OPTIONAL,
        midambleShiftAndBurstType           MidambleShiftAndBurstType,
        repetitionPeriodLengthOffset        RepPerLengthOffset-PICH     OPTIONAL,
        pagingIndicatorLength               PagingIndicatorLength       DEFAULT pi4,
        n-GAP                               N-GAP                       DEFAULT f4,
        n-PCH                               N-PCH                       DEFAULT 2
    }
}

PICH-Info-LCR-r4 ::=                SEQUENCE {
    timeslot                            TimeslotNumber-LCR-r4           OPTIONAL,
    pichChannelisationCodeList-LCR-r4   PichChannelisationCodeList-LCR-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    repetitionPeriodLengthOffset        RepPerLengthOffset-PICH         OPTIONAL,
    pagingIndicatorLength               PagingIndicatorLength       DEFAULT pi4,
    n-GAP                               N-GAP                       DEFAULT f4,
    n-PCH                               N-PCH                       DEFAULT 2
}

PICH-PowerOffset ::=                INTEGER (-10..5)

PilotBits128 ::=                    ENUMERATED {
                                        pb4, pb8 }

PilotBits256 ::=                    ENUMERATED {
                                        pb2, pb4, pb8 }

    -- Actual value Po-hsdsch = IE value * 0.5
    -- Range of po hsdsch is FFS.
Po-hsdsch ::=                       INTEGER (-10..0 12..26)

PositionFixedOrFlexible ::=         ENUMERATED {
                                        fixed,
                                        flexible }

PowerControlAlgorithm ::=           CHOICE {
    algorithm1                          TPC-StepSizeFDD,
    algorithm2                          NULL
}

PowerOffsetPilot-pdpdch ::=         INTEGER (0..24)

PowerRampStep ::=                   INTEGER (1..8)

PRACH-ChanCodes-LCR-r4 ::=          SEQUENCE (SIZE (1..4)) OF
                                        TDD-PRACH-CCode-LCR-r4

PRACH-Definition-LCR-r4 ::=         SEQUENCE {
    timeslot                            TimeslotNumber-PRACH-LCR-r4,
    prach-ChanCodes-LCR                 PRACH-ChanCodes-LCR-r4,
    midambleShiftAndBurstType           MidambleShiftAndBurstType-LCR-r4,
    fpach-Info                          FPACH-Info-r4
}

PRACH-Midamble ::=                  ENUMERATED {
                                        direct,
                                        direct-Inverted }

PRACH-Partitioning ::=              CHOICE {
    fdd                                 SEQUENCE (SIZE (1..maxASC)) OF
                                            ASCSetting-FDD,
    tdd                                 SEQUENCE (SIZE (1..maxASC)) OF
                                            ASCSetting-TDD
}

PRACH-Partitioning-LCR-r4 ::=       SEQUENCE (SIZE (1..maxASC)) OF
                                        ASCSetting-TDD-LCR-r4

PRACH-PowerOffset ::=               SEQUENCE {
    powerRampStep                       PowerRampStep,
    preambleRetransMax                  PreambleRetransMax
}

PRACH-RACH-Info ::=                 SEQUENCE {
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
```

```
        availableSignatures                 AvailableSignatures,
        availableSF                         SF-PRACH,
        preambleScramblingCodeWordNumber    PreambleScramblingCodeWordNumber,
        puncturingLimit                     PuncturingLimit,
        availableSubChannelNumbers          AvailableSubChannelNumbers
    },
    tdd                                 SEQUENCE {
        timeslot                            TimeslotNumber,
        channelisationCodeList              TDD-PRACH-CCodeList,
        prach-Midamble                      PRACH-Midamble
    }
    }
}

PRACH-RACH-Info-LCR-r4 ::=          SEQUENCE {
    sync-UL-Info                        SYNC-UL-Info-r4,
    prach-DefinitionList                SEQUENCE (SIZE (1..maxPRACH-FPACH)) OF
                                            PRACH-Definition-LCR-r4
}

PRACH-SystemInformation ::=         SEQUENCE {
    prach-RACH-Info                     PRACH-RACH-Info,
    transportChannelIdentity            TransportChannelIdentity,
    rach-TransportFormatSet             TransportFormatSet                  OPTIONAL,
    rach-TFCS                           TFCS                                OPTIONAL,
    prach-Partitioning                  PRACH-Partitioning                  OPTIONAL,
    persistenceScalingFactorList        PersistenceScalingFactorList        OPTIONAL,
    ac-To-ASC-MappingTable              AC-To-ASC-MappingTable              OPTIONAL,
    modeSpecificInfo                    CHOICE {
        fdd                                 SEQUENCE {
            primaryCPICH-TX-Power               PrimaryCPICH-TX-Power       OPTIONAL,
            constantValue                       ConstantValue               OPTIONAL,
            prach-PowerOffset                   PRACH-PowerOffset           OPTIONAL,
            rach-TransmissionParameters         RACH-TransmissionParameters OPTIONAL,
            aich-Info                           AICH-Info                   OPTIONAL
        },
        tdd                                 NULL
    }
}

PRACH-SystemInformation-LCR-r4 ::=  SEQUENCE {
    prach-RACH-Info-LCR                 PRACH-RACH-Info-LCR-r4,
    rach-TransportFormatSet-LCR         TransportFormatSet-LCR              OPTIONAL,
    prach-Partitioning-LCR              PRACH-Partitioning-LCR-r4           OPTIONAL
}

PRACH-SystemInformationList ::=     SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation

PRACH-SystemInformationList-LCR-r4 ::=  SEQUENCE (SIZE (1..maxPRACH)) OF
                                        PRACH-SystemInformation-LCR-r4

PreambleRetransMax ::=              INTEGER (1..64)

PreambleScramblingCodeWordNumber ::=   INTEGER (0..15)

PreDefPhyChConfiguration ::=        SEQUENCE {
    ul-DPCH-InfoPredef                  UL-DPCH-InfoPredef,
    dl-CommonInformationPredef          DL-CommonInformationPredef  OPTIONAL
}

