Agenda Item: 7

Source: TTC/ARIB

Title: TTC/ARIB Iur draft specification

_____

Attached is the Iur specification document studied in TTC/ARIB joint meeting in Japan.

Note: Revision marks indicate the difference between the ETSI specification document and TTC/ARIB's. But ANNEX only exists in the document of TTC/ARIB.

Description of I$_{ur}$ Interface

Telecommunication Technology Committee(TTC)
Association of Radio Industries and Businesses(ARIB)

This document is agreed by
TTC/IMT-2000 SWG-6-5-1 ARIB/IMT-2000 SWG6 GSM-G Joint Meeting.

Contents

1.   Intellectual Property Rights

IPRs essential or potentially essential to the present deliverable may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members, free of charge**. This can be found in the latest version of the ETSI Technical Report: ETR 314: "Intellectual Property Rights (IPRs); Essential or potentially Essential, IPRs notified to ETSI in respect of ETSI standards". The most recent update of ETR 314, is available on the ETSI web server or on request from the Secretariat.
Pursuant to the ETSI Interim IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in the ETR 314, which are, or may be, or may become, essential to the present document.

2.   Foreword

This Technical Report (TR) has been produced by the Special Mobile Group (SMG) of the European Telecommunications Standards Institute (ETSI).
This TR describes the UTRAN RNSC-RNSC (Iur) interface. The contents of this TR is subject to continuing work within TC-SMG and may change following formal TC-SMG approval..

3.   Scope

This document shall provide a description of the UTRAN RNSC-RNSC (Iur) interface as agreed within the TTC SWG 6-5-1 / ARIB SWG 6 ETSI SMG2 UMTS ARC expert group.

4.   References

[Editor´s note: Text copied from [1]*.]*

References may be made to:
   a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply;
   b) all versions up to and including the identified version (identified by "up to and including" before the version identity);
   c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
   d) publications without mention of a specific version, in which case the latest version applies.
A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] [1]   ZZ.01, UTRAN Architecture Description
[1] [2]   UMTS 23.10, UMTS Access Stratum Services and Function
[1] [3]   Tdoc SMG2 UMTS-L23 110/98, Vocabulary used in the UMTS L2&L3 Expert Group
[1] [4]   UMTS ZZ.13, Description of I_{ub} Interface
[1] [5]   UMTS ZZ.11, Description of I_u Interface
[1]   [6]   RRC Procedures for Handover Measurement Reporting and Handover Execution
[1]   [7]   Manifestations of Handover and Streamlining
[1]   [8]   ITU-T Draft TRQ.2015.1.01, Signalling Requirements for AAL Type 2 Capability Set 1 (CS1), November 1998
[1]   [9]   ITU-T Draft new ITU-T Recommendation Q.aal2 AAL Type 2 Signalling protocol (Capability Set 1), November 1998
[1]   [10]   ZZ.02, UTRAN Functions, Examples on Signalling Procedures
[1]

5. Definitions, Abbreviations and Symbols

5.1 Definitions

[Editor´s note: For list of definitions, see [1]. Only definitions specific to this document are listed below, in order to avoid inconsistency between documents. When list is stable, definitions relevant for this document should be extracted.]

5.2 Abbreviations

[Editor´s note: For list of abbreviations, see [1]. Only abbreviations specific to this document are listed below, in order to avoid inconsistency between documents. When list is stable, abbreviations relevant for this document should be extracted.]

5.3 Symbols

For the purposes of this specification the following symbols apply:

5.4 Notation

[Editor´s note: This text has been copied from [1].]

Parts of the document apply only to one mode, FDD or TDD. Any such area will be tagged by [FDD — xxxxxxxxx], or [TDD — yyyyyyyyyyy], respectively. The tag applies to the text until the closing bracket.

6. General Aspects

6.1 UTRAN Architecture

[Editor´s note: This chapter should describe the UTRAN architecture from I_{ur} point of view. The RNS roles SRNS and DRNS are described to facilitate the description of functional split in chapter 0.
In order to avoid inconsistency between documents, reference to [1], chapter 8.1, has been made. When finally approved, applicable parts should be included below.]

See [1], chapter 8.1.

6.2 I_{ur} -Interface Capabilities

[Editor´s note: The structure of the chapter has been slightly changed to conform with the structure of the correpsonding chapter in the Iub Interface Description [4]. 'Radio application related signalling' has been added to the list below as an own category of information transferred over the Iur interface. The structural change is an editor's proposal.]

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

1. Radio application related signalling

The I_{ur} interface provides capability to support radio interface mobility between RNSCs, of UEs having a connection with UTRAN. This capability includes the support of handover and radio resource handling between RNSCs.

2. Iub/Iur DCH data streams

For a description of the Iub/Iur DCH data stream see the Description of Iub Interface [4].

3.   Iur RACH data streams

The contents of the RACH data streams is FFS.

