TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

TSGRP#7(00)0105

Title: **Agreed CRs to TS 25.430**

Source: **TSG-RAN WG3**

Agenda item: **6.4.3**

Tdoc_Num	Specification	CR_Num	Revision_Num	CR_Subject	CR_Category	WG_Status	Cur_Ver_Num	New_Ver_Num
R3-000224	25.430	004		Clarification to the functional split of System Information over Iub	C	agreed	3.0.0	3.1.0
R3-000542	25.430	005	2	Generalisation of the combining/splitting functionality in the Node B	F	agreed	3.0.0	3.1.0
R3-000543	25.430	003	1	PDSCH and PUSCH handling in NodeB	C	agreed	3.0.0	3.1.0
R3-000544	25.430	007		Functional list update	F	agreed	3.0.0	3.1.0
R3-000505	25.430	006		Data stream definitions	D	agreed	3.0.0	3.1.0
R3-000667	25.430	002	1	Correction of Node B common resources for TDD	F	agreed	3.0.0	3.1.0
R3-000954	25.430	001	4	Changes for CPCH	C	agreed	3.0.0	3.1.0

3GPP TSG-RAN Meeting #7
Madrid, Spain, 13 - 15 March 2000

***Document* R3-000224**
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25.430	CR	004	Current Version:	3.0.0

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

For submission to:	TSG RAN#7	for approval	X	strategic		(for SMG use only)
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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 [ ] UTRAN / Radio [X] Core Network [ ]

Source: TSG-RAN WG3 **Date:** 2000-01-25

Subject: Clarification to the functional split of System Information over Iub

Work item:

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

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

Release:

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

Reason for change: This CR proposes clarification to the functional split over the Iub.

Clauses affected: 5.2.4

Other specs Affected:

Other 3G core specifications		→ List of CRs:
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:

5.2 Functional split over Iub

5.2.1 Management of Iub Transport Resources

The underlying transport resources (AAL2 connections) shall be set up and controlled by the RNC. Further information on these functions is provided in the transport layer specifications [3], [8], [10].

5.2.2 Logical O&M of Node B

Logical O&M is the signalling associated with the control of logical resources (channels, cells,…) owned by the RNC but physically implemented in the Node B. The RNC controls these logical resources. A number of O&M procedures physically implemented in Node B impact on the logical resources and therefore require an information exchange between RNC and Node B. All messages needed to support this information exchange are classified as Logical O&M forming an integral part of NBAP over the Iub interface.

5.2.2.1 Handling of Node B Hardware Resources

Mapping of Node B logical resources onto Node B hardware resources, used for Iub data streams and radio interface transmission/reception, is performed by Node B.

5.2.3 Implementation Specific O&M Transport

The Iub interface may support the transport of Implementation specific O&M information. Further detail on this can be found in the UMTS technical specification on Implementation Specific O&M Transport [2].

5.2.4 System Information Management

System Information is sent by the CRNC to a Node B. CRNC can also request the Node B to autonomously create and update certain NodeB related system information. Scheduling of system broadcast information is ~~also~~ carried out in the CRNC. ~~System information and s~~Scheduling information ~~are~~is always sent by the CRNC to the Node B. The Node B is responsible for transmitting the received system information according to the scheduling parameters provided. If requested by the CRNC, the Node B is also responsible for autonomously create and update the Node B related system information according to the scheduling parameters provided.

5.2.5 Traffic management of Common Channels

The common channels need to be controlled from the RNC. This is typically the control of the RACH and FACH channels, the information that is broadcast on the Broadcast control channel, and the control and request for sending information on the paging channels.

5.2.6 Traffic management of Dedicated Channels

These functions are related to the activation of logical resources (e.g. Radio Links, Iub ports), and the connection of these various resources together.

Some freedom may be left for Node B implementation on some functions like soft combining for FDD within Node B, since soft combining has merits for being executed as close as possible to the radio (both in terms of transmission cost and efficiency).

5.2.6.1 FDD Macro-diversity Combining and Control

Node B may perform macro-diversity combining/splitting of data streams communicated via its cells. RNC performs macro-diversity combining/splitting of Iub data streams received from/sent to several Node B(s).

3GPP TSG-RAN Working Group 3, Meeting #10
Sophia Antipolis, France, February 28-March 3, 2000

***Document* R3-000542**
Resubmission of R3-000391

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25.430	CR	005r2	Current Version:	3.0.0

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

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

Source: RAN-WG3 **Date:** Feb 22, 2000

Subject: Generalisation of the combining/splitting functionality in the Node B

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: This functionality is currently described in such a way that only FDD macrodiversity is covered. A similar functionality is used to support hard handover. The new text proposes a general description for this functionality.

Clauses affected: 5.2.6.1

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	R3-000528 CR 1 rev1 TS25.401 R3-000540 CR 3 rev2 TS25.420
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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5.2.6.1 ~~FDD Macro-diversity~~ Combining/Splitting and Control

Node B may perform ~~macro-diversity~~ combining/splitting of data streams communicated via its cells. RNC performs ~~macro-diversity~~ combining/splitting of Iub data streams received from/sent to several Node B(s).

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

When requesting the addition of a new cell for a UE-UTRAN connection, the RNC can explicitly request to the Node B a new Iub data stream, in which case the ~~macro-diversity~~ combining and splitting function within the Node B is not used for that cell. Otherwise, the Node B takes the decision whether ~~macro-diversity~~ combining and splitting function is used inside the Node B for that cell i.e. whether a new Iub data stream shall be added or not.

The internal Node B handling of the ~~macro-diversity~~ combining/splitting of radio frames is controlled by the Node B.

TSG-RAN Working Group 3, meeting #11 *TSG R3-000543*
Sophia Antipolis, France, February 28-March 3, 2000.

Agenda Item: **15.2**

Source: **RAN-WG3**

Title: **Revision of CR3 of 25.430**

Document For: **Decision**

Proposal

In CR3 of 25.430 chapter 6.2.4.4 has been updated, according to the decision taken during RAN3#10. Since a reference to USCH is still missing in the CR, an update is proposed to amend the text.

