

Title: Addition of TSTD for S-CCPCH in 3.84Mcps TDD
Agenda Item: 8.10
Source: IPWireless
Document for: Decision

Introduction

This contribution contains the following three linked CR's :

Specification	Version	CR Number	Revision	Source
25.221	6.0.0	116	2	IPWireless
25.224	6.0.0	131	2	IPWireless
25.433	6.1.0	1010	--	IPWireless, Interdigital

References

- [1] R1-040461 "Addition of TSTD for S-CCPCH in 3.84Mcps TDD", 3GPP RAN WG1#37, Montreal, Canada, 10-14 May 2004, IPWireless
- [2] R1-040231 "Addition of TSTD for S-CCPCH in 3.84Mcps TDD", 3GPP RAN WG1#36, Malaga, Spain, 16-20 February 2004, IPWireless

CHANGE REQUEST

⌘ **25.221 CR 116** ⌘ rev **2** ⌘ Current version: **6.0.0** ⌘

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 Radio Access Network Core Network

Title:	⌘ Addition of TSTD for S-CCPCH in 3.84Mcps TDD		
Source:	⌘ IPWireless		
Work item code:	⌘ TEI-6	Date:	⌘ 27 / 05 / 2004
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ Time Switched Transmit Diversity (TSTD) provides useful diversity gain and can improve the coverage of bearers mapped to S-CCPCH. SSTD may not always be applicable to S-CCPCH due to its restriction to beacon-function physical channels, and TSTD can out-perform implicit Tx diversity (the mapping of different codes of a multi-code CCTrCH to different antennas at the Node-B under default midamble allocation) in some channel types.		
Summary of change:	⌘ TSTD for S-CCPCH is added to table 8 (section 5.4).		
Consequences if not approved:	⌘ Coverage of bearers mapped to S-CCPCH (eg: MBMS) may be reduced. 3.84Mcps TDD S-CCPCH is not aligned with 1.28Mcps TDD in terms of Tx diversity options.		

Clauses affected:	⌘ 5.4										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 25.224, 25.433
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Isolated Impact Analysis The CR affects Node-B implementations in Rel-6. UE operation is unaffected. The change is backwards compatible, supporting operation of a Rel-6 UTRAN with pre-Rel-6 UE's and vice versa.										

5.4 Transmit Diversity for DL Physical Channels

Table 8 summarizes the different transmit diversity schemes for different downlink physical channel types that are described in [9].

Table 8: Application of Tx diversity schemes on downlink physical channel types
 "X" – can be applied, "-" – must not be applied

Physical channel type	Open loop Tx Diversity		Closed loop Tx Diversity
	TSTD	SCTD ^(*)	
P-CCPCH	–	X	–
S-CCPCH	X ^(**)	X	--
SCH	X	–	–
DPCH	–	–	X
PDSCH	–	X	X
PICH	–	X	–
HS-SCCH	--	X	X
HS-PDSCH	--	X	X

(*) Note: SCTD may only be applied to physical channels when they are allocated to beacon locations.

(**) Note: TSTD may not be applied to S-CCPCH in beacon locations.

CHANGE REQUEST

⌘ **25.224 CR 131** ⌘ rev **2** ⌘ Current version: **6.0.0** ⌘

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 Radio Access Network Core Network

Title:	⌘ Addition of TSTD for S-CCPCH in 3.84Mcps TDD		
Source:	⌘ IPWireless		
Work item code:	⌘ TEI-6	Date:	⌘ 27 / 05 / 2004
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

Reason for change:	⌘ Time Switched Transmit Diversity (TSTD) provides useful diversity gain and can improve the coverage of bearers mapped to S-CCPCH. SSTD may not always be applicable to S-CCPCH due to its restriction to beacon-function physical channels, and TSTD can out-perform implicit Tx diversity (the mapping of different codes of a multi-code CCTrCH to different antennas at the Node-B under default midamble allocation) in some channel types.		
Summary of change:	⌘ TSTD for S-CCPCH is added under section 4.6.2		
Consequences if not approved:	⌘ Coverage of bearers mapped to S-CCPCH (eg: MBMS) may be reduced. 3.84Mcps TDD S-CCPCH is not aligned with 1.28Mcps TDD in terms of Tx diversity options.		