4.   Iur FACH data streams

The contents of the FACH data streams is FFS.

5.   Iur DSCH data streams

The contents of the DSCH data streams is FFS.

The FAUSCH is FFS.

6.3   I$_{ur}$ -Interface Specification Objectives

[Editor´s note: The text below is the editor's proposal.]

The I$_{ur}$ interface specifications shall facilitate the following:
-    Inter-connection of RNSCs from different manufacturers;
-    Support of continuation between RNSCs of the UTRAN services offered via the Iu interface.
-    Separation of I$_{ur}$ interface Radio Network functionality and Transport Network functionality to facilitate introduction of future technology.

6.4   I$_{ur}$ -Interface Characteristics

[Editor´s note: This chapter should shortly describe the I$_{ur}$-Interface Characteristics.]

7.   I$_{ur}$ -Interface Protocol Functions

[Editor´s note: This chapter should describe the functions of the Iur interface protocols.]

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

1.   Transport Network Management

2.   Traffic management of Common Channels

-    URA Paging

3.   Traffic Management of Dedicated Channels

-    Radio Link Setup/Addition/-Deletion

-    Measurement Reporting

-    Dedicated Transport Channel Management

1.   Traffic Management of Downlink Shared Channels

For information about the I$_{ur}$ Interface functional division, see [1].

8. I$_{ur}$ -Interface Protocol Structure

[Editor´s note: This chapter should provide an introduction to the structure of the Iur interface protocols.]

RADIO NETWORK CONTROL	TRANSPORT NETWORK CONTROL PLANE		USER PLANE
RNSAP	BISUP *1	AAL2 L3	
SCCP		BEARER CONVERTER	
	MTP3b		
	SSCF-NNI		
	SSCOP		
	AAL5		AAL 2/5 *2
	ATM		
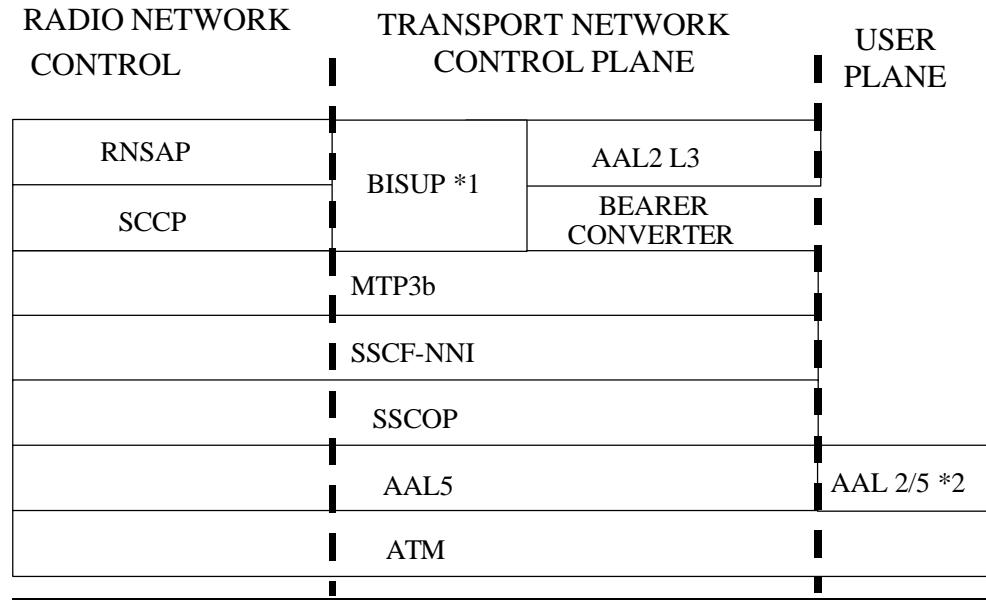
[Note *1]: It is FFS which signaling protocol sets up AAL5 connection.
[Note *2]: It is FFS whether AAL5 is applied to User-plane.

Figure 1 :Iur Interface protocol Structure

9. I$_{ur}$ -Interface Protocol Layer Specification for Radio Network Control Plane

9.1 Introduction

[Editor´s note: This chapter should give and introduction to the protocol layer specification for Radio Network Control Plane]

9.2 Radio Network Layer

9.2.1 General

[Editor´s note: This chapter should describe requirements on RNSAP forward/backward compatibility, error handling principles, message coding principles etc.]

9.2.2 RNSAP Procedures

[Editor´s note: This chapter should list RNSAP procedures, including a text describing the procedure (triggering events, successful and unsuccessful outcome. Message sequences should be provided (using Word pictures for simple editing).
]

9.2.2.1 Radio Link ~~Addition~~Setup

When the serving RNC makes an algorithmic decision to add a cell from an other RNC (a drift RNC) which is not activated yet to the active set of a specific RRC connection, the RNSAP message RL SETUP REQUEST is sent to the corresponding drift RNC to request setting of radio links. This message contains essentially RL identifiers, the target cell identifier, transport format sets (TFSs) for each active DCH and desired radio resources for each radio link. The serving RNC also indicates when there are several radio links to setup in drift RNC, either that

1) the new radio link may be combined with first radio link for this RRC connection, or
2) the new radio link must not be combined with first radio link for this RRC connection.
3) Or must.

