TSG-RAN Meeting #10 *RP-000574*
Bangkok, Thailand, 6 - 8 December 2000

Title: **Agreed CRs to TS 25.331 (5)**

Source: **TSG-RAN WG2**

Agenda item: **5.2.3**

Doc-1st-	Status-	Spec	CR	Rev	Subject	Cat	Version	Versio
R2-002331	agreed	25.331	583	1	CSICH Corrections	F	3.4.1	3.5.0
R2-002475	agreed	25.331	597	3	RRC Connection Management Procedures, Generic procedures and actions	F	3.4.1	3.5.0
R2-002299	agreed	25.331	616		PICH power offset for TDD	F	3.4.1	3.5.0
R2-002301	agreed	25.331	618		Usage of dynamic spreading factor in uplink	F	3.4.1	3.5.0
R2-002368	agreed	25.331	632		Signalling of the alpha value in TDD for open loop power control	F	3.4.1	3.5.0

3GPP TSG-RAN WG2 Meeting #17
Sophia-Antipolis, FR, 13-17 November, 2000

***Document* R2-002331**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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25.331	CR	583r1	Current Version:	3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #10	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 14 November, 2000

Subject: CSICH corrections

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: CSICH information structure description is not appropriate as an RRC tabular IE. The CSICH information structure description is moved to TS25.211 via a linked CR.

Clauses affected: 10.3.6.12, 10.3.6.13, 10.3.6.13.1, 10.3.6.13.2, 11.3.6

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	25211CR089, CSICH correction
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

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<--------- double-click here for help and instructions on how to create a CR.

10.3.6.12 CPCH set info

NOTE: Only for FDD.

This IE may be broadcast in the System Information message or assigned by SRNC. It is pseudo-static in a cell.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH set ID	MP		CPCH set ID 10.3.5.3	Indicates the ID number for a particular CPCH set allocated to a cell.
TFS	MP		Transport Format Set 10.3.5.23	Transport Format Set Information allocated to this CPCH set.
TFCS	MP		Transport Format Combination Set 10.3.5.20	Transport Format Set Information allocated to this CPCH set
AP preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for AP in UL
AP-AICH scrambling code	MP		Secondary Scrambling Code 10.3.6.73	Default is the same scrambling code as for the primary CPICH.
AP-AICH channelisation code	MP		Integer(0..255)	Channelisation code for AP-AICH in DL
CD preamble scrambling code	MP		Integer (0..79)	Preamble scrambling code for CD in UL
CD/CA-ICH scrambling code	MD		Secondary Scrambling Code 10.3.6.73	Default is the same scrambling code as for the primary CPICH.
CD/CA-ICH channelisation code	MP		Integer (0..255)	Channelisation code for CD/CA-ICH in DL
Available CD access slot subchannel	CV-CDSigPresent	1 to <maxPCPCH-CDsubCh>		Lists the set of subchannels to be used for CD access preambles. Note: if not present, all subchannels are to be used without access delays.
>CD access slot subchannel	MP		Integer (0..11)	
Available CD signatures	OP	1 to <maxPCPCH-CDsig>		Signatures for CD preamble in UL. Note: if not present, all signatures are available for use.
>CD signatures	MP		Integer (0..15)	
DeltaPp-m	MP		Integer (-10..10)	In dB. Power offset between the transmitted CD preamble and UL DPCCH of the power control preamble or message part (added to the preamble power to calculate the power of the UL DPCCH)
UL DPCCH Slot Format	MP		Enumerated (0,1,2)	Slot format for UL DPCCH in power control preamble and in message part
N_start_message	MP		Integer (1..8)	Number of Frames for start of message indication
N_EOT	MP		Integer(0...7)	Actual number of appended EOT indicators is T_EOT = N_TTI * ceil(N_EOT/N_TTI), where N_TTI is the number of