PrimaryCCPCH-Info ::=               CHOICE {
    fdd                                 SEQUENCE {
        tx-DiversityIndicator               BOOLEAN
    },
    tdd                                 SEQUENCE {
        -- syncCase should be ignored for 1.28Mcps TDD mode
        syncCase                            CHOICE {
            syncCase1                           SEQUENCE {
                timeslot                            TimeslotNumber
            },
            syncCase2                           SEQUENCE {
                timeslotSync2                       TimeslotSync2
            }
        }                                                           OPTIONAL,
        cellParametersID                    CellParametersID        OPTIONAL,
        sctd-Indicator                      BOOLEAN
    }
```

```
}
PrimaryCCPCH-Info-r4 ::=          CHOICE {
    fdd                                SEQUENCE {
        tx-DiversityIndicator          BOOLEAN
    },
    tdd                                SEQUENCE {
        tddOption                          CHOICE {
            tdd384                             SEQUENCE {
                syncCase                           CHOICE {
                    syncCase1                          SEQUENCE {
                        timeslot                           TimeslotNumber
                    },
                    syncCase2                          SEQUENCE {
                        timeslotSync2                      TimeslotSync2
                    }
                }                                                  OPTIONAL
            },
            tdd128                         SEQUENCE {
                tstd-Indicator                 BOOLEAN
            }
        },
        cellParametersID               CellParametersID           OPTIONAL,
        blockSTTD-Indicator            BOOLEAN
    }
}

PrimaryCCPCH-Info-LCR-r4 ::=      SEQUENCE {
    tstd-Indicator                 BOOLEAN,
    cellParametersID               CellParametersID               OPTIONAL,
    blockSTTD-Indicator            BOOLEAN
}

-- For 1.28Mcps TDD, the following IE includes elements for the PCCPCH Info additional to those
-- in PrimaryCCPCH-Info
PrimaryCCPCH-Info-LCR-r4-ext ::=  SEQUENCE {
    tstd-Indicator                 BOOLEAN
}

PrimaryCCPCH-InfoPost ::=         SEQUENCE {
    syncCase                           CHOICE {
        syncCase1                          SEQUENCE {
            timeslot                           TimeslotNumber
        },
        syncCase2                          SEQUENCE {
            timeslotSync2                      TimeslotSync2
        }
    },
    cellParametersID               CellParametersID,
    sctd-Indicator                 BOOLEAN
}

PrimaryCCPCH-InfoPostTDD-LCR-r4 ::= SEQUENCE {
    tstd-Indicator                 BOOLEAN,
    cellParametersID               CellParametersID,
    blockSTTD-Indicator            BOOLEAN
}

PrimaryCCPCH-TX-Power ::=         INTEGER (6..43)

PrimaryCPICH-Info ::=             SEQUENCE {
    primaryScramblingCode          PrimaryScramblingCode
}

PrimaryCPICH-TX-Power ::=         INTEGER (-10..50)

PrimaryScramblingCode ::=         INTEGER (0..511)

PuncturingLimit ::=               ENUMERATED {
                                      pl0-40, pl0-44, pl0-48, pl0-52, pl0-56,
                                      pl0-60, pl0-64, pl0-68, pl0-72, pl0-76,
                                      pl0-80, pl0-84, pl0-88, pl0-92, pl0-96, pl1 }

PUSCH-CapacityAllocationInfo ::=  SEQUENCE {
    pusch-Allocation                   CHOICE {
        pusch-AllocationPending            NULL,
        pusch-AllocationAssignment         SEQUENCE {
            pusch-AllocationPeriodInfo         AllocationPeriodInfo,
```

```
            pusch-PowerControlInfo              UL-TargetSIR            OPTIONAL,
            configuration                       CHOICE {
                old-Configuration                   SEQUENCE {
                    tfcs-ID                             TFCS-IdentityPlain      DEFAULT 1,
                    pusch-Identity                      PUSCH-Identity
                },
                new-Configuration                   SEQUENCE {
                    pusch-Info                          PUSCH-Info,
                    pusch-Identity                      PUSCH-Identity      OPTIONAL
                }
            }
        }
    }
}

PUSCH-CapacityAllocationInfo-r4 ::= SEQUENCE {
    pusch-Allocation                    CHOICE {
        pusch-AllocationPending             NULL,
        pusch-AllocationAssignment          SEQUENCE {
            pusch-AllocationPeriodInfo          AllocationPeriodInfo,
            pusch-PowerControlInfo              PUSCH-PowerControlInfo-r4   OPTIONAL,
            configuration                       CHOICE {
                old-Configuration                   SEQUENCE {
                    tfcs-ID                             TFCS-IdentityPlain      DEFAULT 1,
                    pusch-Identity                      PUSCH-Identity
                },
                new-Configuration                   SEQUENCE {
                    pusch-Info                          PUSCH-Info-r4,
                    pusch-Identity                      PUSCH-Identity      OPTIONAL
                }
            }
        }
    }
}

PUSCH-Identity ::=                  INTEGER (1..hiPUSCHidentities)

PUSCH-Info ::=                      SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo          OPTIONAL,
    pusch-TimeslotsCodes                UplinkTimeslotsCodes        OPTIONAL
}

PUSCH-Info-r4 ::=                   SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,
    commonTimeslotInfo                  CommonTimeslotInfo          OPTIONAL,
    tddOption                           CHOICE {
        tdd384                              SEQUENCE {
            pusch-TimeslotsCodes                UplinkTimeslotsCodes        OPTIONAL
        },
        tdd128                              SEQUENCE {
            pusch-TimeslotsCodes                UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

PUSCH-Info-LCR-r4 ::=               SEQUENCE {
    tfcs-ID                             TFCS-IdentityPlain          DEFAULT 1,

    commonTimeslotInfo                  CommonTimeslotInfo          OPTIONAL,
    pusch-TimeslotsCodes                UplinkTimeslotsCodes-LCR-r4 OPTIONAL
}

PUSCH-PowerControlInfo-r4 ::=       SEQUENCE {
    -- The IE ul-TargetSIR corresponds to PRX-PUSCHdes for 1.28Mcps TDD
    -- Actual value PRX-PUSCHdes = (value of IE "ul-TargetSIR" – 120)
    ul-TargetSIR                        UL-TargetSIR,
    tddOption                           CHOICE {
        tdd384                              NULL,
        tdd128                              SEQUENCE {
            tpc-StepSize                        TPC-StepSizeTDD         OPTIONAL,
            dl-CCTrChTPCList                    DL-CCTrChTPCList        OPTIONAL
        }
    }
}