Additional information is FFS.

Since the drift RNC is responsible for its own radio resources the load control (Admission control) must be performed due to the request, In successful case (the load is not too high) the drift RNC allocates requested type of spreading codes for each RL and assigns a binding identifier and a transmission address (e.g. ATM Address) for each DCH. This information is sent to the Serving RNC in the message RL SETUP RESPONSE, The drift RNC also provides the SRNC with the:

  Cell identity of all neighboring cells to the cell where the radio link is added.
  Information related to neighboring cells necessary for the SRNC (the exact parameters are FFS), and the Signaling Address of any RNC controlling neighboring cells not controlled by the drift RNC.

Mechanisms to reduce the amount of information to be transported are FFS.

The serving RNC is responsible for setting up the I_{ur} transport bearers for each DCH. The transport bearers are setup towards the address indicated in the RL SETUP RESPONSE message from the drift RNC. Also the setup messages should include the corresponding binding identifier, which will be used by the drift RNC to map each transport bearer to the corresponding DCH.

In case the serving RNC has indicated that the new radio link may be combined with first radio link for this RRC connection, the drift RNC may instead of assigning binding identifiers and transport addresses in the RL SETUP RESPONSE message indicate that the first I_{ur} transport bearers can be used also for the new radio link. In such a case the response includes the current binding whose I_{ur} transport bearers will be used for data transmission. If old transport bearers are used, then the serving RNC does not perform additional transport bearer setups. In unsuccessful case a RNSAP message RL SETUP FAILURE is returned, indicating among other things the reason for failure.

An example of a corresponding message flow at Iur interface is presented in Figure 9-1.

SRNC   DRNC

RADIO LINK SETUP

RADIO LINK SETUP RESPONSE

Necessary Iur transport bearer setup for DCHs
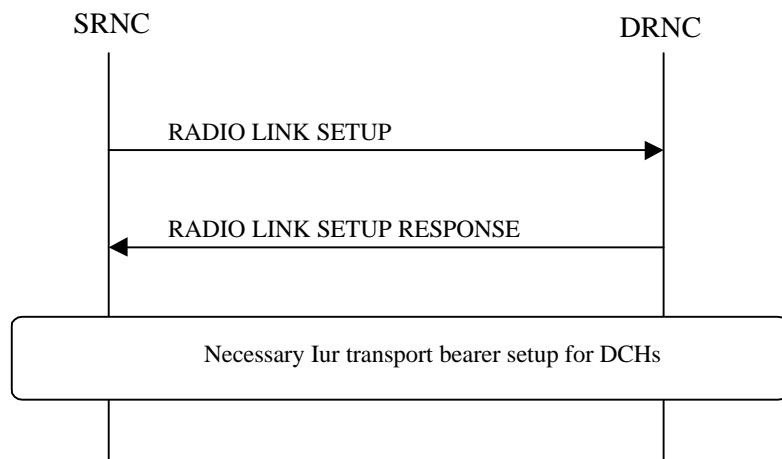
(Successful Case)

(Unsuccessful Case)
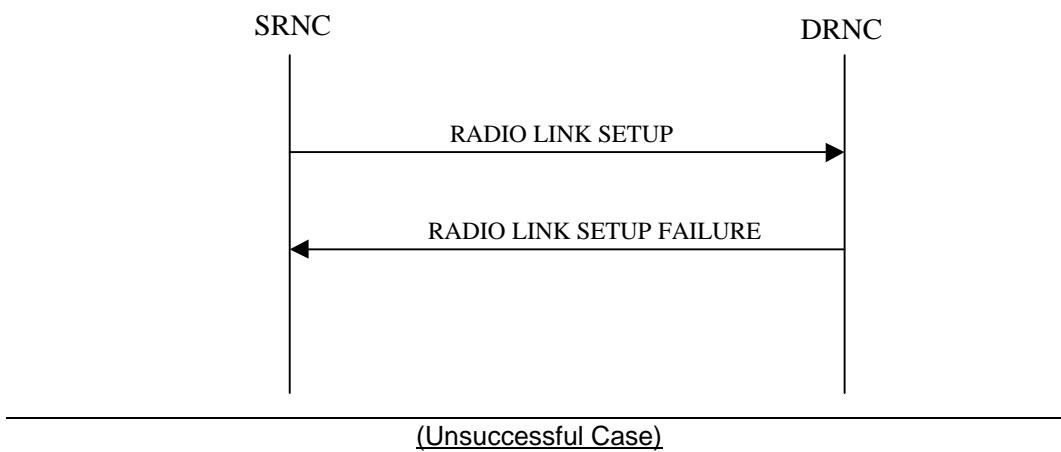
Figure 9-1. An example RNSAP message flow at I_{ur} interface for RL setup.