				frames per TTI and "ceil" refers to rounding up to nearest integer.
Channel Assignment Active	OP		Boolean	When present, indicates that Node B send a CA message and VCAM mapping rule (14.11) shall be used.
CPCH status indication mode	MP		CPCH status indication mode 10.3.6.13~~Enumerated (PCPCH availability, PCPCH availability and minimum available Spreading Factor)~~	~~Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)~~
PCPCH Channel Info.	MP	1 to <maxPCPCHs>		
> UL scrambling code	MP		Integer (0..79)	For PCPCH message part
> DL channelisation code	MP		Integer (0…511)	For DL DPCCH for PCPCH message part
> DL scrambling code	MD		Secondary Scrambling Code 10.3.6.73	Default is the same scrambling code as for the primary CPICH.
> PCP length	MP		Enumerated (0, 8)	Indicates length of power control preamble, 0slots (no preamble used) or 8 slots
> UCSM Info	CV-NCAA			
>>Minimum Spreading Factor	MP		Integer (4,8,16,32,64,128,256)	The UE may use this PCPCH at any Spreading Factor equal to or greater than the indicated minimum Spreading Factor. The Spreading Factor for initial access is the minimum Spreading Factor.
>> NF_max	MP		Integer (1…64)	Maximum number of frames for PCPCH message part
>> Channel request parameters for UCSM	MP	1 to <maxSig>		Required in UE channel selection mode.
>>>Available AP signature	MP	1 to <maxPCPCH-APsig>		AP preamble signature codes for selection of this PCPCH channel.
>>>> AP signature	MP		Integer (0..15)	
>>>Available AP access slot subchannel	OP	1 to <maxPCPCH-APsubCh>		Lists the set of subchannels to be used for AP access preambles in combination with the above AP signature(s). Note: if not present, all subchannels are to be used without access delays.
>>>> AP access slot subchannel	MP		Integer (0..11)	
VCAM info	CV-CAA			
> Available Minimum Spreading Factor	MP	1 to <maxPCPCH-SF>		
>> Minimum Spreading Factor	MP		Enumerated (4,8,16,32,6	

			4,128,256)	
>>NF_max	MP		Integer (1..64)	Maximum number of frames for PCPCH message part
>> Maximum available number of PCPCH	MP		Integer (1..64)	Maximum available number of PCPCH for the indicated Spreading Factor.
>> Available AP signatures	MP	1 to <maxPCPCH-APsig>		Signatures for AP preamble in UL.
>>> AP signature			Integer (0..15)	
>> Available AP sub-channel	OP	1 to <maxPCPCH-APsubCh>		AP sub-channels for the given AP signature in UL. Note: if not present, all subchannels are to be used without access delays.
>>> AP sub-channel	MP		Integer (0..11)	

Condition	Explanation
CDSigPresent	This IE may be included if IE "Available CD signatures" is present.
NCAA	This IE is included if IE "Channel Assignment Active" is not present
CAA	This IE is included if IE ""Channel Assignment Active" is present.

10.3.6.13 CPCH Status Indication mode

NOTE: Only for FDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
CPCH Status Indication mode	MP		Enumerated (PA mode, PAMSF mode)	Defines the status information type broadcast on the CPCH Status Indication Channel (CSICH)

CPCH Status Indication mode defines the structure of the CSICH information which is broadcast by Node B on the CSICH channel. CSICH mode.can take 2 values: PCPCH Availability (PA) mode and PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode. PAMASF mode is used when Channel Assignment is active. PA mode is used when Channel Assignment is not active (UE Channel Selection is active). ~~These two separate modes are described independently in the subclause that follows.~~ TS25.211 defines the structure of the CSICH information for both CSICH modes.~~Status Indicators (SIs) of the CSICH channel which convey the CPCH status information described here. A CSICH may contain from 3 upto a maximum of 60 Status Indicators.~~

~~10.3.6.13.1 PCPCH Availability (PA) mode~~

~~In PA mode, CPCH Status Indication conveys the PCPCH Channel Availability value which is a 1 to 16 bit value which indicates the availability of each of the 1 to 16 defined PCPCHs in the CPCH set. PCPCHs are numbered from PCPCH0 through PCPCH15. There is one bit of the PCPCH Channel Availability (PCA) value for each defined PCPCH channel. If there are 2 PCPCHs defined in the CPCH set, then there are 2 bits in the PCA value. And likewise for other numbers of defined PCPCH channels up to 16 maximum CPCH channels per set when UE Channel Selection is active.~~

~~The number of SIs (Status Indicators) per frame is a function of the number of defined PCPCH channels.~~

Number of defined PCPCHs(=K)	Number of SIs per frame(=N)
1, 2, 3	3
4,5	5
6,7,8,9,10,11,12,13,14,15	15
16	30

The value of the SI shall indicate the PCA value for one of the defined PCPCHs, where PCA(n)=1 indicates that the PCPCH is available, and PCA(n)=0 indicates that the PCPCHn is not available. SI(0) shall indicate PCA(0) for PCPCH0, SI(1) shall indicate PCA(1) for PCPCH1, etc., for each defined PCPCH. When the number of SIs per frame exceeds the number of defined PCPCHs (K), the SIs which exceed K shall be set to repeat the PCA values for the defined PCPCHs. In general ,

SI(n) = PCA(n mod (K)),

where PCA(i) is availability of PCPCHi,

and n ranges from 0 to N-1.