PUSCH-SysInfo ::=                   SEQUENCE {
    pusch-Identity                      PUSCH-Identity,
```

```
    pusch-Info                          PUSCH-Info,
    usch-TFS                            TransportFormatSet                  OPTIONAL,
    usch-TFCS                           TFCS                                OPTIONAL
}

PUSCH-SysInfo-LCR-r4 ::=            SEQUENCE {
    pusch-Identity                      PUSCH-Identity,
    pusch-Info                          PUSCH-Info-LCR-r4,
    usch-TFS                            TransportFormatSet                  OPTIONAL,
    usch-TFCS                           TFCS                                OPTIONAL
}

PUSCH-SysInfoList ::=              SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       PUSCH-SysInfo

PUSCH-SysInfoList-LCR-r4 ::=       SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       PUSCH-SysInfo-LCR-r4

PUSCH-SysInfoList-SFN ::=          SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       SEQUENCE {
    pusch-SysInfo                       PUSCH-SysInfo,
    sfn-TimeInfo                        SFN-TimeInfo                        OPTIONAL
}

PUSCH-SysInfoList-SFN-LCR-r4 ::=   SEQUENCE (SIZE (1..maxPUSCH)) OF
                                       SEQUENCE {
    pusch-SysInfo                       PUSCH-SysInfo-LCR-r4,
    sfn-TimeInfo                        SFN-TimeInfo                        OPTIONAL
}

RACH-TransmissionParameters ::=    SEQUENCE {
    mmax                                INTEGER (1..32),
    nb01Min                             NB01,
    nb01Max                             NB01
}

ReducedScramblingCodeNumber ::=    INTEGER (0..8191)

RepetitionPeriodAndLength ::=      CHOICE {
    repetitionPeriod1                   NULL,
    -- repetitionPeriod2 could just as well be NULL also.
    repetitionPeriod2                   INTEGER (1..1),
    repetitionPeriod4                   INTEGER (1..3),
    repetitionPeriod8                   INTEGER (1..7),
    repetitionPeriod16                  INTEGER (1..15),
    repetitionPeriod32                  INTEGER (1..31),
    repetitionPeriod64                  INTEGER (1..63)
}

RepetitionPeriodLengthAndOffset ::= CHOICE {
    repetitionPeriod1                   NULL,
    repetitionPeriod2                   SEQUENCE {
        length                              NULL,
        offset                              INTEGER (0..1)
    },
    repetitionPeriod4                   SEQUENCE {
        length                              INTEGER (1..3),
        offset                              INTEGER (0..3)
    },
    repetitionPeriod8                   SEQUENCE {
        length                              INTEGER (1..7),
        offset                              INTEGER (0..7)
    },
    repetitionPeriod16                  SEQUENCE {
        length                              INTEGER (1..15),
        offset                              INTEGER (0..15)
    },
    repetitionPeriod32                  SEQUENCE {
        length                              INTEGER (1..31),
        offset                              INTEGER (0..31)
    },
    repetitionPeriod64                  SEQUENCE {
        length                              INTEGER (1..63),
        offset                              INTEGER (0..63)
    }
}

ReplacedPDSCH-CodeInfo ::=         SEQUENCE {
```

```
    tfci-Field2                     MaxTFCI-Field2Value,
    spreadingFactor                 SF-PDSCH,
    codeNumber                      CodeNumberDSCH,
    multiCodeInfo                   MultiCodeInfo
}

ReplacedPDSCH-CodeInfoList ::=      SEQUENCE (SIZE (1..maxTFCI-2-Combs)) OF
                                    ReplacedPDSCH-CodeInfo

RepPerLengthOffset-PICH ::=         CHOICE {
    rpp4-2                          INTEGER (0..3),
    rpp8-2                          INTEGER (0..7),
    rpp8-4                          INTEGER (0..7),
    rpp16-2                         INTEGER (0..15),
    rpp16-4                         INTEGER (0..15),
    rpp32-2                         INTEGER (0..31),
    rpp32-4                         INTEGER (0..31),
    rpp64-2                         INTEGER (0..63),
    rpp64-4                         INTEGER (0..63)
}

RestrictedTrCH ::=                  SEQUENCE {
    dl-restrictedTrCh-Type          DL-TrCH-Type,
    restrictedDL-TrCH-Identity      TransportChannelIdentity,
    allowedTFIList                  AllowedTFI-List
}

RestrictedTrCH-InfoList ::=         SEQUENCE (SIZE(1..maxTrCH)) OF
                                    RestrictedTrCH

RL-AdditionInformation ::=          SEQUENCE {
    primaryCPICH-Info               PrimaryCPICH-Info,
    dl-DPCH-InfoPerRL               DL-DPCH-InfoPerRL,
    tfci-CombiningIndicator         BOOLEAN,
    sccpch-InfoforFACH              SCCPCH-InfoForFACH              OPTIONAL
}

RL-AdditionInformationList ::=      SEQUENCE (SIZE (1..maxRL-1)) OF
                                    RL-AdditionInformation

RL-IdentifierList ::=               SEQUENCE (SIZE (1..maxRL)) OF
                                    PrimaryCPICH-Info

RL-RemovalInformationList ::=       SEQUENCE (SIZE (1..maxRL)) OF
                                    PrimaryCPICH-Info

RPP ::=                             ENUMERATED {
                                    mode0, mode1 }

S-Field ::=                         ENUMERATED {
                                    e1bit, e2bits }

SCCPCH-ChannelisationCode ::=       ENUMERATED {
                                    cc16-1, cc16-2, cc16-3, cc16-4,
                                    cc16-5, cc16-6, cc16-7, cc16-8,
                                    cc16-9, cc16-10, cc16-11, cc16-12,
                                    cc16-13, cc16-14, cc16-15, cc16-16 }

SCCPCH-ChannelisationCodeList ::=   SEQUENCE (SIZE (1..16)) OF
                                    SCCPCH-ChannelisationCode

SCCPCH-InfoForFACH ::=              SEQUENCE {
    secondaryCCPCH-Info             SecondaryCCPCH-Info,
    tfcs                            TFCS,
    modeSpecificInfo                CHOICE {
        fdd                             SEQUENCE {
            fach-PCH-InformationList        FACH-PCH-InformationList,
            sib-ReferenceListFACH           SIB-ReferenceListFACH
        },
        tdd                             SEQUENCE {
            fach-PCH-InformationList        FACH-PCH-InformationList
        }
    }
}