In the attached proposal, the text added is highlighted in yellow.

3GPP TSG-RAN Working Group 3, Meeting #11
Sphia Antipolis, France, 28 Feb - 3 Mar 2000

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25.430	CR	003r1	Current Version:	3.0.0

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

Source: RAN-WG3 **Date:** Feb 22, 2000

Subject: PDSCH and PUSCH handling in NodeB

Work item:

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

F	Correction		**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	X		Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The configuration of Physical Shared Channels (PDSCH and TDD PUSCH) in the NodeB, and the dynamical assignment to specific DSCH and USCH data ports was yet unspecified. This CR proposes suitable text, which covers mainly TDD PDSCH and PUSCH but also applies to the FDD PDSCH.

Clauses affected:

Other specs affected:

Other 3G core specifications		→	List of CRs:
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:

6.2 Elements of the logical model

6.2.1 Node B Communication Contexts for Dedicated and Shared Channels

A Node B Communication Context corresponds to all the dedicated resources that are necessary for a user in dedicated mode and using dedicated and/or shared channels as restricted to a given Node B. [In TDD, the NodeB Communication Context also exists for users in Cell_FACH mode (i.e. non-dedicated mode) provided a USCH and/or DSCH has been allocated to these users.]

There are a number of Node B Communication Contexts inside a given Node B.

The attributes to a Node B Communication Context shall include the following (not exhaustive):

- The list of Cells where dedicated and/or shared physical resources are used.
- The list of DCH which are mapped on the dedicated physical resources for that Node B Communication Context.
- The list of DSCH and (TDD) USCH which are used by the respective UE.
- The complete DCH characteristics for each DCH, identified by its DCH-identifier [4].
- The complete Transport Channel ~~and Physical Channel~~ characteristics for each DSCH and USCH, identified by its ~~Physical~~ Shared Channel identifier [4].
- The list of Iub DCH Data Ports.
- The list of Iub DSCH Data ports and Iub USCH data ports.
- For each Iub DCH Data Port, the corresponding DCH and cells which are carried on this data port.
- For each Iub DSCH and USCH data port, the corresponding DSCH or USCH and cells which serve that DSCH or USCH.
- Physical layer parameters (outer loop power control, etc).

6.2.2 Common Transport Channels

Common Transport Channels are defined in [2]. A Common Transport Channel is configured in the Node B, on request of the CRNC.

The BCH is carried directly on the Node B control port using NBAP procedures. This Common Channel will not be mapped to an individual data port.

The RACH has an associated Iub RACH Data Port and the FACH has an associated Iub FACH Data Port.

The Iub DSCH data port is associated to one DSCH and to one NodeB Communication Context.

[TDD - the Iub USCH data port is associated to one USCH and to one NodeB Communication Context.]

The attributes of a Common transport channel shall include (not exhaustive):

- Type (RACH, FACH, DSCH, USCH, PCH).
- Associated Iub RACH Data Port for a RACH, Iub FACH Data Port for a FACH, Iub PCH Data Port for the PCH.
- List of associated Iub FDD DSCH Data ports for the DSCH (FDD only).
- Physical parameters.

[TDD – In TDD, the DSCHs used by one UE are multiplexed to one or several CCTrCHs where each CCTrCH is mapped to a set of PDSCH (“PDSCH Set”). These PDSCH Sets are included in the Common Transport Channel data

base. The same applies for the USCHs and the corresponding PUSCH Sets.]

6.2.3 Transport network logical resources

...

6.2.4 Radio Network Logical resources

6.2.4.1 Common Resources

...

6.2.4.2 Cell

...

6.2.4.3 Common Physical Channels and Common Transport Channels

Common physical channels and common transport channels in Node B have a resource operational state.

Figure 6 illustrates the state diagram for common physical channels and common transport channels in Node B, as seen over the Iub interface.

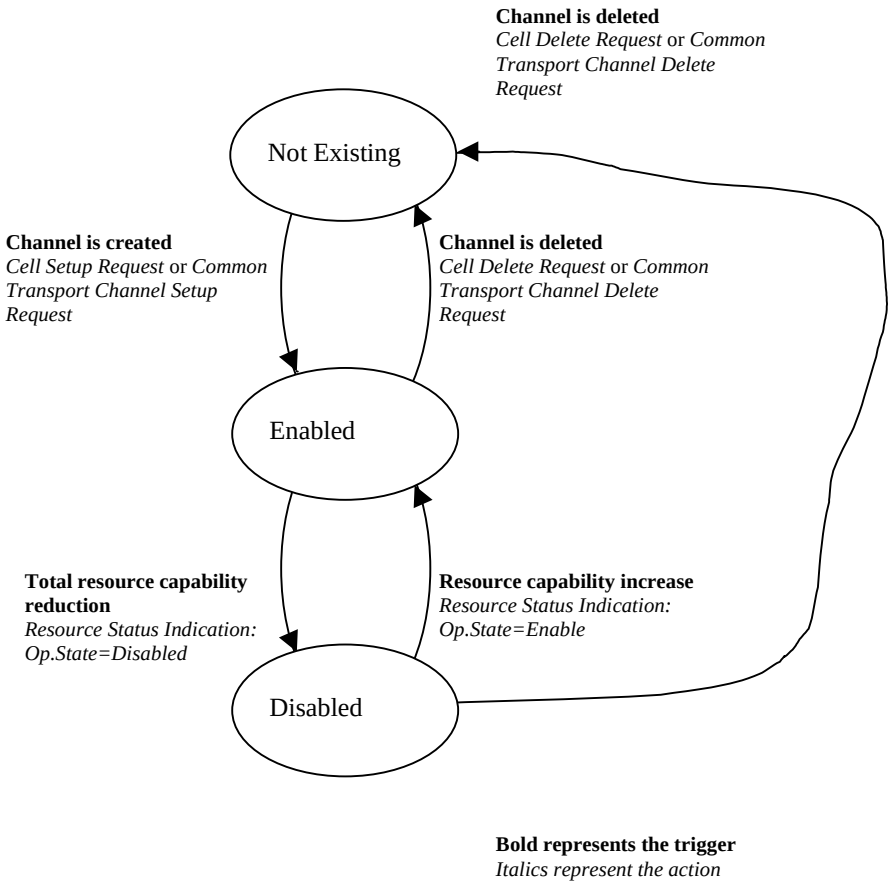

Figure 6: States for a common channel in Node B, as reported to the CRNC.

