3GPP TSG-RAN Meeting #15
Jeju, Korea, 5-8 March, 2002

RP-020233

CR-Form-v4

CHANGE REQUEST

⌘ **25.331** **CR** **1367** ⌘ ev ⌘ Current version: **3.9.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Clarification of Maximum number of TFC in the TFCS
Source:	⌘	Panasonic
Work item code:	⌘	***Date:*** ⌘ 6 March 2002
Category:	⌘ **F**	***Release:*** ⌘ R99

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

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

Reason for change: ⌘

The UE capability, "Maximum number of TFC in the TFCS", seems to have two ambiguities.
1. In multiple CCTrCH case such as DSCH, the TFC is counted as sum of each TFC in the CCTrCH. For example, if UE declares 64 TFC is supported, there can be possible two understanding.
   a) 64 TFC in DPCH and 64 TFC in DPCH
   b) The sum of DPCH TFC and DSCH TFC is 64.
2. In DSCH, channelization code is also informed by TFC. Although this capability is described in transport channel capability, the difference of channelization code is counted as different TFC. If this understanding is different, there is no limitation in amount of channelization code the network can inform.
For above reasons, TS25.306CR036 (R'99) and CR037 (Rel4) are proposed. In the CR, the name "maximum number of TFC in the TFCS" is proposed to update "Maximum number of TFC". So, this CR is corresponding CR to TS25.331.

Summary of change: ⌘

In the UE capability, the name "maximum number of TFC in the TFCS" is proposed to update "Maximum number of TFC".

Isolated impact analysis:
This clarification is to a function where the specification was not sufficiently explicit. This would not affect implementations behaving like indicated in the CR, but would affect implementations supporting the corrected functionality.
1) If previous understanding is each CCTrCH has each number of TFCS, the maximum number of TFCS is reduced. If previous understanding is sum of each number of TFCS, this CR would not affect implementation.
2) If previous understanding is difference of channelization code is not counted as different TFC, the maximum number of TFC is reduced but no limitation of the amount of TFC of the channelization code. If previous understanding is counted as counted as different TFC, this CR would not affect implementation.

Consequences if not approved:	⌘	TS25.306 and TS25.331 are not aligned.

Clauses affected:	⌘	10.3.3.40, 11.3		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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/3G_Specs/CRs.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.

10.3.3.40 Transport channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink transport channel capability information elements				
Max no of bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks received at an arbitrary time instant
Max convolutionally coded bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all convolutionally coded transport blocks received at an arbitrary time instant
Max turbo coded bits received	CV-*turbo_dec_sup*		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks received at an arbitrary time instant
Maximum number of simultaneous transport channels	MP		Integer(4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH	MP		Integer (1..8)	
Max no of received transport blocks	MP		Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks received within TTIs that end at within the same 10ms interval
Maximum number of TFC ~~in the TFCS~~	MP		Integer(16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo decoding	MP		Boolean	TRUE means supported
Uplink transport channel capability information elements				
Max no of bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks transmitted at an arbitrary time instant

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Max convolutionally coded bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all convolutionally coded transport blocks transmitted at an arbitrary time instant
Max turbo coded bits transmitted	CV-*turbo_enc_sup*		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks transmitted at an arbitrary time instant
Maximum number of simultaneous transport channels	MP		Integer(2, 4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH of DCH type	CH-*tdd_req_sup*		Integer (1..8)	
Max no of transmitted transport blocks	MP		Integer(2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks transmitted within TTIs that start at the same time
Maximum number of TFC ~~in the TFCS~~	MP		Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo encoding	MP		Boolean	TRUE means supported

Condition	Explanation
turbo_dec_sup	The IE is mandatory present if the IE "Support of turbo decoding" = True. Otherwise this field is not needed in the message.
turbo_enc_sup	The IE is mandatory present if the IE "Support of turbo encoding" = True. Otherwise this field is not needed in the message.
tdd_req_sup	The IE is mandatory present if the IE "Multi-mode capability" has the value "TDD" or "FDD/TDD" and a TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