SCCPCH-InfoForFACH-r4 ::=           SEQUENCE {
    secondaryCCPCH-Info             SecondaryCCPCH-Info-r4,
    tfcs                            TFCS,
```

```
    fach-PCH-InformationList          FACH-PCH-InformationList,
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            sib-ReferenceListFACH             SIB-ReferenceListFACH
        },
        tdd                               NULL
    }
}

SCCPCH-SystemInformation ::=          SEQUENCE {
    secondaryCCPCH-Info               SecondaryCCPCH-Info,
    tfcs                              TFCS                          OPTIONAL,
    fach-PCH-InformationList          FACH-PCH-InformationList      OPTIONAL,
    pich-Info                         PICH-Info                     OPTIONAL
}

SCCPCH-SystemInformation-LCR-r4-ext ::= SEQUENCE {
    secondaryCCPCH-LCR-Extensions   SecondaryCCPCH-Info-LCR-r4-ext,
    -- pich-Info in the SCCPCH-SystemInformation IE shall be absent,
    -- and instead the following used.
    pich-Info                         PICH-Info-LCR-r4              OPTIONAL
}

SCCPCH-SystemInformationList ::=      SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                      SCCPCH-SystemInformation

-- SCCPCH-SystemInformationList-LCR-r4-ext includes elements additional to those in
-- SCCPCH-SystemInformationList for the 1.28Mcps TDD. The order of the IEs
-- indicates which SCCPCH-SystemInformation-LCR-r4-ext IE extends which
-- SCCPCH-SystemInformation IE.
SCCPCH-SystemInformationList-LCR-r4-ext ::= SEQUENCE (SIZE (1..maxSCCPCH)) OF
                                            SCCPCH-SystemInformation-LCR-r4-ext

ScramblingCodeChange ::=              ENUMERATED {
                                      codeChange, noCodeChange }

ScramblingCodeType ::=                ENUMERATED {
                                      shortSC,
                                      longSC }

SecondaryCCPCH-Info ::=               SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            -- dummy1 is not used in this version of the specification and should be ignored.
            dummy1                        PCPICH-UsageForChannelEst,
            -- dummy2 is not used in this version of the specification.  It should not
            -- be sent and if received it should be ignored.
            dummy2                        SecondaryCPICH-Info           OPTIONAL,
            secondaryScramblingCode       SecondaryScramblingCode       OPTIONAL,
            sttd-Indicator                BOOLEAN,
            sf-AndCodeNumber              SF256-AndCodeNumber,
            pilotSymbolExistence          BOOLEAN,
            tfci-Existence                BOOLEAN,
            positionFixedOrFlexible       PositionFixedOrFlexible,
            timingOffset                  TimingOffset                  DEFAULT 0
        },
        tdd                               SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
            commonTimeslotInfo            CommonTimeslotInfoSCCPCH,
            individualTimeslotInfo        IndividualTimeslotInfo,
            channelisationCode            SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-r4 ::=        SEQUENCE {
    modeSpecificInfo                  CHOICE {
        fdd                               SEQUENCE {
            secondaryScramblingCode       SecondaryScramblingCode       OPTIONAL,
            sttd-Indicator                BOOLEAN,
            sf-AndCodeNumber              SF256-AndCodeNumber,
            pilotSymbolExistence          BOOLEAN,
            tfci-Existence                BOOLEAN,
            positionFixedOrFlexible       PositionFixedOrFlexible,
            timingOffset                  TimingOffset                  DEFAULT 0
        },
        tdd                               SEQUENCE {
            -- TABULAR: the offset is included in CommonTimeslotInfoSCCPCH
```

```
            commonTimeslotInfo              CommonTimeslotInfoSCCPCH,
            tddOption                       CHOICE {
                tdd384                          SEQUENCE {
                    individualTimeslotInfo          IndividualTimeslotInfo
                },
                tdd128                          SEQUENCE {
                    individualTimeslotInfo          IndividualTimeslotInfo-LCR-r4
                }
            },
            channelisationCode              SCCPCH-ChannelisationCodeList
        }
    }
}

SecondaryCCPCH-Info-LCR-r4-ext ::=  SEQUENCE {
    individualTimeslotLCR-Ext       IndividualTimeslotInfo-LCR-r4-ext
}

SecondaryCPICH-Info ::=             SEQUENCE {
    secondaryDL-ScramblingCode          SecondaryScramblingCode         OPTIONAL,
    channelisationCode                  ChannelisationCode256
}

SecondaryScramblingCode ::=         INTEGER (1..15)

SecondInterleavingMode ::=          ENUMERATED {
                                        frameRelated, timeslotRelated }

-- SF256-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF256-AndCodeNumber ::=             CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255)
}

-- SF512-AndCodeNumber encodes both "Spreading factor" and "Code Number"
SF512-AndCodeNumber ::=             CHOICE {
    sf4                                 INTEGER (0..3),
    sf8                                 INTEGER (0..7),
    sf16                                INTEGER (0..15),
    sf32                                INTEGER (0..31),
    sf64                                INTEGER (0..63),
    sf128                               INTEGER (0..127),
    sf256                               INTEGER (0..255),
    sf512                               INTEGER (0..511)
}

-- SF512-AndPilot encodes both "Spreading factor" and "Number of bits for Pilot bits"
SF512-AndPilot ::=                 CHOICE {
    sfd4                                NULL,
    sfd8                                NULL,
    sfd16                               NULL,
    sfd32                               NULL,
    sfd64                               NULL,
    sfd128                              PilotBits128,
    sfd256                              PilotBits256,
    sfd512                              NULL
}
SF-PDSCH ::=                        ENUMERATED {
                                        sfp4, sfp8, sfp16, sfp32,
                                        sfp64, sfp128, sfp256 }

SF-PRACH ::=                        ENUMERATED {
                                        sfpr32, sfpr64, sfpr128, sfpr256 }

SFN-TimeInfo ::=                    SEQUENCE {
    activationTimeSFN                   INTEGER (0..4095),
    physChDuration                  DurationTimeInfo
}

SpecialBurstScheduling ::=          INTEGER (0..7)

SpreadingFactor::=                  ENUMERATED {
                                        sf4, sf8, sf16, sf32,
```