There are three states seen over the Iub interface:

1. Not existing, meaning that the resource does not exist in Node B.
2. enabled, meaning that the resource can be used by the RNC.

3. disabled, meaning that the resource cannot be used by the RNC.

When a channel becomes disabled in the Node B, this shall be reported to the CRNC together with the cause.

6.2.4.4 Physical Shared Channels

Physical Shared Channels includes the Physical Downlink Shared Channels (PDSCH) and the Physical Uplink Shared Channels (PUSCH, TDD only). These PDSCH and PUSCH are special cases of the Common Physical Channels.

[FDD - A PDSCH is defined by a channelization code within a code subtree that is configured within a specific Communication Context. The PDSCH is activated dynamically as part of the DSCH scheduling.]

[TDD – A PDSCH is defined by a channelization code, a time slot and other Physical Channel parameters. Several PDSCH may be grouped into a PDSCH Set, which is given a “PDSCH Set Id”. The PDSCH Sets are configured in the NodeB in the “Common Transport Channel” data base by Common NBAP messages. These PDSCH Sets are available to carry DSCH data. The PDSCH Sets are dynamically activated to carry DSCH data, as part of the DSCH scheduling.

A PUSCH is defined by a channelization code, a time slot and other Physical Channel parameters. Several PUSCH may be grouped into a PUSCH Set, which is given a “PUSCH Set Id”. The PUSCH Sets are configured in the NodeB in the “Common Transport Channel” data base by Common NBAP messages. These PUSCH Sets are available to carry USCH data. The PUSCH Sets are dynamically activated to carry USCH data, as part of the USCH scheduling.]

3GPP TSG-RAN WG3 Meeting #11
Sophia Antipolis, France, February 28-March 3, 2000.

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25.430	CR	007	Current Version:	3.0.0

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

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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		UTRAN / Radio	X	Core Network	

Source: RAN-WG3 **Date:** 15 Feb 2000

Subject: Functional list update

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: This CR updates the function list for Shared Channels according to decisions taken in RAN3#10 meeting. An amendment to a reference is included, as well.

Clauses affected: 5.1; 6.2.2

Other specs affected:

Other 3G core specifications		→ List of CRs:
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:

5.1 Iub Functions

The list of functions on the Iub interface is the following:

1. Management of Iub Transport Resources
2. Logical O&M of Node B
   - Iub Link Management
   - Cell Configuration Management
   - Radio Network Performance Measurements
   - Resource Event Management
   - Common Transport Channel Management
   - Radio Resource Management
   - Radio Network Configuration Alignment
3. Implementation Specific O&M Transport
4. System Information Management
5. Traffic Management of Common Channels
   - Admission Control
   - Power Management
   - Data Transfer
6. Traffic Management of Dedicated Channels
   - Radio Link Management
   - Radio Link Supervision
   - Channel Allocation / De-allocation
   - Power Management
   - Measurement Reporting
   - Dedicated Transport Channel Management
   - Data Transfer
7. Traffic Management of Shared Channels
   - Channel Allocation / De-allocation
   - Power Management
   - —Transport Channel Management
   - Dynamic Physical Channel Assignment
   - Radio Link Management
   - Data Transfer
8. Timing and Synchronisation Management
   - Transport Channel Synchronisation (Frame synchronisation)

- Node B – RNC node Synchronisation
- Inter Node B node Synchronisation

6.2.2 Common Transport Channels

Common Transport Channels are defined in [~~2~~9]. A Common Transport Channel is configured in the Node B, on request of the CRNC.

The BCH is carried directly on the Node B control port using NBAP procedures. This Common Channel will not be mapped to an individual data port.

The RACH has an associated Iub RACH Data Port and the FACH has an associated Iub FACH Data Port.

The Iub DSCH data port is associated to one DSCH and to one NodeB Communication Context.

[TDD - the Iub USCH data port is associated to one USCH and to one NodeB Communication Context.]

The attributes of a Common transport channel shall include (not exhaustive):

- Type (RACH, FACH, DSCH, USCH, PCH).
- Associated Iub RACH Data Port for a RACH, Iub FACH Data Port for a FACH, Iub PCH Data Port for the PCH.
- List of associated Iub FDD DSCH Data ports for the DSCH (FDD only).
- Physical parameters.

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Sophia Antipolis, France, 28th Feb – 3rd March 2000

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25.430	CR	6	Current Version:	3.0.0

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

Source: R-WG3 **Date:** 00.02.28

Subject: Data stream definitions.

Work item:

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

F	Correction		**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	X		Release 99	X
				Release 00	

Reason for change: Clarification of definition of Iub data streams and their mapping to transport bearers.

Editorial correction in 6.2.3.6: CCH -> FACH.

Clauses affected: 4.4, 4.5, 6.2.3.6

Other specs affected:

Other 3G core specifications		→ List of CRs:
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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4.4 Iub Interface Capabilities

The Iub interface connects a RNC and a Node B.

The information transferred over the Iub reference point can be categorised as follows:

4.4.1 Radio application related signalling

The Iub interface allows the RNC and the Node B to negotiate about radio resources, for example to add and delete cells controlled by the Node B to support communication of the dedicated connection between UE and SRNC. Information used to control the broadcast channel and information to be transported on the broadcast channel belong to this category also. In addition, logical O&M [1] between the Node B and RNC shall also be included in this category.

4.4.2 Iub/Iur DCH data stream

The Iub interface provides the means for transport of uplink and downlink DCH transport frames between RNC and Node B. An Iub/Iur DCH data streams corresponds to the data carried on one DCH transport channel.