11.3 Information element definitions

```
DL-TransChCapability ::=            SEQUENCE {
    maxNoBitsReceived                   MaxNoBits,
    maxConvCodeBitsReceived             MaxNoBits,
    turboDecodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsDL,
    maxSimultaneousCCTrCH-Count         MaxSimultaneousCCTrCH-Count,
    maxReceivedTransportBlocks          MaxTransportBlocksDL,
    maxNumberOfTFC~~-InTFCS~~           MaxNumberOfTFC~~-InTFCS~~-DL,
    maxNumberOfTF                       MaxNumberOfTF
}
```

```
MaxNumberOfTFC-InTFCS-DL ::=        ENUMERATED {
                                        tfc16, tfc32, tfc48, tfc64, tfc96,
                                        tfc128, tfc256, tfc512, tfc1024 }


MaxNumberOfTFC-InTFCS-UL ::=        ENUMERATED {
                                        tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
                                        tfc96, tfc128, tfc256, tfc512, tfc1024 }


UL-TransChCapability ::=            SEQUENCE {
    maxNoBitsTransmitted                MaxNoBits,
    maxConvCodeBitsTransmitted          MaxNoBits,
    turboDecodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsUL,
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            maxSimultaneousCCTrCH-Count         MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks                MaxTransportBlocksUL,
    maxNumberOfTFC-InTFCS               MaxNumberOfTFC-InTFCS-UL,
    maxNumberOfTF                       MaxNumberOfTF
}
```

CR-Form-v4

CHANGE REQUEST

⌘ **25.331** **CR** **1368** ⌘ ev ⌘ Current version: **4.3.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Clarification of Maximum number of TFC in the TFCS
Source:	⌘	Panasonic
Work item code:	⌘	***Date:*** ⌘ 6 March 2002
Category:	⌘ **A**	***Release:*** ⌘ REL-4

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

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

Reason for change: ⌘

The UE capability, "Maximum number of TFC in the TFCS", seems to have two ambiguities.
1. In multiple CCTrCH case such as DSCH, the TFC is counted as sum of each TFC in the CCTrCH. For example, if UE declares 64 TFC is supported, there can be possible two understanding.
   a) 64 TFC in DPCH and 64 TFC in DPCH
   b) The sum of DPCH TFC and DSCH TFC is 64.
2. In DSCH, channelization code is also informed by TFC. Although this capability is described in transport channel capability, the difference of channelization code is counted as different TFC. If this understanding is different, there is no limitation in amount of channelization code the network can inform.
For above reasons, TS25.306CR036 (R'99) and CR037 (Rel4) are proposed. In the CR, the name "maximum number of TFC in the TFCS" is proposed to update "Maximum number of TFC". So, this CR is corresponding CR to TS25.331.

Summary of change: ⌘

In the UE capability, the name "maximum number of TFC in the TFCS" is proposed to update "Maximum number of TFC".

Isolated impact analysis:
This clarification is to a function where the specification was not sufficiently explicit. This would not affect implementations behaving like indicated in the CR, but would affect implementations supporting the corrected functionality.
1) If previous understanding is each CCTrCH has each number of TFCS, the maximum number of TFCS is reduced. If previous understanding is sum of each number of TFCS, this CR would not affect implementation.
2) If previous understanding is difference of channelization code is not counted as different TFC, the maximum number of TFC is reduced but no limitation of the amount of TFC of the channelization code. If previous understanding is counted as counted as different TFC, this CR would not affect implementation.

Consequences if not approved:	⌘	TS25.306 and TS25.331 are not aligned.

Clauses affected:	⌘	4.5.1, 4.5.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ 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/3G_Specs/CRs.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.