~~10.3.6.13.2 PCPCH Availability with Minimum Available Spreading Factor (PAMASF) mode~~

~~In PAMASF mode, CPCH Status Indication conveys two pieces of information. One is the Minimum Available Spreading Factor (MASF) value and the other is the PCPCH Channel Availability (PCA) value.~~

- ~~MASF is a 3 bit number with bits MASF0 through MASF2 where MASF0 is the MSB of the MASF value and MASF2 is the LSB of the MASF value.~~

~~The following table defines MASF(0), MASF(1) and MASF(2) values to convey the MASF. All spreading factors greater than MASF are available~~

~~Minimum Available Spreading Factor (MASF)~~	~~MASF(0)~~	~~MASF(1)~~	~~MASF(2)~~	
~~N/A (No available CPCH resources)~~	~~0~~	~~0~~	~~0~~	
~~256~~	~~0~~	~~0~~	~~1~~	
~~128~~	~~0~~	~~1~~	~~0~~	
~~64~~	~~0~~	~~1~~	~~1~~	
~~32~~	~~1~~	~~0~~	~~0~~	
~~16~~	~~1~~	~~0~~	~~1~~	
~~08~~	~~1~~	~~1~~	~~0~~	
~~04~~	~~1~~	~~1~~	~~1~~	

~~The number of SIs (Status Indicators) per frame, N is a function of the number of defined PCPCH channels, K.~~

~~Number of defined PCPCHs(K)~~	~~Number of SIs per frame(N)~~
~~*1, 2,*~~	~~*5*~~
~~*3,4,5,6,7,8,9,10,11,12*~~	~~*15*~~
~~*13,14,15,16,17,18,19,20,21,22,23,24,25,26,*~~	~~*30*~~

27	
28….57	60

PCA(n)=1 indicates that the PCPCHn is available, and PCA(n)=0 indicates that the PCPCHn is not available. PCA value for each PCPCH channel defined in a CPCH set shall be assigned to one SI (Status Indicator), and 3-bit MASF value shall be assigned to SIs as shown in Figure 61.

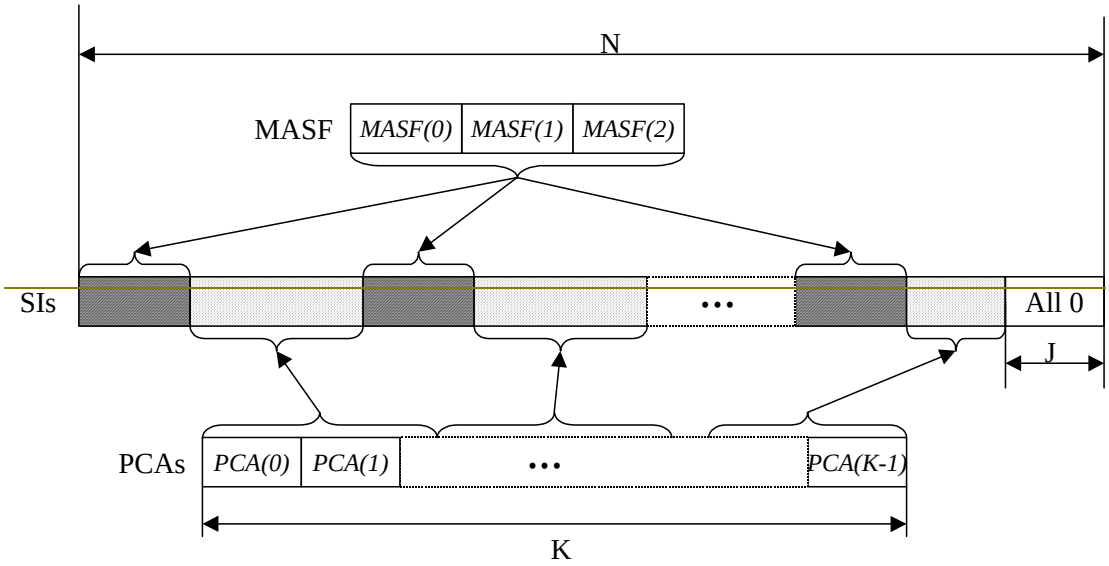

Figure 61: Mapping of MASF and PCAs to SIs in CSICH

The number of repetition that 3-bit MASF values shall be repeated is

$$T = \lfloor (N - K)/3 \rfloor$$

where $\lfloor x \rfloor$ is largest integer less than or equal to x. Each MASF value it, MASF(n), shall be mapped to SI as follows.

