Title: **CR (Rel-5) to TS 25.331 on HSDPA parameter value ranges.**

Source: **TSG-RAN WG2**

Agenda item: **7.2.5**

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version-	Version
R2-023211	Agreed	25.331	1793	-	Rel-5	HSDPA parameter value ranges	F	5.2.0	5.3.0

CR-Form-v7

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 <u>one</u> 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 <u>TR 21.900</u>.

Use <u>one</u> 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		<u>Real(-6 .. 13 by step of 0.5)</u> ~~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 <u>(0, 2, 10, 20, 40, 80, 160)</u>~~([0, 1, 5, 10, 20, 40, 80])~~	~~Multiples of 2 ms intervals. Value 10 corresponds to 20 ms~~<u>In milliseconds</u>.	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)
```