4.4.3 Iub RACH data stream

The Iub interface provides the means for transport of uplink RACH transport frames between Node B and RNC. An Iub RACH data streams corresponds to the data carried on one RACH transport channel.

4.4.4 Iub FACH data stream

The Iub interface provides the means for transport of downlink FACH transport frames between RNC and Node B. An Iub FACH data streams corresponds to the data carried on one FACH transport channel.

4.4.5 Iub DSCH data stream

The Iub interface provides the means for transport of downlink shared channel, DSCH, data frames between RNC and Node B. An Iub DSCH data streams corresponds to the data carried on one DSCH transport channel for one UE. A UE may have multiple DSCH data streams.

4.4.6 Iub TDD USCH data stream

The Iub interface provides the means for transport of uplink shared channel, USCH, data frames between Node B and RNC. An Iub USCH data streams corresponds to the data carried on one USCH transport channel for one UE. A UE may have multiple USCH data streams.

4.4.7 Iub PCH data stream

The Iub interface provides the means for transport of PCH transport frames between RNC and Node B. An Iub PCH data streams corresponds to the data carried on one PCH transport channel.

4.5 Iub Interface Characteristics

4.5.1 Mapping of Iub data streams

DCH One Iub DCH data stream is carried on one transport bearer. For each DCH data stream a transport bearer must be established over Iub, except in the case of coordinated DCHs in which case a set of coordinated DCHs are multiplexed onto the same transport bearer.

RACH One Iub RACH data stream is carried on one transport bearer. For each RACH in a cell, a~~n Iub~~ transport bearer ~~RACH data stream~~ must be established over the Iub interface.

FACH One Iub FACH data stream is carried on one transport bearer. For each FACH in a cell, a~~n Iub~~ transport bearer~~FACH data stream~~ must be established over the Iub Interface.

DSCH One Iub DSCH data stream is carried on one transport bearer. For each DSCH data stream, a transport bearer must be established over the Iub interface.

TDD USCH One Iub TDD USCH data stream is carried on one transport bearer. For each USCH data stream, a transport bearer must be established over the Iub interface.

PCH One Iub PCH data stream is carried on one transport bearer.

6 Node B logical Model over Iub

6.2.3 Transport network logical resources

6.2.3.1 Node B Control Port

The Node B Control Port is used to exchange the signalling information for the logical O&M of Node B, the creation of Node B Communication Contexts, the configuration of the common transport channels that Node B provides in a given cell, PCH and BCH control information between the RNC and the Node B. The Node B Control Port corresponds to one signalling bearer between the controlling RNC and the Node B. There is one Node B Control Port per Node B.

6.2.3.2 Communication Control Port

A Communication Control Port corresponds to one signalling bearer between the RNC and Node B for the control of Node B Communication Contexts. One signalling bearer between RNC and Node B can at most correspond to one Communication Control Port. Node B may have multiple Communication Control Ports (one per Traffic Termination Point). The Communication Control Port is selected at creation of the Node B Communication Context.

6.2.3.3 Traffic Termination Point

Traffic Termination Point represents DCH, DSCH and TDD USCH data streams belonging to one or more Node B Communication Contexts (UE contexts), which are controlled via one Communication Control Port. The Traffic Termination Point is thus a descriptive entity which neither is controlled over Iub nor by O&M.

6.2.3.4 Iub DCH Data Port

One Iub DCH Data port represents one user plane transport bearer. One user plane transport bearer will carry only one DCH data stream except in the case of coordinated DCHs, in which case the data streams of all combined DCHs shall be multiplexed on one and the same user plane transport bearer.

6.2.3.5 Iub RACH Data Port

An Iub RACH Data Port represents a user plane bearer carrying one Iub RACH Data Stream between the Node B and the RNC. There is one RACH Data Port for each RACH channel of Node B.

6.2.3.6 Iub FACH Data Port

An Iub FACH Data Port represents a user plane bearer carrying one Iub FACH Data Stream between the Node B and the RNC. There is one FA~~C~~CH Data Port for each FACH channel of Node B.

6.2.3.7 Iub DSCH Data Port

An Iub DSCH Data Port represents a user plane bearer carrying one Iub DSCH Data Stream between the Node B and the RNC. For each DSCH, that is used by an individual UE, there is one Iub DSCH Data Port per NodeB exclusively assigned to the communication context of that UE. In FDD each DSCH is associated with a downlink DPCCH.

6.2.3.8 Iub TDD USCH Data Port

An Iub TDD USCH Data Port represents a user plane bearer carrying one Iub TDD USCH Data Stream between the Node B and the RNC. For each USCH, that is used by an individual UE, there is one Iub TDD USCH Data Port with data exclusively assigned to the NodeB communication context of that UE.

6.2.3.9 Iub PCH Data Port

An Iub PCH Data Port represents an Iub PCH Data Stream between the Node B and the RNC.

3GPP TSG-RAN Working Group 3, Meeting #11
Sophia Antipolis, France, 28 February-3 March 2000

***Document* R3-000667**
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25.430	CR	2rev1	Current Version:	3.0.0

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

For submission to:	RAN #7	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: (U)SIM [ ] ME [ ] UTRAN / Radio [X] Core Network [ ]
(at least one should be marked with an X)

Source: RAN-WG3 **Date:** Feb 23, 2000

Subject: Revised version of CR 02 due to removal of Sync Case 3

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:
This document revises CR02 to align the Node B common resources with the decision made at RAN1#11 and removes the Sync Case 3 for TDD related to Cell configuration.

By the Sync Case 3 removal, the previously defined Transport Channel (SCH) for TDD for information transfer of the PCCPCH location can now be removed. Consequently only a physical channel exist, named SCH similar to the definition for FDD.