$$\begin{array}{l} SI_{l(t+4)+i} = MASF(i), \quad 0 \le i \le 2 \quad l = 0,1,\cdots,s-1 \\ SI_{s+l(t+3)+i} = MASF(i), \quad 0 \le i \le 2 \quad l = s, s+1,\cdots,T-1 \end{array},$$

where

$$t = \lfloor K/T \rfloor$$

and

$$s = K - t \cdot T$$

Each PCA value bit, PCA(n), shall be mapped to SI as follows.

$$SI_{l(t+4)+j+3} = PCA(l + l \cdot t + j), \quad 0 \le j \le t \qquad l = 0,1,\cdots,s-1$$
$$SI_{s+l(t+3)+j+3} = PCA(s + l \cdot t + j), \quad 0 \le j \le t-1 \quad l = s, s+1,\cdots,T-1$$

~~The remaining~~

~~$J = N - (3T + K)$~~

~~SIs shall be set to 0.~~

11.3.6 Physical channel information elements

```
CPCH-StatusIndicationMode ::=       ENUMERATED {
                                        pa-mode~~pcpch-Availability~~,
                                        pamsf-mode~~pcpch-AvailabilityAndMinAvailableSF~~ }
```

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e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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25.331	CR	616	Current Version:	3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #10	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 7/11/2000

Subject: PICH power offset for TDD

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:
PICH power offset is defined for FDD to enable Ues to perform measurements on the PICH instead of the CPICH. A similar feature is also reasonable for TDD.
In TDD the PICH may be measured instead of the PCCPCH.
Therefore as harmonisation with FDD the PICH power offset is included for TDD.
Additionally, power control related presence values in system information are changed from OP to MP because these parameters are always need for TDD open loop power control
- Primary CCPCH Tx power
- DPCH Constant value
-PRACH Constant value

Clauses affected: 10.2.49.8.6, 10.2.49.8.7, 10.3.6.49, 11.3.8

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	25.221 CR 036; 25.224 CR 040
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments: Pending on decision in WG1


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10.2.49.8.6 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.11	Only system information blocks with area scope "Cell" and update mechanism "value tag" may be referenced.
PhyCH information elements				
PICH Power offset	MP		PICH Power offset 10.3.6.49	
CHOICE *mode*	MP			
>FDD				
~~>>PICH Power offset~~	~~MP~~		~~PICH Power offset 10.3.6.49~~	
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.65	
>>PDSCH system information	OP		PDSCH system information 10.3.6.45	
>>Midamble configuration	MD		Midamble configuration 10.3.6.39	Default value is defined in 10.3.6.39
>>Primary CCPCH Tx Power	~~OP~~MP		Primary CCPCH Tx Power 10.3.6.58	For path loss calculation
>>PRACH Constant Value	~~OP~~MP		Constant Value 10.3.6.10	Operator controlled PRACH Margin
>>DPCH Constant Value	~~OP~~MP		Constant Value 10.3.6.10	Operator controlled UL DPCH Margin
>>PUSCH Constant Value	OP		Constant Value 10.3.6.10	Operator controlled PUSCH Margin
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.56	Note 1
PRACH system information list	MP		PRACH system information list 10.3.6.54	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.71	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.49.8.7 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common and shared physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.11	Only system information blocks with area scope "Cell" and update mechanism "value tag" may be referenced.
PhyCH information elements				
PICH Power offset	MP		PICH Power offset 10.3.6.49	
CHOICE *mode*	MP			
>FDD				
~~>>PICH Power offset~~	~~MP~~		~~PICH Power offset 10.3.6.49~~	
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	
>>CSICH Power offset	OP		CSICH Power offset 10.3.6.14	
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.65	
>>PDSCH system information	OP		PDSCH system information 10.3.6.45	
>>Midamble configuration	MD		Midamble configuration 10.3.6.39	Default value is defined in 10.3.6.39

>>Primary CCPCH Tx Power	~~OP~~MP		Primary CCPCH Tx Power 10.3.6.58	For path loss calculation
>>PRACH Constant Value	~~OP~~MP		Constant Value 10.3.6.10	Operator controlled PRACH Margin for SF 16 case. In the SF 8 case 3dB is added.
>>DPCH Constant Value	~~OP~~MP		Constant Value 10.3.6.10	Operator controlled UL DPCH Margin
>>PUSCH Constant Value	OP		Constant Value 10.3.6.10	Operator controlled PUSCH Margin
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.56	Note 1
PRACH system information list	MP		PRACH system information list 10.3.6.54	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.71	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.3.6.49 PICH Power offset