Clauses affected:	⌘ 4.6.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 25.221, 25.433
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘ Isolated Impact Analysis The CR affects Node-B implementations in Rel-6. UE operation is unaffected. The change is backwards compatible, supporting operation of a Rel-6 UTRAN with pre-Rel-6 UE's and vice versa.										

4.6.2 Transmit Diversity for SCH [and S-CCPCH](#)

Time Switched Transmit Diversity (TSTD) can be employed as a transmit diversity scheme for the synchronisation channel [and/or S-CCPCH](#).

4.6.2.1 SCH Transmission Scheme

The transmitter structure to support transmit diversity for SCH transmission is shown in figure 2. P-SCH and S-SCH are transmitted from antenna 1 and antenna 2 alternatively. An example for the antenna switching pattern is shown in figure 3.

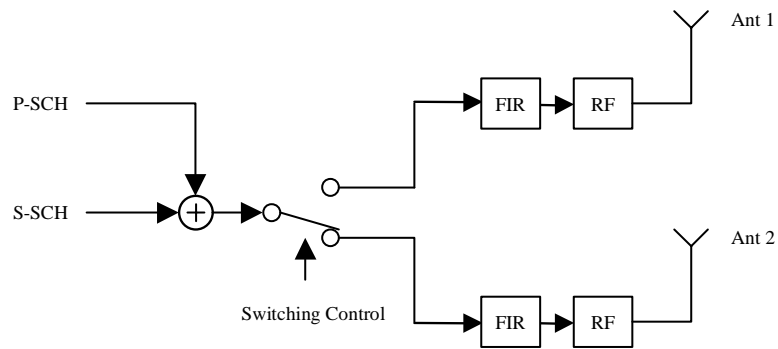


Figure 2: Downlink transmitter structure to support Transmit Diversity for SCH transmission (UTRAN Access Point)

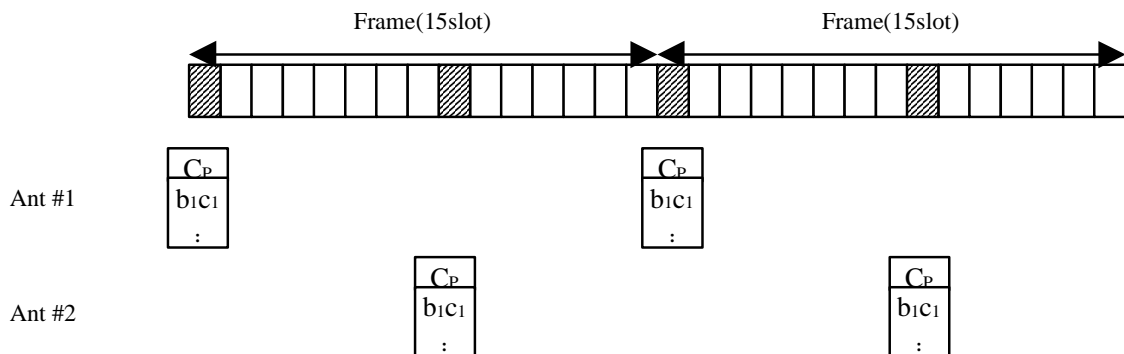


Figure 3: Antenna Switching Pattern (Case 2)

4.6.2.2 [S-CCPCH Transmission Scheme](#)

[The transmitter structure to support TSTD for S-CCPCH is shown in figure 3a. The antenna switching pattern is under the control of the Node-B and is not explicitly known to the UE. Switching may only be performed during the guard periods between timeslots.](#)

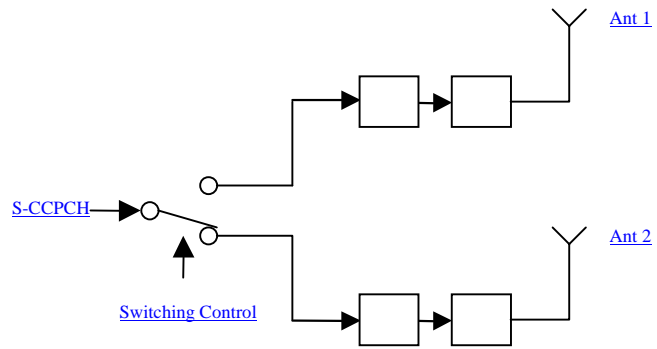


Figure 3a: Downlink transmitter structure to support TSTD for S-CCPCH transmission (UTRAN Access Point)