9.2.2.2 Radio Link Addition

When the serving RNSC makes an algorithmic decision to add a cell from an other RNSC (a drift RNSC) to the active set of a specific RRC connection, the RNSAP message RL ADDITION REQUEST is sent to the corresponding drift RNSC to request addition of a radio link. This message contains essentially RL identifier, the target cell identifier, transport format sets (TFSs) for each active DCH and desired radio resources for each radio link. The serving RNSC also indicates either that

1) the new radio link may be combined with already existing radio links for this RRC connection, or
2) the new radio link must not be combined with already existing radio links for this RRC connection.

Additional information is ffs.

Since the drift RNSC is responsible for its own radio resources the load control (Admission control) must be performed due to the request. In successful case (the load is not too high) the drift RNSC allocates requested type of spreading codes for each RL and assigns a binding identifier and a transmission address (e.g. ATM Address) for each DCH. The time at which the DRNSC allocates the spreading code is FFS. This information is sent to the Serving RNSC in the message RL ADDITION PROCEEDINGRESPONSE. The drift RNSC also provides the SRNC with the:

- Cell Identity of all neighboring cells to the cell where the radio link is added,
- information related to neighboring cells necessary for the SRNC (the exact parameters are FFS), and
- the Signaling Address of any RNC controlling neighboring cells not controlled by the drift RNC

Mechanisms to reduce the amount of information to be transported is FFS.

The serving RNSC is responsible for setting up the I_{ur} transport bearers for each DCH. The transport bearers are setup towards the address indicated in the RL ADDITION PROCEEDINGRESPONSE message from the drift RNSC. Also the setup messages should include the corresponding binding identifier, which will be used by the drift RNSC to map each transport bearer to the corresponding DCH.

In case the serving RNSC has indicated that the new radio link may be combined with already existing radio links for this RRC connection, the drift RNSC may instead of assigning binding identifiers and transport addresses in the RL ADDITION PROCEEDINGRESPONSE message indicate that the already existing I_{ur} transport bearers can be used also for the new radio link. In such a case the response includes the radio link ID whose I_{ur} transport bearers will be used for data transmission. If old transport bearers are used, then the serving RNSC does not perform additional transport bearer setups.

[Editor´s note: The need for a RL ADDITION COMPLETE message from the drift RNS to the serving RNS at detection of layer 1 synchronisation between the cell and the UE in order to indicate completion of the RL Addition procedure is FFS.]

An example of a corresponding message flow at I_{ur} interface is presented in 9-2.

SRNC   DRNC

RADIO LINK ADDITION

RADIO LINK ADDITION RESPONSE

Necessary Iur transport bearer setup for DCHs

(Successful case)

SRNC   DRNC

RADIO LINK ADDITION

RADIO LINK ADDITION FAILURE
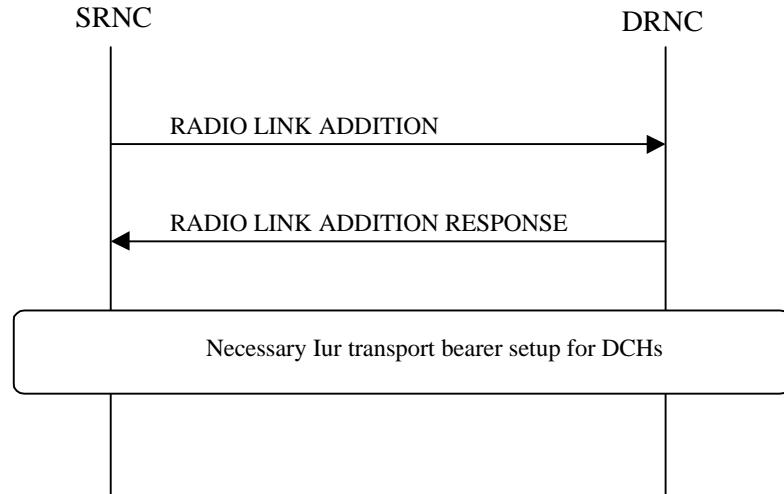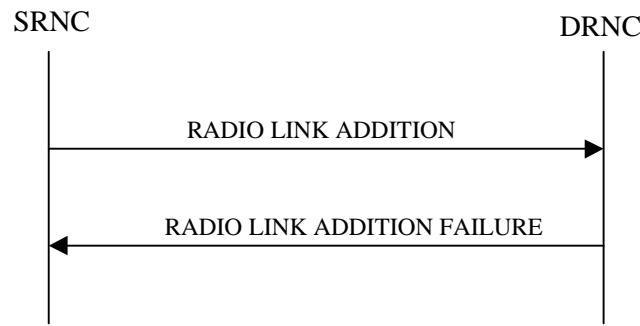
(Unsuccessful case)

Figure 9-2. An example RNSAP message flow at I$_{ur}$ interface for RL addition.