```
                                    sf64, sf128, sf256 }

SRB-delay ::=                       INTEGER (0..7)

SSDT-CellIdentity ::=               ENUMERATED {
                                        ssdt-id-a, ssdt-id-b, ssdt-id-c,
                                        ssdt-id-d, ssdt-id-e, ssdt-id-f,
                                        ssdt-id-g, ssdt-id-h }

SSDT-Information ::=                 SEQUENCE {
    s-Field                             S-Field,
    codeWordSet                         CodeWordSet
}

SSDT-Information-r4 ::=              SEQUENCE {
    s-Field                             S-Field,
    codeWordSet                         CodeWordSet,
    ssdt-UL                             SSDT-UL-r4                          OPTIONAL
}

-- SSDT-UL-r4 is used to extend the
-- SSDT-Information IE from Release 4 onwards.
SSDT-UL-r4 ::=                       ENUMERATED {
                                        ul, ul-AndDL }

SynchronisationParameters-r4 ::=    SEQUENCE {
    sync-UL-CodesBitmap                 BIT STRING {
                                            code7(0),
                                            code6(1),
                                            code5(2),
                                            code4(3),
                                            code3(4),
                                            code2(5),
                                            code1(6),
                                            code0(7)
                                            } (SIZE (8)),
    fpach-Info                          FPACH-Info-r4,
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes                         INTEGER (0..62),
    sync-UL-Procedure                   SYNC-UL-Procedure-r4               OPTIONAL
}

SYNC-UL-Procedure-r4 ::=            SEQUENCE {
    max-SYNC-UL-Transmissions           ENUMERATED { tr1, tr2, tr4, tr8 },
    powerRampStep                       INTEGER (0..3)
}

SYNC-UL-Info-r4 ::=                 SEQUENCE {
    sync-UL-Codes-Bitmap                BIT STRING {
                                            code7(0),
                                            code6(1),
                                            code5(2),
                                            code4(3),
                                            code3(4),
                                            code2(5),
                                            code1(6),
                                            code0(7)
                                            } ( SIZE (8)),
    -- Actual value prxUpPCHdes = IE value - 120
    prxUpPCHdes                         INTEGER (0..62),
    powerRampStep                       INTEGER (0..3),
    max-SYNC-UL-Transmissions           ENUMERATED { tr1, tr2, tr4, tr8 } ,
    mmax                                INTEGER(1..32)
}

TDD-FPACH-CCode16-r4 ::=            ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-UL-Interference ::=             INTEGER (-110..-52)

TDD-PICH-CCode ::=                  ENUMERATED {
                                        cc16-1, cc16-2, cc16-3, cc16-4,
                                        cc16-5, cc16-6, cc16-7, cc16-8,
                                        cc16-9, cc16-10, cc16-11, cc16-12,
                                        cc16-13, cc16-14, cc16-15, cc16-16 }
```

```
TDD-PRACH-CCode8 ::=                 ENUMERATED {
                                         cc8-1, cc8-2, cc8-3, cc8-4,
                                         cc8-5, cc8-6, cc8-7, cc8-8 }

TDD-PRACH-CCode16 ::=                ENUMERATED {
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCode-LCR-r4 ::=           ENUMERATED {
                                         cc4-1, cc4-2, cc4-3, cc4-4,
                                         cc8-1, cc8-2, cc8-3, cc8-4,
                                         cc8-5, cc8-6, cc8-7, cc8-8,
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }

TDD-PRACH-CCodeList ::=              CHOICE {
    sf8                                 SEQUENCE (SIZE (1..8)) OF
                                            TDD-PRACH-CCode8,
    sf16                                SEQUENCE (SIZE (1..8)) OF
                                            TDD-PRACH-CCode16
}

TFC-ControlDuration ::=              ENUMERATED {
                                         tfc-cd1, tfc-cd2, tfc-cd4, tfc-cd8,
                                         tfc-cd16, tfc-cd24, tfc-cd32,
                                         tfc-cd48, tfc-cd64, tfc-cd128,
                                         tfc-cd192, tfc-cd256, tfc-cd512 }

TFCI-Coding ::=                      ENUMERATED {
                                         tfci-bits-4, tfci-bits-8,
                                         tfci-bits-16, tfci-bits-32 }

TGCFN ::=                            INTEGER (0..255)

-- In TGD, value 270 represents "undefined" in the tabular description.
TGD ::=                              INTEGER (15..270)

TGL ::=                              INTEGER (1..14)

TGMP ::=                             ENUMERATED {
                                         tdd-Measurement, fdd-Measurement,
                                         gsm-CarrierRSSIMeasurement,
                                         gsm-initialBSICIdentification, gsmBSICReconfirmation,
                                         multi-carrier }

TGP-Sequence ::=                     SEQUENCE {
    tgpsi                                TGPSI,
    tgps-Status                          CHOICE {
        activate                             SEQUENCE {
            tgcfn                                TGCFN
        },
        deactivate                           NULL
    },
    tgps-ConfigurationParams             TGPS-ConfigurationParams           OPTIONAL
}

TGPS-Reconfiguration-CFN ::=        INTEGER (0..255)

TGP-SequenceList ::=                SEQUENCE (SIZE (1..maxTGPS)) OF
                                        TGP-Sequence

TGP-SequenceShort ::=               SEQUENCE {
    tgpsi                                TGPSI,
    tgps-Status                          CHOICE {
        activate                             SEQUENCE {
            tgcfn                                TGCFN
        },
        deactivate                           NULL
    }
}

TGPL ::=                             INTEGER (1..144)
```

```
-- TABULAR: In TGPRC, value 0 represents "infinity" in the tabular description.
TGPRC ::=                         INTEGER (0..511)

TGPS-ConfigurationParams ::=      SEQUENCE {
    tgmp                              TGMP,
    tgprc                             TGPRC,
    tgsn                              TGSN,
    tgl1                              TGL,
    tgl2                              TGL                           OPTIONAL,
    tgd                               TGD,
    tgpl1                             TGPL,
    tgpl2                             TGPL                          OPTIONAL,
    rpp                               RPP,
    itp                               ITP,
    -- TABULAR: Compressed mode method is nested inside UL-DL-Mode
    ul-DL-Mode                        UL-DL-Mode,
    dl-FrameType                      DL-FrameType,
    deltaSIR1                         DeltaSIR,
    deltaSIRAfter1                    DeltaSIR,
    deltaSIR2                         DeltaSIR                      OPTIONAL,
    deltaSIRAfter2                    DeltaSIR                      OPTIONAL,
    nidentifyAbort                    NidentifyAbort                OPTIONAL,
    treconfirmAbort                   TreconfirmAbort               OPTIONAL
}