CR-Form-v7

CHANGE REQUEST

25.433 CR 1010 # rev - # Current version: 6.1.0

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 Radio Access Network Core Network

Title:	# Addition of TSTD for S-CCPCH in 3.84 Mcps TDD		
Source:	# IPWireless, Interdigital		
Work item code:	# TEI 6	Date:	# 27/5/04
Category:	# B	Release:	# Rel-6
	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 TR 21.900 .		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:	# The TSTD form of transmit diversity for S-CCPCH in HCR TDD has been agreed to be introduced by RAN1 #37 in Release 6. This CR introduces a mechanism to enable or disable it at the Node B via the lub.
Summary of change:	# A TSTD Indicator IE is added in COMMON TRANSPORT CHANNEL SETUP REQUEST for S-CCPCH in 3.84 Mcps TDD. <u>Impact assessment towards the previous version of the specification (same release):</u> This CR has isolated impact towards the previous version of the specification (same release). This CR has an impact under functional point of view. The impact can be considered isolated because it only affects the use of TSTD transmit diversity in HCR TDD mode.
Consequences if not approved:	# The RNC will be unable to control the use of TSTD transmit diversity for S-CCPCH in HCR TDD.

Clauses affected:	# 8.2.1.2, 9.1.3.2, 9.3.3, 9.3.6										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	#	25.221 (R1 CR 116), 25.224 (R1 CR 131), R1-040461.zip
Y	N										
X											
	X										
	X										

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.

8.2 NBAP Common Procedures

8.2.1 Common Transport Channel Setup

8.2.1.1 General

This procedure is used for establishing the necessary resources in Node B, regarding Secondary CCPCH, PICH, PRACH, PCPCH [FDD], AICH [FDD], AP_AICH [FDD], CD/CA-ICH [FDD], FACH, PCH, RACH, FPACH [1.28Mcps TDD] and CPCH [FDD].

8.2.1.2 Successful Operation

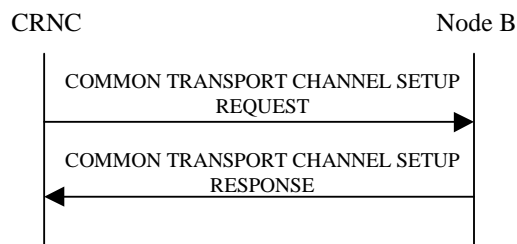


Figure 1: Common Transport Channel Setup procedure, Successful Operation

The procedure is initiated with a COMMON TRANSPORT CHANNEL SETUP REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

One message can configure only one of the following combinations:

- [FDD - one Secondary CCPCH, and FACHs, PCH and PICH related to that Secondary CCPCH], or
- [TDD - one CCTrCH consisting of Secondary CCPCHs and FACHs, PCH with the corresponding PICH related to that group of Secondary CCPCHs], or
- one [1.28Mcps TDD - or more] PRACH, one RACH and one AICH [FDD] and one FPACH[1.28Mcps TDD] related to that PRACH.
- [FDD - PCPCHs, one CPCH, one AP_AICH and one CD/CA-ICH related to that group of PCPCHs.]

Secondary CCPCH:

[FDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - FACHs and PCH may be mapped onto a CCTrCH which may consist of several Secondary CCPCHs]

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FACH Parameters* IE, the Node B shall configure and activate the indicated FACH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PCH Parameters* IE, the Node B shall configure and activate the concerned PCH and the associated PICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[1.28Mcps TDD - If the *PCH Power* IE is included in the *PCH Parameters* IE of the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall use this value as the power at which the PCH shall be transmitted.]

[3.84Mcps TDD - If the *TSTD Indicator* IE is included and is set to "active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall activate TSTD diversity for all S-CCPCHs defined in the message that are not beacon channels [19,21]. If the *TSTD Indicator* IE is not included or is set to "not active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall not activate TSTD diversity for the S-CCPCHs defined in the message.]