9.2.2.~~2~~3   Radio Link Deletion

When the serving RN~~S~~C makes an algorithmic decision to delete a cell from another RN~~S~~C (drift RN~~S~~C) from the active set of a specific RRC connection, the message RL DELETION REQUEST to request deletion of radio link is sent to the corresponding drift RN~~S~~C. The message contains essentially the RL identifier to be deleted. Upon reception of the message, the Drift RN~~S~~C should immediately delete the radio link and all related allocations within the drift RN~~S~~C and acknowledge the deletion to the Serving RN~~S~~C by the message RL DELETION ~~CONFIRM~~RESPONSE.

The serving RN~~S~~C is responsible to release the corresponding I$_{ur}$ transport bearers, if they are not used by other radio links.

An example of a corresponding message flow at I$_{ur}$ interface is presented in Figure 9-3-3.
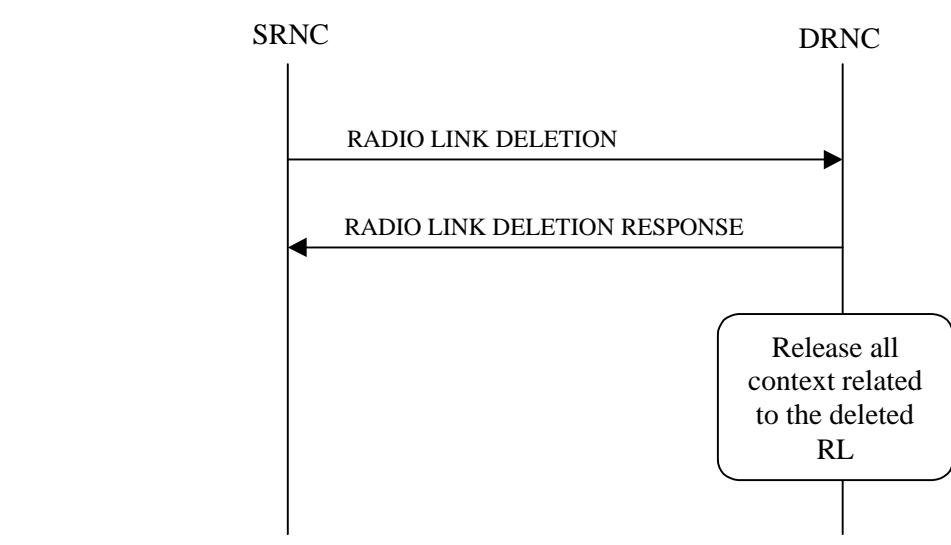
Figure 9-3. An example RNSAP message flow at I$_{ur}$ interface for RL deletion.

9.2.2.~~3~~4   Radio Link Reconfiguration

RL Reconfiguration procedure is used to reconfigure radio links related to one UE-UTRAN connection within one DRNS~~S~~C. The procedure can be used to add, delete or modify a DCH and also physical channel reconfiguration.

The RL Reconfiguration procedure is initiated by the serving RN~~S~~C by sending the RNSAP message RL RECONFIGURATION ~~REQUEST~~PREPARE to the DRN~~S~~C. The message is sent using the relevant signalling connection.

The message includes essentially the desired radio link parameters for the radio links after completion of this procedure. The following parameters can be specified (the list is to be considered as an incomplete example):

Possible parameters related to all radio links after completion of the procedure:
- ~~DL spreading code type(s)~~
- ~~New UL spreading type~~
- ~~New TFCS~~
- ~~IDs of the DCHs to be added / deleted or modified~~
- ~~Priority of the added/modified DCH~~
- ~~TFS of the added/modified DCH~~
   - Transport CH Parameters   Transport CH ID
   -                         TFS
   -                         TFCS
   - Physical CH Parameters Frequency
   -                         DL Radio Resources
   -                         UL Radio Resources

If the proposed modifications are allowed by the DRN~~S~~C resource management algorithms, and the DRN~~S~~C has successfully reserved the required resources it responds to the SRN~~S~~C with RL RECONFIGURATION ~~PROCEEDING~~READY message. In unsuccessful case a RNSAP message RL RECONFIGURATION FAILURE is returned, indicating among other things the reason for failure.

The RL RECONFIGURATION ~~PROCEEDING~~READY message contains the downlink spreading codes for each radio link (if changed), a Binding Identifier (BID) and transmission address (e.g. ATM Address) for each new Iur transport bearer (if any).

SRN~~S~~C informs the UE about the changes in radio links (RL) with the relevant RRC message(s) and sends the RL RECONFIGURATION COMM~~AND~~IT message to DRN~~S~~Cs.

SRNC is responsible for releasing unnecessary Iur transport bearers (if any).