Clauses affected: 6.2.4.1

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	R1-000220, R3-000548, R3-000549
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:

help.doc

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

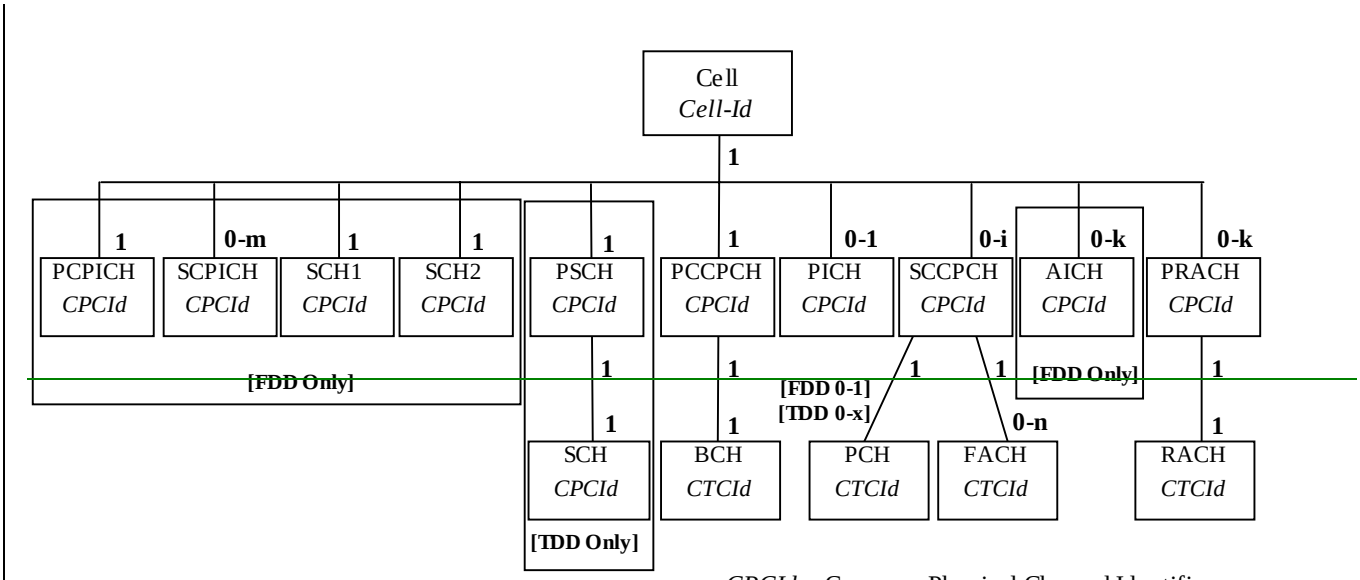
6.2.4.1 Common Resources

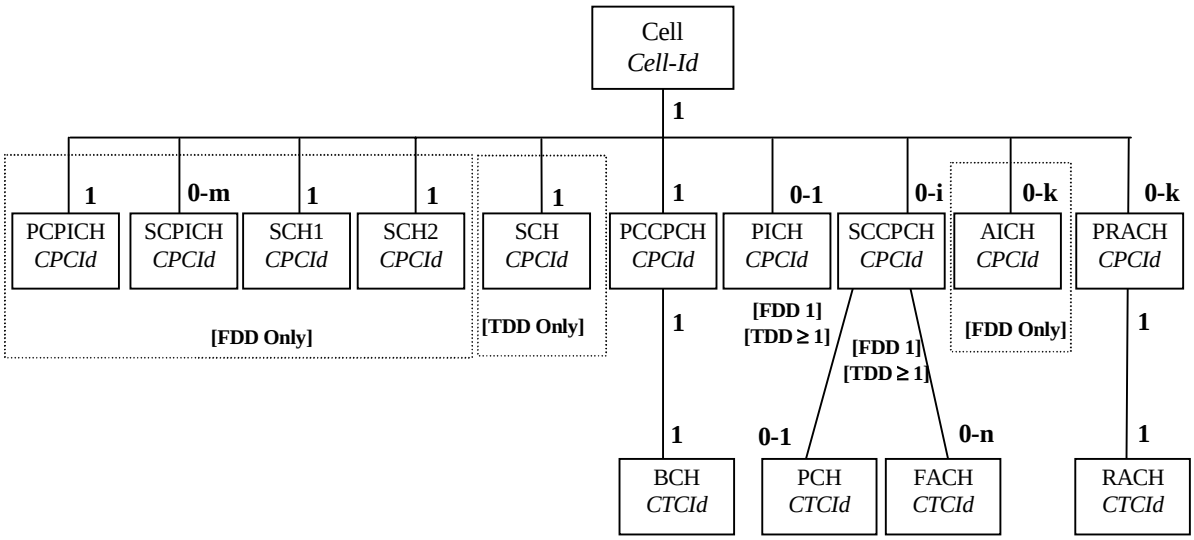
The CRNC manages logical radio network resources in Node B and needs to use both common and dedicated resources in a Node B to run a radio network. Therefore, it is the CRNC that orders the Node B to configure, reconfigure and delete these resources. However, if the equipment in Node B cannot fully support the configuration that the CRNC requests, or the equipment breaks down, then Node B can indicate the availability of the common resources (i.e. both downgrade and upgrade).

The common resources are the Cell, the common physical channels and the common transport channels.

In Node B these common resources have an operational state, that indicates whether they are operational or not, i.e. whether they can carry traffic or not.

Figure 3 shows the common resources that an CRNC is managing in a Node B to be able to run a radio network.





CPCId = Common Physical Channel Identifier
CTCId = Common Transport Channel Identifier
The number of PICH = the number of PCH
[FDD - The number of AICH = the number of PRACH]
[TDD – PCHs and FACHs can be mapped on one or more SCCPCH]

Figure 3. Common resources in a Node B that are managed by the CRNC

3GPP TSG-RAN WG3 Meeting #10
Sophia-Antipolis, FR, 28 Feb-03 Mar, 2000

Document R3-000954
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.

25.430	CR	001r4	Current Version:	3.0.0

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

For submission to:	TSG-RAN#7	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: R-WG3 **Date:** 1 Mar, 2000

Subject: Changes for CPCH

Work item:

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

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

Reason for change: This CR adds changes to include specifications of CPCH on the specified Iub interface on general aspects and principles.