PRACH:

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PRACH* IE, the Node B shall configure and activate the indicated PRACH and the associated RACH [FDD - and the associated AICH] according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[1.28Mcps TDD - FPACH]:

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FPACH* IE, the Node B shall configure and activate the indicated FPACH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[FDD - PCPCHs]:

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *CPCH Parameters* IE, the Node B shall configure and activate the indicated CPCH and the associated PCPCH(s), AP-AICH and CD/CA-ICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Signatures* IE, the Node B may use only the given CD signatures on CD/CA-ICH. Otherwise, the Node B may use all the CD signatures on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Sub Channel Numbers* IE, the Node B may use only the given CD Sub Channels on CD/CA-ICH. Otherwise, the Node B may use all the CD Sub Channels on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *Channel Request Parameters* IE, the Node B shall use the parameters to distinguish the PCPCHs.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *Channel Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the configured PCPCH. Otherwise all AP subchannel numbers are used to distinguish the configured PCPCH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *SF Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the requested Spreading Factors. Otherwise all AP subchannel numbers are used to distinguish the configured Spreading Factor.

General:

After successfully configuring the requested common transport channels and the common physical channels, the Node B shall store the value of *Configuration Generation ID* IE and it shall respond with the COMMON TRANSPORT CHANNEL SETUP RESPONSE message with the *Common Transport Channel*

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ID IE, the *Binding ID* IE and the *Transport Layer Address* IE for the configured common transport channels.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes the *Transport Layer Address* and *Binding ID* IEs, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the indicated common transport channels.

After a successful procedure and once the transport bearers are established, the configured common transport channels and the common physical channels shall adopt the state Enabled [6] in the Node B and the common physical channels exist on the Uu interface.

9.1.3 COMMON TRANSPORT CHANNEL SETUP REQUEST

9.1.3.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE <i>Common Physical Channel To Be Configured</i>	M				YES	ignore
>Secondary CCPCHs					–	
>>SCCPCH CCTrCH ID	M		CCTrCH ID 9.2.3.3	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCS	M		9.2.1.58	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCI Coding	M		9.2.3.22		–	
>>Puncture Limit	M		9.2.1.50		–	
>>CHOICE <i>HCR or LCR</i>	M			See note 1 below	–	
>>>3.84Mcps TDD					–	
>>>>Secondary CCPCH		1..<maxno ofSCCPC Hs>			GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>SCCPCH Power	M		DL Power 9.2.1.21		–	
>>>>1.28Mcps TDD					–	
>>>>>Secondary		1..<maxno			GLOBAL	reject

CCPCH LCR		<i>ofSCCPC HsLCR></i>				
>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>Midamble Shift LCR	M		9.2.3.7A		-	
>>>>TDD Physical Channel Offset	M		9.2.3.20		-	
>>>>Repetition Period	M		9.2.3.16		-	
>>>>Repetition Length	M		9.2.3.15		-	
>>>>SCCPC Power	M		DL Power 9.2.1.21		-	
>>>> SCCPC Time Slot Format LCR	M		TDD DL DPCH Time Slot Format LCR 9.2.3.19D		-	
>>FACH Parameters		<i>0..<maxno ofFACHs></i>			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>FACH CCTrCH ID	M		CCTrCH ID 9.2.3.3		-	
>>>Transport Format Set	M		9.2.1.59	For the DL.	-	
>>>ToAWS	M		9.2.1.61		-	
>>>ToAWE	M		9.2.1.60		-	
>>>Max FACH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>PCH Parameters		<i>0..1</i>			YES	reject
>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>PCH CCTrCH ID	M		CCTrCH ID 9.2.3.3		-	
>>>Transport Format	M		9.2.1.59	For the DL.	-	

Set						
>>>ToAWS	M		9.2.1.61		-	
>>>ToAWE	M		9.2.1.60		-	
>>>CHOICE <i>HCR or LCR</i>	M			See note 1 below	-	
>>>>3.84Mcps TDD					-	
>>>>>PICH Parameters		0..1			YES	reject
>>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>>TDD Channelisation Code	M		9.2.3.19		-	
>>>>>>Time Slot	M		9.2.3.23		-	
>>>>>>Midamble Shift And Burst Type	M		9.2.3.7		-	
>>>>>>TDD Physical Channel Offset	M		9.2.3.20		-	
>>>>>>Repetition Period	M		9.2.3.16		-	
>>>>>>Repetition Length	M		9.2.3.15		-	
>>>>>>Paging Indicator Length	M		9.2.3.8		-	
>>>>>>PICH Power	M		9.2.1.49A		-	
>>>>>1.28Mcps TDD					-	
>>>>>>PICH Parameters LCR		1			YES	reject
>>>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>>>>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>>>>Midamble Shift LCR	M		9.2.3.7A		-	
>>>>>>>TDD Physical Channel Offset	M		9.2.3.20		-	
>>>>>>>Repetition Period	M		9.2.3.16		-	
>>>>>>>Repetition Length	M		9.2.3.15		-	
>>>>>>>Paging Indicator Length	M		9.2.3.8		-	
>>>>>>>PICH	M		9.2.1.49A		-	