TGPSI ::=                         INTEGER (1..maxTGPS)

TGSN ::=                          INTEGER (0..14)

TimeInfo ::=                      SEQUENCE {
    activationTime                    ActivationTime                OPTIONAL,
    durationTimeInfo                  DurationTimeInfo              OPTIONAL
}

TimeslotList ::=                  SEQUENCE (SIZE (1..maxTS)) OF
                                      TimeslotNumber

TimeslotList-r4 ::=               CHOICE {
    tdd384                            SEQUENCE (SIZE (1..maxTS)) OF
                                          TimeslotNumber,
    tdd128                            SEQUENCE (SIZE (1..maxTS-LCR)) OF
                                          TimeslotNumber-LCR-r4
}

-- If TimeslotNumber is included for a 1.28Mcps TDD description, it shall take values from 0..6
TimeslotNumber ::=                INTEGER (0..14)

TimeslotNumber-LCR-r4 ::=         INTEGER (0..6)

TimeslotNumber-PRACH-LCR-r4 ::=   INTEGER (1..6)

TimeslotSync2 ::=             INTEGER (0..6)

-- Actual value TimingOffset = IE value * 256
TimingOffset ::=                  INTEGER (0..149)

TPC-CombinationIndex ::=          INTEGER (0..5)

-- Actual value TPC-StepSizeFDD = IE value + 1
TPC-StepSizeFDD ::=               INTEGER (0..1)

TPC-StepSizeTDD ::=               INTEGER (1..3)

-- Actual value TreconfirmAbort = IE value * 0.5 seconds
TreconfirmAbort ::= INTEGER (1..20)

TX-DiversityMode ::=              ENUMERATED {
                                      noDiversity,
                                      sttd,
                                      closedLoopMode1,
                                      closedLoopMode2 }

UARFCN ::=                        INTEGER (0..16383)

UCSM-Info ::=                     SEQUENCE {
    minimumSpreadingFactor            MinimumSpreadingFactor,
    nf-Max                            NF-Max,
    channelReqParamsForUCSM           ChannelReqParamsForUCSM
```

```
}

UL-CCTrCH ::=                        SEQUENCE {
    tfcs-ID                          TFCS-IdentityPlain                 DEFAULT 1,
    ul-TargetSIR                     UL-TargetSIR,
    timeInfo                         TimeInfo,
    commonTimeslotInfo               CommonTimeslotInfo                 OPTIONAL,
    ul-CCTrCH-TimeslotsCodes         UplinkTimeslotsCodes               OPTIONAL
}

UL-CCTrCH-r4 ::=                     SEQUENCE {
    tfcs-ID                          TFCS-IdentityPlain                 DEFAULT 1,
    ul-TargetSIR                     UL-TargetSIR,
    timeInfo                         TimeInfo,
    commonTimeslotInfo               CommonTimeslotInfo                 OPTIONAL,
    tddOption                        CHOICE {
        tdd384                           SEQUENCE {
            ul-CCTrCH-TimeslotsCodes         UplinkTimeslotsCodes           OPTIONAL
        },
        tdd128                           SEQUENCE {
            ul-CCTrCH-TimeslotsCodes         UplinkTimeslotsCodes-LCR-r4 OPTIONAL
        }
    }
}

UL-CCTrCHList ::=                    SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                         UL-CCTrCH

UL-CCTrCHList-r4 ::=                 SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                         UL-CCTrCH-r4

UL-CCTrCHListToRemove ::=            SEQUENCE (SIZE (1..maxCCTrCH)) OF
                                         TFCS-IdentityPlain

UL-CCTrChTPCList ::=                 SEQUENCE (SIZE (0..maxCCTrCH)) OF
                                         TFCS-Identity

UL-ChannelRequirement ::=            CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info,
    cpch-SetInfo                     CPCH-SetInfo
}

UL-ChannelRequirement-r4 ::=         CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info-r4,
    cpch-SetInfo                     CPCH-SetInfo
}

UL-ChannelRequirement-r5 ::=         CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info-r5,
    cpch-SetInfo                     CPCH-SetInfo
}

UL-ChannelRequirementWithCPCH-SetID ::= CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info,
    cpch-SetInfo                     CPCH-SetInfo,
    cpch-SetID                       CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r4 ::=  CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info-r4,
    cpch-SetInfo                     CPCH-SetInfo,
    cpch-SetID                       CPCH-SetID
}

UL-ChannelRequirementWithCPCH-SetID-r5 ::=  CHOICE {
    ul-DPCH-Info                     UL-DPCH-Info-r5,
    cpch-SetInfo                     CPCH-SetInfo,
    cpch-SetID                       CPCH-SetID
}

UL-CompressedModeMethod ::=          ENUMERATED {
                                     sf-2,
                                     higherLayerScheduling }

UL-DL-Mode ::=                       CHOICE {
    ul                               UL-CompressedModeMethod,
    dl                               DL-CompressedModeMethod,
    ul-and-dl                            SEQUENCE {
```

```
        ul                               UL-CompressedModeMethod,
        dl                               DL-CompressedModeMethod
    }}

UL-DPCCH-SlotFormat ::=           ENUMERATED {
                                 slf0, slf1, slf2 }

UL-DPCH-Info ::=                 SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo         OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                              SEQUENCE {
            scramblingCodeType               ScramblingCodeType,
            scramblingCode                   UL-ScramblingCode,
            numberOfDPDCH                    NumberOfDPDCH         DEFAULT 1,
            spreadingFactor                  SpreadingFactor,
            tfci-Existence                   BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits                 NumberOfFBI-Bits         OPTIONAL,
            puncturingLimit                  PuncturingLimit
        },
        tdd                              SEQUENCE {
            ul-TimingAdvance                 UL-TimingAdvanceControl  OPTIONAL,
            ul-CCTrCHList                    UL-CCTrCHList            OPTIONAL,
            ul-CCTrCHListToRemove            UL-CCTrCHListToRemove    OPTIONAL
        }
    }
}