~~Note. A mechanism for synchronising the switch from the old to the new configuration in the UE and the DRNS in needed and FFS.~~

SRNC   DRNC

RADIO LINK RECONFIGURATION PREPARE

RADIO LINK RECONFIGURATION READY

┌─────────────┐
│ All RLs   │
│ addressed │
└─────────────┘

┌─────────────┐
│ UE informed │
│   of RL   │
│modifications│
└─────────────┘

RADIO LINK RECONFIGURATION COMMIT

(Successful case)

SRNC   DRNC1   DRNC2

RADIO LINK RECONFIGURATION PREPARE

RADIO LINK RECONFIGURATION READY

┌──────────────────┐
│ All Radio Links │
│   addressed   │
└──────────────────┘

RADIO LINK RECONFIGURATION PREPARE

RADIO LINK RECONFIGURATION FAILURE

RADIO LINK RECONFIGURATION CANCEL

(Unsuccessful case)

Figure 9-4. An example RNSAP message flow at I$_{ur}$ interface for RL Reconfiguration

9.2.2.5   DL POWER CONTROL

DL POWER CONTROL procedure is initiated by SRNC to make the transmitting power from base station minimized. It is also controlled that base stations have the same and minimized transmission power when one UE communicates with them simultaneously.

```
        SRNC                                          DRNC

          |                                             |
          |              POWER CONTROL                  |
          |-------------------------------------------->|
          |                                             |
          |                                             |
```
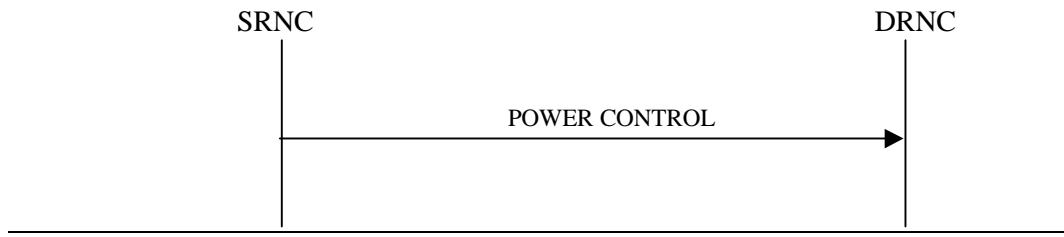
<u>Figure 9-5. POWER CONTROL Procedure.</u>

9.2.2.6 <u>OUTER LOOP POWER CONTROL</u>

<u>This procedure is used to provide the DRNC with a new quality target value (Eb/I0) for the UL quality.</u>
~~Outer loop power control procedure is initiated by SRNC and is executed when the communication quality at the UE side is far from the standard quality. After execution of this procedure, the communication quality at the UE side will be equal to the standard quality~~

```
        SRNC                                          DRNC

          |                                             |
          |          OUTER LOOP POWER CONTROL           |
          |-------------------------------------------->|
          |                                             |
          |                                             |
```
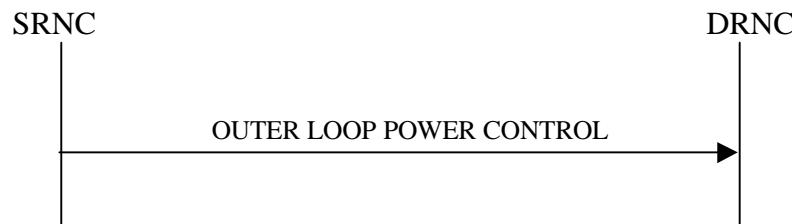
<u>Figure 9-6. Outer loop Control Procedure</u>

9.2.2.<u>7</u><s>5</s>   Down Link Code Reconfiguration <u>Trigger</u>

~~DL Code Reconfiguration is used to change the DL spreading codes of radio link(s) related to one UE-UTRAN connection. The spreading factor can not be changed and this procedure is used only to defragment the DL spreading code pool.~~

<u>The purpose of this procedure is to balance the DL transmission powers of Radio Links used for the related RRC connection within the Drift RNC. DL POWER CONTROL procedure is initiated by SRNC by sending a *DL POWER CONTROL* RNSAP message, which contains the desired power range for the Radio Links within the node Bs under the drift RNC.</u>

<s>Down Link</s> Code reconfiguration <u>trigger</u> procedure is initiated by the DRNS<u>C</u>, when it detects unwanted fragmentation in the DL spreading code pool(s). ~~DRNC sends DL CODE RECONFIGURATION REQUEST to the SRNC via the appropriate dedicated connection. The message includes the radio link ID(s) and proposal for the new DL spreading codes for them.~~

~~SRNC decides appropriate execution time for the change. SRNC sends relevant RRC message(s) to the UE and RNSAP DL CODE RECONFIGURATION COMMAND to the DRNS.~~

~~DRNS makes the switch to the new codes and releases the old DL spreading codes.~~

```
        SRNC                                          DRNC

          |                                             |
          |     DL CODE RECONFIGURATION  REQUEST        |
          |<--------------------------------------------|
          |                                             |
          |                                             |
```

Figure 9-<u>7</u>. An example RNSAP message flow at I$_{ur}$ interface for DL Code Reconfiguration <u>trigger</u>

9.2.2.~~5~~8 ~~Cell/URA Update Indication~~RNC RELOCATION

[Editor's note: The Cell-and URA Update procedures listed in YY.02 [10] have not yet been specified by the SMG2-UMTS ARC EG. The usage of this procedure needs to be further studied together with the Cell- and URA Update procedures, and also with respect to common channel handling over Iur. The name of the procedure is only a working name proposed by the editor.]