Power						
>>>>>Second TDD Channelisation Code LCR	M		TDD Channelisation Code LCR 9.2.3.19a		–	
>>>PCH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>TSTD Indicator	O		9.2.1.64	Applicable to 3.84 Mcps TDD only	YES	reject
>PRACH					–	
>>CHOICE HCR or LCR	M			See note 1 below	–	
>>>3.84Mcps TDD					–	
>>>>PRACH		1			YES	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TFCS	M		9.2.1.58		–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>Max PRACH Midamble Shifts	M		9.2.3.6		–	
>>>>>PRACH Midamble	M		9.2.3.14		–	
>>>>>RACH		1			YES	reject
>>>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>>>>Transport Format Set	M		9.2.1.59	For the UL	–	
>>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>1.28Mcps TDD					–	

>>>>PRACH LCR		<i>1..<maxno ofPRACHLCRs></i>			GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TFCS	M		9.2.1.58		–	
>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>>RACH		<i>1</i>			YES	reject
>>>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>>>Transport Format Set	M		9.2.1.59	For the UL	–	
>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>FPACH		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>Time Slot LCR	M		9.2.3.24A		–	
>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>Max FPACH Power	M		9.2.3.5E		–	

Note 1: This information element is a simplified representation of the ASN.1. The choice is in reality performed through the use of ProtocolIE-Single-Container within the ASN.1.

Range Bound	Explanation
<i>maxnoofSCCPCHs</i>	Maximum number of Secondary CCPCHs per CCTrCH for 3.84Mcps TDD
<i>maxnoofSCCPCHsLCR</i>	Maximum number of Secondary CCPCHs per CCTrCH for 1.28Mcps TDD
<i>maxnoofFACHs</i>	Maximum number of FACHs that can be defined on a Secondary CCPCH
<i>maxnoofPRACHLCRs</i>	Maximum number of PRACHs LCR that can be defined on a RACH for 1.28Mcps TDD

9.3.3 PDU Definitions

```
-- *****  
--  
-- IE parameter types from other modules.  
--  
-- *****
```

IMPORTS

/// break ///

```
FROM NBAP-Containers  
    id-Active-Pattern-Sequence-Information,  
    id-AdjustmentRatio,  
    id-AICH-Information,  
    id-AICH-ParametersListIE-CTCH-ReconfRqstFDD,  
    id-AP-AICH-Information,  
    id-AP-AICH-ParametersListIE-CTCH-ReconfRqstFDD,
```