Clauses affected: 3.3; 4.4; 4.5.1; 5.2.5; 6.1; 6.2.2; 6.2.3; 6.2.4.1; 7

Other specs affected:

Other 3G core specifications		→ List of CRs:
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:

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
AICH	Acquisition Indication Channel
ALCAP	Access Link Control Application Part
AP-AICH	Access Preamble Acquisition Indication Channel
ATM	Asynchronous Transfer Mode
BCH	Broadcast Channel
BCCH	Broadcast Control Channel
CCH	Control Channel
CD/CA-ICH	Collision Detection/Channel Assignment Indication Channel
CPCH	Common Packet Channel
CPCId	Common Physical Channel Identifier
CPICH	Common Pilot Channel
CSICH	Common Packet Channel Status Indication Channel
CTCId	Common Transport Channel Identifier
CRNC	Controlling Radio Network Controller
DCH	Dedicated Transport Channel
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DRNC	Drift Radio Network Controller
DSCH	Down-link Shared Channel
FACH	Forward Access Channel
FAUSCH	Fast Up-link Signalling Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
NBAP	NodeB Application Part
O&M	Operation and Maintenance
PICH	Page Indication Channel
PCCH	Paging Control Channel
PCCPCH	Primary Common Control Physical Channel
PCPCH	Physical Common Packet Channel
PCPICH	Primary Common Pilot Channel
PCH	Paging Channel
PDSCH	Physical Downlink Shared Channel
PRACH	Physical Random Access Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RNC	Radio Network Controller
RNS	Radio Network Subsystem
SCCP	Signalling Connection Control Part
SCH	Synchronisation Channel
SCCPCH	Secondary Common Control Physical Channel
SCPICH	Secondary Common Pilot Channel
SRNC	Serving Radio Network Controller
SSCF-UNI	Service Specific Co-ordination Function – User Network Interface
SSCOP	Service Specific Connection Oriented Protocol
TDD	Time Division Duplex
UE	User Equipment
UC-ID	UTRAN Cell Identifier
UMTS	Universal Mobile Telecommunication System
USCH	Up-link Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

4.4.3 Iub RACH data stream

The Iub interface provides the means for transport of uplink RACH transport frames between Node B and RNC.

4.4.4 Iub FDD CPCH data stream

.The Iub interface provides the means for transport of uplink CPCH [FDD] transport frames between Node B and RNC.

4.4.~~.4~~5 Iub FACH data stream

The Iub interface provides the means for transport of downlink FACH transport frames between RNC and Node B~~.~~

4.4.~~5~~6 Iub DSCH data stream

The Iub interface provides the means for transport of downlink shared channel, DSCH, data frames between RNC and Node B.

4.4.~~6~~7 Iub TDD USCH data stream

The Iub interface provides the means for transport of uplink shared channel, USCH, data frames between Node B and RNC.

4.4.~~7~~8 Iub PCH data stream

The Iub interface provides the means for transport of PCH transport frames between RNC and Node B.

4.5 Iub Interface Characteristics

4.5.1 Mapping of Iub data streams

DCH	One Iub DCH data stream is carried on one transport bearer except in the case of coordinated DCHs in which case a set of coordinated DCHs are multiplexed onto the same transport bearer.
FDD CPCH	**One Iub CPCH data stream is carried on one transport bearer. For each CPCH in a cell, an Iub CPCH data stream must be established over the Iub interface.**
RACH	One Iub RACH data stream is carried on one transport bearer. For each RACH in a cell, an Iub RACH data stream must be established over the Iub interface.
FACH	One Iub FACH data stream is carried on one transport bearer. For each FACH in a cell, an Iub FACH data stream must be established over the Iub Interface.
DSCH	One Iub DSCH data stream is carried on one transport bearer.
TDD USCH	One Iub TDD USCH data stream is carried on one transport bearer.
PCH	One Iub PCH data stream is carried on one transport bearer.

5.2.5 Traffic management of Common Channels

The common channels need to be controlled from the RNC. This is typically the control of the ~~RACH~~ RACH, CPCH [FDD], DSCH and FACH channels, the information that is broadcast on the Broadcast control channel, and the control and request for sending information on the paging channels.

6 Node B logical Model over Iub

6.1 Overview

The model described in Figure 2 shows the Node B as seen from the controlling RNC. The model includes:

- the logical resources provided by Node B to UTRAN (via its Controlling RNC) – depicted as "cells" which include the physical channel resources DPCH, PDSCH, and PUSCH.
- the dedicated channels which have been established on Node B.
- the common transport channels that Node B provides to the RNC.

The procedures for controlling the connections between radio links and Iub DCH data ports are sent from the RNC to the Node B via the Communication Control Ports.