UTRAN Cell update is an RRC procedure, which can be executed while in Cell Connected State (RACH/FACH ~~common channel~~ substate) [6]. ~~This functionality is required for the forward type of operation of scenario 2b (Inter RNS/Intra UTRAN) as defined in [7].~~
UTRAN Registration Area update is an RRC procedure, which can be executed while in URA Connected State (RACH/PCH ~~common channel~~ substate) [6]. ~~This functionality is required for the forward type of operation of scenario 2b (Inter RNS/Intra UTRAN) as defined in [7].~~

There may exist two ways of procedure to reallocate RNC.

< 1. Backward method >
Upon reception of RRC message ~~UTRAN~~ Cell Update REQUEST or UTRAN Registration Area Update REQUEST from a UE the drift RN~~S~~C inserts necessary information received in the RRC message to the RNC Relocation REQUEST ~~Cell/URA Update Indication~~ message and sends the message to the serving RN~~S~~C and Perform the update with an SRNC relocation.

< 2. Forward method >
Upon reception of RRC message Cell Update REQUEST or UTRAN Registration Area Update REQUEST from a UE the drift RNC inserts necessary information received in the RRC message to the RRC Context Retrieval message and sends the message to the serving RNC and receive the RRC Context Retrieval Response message. After that the update with an SRNC relocation will be performed.
~~At reception of the Cell/URA Update Indication message, there are two options:~~

~~1.   Perform the update without SRNS Relocation (How this is done is FFS.).~~
~~2.   Perform the update with an SRNS Relocation (see [10] for a description of the SRNS Relocation procedure)~~

~~Which option to use is decided by the SRNS.~~
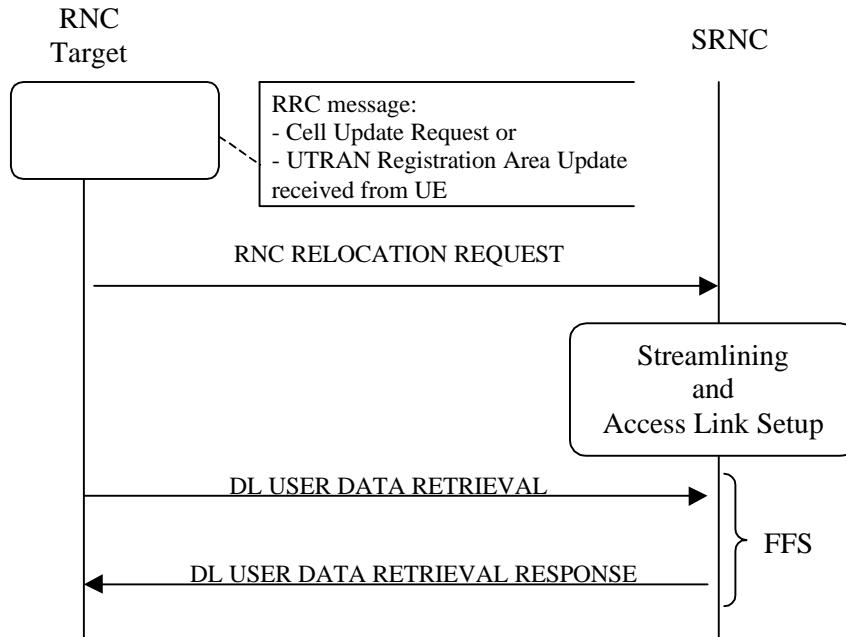
Figure 9-~~8-1~~5. An example RNSAP message flow at I~~ur~~ interface for RNC Relocation(Backward method)

RNC
Target

SRNC

RRC message:
- Cell Update Request or
- UTRAN Registration Area Update
received from UE