/// break ///

```
    id-T-Cell,  
    id-TargetCommunicationControlPortID,  
    id-TFCI2-Bearer-Information-RL-SetupRqstFDD,  
    id-TFCI2-BearerInformationResponse,  
    id-TFCI2BearerRequestIndicator,  
    id-TFCI2-BearerSpecificInformation-RL-ReconfPrepFDD,  
    id-Transmission-Gap-Pattern-Sequence-Information,  
    id-TimeSlotConfigurationList-Cell-ReconfRqstTDD,  
    id-TimeSlotConfigurationList-Cell-SetupRqstTDD,  
    id-timeslotInfo-CellSyncInitiationRqstTDD,  
    id-timeslotISCPInfo,  
    id-TimingAdvanceApplied,  
    id-TnlQos,  
    id-TransmissionDiversityApplied,  
    id-transportlayeraddress,  
    id-Tstd-indicator-CTCH-SetupRqstTDD,  
    id-UARFCNforNt,  
    id-UARFCNforNd,  
    id-UARFCNforNu,
```

```

-- *****
--
-- COMMON TRANSPORT CHANNEL SETUP REQUEST TDD
--
-- *****

CommonTransportChannelSetupRequestTDD ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container  {{CommonTransportChannelSetupRequestTDD-IEs}},
    protocolExtensions   ProtocolExtensionContainer  {{CommonTransportChannelSetupRequestTDD-Extensions}}
    ...
}

CommonTransportChannelSetupRequestTDD-IEs NBAP-PROTOCOL-IES ::= {
    { ID      id-C-ID          CRITICALITY reject  TYPE C-ID          PRESENCE
mandatory  }|
    { ID      id-ConfigurationGenerationID  CRITICALITY reject  TYPE ConfigurationGenerationID  PRESENCE
mandatory  }|
    { ID      id-CommonPhysicalChannelType-CTCH-SetupRqstTDD  CRITICALITY ignore  TYPE CommonPhysicalChannelType-CTCH-SetupRqstTDD
PRESENCE   mandatory  },
    ...
}

CommonTransportChannelSetupRequestTDD-Extensions NBAP-PROTOCOL-EXTENSION ::= {
    ...
}

CommonPhysicalChannelType-CTCH-SetupRqstTDD ::= CHOICE {
    secondary-CCPCH-parameters          Secondary-CCPCH-CTCH-SetupRqstTDD,
    pRACH-parameters                    PRACH-CTCH-SetupRqstTDD,
    ...
}

Secondary-CCPCH-CTCH-SetupRqstTDD ::= SEQUENCE {
    sCCPCH-CCTrCH-ID          CCTrCH-ID, -- For DL CCTrCH supporting one or several Secondary CCPCHs
    tFCS                      TFCS,      -- For DL CCTrCH supporting one or several Secondary CCPCHs
    tFCI-Coding               TFCI-Coding,
    punctureLimit             PunctureLimit,
    secondaryCCPCH-parameterList  Secondary-CCPCH-parameterList-CTCH-SetupRqstTDD,
    fACH-ParametersList       FACH-ParametersList-CTCH-SetupRqstTDD      OPTIONAL,
    pCH-Parameters            PCH-Parameters-CTCH-SetupRqstTDD      OPTIONAL,
    iE-Extensions             ProtocolExtensionContainer  {{Secondary-CCPCHItem-CTCH-SetupRqstTDD-ExtIEs}}
    OPTIONAL,
    ...
}

Secondary-CCPCHItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {

```

```

{ ID id-Tstd-indicator-CTCH-SetupRqstTDD CRITICALITY reject EXTENSION TSTD-Indicator PRESENCE
optional },
-- Applicable to 3.84 Mcps TDD only
...
}

Secondary-CCPCH-parameterList-CTCH-SetupRqstTDD ::= ProtocolIE-Single-Container {{ Secondary-CCPCH-parameterListIEs-CTCH-SetupRqstTDD
}}

Secondary-CCPCH-parameterListIEs-CTCH-SetupRqstTDD NBAP-PROTOCOL-IES ::= {
{ ID id-Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD CRITICALITY reject TYPE Secondary-CCPCH-parameterListIE-CTCH-
SetupRqstTDD PRESENCE optional }|
{ ID id-Secondary-CCPCH-LCR-parameterList-CTCH-SetupRqstTDD CRITICALITY reject TYPE Secondary-CCPCH-LCR-parameterList-CTCH-
SetupRqstTDD PRESENCE optional }
}

Secondary-CCPCH-parameterListIE-CTCH-SetupRqstTDD ::= SEQUENCE (SIZE (1..maxNrOfSCCPCHs)) OF Secondary-CCPCH-parameterItem-CTCH-
SetupRqstTDD

Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD ::= SEQUENCE {
commonPhysicalChannelID CommonPhysicalChannelID,
tdd-ChannelisationCode TDD-ChannelisationCode,
timeslot TimeSlot,
midambleShiftandBurstType MidambleShiftAndBurstType,
tdd-PhysicalChannelOffset TDD-PhysicalChannelOffset,
repetitionPeriod RepetitionPeriod,
repetitionLength RepetitionLength,
s-CCPCH-Power DL-Power,
iE-Extensions ProtocolExtensionContainer { { Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD-ExtIEs}
} OPTIONAL,
...
}

Secondary-CCPCH-parameterItem-CTCH-SetupRqstTDD-ExtIEs NBAP-PROTOCOL-EXTENSION ::= {
...
}

```

9.3.6 Constant Definitions

```

-- *****
--
-- IEs
--

```

-- *****

id-AICH-Information	ProtocolIE-ID ::= 0
id-AICH-InformationItem-ResourceStatusInd	ProtocolIE-ID ::= 1
id-BCH-Information	ProtocolIE-ID ::= 7
id-BCH-InformationItem-ResourceStatusInd	ProtocolIE-ID ::= 8

/// break ///

| id-Tstd-indicator-CTCH-SetupRqstTDD ProtocolIE-ID ::= 627