10.3.3.40 Transport channel capability

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Downlink transport channel capability information elements				
Max no of bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks received at an arbitrary time instant
Max convolutionally coded bits received	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all convolutionally coded transport blocks received at an arbitrary time instant
Max turbo coded bits received	CV-*turbo_dec_sup*		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks received at an arbitrary time instant
Maximum number of simultaneous transport channels	MP		Integer(4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH	MP		Integer (1..8)	
Max no of received transport blocks	MP		Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks received within TTIs that end at within the same 10ms interval
Maximum number of TFC ~~in the TFCS~~	MP		Integer(16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo decoding	MP		Boolean	TRUE means supported
Uplink transport channel capability information elements				
Max no of bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all transport blocks transmitted at an arbitrary time instant

Information Element/Group name	Need	Multi	Type and Reference	Semantics description
Max convolutionally coded bits transmitted	MP		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all convolutionally coded transport blocks transmitted at an arbitrary time instant
Max turbo coded bits transmitted	CV-*turbo_enc_sup*		Integer(640, 1280, 2560, 3840, 5120, 6400, 7680, 8960, 10240, 20480, 40960, 81920, 163840)	Maximum sum of number of bits of all turbo coded transport blocks transmitted at an arbitrary time instant
Maximum number of simultaneous transport channels	MP		Integer(2, 4, 8, 16, 32)	
Maximum number of simultaneous CCTrCH of DCH type	CH-*tdd_req_sup*		Integer (1..8)	
Max no of transmitted transport blocks	MP		Integer(2, 4, 8, 16, 32, 48, 64, 96, 128, 256, 512)	Maximum total number of transport blocks transmitted within TTIs that start at the same time
Maximum number of TFC ~~in the TFCS~~	MP		Integer(4, 8, 16, 32, 48, 64, 96, 128, 256, 512, 1024)	
Maximum number of TF	MP		Integer(32, 64, 128, 256, 512, 1024)	
Support for turbo encoding	MP		Boolean	TRUE means supported

Condition	Explanation
turbo_dec_sup	The IE is mandatory present if the IE "Support of turbo decoding" = True. Otherwise this field is not needed in the message.
turbo_enc_sup	The IE is mandatory present if the IE "Support of turbo encoding" = True. Otherwise this field is not needed in the message.
tdd_req_sup	The IE is mandatory present if the IE "Multi-mode capability" has the value "TDD" or "FDD/TDD" and a TDD capability update has been requested in a previous message. Otherwise this field is not needed in the message.

11.3 Information element definitions

```
DL-TransChCapability ::=            SEQUENCE {
    maxNoBitsReceived                   MaxNoBits,
    maxConvCodeBitsReceived             MaxNoBits,
    turboDecodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsDL,
    maxSimultaneousCCTrCH-Count         MaxSimultaneousCCTrCH-Count,
    maxReceivedTransportBlocks          MaxTransportBlocksDL,
    maxNumberOfTFC-InTFCS               MaxNumberOfTFC-InTFCS-DL,
    maxNumberOfTF                       MaxNumberOfTF
}
```

```
MaxNumberOfTFC-InTFCS-DL ::=        ENUMERATED {
                                        tfc16, tfc32, tfc48, tfc64, tfc96,
                                        tfc128, tfc256, tfc512, tfc1024 }

MaxNumberOfTFC-InTFCS-UL ::=        ENUMERATED {
                                        tfc4, tfc8, tfc16, tfc32, tfc48, tfc64,
                                        tfc96, tfc128, tfc256, tfc512, tfc1024 }


UL-TransChCapability ::=            SEQUENCE {
    maxNoBitsTransmitted                MaxNoBits,
    maxConvCodeBitsTransmitted          MaxNoBits,
    turboDecodingSupport                TurboSupport,
    maxSimultaneousTransChs             MaxSimultaneousTransChsUL,
    modeSpecificInfo                    CHOICE {
        fdd                                 NULL,
        tdd                                 SEQUENCE {
            maxSimultaneousCCTrCH-Count         MaxSimultaneousCCTrCH-Count
        }
    },
    maxTransmittedBlocks                MaxTransportBlocksUL,
    maxNumberOfTFC-InTFCS               MaxNumberOfTFC-InTFCS-UL,
    maxNumberOfTF                       MaxNumberOfTF
}
```