~~NOTE: Only for FDD.~~

This is the power transmitted on the PICH minus power of the Primary CPICH in FDD and Primary CCPCH Tx Power.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
PICH Power offset	MP		Integer(-10 .. +5)	Offset in dB

11.3.8 Other information elements

```
Other-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

...


SysInfoType5 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList                   OPTIONAL,
    -- Physical channel IEs
        pich-PowerOffset                PICH-PowerOffset,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                pich-PowerOffset                PICH-PowerOffset,
                aich-PowerOffset                AICH-PowerOffset
            },
            tdd                             SEQUENCE {
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                midambleConfiguration           MidambleConfiguration       OPTIONAL,
                primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power       OPTIONAL,
                prach-ConstantValue             ConstantValue               OPTIONAL,
                dpch-ConstantValue              ConstantValue               OPTIONAL,
                pusch-ConstantValue             ConstantValue               OPTIONAL
    }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}
}


SysInfoType6 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList                   OPTIONAL,
    -- Physical channel IEs
        pich-PowerOffset                PICH-PowerOffset,
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                pich-PowerOffset                PICH-PowerOffset,
                aich-PowerOffset                AICH-PowerOffset,
                csich-PowerOffset               CSICH-PowerOffset           OPTIONAL
            },
            tdd                             SEQUENCE {
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                midambleConfiguration           MidambleConfiguration       OPTIONAL,
                primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power       OPTIONAL,
                prach-ConstantValue             ConstantValue               OPTIONAL,
                dpch-ConstantValue              ConstantValue               OPTIONAL,
                pusch-ConstantValue             ConstantValue               OPTIONAL
            }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}
}


...

END
```

3GPP RAN WG2 Meeting #17
Sophia Antipolis, France, 13 Nov - 17 Nov

***Document* R2-002301**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	618	Current Version:	3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #10	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio	X	Core Network	

Source: TSG-RAN WG2 **Date:** 5.11.2000

Subject: Usage of dynamic spreading factor in uplink

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change:
It is not always possible for the Node B to detect the SF of the received codes with an acceptable performance in TDD.
Therefore a means is required to prohibit the dynamic selection of the used SF depending on the applied TFC.

One flag for uplink physical channels is needed to signal to the UE whether it may or may not change the spreading factor.

Clauses affected: 10.3.6.92, 11.3.6

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	25.221 CR 034; 25.222 CR 050
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments: Depending on WG1 decision


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<--------- double-click here for help and instructions on how to create a CR.

10.3.6.92 Uplink Timeslots and Codes

NOTE: Only for TDD

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Dynamic SF usage	MP		Boolean	
First Individual timeslot info	MP		Individual timeslot info 10.3.6.36	Individual timeslot info for the first timeslot used by the physical layer.
First timeslot Code List	MP	1..2		Code list used in the timeslot. given in First individual timeslot info.
>Channelization Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)..(4/ 4),(8/1)..(8/8) ,(16/1)..(16/1 6))	
CHOICE *more timeslots*	MP			
>No more timeslots				(no data)
>Consecutive timeslots				
>>Number of additional timeslots	MP		Integer(1..m axTS-1)	The timeslots used by the physical layer shall be timeslots: N mod maxTS (N+1) mod maxTS ... (N+k) mod maxTS in that order, where N is the timeslot number in the First individual timeslot info and k the Number of additional timeslots. The additional timeslots shall use the same parameters (e.g. channelization codes, midamble shifts etc.) as the first timeslot.
>Timeslot list				
>>Additional timeslot list	MP	1 to <maxTS-1>		The first instance of this parameter corresponds to the timeslot that shall be used second by the physical layer, the second to the timeslot that shall be used third and so on.
>>>CHOICE *parameters*	MP			
>>>>Same as last				
>>>>>Timeslot number	MP		Timeslot Number 10.3.6.81	This physical layer shall use the same parameters (e.g. channelization codes, midamble shifts etc.) for this timeslot as for the last one.
>>>>New parameters				
>>>>>Individual timeslot info	MP		Individual timeslot info 10.3.6.36	
>>>>>Code List	MP	1..2		
>>>>>>Channelization Code	MP		Enumerated((1/1),)(2/1),(2/2),(4/1)..(4/ 4),(8/1)..(8/8) ,(16/1)..(16/1 6))	

11.3.6 Physical channel information elements

```
PhysicalChannel-IEs DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

...

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


END
```

3GPP TSG RAN WG2 Meeting #17
Sophia Antipolis, France, Nov. 13-17th 2000

***Document* R2-002368**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.331	CR	632	Current Version:	3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TSG-RAN #10	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic	X	

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 14-11-2000

Subject: Signalling of the alpha value in TDD for open loop power control

Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: The value of alpha used in the open loop power control equation can currently be set autonomously by the UE subject to a minimum value of 0 and a maximum value of 1. The use of a high value of alpha assumes a high degree of reciprocity between the downlink beacon channel and the uplink channel being power controlled. This reciprocity is not guaranteed, however. For example, the Node B may be using separate transmit and receive antennas. It is therefore proposed that the network can impose a minimum level of filtering of the pathloss estimate by specifying a maximum value of alpha that can be used in the open loop power control equation. This parameter would be set dependent on the expected channel reciprocity.