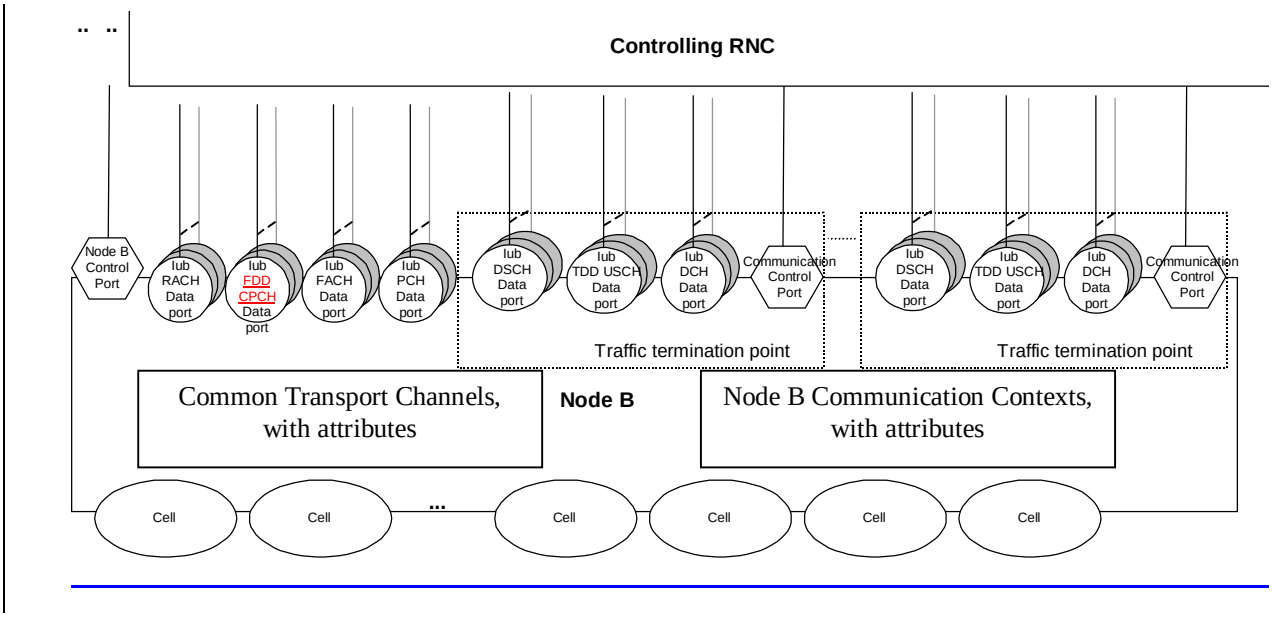


Figure 2: Logical Model of Node B

6.2.2 Common Transport Channels

Common Transport Channels are defined in [2]. A Common Transport Channel is configured in the Node B, on request of the CRNC.

The BCH is carried directly on the Node B control port using NBAP procedures. This Common Channel will not be mapped to an individual data port.

The RACH has an associated Iub RACH Data Port and the FACH has an associated Iub FACH Data Port.

The CPCH [FDD] has an associated Iub CPCH Data Port.

The Iub DSCH data port is associated to one DSCH and to one NodeB Communication Context.

[TDD - the Iub USCH data port is associated to one USCH and to one NodeB Communication Context.]

The attributes of a Common transport channel shall include (not exhaustive):

- Type (~~RACH~~RACH, CPCH [FDD], FACH, DSCH, USCH, PCH).
- Associated Iub RACH Data Port for a RACH, Iub CPCH Data Port for a CPCH [FDD], Iub FACH Data Port for a FACH, Iub PCH Data Port for the PCH.
- List of associated Iub FDD DSCH Data ports for the DSCH (FDD only).
- Physical parameters.

6.2.3.5 Iub RACH Data Port

An Iub RACH Data Port represents a user plane bearer carrying one Iub RACH Data Stream between the Node B and the RNC. There is one RACH Data Port for each RACH channel of Node B.

6.2.3.6 Iub FDD CPCH Data Port

An Iub CPCH Data Port represents a user plane bearer carrying one Iub CPCH Data Stream between the Node B and the RNC. There is one CPCH Data Port for each CPCH [FDD] channel of Node B..

6.2.3.~~6~~7 Iub FACH Data Port

An Iub FACH Data Port represents a user plane bearer carrying one Iub FACH Data Stream between the Node B and the RNC. There is one CCH Data Port for each FACH channel of Node B.

6.2.3.~~7~~8 Iub DSCH Data Port

An Iub DSCH Data Port represents a user plane bearer carrying one Iub DSCH Data Stream between the Node B and the RNC. For each DSCH, that is used by an individual UE, there is one Iub DSCH Data Port per NodeB exclusively assigned to the communication context of that UE. In FDD each DSCH is associated with a downlink DPCCH.

6.2.3.~~8~~9 Iub TDD USCH Data Port

An Iub TDD USCH Data Port represents a user plane bearer carrying one Iub TDD USCH Data Stream between the Node B and the RNC. For each USCH, that is used by an individual UE, there is one Iub TDD USCH Data Port with data exclusively assigned to the NodeB communication context of that UE.

6.2.3.~~9~~10 Iub PCH Data Port

An Iub PCH Data Port represents an Iub PCH Data Stream between the Node B and the RNC.

6.2.4 Radio Network Logical resources

6.2.4.1 Common Resources

The CRNC manages logical radio network resources in Node B and needs to use both common and dedicated resources in a Node B to run a radio network. Therefore, it is the CRNC that orders the Node B to configure, reconfigure and delete these resources. However, if the equipment in Node B cannot fully support the configuration that the CRNC requests, or the equipment breaks down, then Node B can indicate the availability of the common resources (i.e. both downgrade and upgrade).

The common resources are the Cell, the common physical channels and the common transport channels.

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Figure 3 shows the common resources that a CRNC is managing in a Node B to be able to run a radio network.