UL-DPCH-Info-r4 ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo-r4      OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                              SEQUENCE {
            scramblingCodeType               ScramblingCodeType,
            scramblingCode                   UL-ScramblingCode,
            numberOfDPDCH                    NumberOfDPDCH         DEFAULT 1,
            spreadingFactor                  SpreadingFactor,
            tfci-Existence                   BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits                 NumberOfFBI-Bits         OPTIONAL,
            puncturingLimit                  PuncturingLimit
        },
        tdd                              SEQUENCE {
            ul-TimingAdvance                 UL-TimingAdvanceControl-r4 OPTIONAL,
            ul-CCTrCHList                    UL-CCTrCHList-r4        OPTIONAL,
            ul-CCTrCHListToRemove            UL-CCTrCHListToRemove   OPTIONAL
        }
    }
}

UL-DPCH-Info-r5 ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfo-r5      OPTIONAL,
    modeSpecificInfo                 CHOICE {
        fdd                              SEQUENCE {
            scramblingCodeType               ScramblingCodeType,
            scramblingCode                   UL-ScramblingCode,
            numberOfDPDCH                    NumberOfDPDCH         DEFAULT 1,
            spreadingFactor                  SpreadingFactor,
            tfci-Existence                   BOOLEAN,
            -- numberOfFBI-Bits is conditional based on history
            numberOfFBI-Bits                 NumberOfFBI-Bits         OPTIONAL,
            puncturingLimit                  PuncturingLimit
        },
        tdd                              SEQUENCE {
            ul-TimingAdvance                 UL-TimingAdvanceControl-r4 OPTIONAL,
            ul-CCTrCHList                    UL-CCTrCHList-r4        OPTIONAL,
            ul-CCTrCHListToRemove            UL-CCTrCHListToRemove   OPTIONAL
        }
    }
}

UL-DPCH-InfoPostFDD ::=          SEQUENCE {
    ul-DPCH-PowerControlInfo         UL-DPCH-PowerControlInfoPostFDD,
        scramblingCodeType               ScramblingCodeType,
        reducedScramblingCodeNumber      ReducedScramblingCodeNumber,
        spreadingFactor                  SpreadingFactor

}
```

```
UL-DPCH-InfoPostTDD ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo           UL-DPCH-PowerControlInfoPostTDD,
    ul-TimingAdvance                   UL-TimingAdvanceControl                 OPTIONAL,
    ul-CCTrCH-TimeslotsCodes           UplinkTimeslotsCodes
}

UL-DPCH-InfoPostTDD-LCR-r4 ::=     SEQUENCE {
    ul-DPCH-PowerControlInfo           UL-DPCH-PowerControlInfoPostTDD-LCR-r4,
    ul-TimingAdvance                   UL-TimingAdvanceControl-LCR-r4          OPTIONAL,
    ul-CCTrCH-TimeslotsCodes           UplinkTimeslotsCodes-LCR-r4
}

UL-DPCH-InfoPredef ::=             SEQUENCE {
    ul-DPCH-PowerControlInfo           UL-DPCH-PowerControlInfoPredef,
    modeSpecificInfo                   CHOICE {
        fdd                                SEQUENCE {
            tfci-Existence                     BOOLEAN,
            puncturingLimit                    PuncturingLimit
        },
        tdd                                SEQUENCE {
            commonTimeslotInfo                 CommonTimeslotInfo
        }
    }
}

UL-DPCH-PowerControlInfo ::=       CHOICE {
    fdd                                SEQUENCE {
        dpcch-PowerOffset                  DPCCH-PowerOffset,
        pc-Preamble                        PC-Preamble,
        sRB-delay                          SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm              PowerControlAlgorithm
    },
    tdd                                SEQUENCE {
        ul-TargetSIR                       UL-TargetSIR               OPTIONAL,
        ul-OL-PC-Signalling                CHOICE {
            broadcast-UL-OL-PC-info            NULL,
            individuallySignalled              SEQUENCE {
                individualTS-InterferenceList      IndividualTS-InterferenceList,
                dpch-ConstantValue                 ConstantValueTdd,
                primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power
            }
        }                                                              OPTIONAL
    }
}

UL-DPCH-PowerControlInfo-r4 ::=    CHOICE {
    fdd                                SEQUENCE {
        dpcch-PowerOffset                  DPCCH-PowerOffset,
        pc-Preamble                        PC-Preamble,
        sRB-delay                          SRB-delay,
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm              PowerControlAlgorithm
    },
    tdd                                SEQUENCE {
        -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
        -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" – 120)
        ul-TargetSIR                       UL-TargetSIR               OPTIONAL,
        ul-OL-PC-Signalling                CHOICE {
            broadcast-UL-OL-PC-info            NULL,
            individuallySignalled              SEQUENCE {
                tddOption                          CHOICE {
                    tdd384                             SEQUENCE {
                        individualTS-InterferenceList      IndividualTS-InterferenceList,
                        dpch-ConstantValue                 ConstantValue
                    },
                    tdd128                             SEQUENCE {
                        tpc-StepSize                       TPC-StepSizeTDD
                    }
                },
                primaryCCPCH-TX-Power              PrimaryCCPCH-TX-Power
            }
        }
    }
}

UL-DPCH-PowerControlInfo-r5 ::=    CHOICE {
    fdd                                SEQUENCE {
```

```
            dpcch-PowerOffset                      DPCCH-PowerOffset,
            pc-Preamble                            PC-Preamble,
            -- TABULAR: TPC step size nested inside PowerControlAlgorithm
            powerControlAlgorithm                  PowerControlAlgorithm,
            deltaACK                               DeltaACK    OPTIONAL,
            deltaNACK                              DeltaNACK    OPTIONAL,
            ack-NACK-repetition-factor             ACK-NACK-repetitionFactor    OPTIONAL
        },
        tdd                                 SEQUENCE {
            -- The IE ul-TargetSIR corresponds to PRX-PDPCHdes for 1.28Mcps TDD
            -- Actual value PRX-PDPCHdes = (value of IE "ul-TargetSIR" - 120)
            ul-TargetSIR                        UL-TargetSIR            OPTIONAL,
            ul-OL-PC-Signalling             CHOICE {
                broadcast-UL-OL-PC-info          NULL,
                individuallySignalled            SEQUENCE {
                    tddOption                        CHOICE {
                        tdd384                           SEQUENCE {
                            individualTS-InterferenceList    IndividualTS-InterferenceList,
                            dpch-ConstantValue               ConstantValue
                        },
                        tdd128                           SEQUENCE {
                            tpc-StepSize                     TPC-StepSizeTDD
                        }
                    },
                    primaryCCPCH-TX-Power            PrimaryCCPCH-TX-Power
                }
            }
        }
    }
}