Clauses affected: 8.1.1.5.5, 8.1.1.5.6, 8.2.10.3, 10.2.49.8.6, 10.2.49.8.6, 10.2.60, 10.3.6.x/y new, 11.2, 11.3.6

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:	25.224 CR 043
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments: CR on 25.224 to be proposed in next WG1 meeting


help.doc

<--------- double-click here for help and instructions on how to create a CR.

8.1.1.5.5 System Information Block type 5

The UE should store all relevant IEs included in this system information block. The UE shall:

- if IEs containing scheduling information for other system information blocks are included, act on those IEs in a similar manner as specified for the scheduling information contained within the master information block;
- replace the TFS of the transport channel with the identical transport channel identity with the one stored in the UE if any;
- let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink for the PRACH if UE is in CELL_FACH state;
- start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" (FDD only) when given allocated PRACH is used;
- select a Secondary CCPCH as specified in subclause 8.6, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if UE is in Idle mode or in CELL_PCH or URA_PCH state;
- start to monitor its paging occasions on the selected PICH if UE is in Idle mode or in CELL_PCH or URA_PCH state;
- start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if UE is in CELL_FACH state;
- in TDD: use the IE "Midamble configuration" for receiver configuration;
- in TDD: Use the IE “TDD open loop power control” as defined in 8.5.8;~~- in TDD: use the IEs "Primary CCPCH Tx Power", "PRACH Constant value", "DPCH Constant value" and "PUSCH Constant value" to calculate PRACH/DPCH/PUSCH transmit power for TDD uplink open loop power control as defined in 8.5.8;~~
- in TDD: if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there.

8.1.1.5.6 System Information Block type 6

If in connected mode, the UE should store all relevant IEs included in this system information block. The UE shall:

- if IEs containing scheduling information for other system information blocks are included, act on those IEs in a similar manner as specified for the scheduling information contained within the master information block;
- replace the TFS of the transport channel with the identical transport channel identity with the one stored in the UE if any;
- let the physical channel(s) of type PRACH given by the IE(s) "PRACH info" be the default in uplink if UE is in CELL_FACH state. If the IE "PRACH info" is not included, the UE shall read the corresponding IE(s) in system information block type 5 and use that information to configure the PRACH;
- start to receive the physical channel of type AICH using the parameters given by the IE "AICH info" when associated PRACH is used. If the IE "AICH info" is not included, the UE shall read the corresponding IE in system information block type 5 and use that information (FDD only);
- select a Secondary CCPCH as specified in subclause 8.6, and start to receive the physical channel of type PICH associated with the PCH carried by the selected Secondary CCPCH using the parameters given by the IE "PICH info" if the UE is in CELL_PCH or URA_PCH state. If the IE "PICH info" is not included, the UE shall read the corresponding IE in system information block type 5 and use that information;
- start to monitor its paging occasions on the selected PICH if the UE is in CELL_PCH or URA_PCH state;
- start to receive the selected physical channel of type Secondary CCPCH using the parameters given by the IE(s) "Secondary CCPCH info" if the UE is in CELL_FACH state. If the IE "Secondary CCPCH info" is not included, the UE shall read the corresponding IE(s) in system information block type 5 and use that information;

- in TDD: ~~use the IEs "Primary CCPCH Tx Power", "PRACH Constant value", "DPCH Constant value" and "PUSCH Constant value" to calculate PRACH/DPCH/PUSCH transmit power for TDD uplink open loop power control~~ Use the IE “TDD open loop power control” as defined in 8.5.8;

- in TDD: if the IE "PDSCH system information" and/or the IE "PUSCH system information" is included, store each of the configurations given there with the associated identity given in the IE "PDSCH Identity" and/or "PUSCH Identity" respectively. For every configuration, for which the IE "SFN Time info" is included, the information shall be stored for the duration given there.

If in idle mode, the UE shall not use the values of the IEs in this system information block.

8.2.10.3 Reception of UPLINK PHYSICAL CHANNEL CONTROL message by the UE

Upon reception of the UPLINK PHYSICAL CHANNEL CONTROL message, the UE shall act upon all received information elements as specified in 8.6.