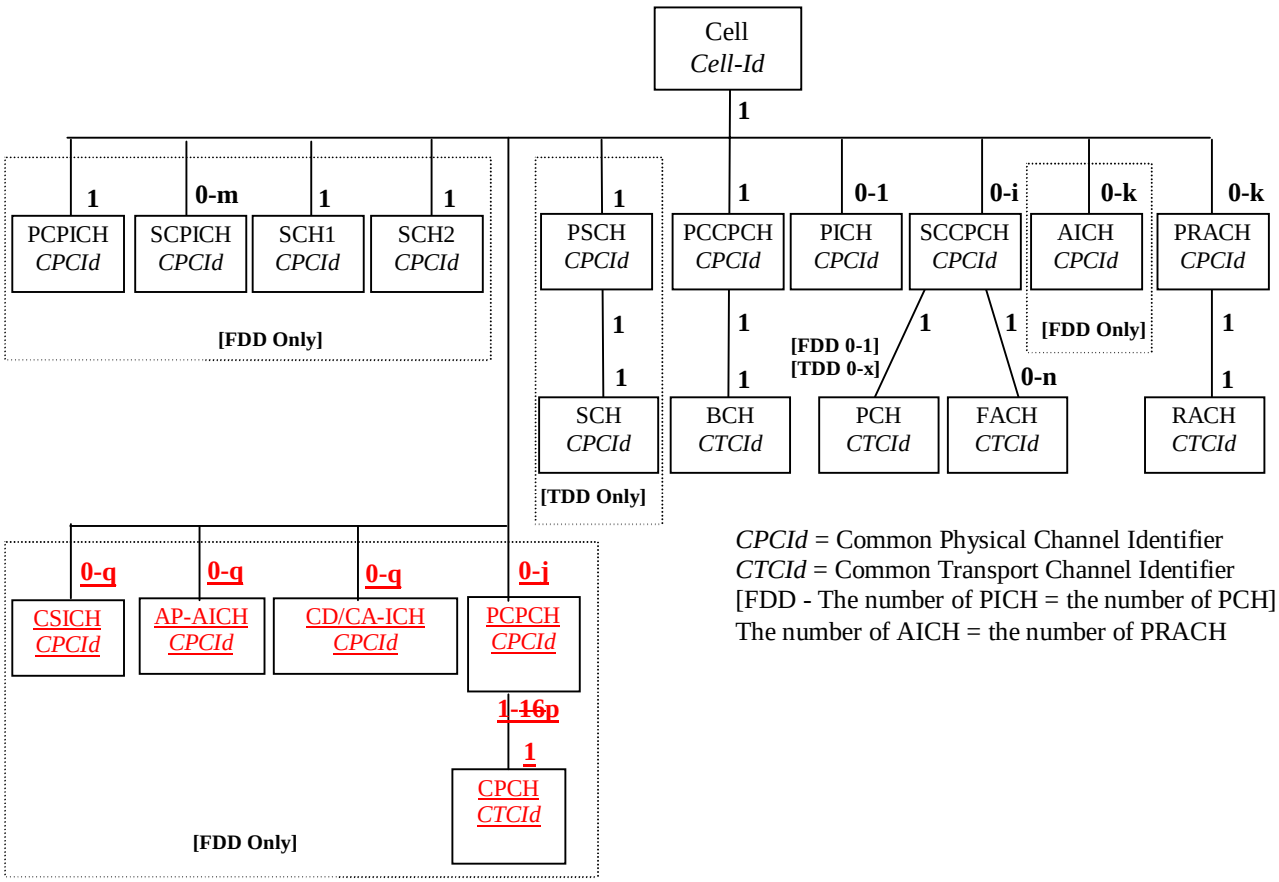

Figure 3: Common resources in a Node B that are managed by the CRNC

7 Iub Interface Protocol Structure

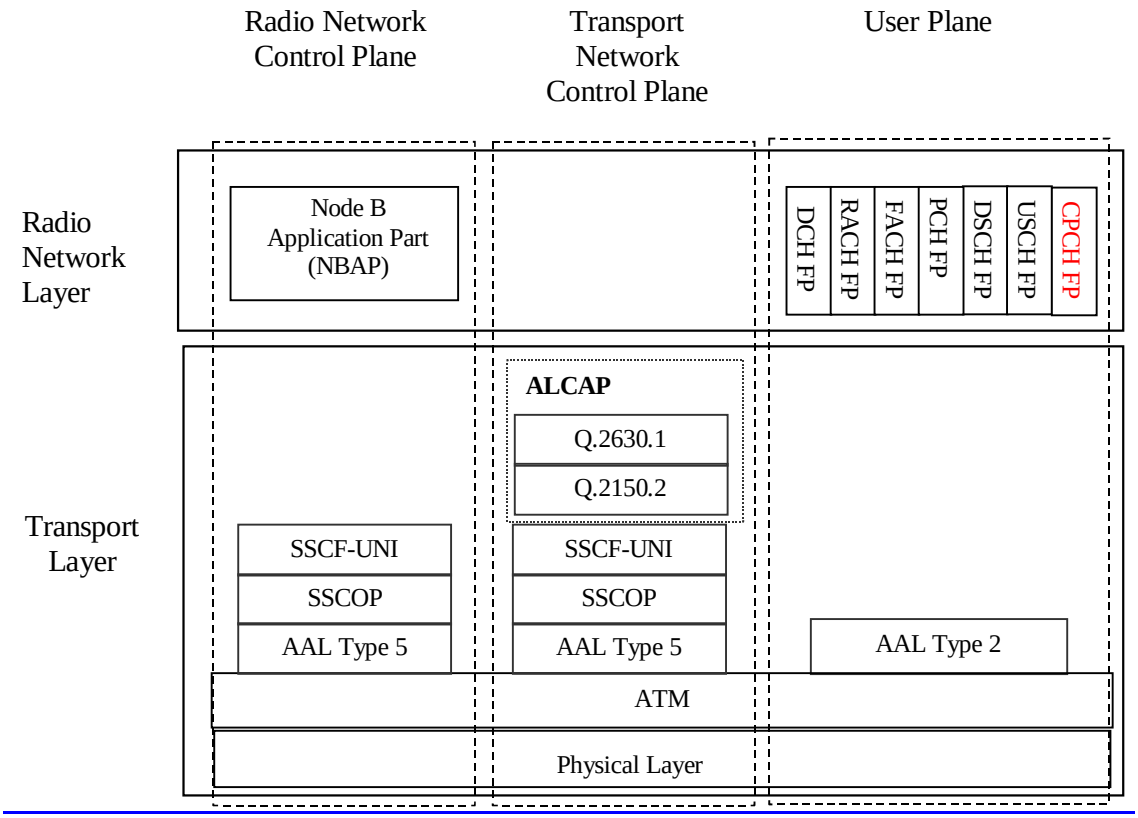

Figure 7: Iub Interface Protocol Structure.

The Iub interface protocol architecture consists of two functional layers:

1. Radio Network Layer, defines procedures related to the operation of Node B. The radio network layer consists of a radio network control plane and a radio network user plane.

2. Transport Layer, defines procedures for establishing physical connections between Node B and the RNC.

There shall be one dedicated AAL2 connection for each RACH, ~~and~~ one for each FACH transport channel, and one for each CPCH [FDD].