UL-DPCH-PowerControlInfoPostFDD ::= SEQUENCE {
    -- DPCCH-PowerOffset2 has a smaller range to save bits
    dpcch-PowerOffset                   DPCCH-PowerOffset2,
    pc-Preamble                         PC-Preamble,
    sRB-delay                           SRB-delay
}

UL-DPCH-PowerControlInfoPostTDD ::= SEQUENCE {
    ul-TargetSIR                        UL-TargetSIR,
    ul-TimeslotInterference             TDD-UL-Interference
}

UL-DPCH-PowerControlInfoPostTDD-LCR-r4 ::=  SEQUENCE {
    ul-TargetSIR                        UL-TargetSIR
}

UL-DPCH-PowerControlInfoPredef ::=      CHOICE {
    fdd                                 SEQUENCE {
        -- TABULAR: TPC step size nested inside PowerControlAlgorithm
        powerControlAlgorithm               PowerControlAlgorithm
    },
    tdd                                 SEQUENCE {
        -- dpch-ConstantValue shall be ignored if in 1.28Mcps TDD mode.
        dpch-ConstantValue                  ConstantValueTdd
    }
}

UL-Interference ::=                 INTEGER (-110..-70)

UL-ScramblingCode ::=               INTEGER (0..16777215)


UL-SynchronisationParameters-r4 ::= SEQUENCE {
    stepSize                        INTEGER (1..8),
    frequency                       INTEGER (1..8)
}

-- Actual value UL-TargetSIR = (IE value * 0.5) - 11
UL-TargetSIR ::=                    INTEGER (0..62)

UL-TimingAdvance ::=                INTEGER (0..63)

UL-TimingAdvanceControl ::=         CHOICE {
    disabled                            NULL,
    enabled                             SEQUENCE {
        ul-TimingAdvance                    UL-TimingAdvance            OPTIONAL,
        activationTime                      ActivationTime              OPTIONAL
    }
```

```
}

UL-TimingAdvanceControl-r4 ::=       CHOICE {
    disabled                             NULL,
    enabled                              SEQUENCE {
        tddOption                            CHOICE {
            tdd384                               SEQUENCE {
                ul-TimingAdvance                     UL-TimingAdvance            OPTIONAL,
                activationTime                       ActivationTime              OPTIONAL
            },
            tdd128                               SEQUENCE {
                ul-SynchronisationParameters         UL-SynchronisationParameters-r4 OPTIONAL,
                synchronisationParameters            SynchronisationParameters-r4    OPTIONAL
            }
        }
    }
}

UL-TimingAdvanceControl-LCR-r4 ::=   CHOICE {
    disabled                             NULL,
    enabled                              SEQUENCE {
        ul-SynchronisationParameters         UL-SynchronisationParameters-r4 OPTIONAL,
        synchronisationParameters            SynchronisationParameters-r4    OPTIONAL
    }
}

UL-TS-ChannelisationCode ::=         ENUMERATED {
                                         cc1-1, cc2-1, cc2-2,
                                         cc4-1, cc4-2, cc4-3, cc4-4,
                                         cc8-1, cc8-2, cc8-3, cc8-4,
                                         cc8-5, cc8-6, cc8-7, cc8-8,
                                         cc16-1, cc16-2, cc16-3, cc16-4,
                                         cc16-5, cc16-6, cc16-7, cc16-8,
                                         cc16-9, cc16-10, cc16-11, cc16-12,
                                         cc16-13, cc16-14, cc16-15, cc16-16 }

UL-TS-ChannelisationCodeList ::=     SEQUENCE (SIZE (1..2)) OF
                                         UL-TS-ChannelisationCode

UplinkAdditionalTimeslots ::=        SEQUENCE {
    parameters                           CHOICE {
        sameAsLast                           SEQUENCE {
            timeslotNumber                       TimeslotNumber
        },
        newParameters                        SEQUENCE {
            individualTimeslotInfo               IndividualTimeslotInfo,
            ul-TS-ChannelisationCodeList         UL-TS-ChannelisationCodeList
        }
    }
}

UplinkAdditionalTimeslots-LCR-r4 ::=  SEQUENCE {
    parameters                           CHOICE {
        sameAsLast                           SEQUENCE {
            timeslotNumber                       TimeslotNumber
        },
        newParameters                        SEQUENCE {
            individualTimeslotInfo               IndividualTimeslotInfo-LCR-r4,
            ul-TS-ChannelisationCodeList         UL-TS-ChannelisationCodeList
        }
    }
}

UplinkTimeslotsCodes ::=             SEQUENCE {
    dynamicSFusage                       BOOLEAN,
    firstIndividualTimeslotInfo          IndividualTimeslotInfo,
    ul-TS-ChannelisationCodeList         UL-TS-ChannelisationCodeList,
    moreTimeslots                        CHOICE {
        noMore                               NULL,
        additionalTimeslots                  CHOICE {
            consecutive                          SEQUENCE {
                numAdditionalTimeslots               INTEGER (1..maxTS-1)
            },
            timeslotList                         SEQUENCE (SIZE (1..maxTS-1)) OF
                                                     UplinkAdditionalTimeslots
        }
    }
}
```

```
UplinkTimeslotsCodes-LCR-r4 ::=      SEQUENCE {
    dynamicSFusage                       BOOLEAN,
    firstIndividualTimeslotInfo          IndividualTimeslotInfo-LCR-r4,
    ul-TS-ChannelisationCodeList         UL-TS-ChannelisationCodeList,
    moreTimeslots                        CHOICE {
        noMore                               NULL,
        additionalTimeslots                  CHOICE {
            consecutive                          SEQUENCE {
                numAdditionalTimeslots               INTEGER (1..maxTS-LCR-1)
            },
            timeslotList                         SEQUENCE (SIZE (1..maxTS-LCR-1)) OF
                                                    UplinkAdditionalTimeslots-LCR-r4
        }
    }
}

Wi-LCR ::=                                                       INTEGER(1..4)
```