If the IEs "Uplink DPCH Power Control Info", "Constant Value", "Alpha" or IE group "list of UL Timeslot Interference" are transmitted, this information shall be taken into account by the UE for uplink open loop power control as specified in 8.5.8.

10.2.49.8.6 System Information Block type 5

The system information block type 5 contains parameters for the configuration of the common physical channels in the cell. The block may also contain scheduling information for other system information blocks.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.11	Only system information blocks with area scope "Cell" and update mechanism "value tag" may be referenced.
PhyCH information elements				
CHOICE *mode*	MP			
>FDD				
>>PICH Power offset	MP		PICH Power offset 10.3.6.49	
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.65	
>>PDSCH system information	OP		PDSCH system information 10.3.6.45	
>>Midamble configuration	MD		Midamble configuration 10.3.6.39	Default value is defined in 10.3.6.39
~~>>Primary CCPCH Tx Power~~	~~OP~~		~~Primary CCPCH Tx Power 10.3.6.58~~	~~For path loss calculation~~
~~>>PRACH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled PRACH Margin~~
~~>>DPCH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled UL DPCH Margin~~
~~>>PUSCH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled PUSCH Margin~~
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.x	
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.56	Note 1
PRACH system information list	MP		PRACH system information list 10.3.6.54	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.71	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed in the message

10.2.49.8.7 System Information Block type 6

The system information block type 6 contains parameters for the configuration of the common and shared physical channels to be used in connected mode. The block may also contain scheduling information for other system information blocks.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
References to other system information blocks	OP		References to other system information blocks 10.3.8.11	Only system information blocks with area scope "Cell" and update mechanism "value tag" may be referenced.
PhyCH information elements				
CHOICE *mode*	MP			
>FDD				
>>PICH Power offset	MP		PICH Power offset 10.3.6.49	
>>AICH Power offset	MP		AICH Power offset 10.3.6.3	
>>CSICH Power offset	OP		CSICH Power offset 10.3.6.14	
>TDD				
>>PUSCH system information	OP		PUSCH system information 10.3.6.65	
>>PDSCH system information	OP		PDSCH system information 10.3.6.45	
>>Midamble configuration	MD		Midamble configuration 10.3.6.39	Default value is defined in 10.3.6.39

~~>>Primary CCPCH Tx Power~~	~~OP~~		~~Primary CCPCH Tx Power 10.3.6.58~~	~~For path loss calculation~~
~~>>PRACH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled PRACH Margin for SF 16 case. In the SF 8 case 3dB is added.~~
~~>>DPCH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled UL DPCH Margin~~
~~>>PUSCH Constant Value~~	~~OP~~		~~Constant Value 10.3.6.10~~	~~Operator controlled PUSCH Margin~~
>>TDD open loop power control	MP		TDD open loop power control 10.3.6.x	
Primary CCPCH info	OP		Primary CCPCH info 10.3.6.56	Note 1
PRACH system information list	MP		PRACH system information list 10.3.6.54	
Secondary CCPCH system information	MP		Secondary CCPCH system information 10.3.6.71	
CBS DRX Level 1 information	CV CTCH		CBS DRX Level 1 information 10.3.8.3	

NOTE 1: DL scrambling code of the Primary CCPCH is the same as the one for Primary CPICH (FDD only).

Condition	Explanation
CTCH	The IE is mandatory if the IE "CTCH indicator" is equal to TRUE for at least one FACH, otherwise the IE is not needed

10.2.60 UPLINK PHYSICAL CHANNEL CONTROL

NOTE: Only for TDD.

In TDD this message is used to transfer uplink physical channel parameters to the UE.

RLC-SAP: AM or UM

Logical channel: DCCH

Direction: UTRAN→UE

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Message Type	MP		Message Type	
UE information elements				
Integrity check info	OP		Integrity check info 10.3.3.14	
PhyCH information elements				
CCTrCH power control info	OP		CCTrCH power control info 10.3.6.7	Power control information for one CCTrCH
Timing Advance Control	OP		UL Timing Advance Control 10.3.6.94	
Alpha	OP		Alpha 10.3.6.y	
PRACH Constant Value	OP		Constant value 10.3.6.10	Operator controlled PRACH Margin
PUSCH Constant Value	OP		Constant value 10.3.6.10	Operator controlled PUSCH Margin

10.3.6.x TDD open loop power control

This information element contains parameters for open loop power control setting for TDD.

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Primary CCPCH Tx Power	OP		Primary CCPCH Tx Power 10.3.6.58	For path loss calculation
Alpha	OP		Alpha 10.3.6.y	
PRACH Constant Value	OP		Constant Value 10.3.6.10	Operator controlled PRACH Margin
DPCH Constant Value	OP		Constant Value 10.3.6.10	Operator controlled UL DPCH Margin
PUSCH Constant Value	OP		Constant Value 10.3.6.10	Operator controlled PUSCH Margin

10.3.6.y Alpha

Information Element/Group name	Need	Multi	Type and reference	Semantics description
Alpha Value	MP		Enumerated(0, 1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 1)	

11.2 PDU definitions

```
....

-- ************************************************
--
-- UPLINK PHYSICAL CHANNEL CONTROL
--
-- ************************************************

UplinkPhysicalChannelControl ::= CHOICE {
    v1                              SEQUENCE {
        v1-IEs                          UplinkPhysicalChannelControl-v1-IEs,
        nonCriticalExtensions           SEQUENCE {}
    },
    criticalExtensions              SEQUENCE {}
}

UplinkPhysicalChannelControl-v1-IEs ::= SEQUENCE {
    -- Physical channel IEs
        ccTrCH-PowerControlInfo         CCTrCH-PowerControlInfo             OPTIONAL,
        timingAdvance                   UL-TimingAdvanceControl             OPTIONAL,
        alpha                           Alpha                               OPTIONAL,
        prach-ConstantValue             ConstantValue                       OPTIONAL,
        pusch-ConstantValue             ConstantValue                       OPTIONAL
}

....
```

11.3.6 Physical channel information elements

```
....

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

-- Actual value = Alpha / 8
Alpha ::=                            INTEGER (0..8)

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

....

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

OpenLoopPowerControl-TDD ::=        ENUMERATED {
    primaryCCPCH-TX-Power               PrimaryCCPCH-TX-Power       OPTIONAL,
    alpha                               Alpha                       OPTIONAL,
    prach-ConstantValue                 ConstantValue               OPTIONAL,
    dpch-ConstantValue                  ConstantValue               OPTIONAL,
    pusch-ConstantValue                 ConstantValue               OPTIONAL
}

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

....
```

11.3.8 Other information elements

```
....

SysInfoType5 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList                   OPTIONAL,
    -- Physical channel IEs
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                pich-PowerOffset                PICH-PowerOffset,
                aich-PowerOffset                AICH-PowerOffset
            },
            tdd                             SEQUENCE {
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                midambleConfiguration           MidambleConfiguration       OPTIONAL,
                openLoopPowerControl-TDD        OpenLoopPowerControl-TDD
                primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power       OPTIONAL,
                prach-ConstantValue             ConstantValue               OPTIONAL,
                dpch-ConstantValue              ConstantValue               OPTIONAL,
                pusch-ConstantValue             ConstantValue               OPTIONAL
    }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}
}


SysInfoType6 ::=                    SEQUENCE {
    -- Other IEs
        sib-ReferenceList               SIB-ReferenceList                   OPTIONAL,
    -- Physical channel IEs
        modeSpecificInfo                CHOICE {
            fdd                             SEQUENCE {
                pich-PowerOffset                PICH-PowerOffset,
                aich-PowerOffset                AICH-PowerOffset,
                csich-PowerOffset               CSICH-PowerOffset           OPTIONAL
            },
            tdd                             SEQUENCE {
                pusch-SysInfoList-SFN           PUSCH-SysInfoList-SFN       OPTIONAL,
                pdsch-SysInfoList-SFN           PDSCH-SysInfoList-SFN       OPTIONAL,
                midambleConfiguration           MidambleConfiguration       OPTIONAL,
                openLoopPowerControl-TDD        OpenLoopPowerControl-TDD
                primaryCCPCH-TX-Power           PrimaryCCPCH-TX-Power       OPTIONAL,
                prach-ConstantValue             ConstantValue               OPTIONAL,
                dpch-ConstantValue              ConstantValue               OPTIONAL,
                pusch-ConstantValue             ConstantValue               OPTIONAL
            }
        },
        primaryCCPCH-Info               PrimaryCCPCH-Info                   OPTIONAL,
        prach-SystemInformationList     PRACH-SystemInformationList,
        sCCPCH-SystemInformationList    SCCPCH-SystemInformationList,
        cbs-DRX-Level1Information       CBS-DRX-Level1Information           OPTIONAL,
        -- Conditional on any of the CTCH indicator IEs in
        -- sCCPCH-SystemInformationList
    -- Extension mechanism for non- release99 information
        nonCriticalExtensions           SEQUENCE {}
}

....
```