RRC CONTEXT RETRIEVAL

RRC CONTEXT RETRIEVAL RESPONSE

Streamlining
and
Access Link Setup
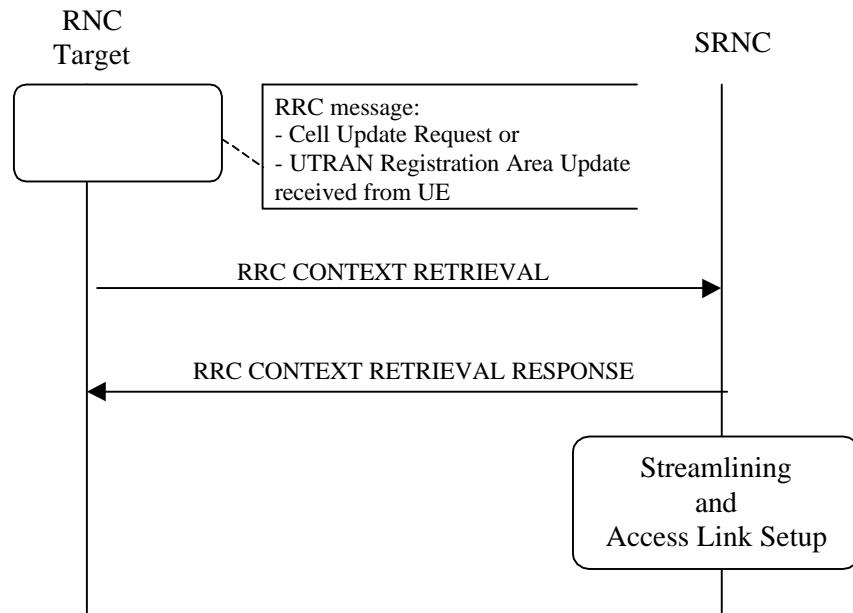
Figure 9-8-2. An example RNSAP message flow at I$_{ur}$ interface for RNC Relocation(Forward method)

9.2.3 RNSAP Messages

This chapter defines the structure of the messages required for the RNSAP protocols.

For each message there is, a table listing the signaling elements in their order of oappearance in the transmitted message.

All the RNSAP messages are listed in the following table :
[Note : All of these message name are tentative, these can be changed after complete discussion]

Message name	Reference
RADIO LINK SETUP	9.2.3.1.1
RADIO LINK SETUP RESPONSE	9.2.3.1.2
RADIO LINK SETUP FAILURE	9.2.3.1.3
RADIO LINK ADDITION	9.2.3.1.4
RADIO LINK ADDITION RESPONSE	9.2.3.1.5
RADIO LINK ADDITION FAILURE	9.2.3.1.6
RADIO LINK DELETION	9.2.3.1.7
RADIO LINK DELETION RESPONSE	9.2.3.1.8
RADIO LINK RECONFIGURATION PREPARE	9.2.3.1.9
RADIO LINK RECONFIGURATION READY	9.2.3.1.10
RADIO LINK RECONFIGURATION COMMIT	9.2.3.1.11
RADIO LINK RECONFIGURATION FAILURE	9.2.3.1.12
RADIO LINK RECONFIGURATION CANCEL	9.2.3.1.13
POWER CONTROL	9.2.3.1.14
OUTER LOOP POWER CONTROL	9.2.3.1.15
DL USER DATA RETRIEVAL	9.2.3.1.16
DL USER DATA RETRIEVAL RESPONSE	9.2.3.1.17
RNC RELOCATION REQUEST	9.2.3.1.18
RRC CONTEXT RETRIEVAL	9.2.3.1.19
RRC CONTEXT RETRIEVAL RESPONSE	9.2.3.1.20
DL CODE RECONFIGURATION REQUEST	9.2.3.1.21
RESET (FFS)	9.2.3.1.22
RESET ACKNOWLEDGE (FFS)	9.2.3.1.23
CONFUSION (FFS)	9.2.3.1.24

9.2.3.1   Message Contents

[Note: INFORMATION ELEMENT for each message shall be described in detail with each TYPE M/O.]

9.2.3.1.1   RADIO LINK SETUP

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
No. of DCHs			M	
DCH ID (# 1)			M	
TFS (for DCH ID# 1)			M	
DCH ID (# n)			M	

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INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
TFS (for DCH ID# n)		-	M	
TFCS (for DCHs)			M	
Radio Frequency			M	
UL scrambling code			M	
UL spreading code type			M	
No. of UL spreading code			M	
UL spreading code id(s)			M	
DL spreading code type			M	
No. of DL spreading code			M	
No. of Radio Links			M	
Radio Link ID			M	
Cell ID			M	
Phase Difference			M	
Radio Link ID			O	
Cell ID			O	
Soft Combination Indication			O	
Phase Difference			O	
Slot offset			M	
Frame offset			M	
Initial DL Power			M	
Target UL Eb/Io			M	

9.2.3.1.2 RADIO LINK SETUP RESPONSE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC -SRNC	M	
Length			M	
Message Compatibility Information			M	
No. of DCHs			M	
DCH ID (# 1)			M	
ATM Binding ID			M	
ATM Address			O	
DCH ID (# n)			M	
ATM Binding ID			M	
ATM Address			O	
UL Interference Level			M	
No. of Radio Links			M	
Radio Link ID			M	
Neighbor Cell Information			M	
No. of DL spreading code			M	
DL spreading code id #1			M	
DL spreading code id #m			M	
Radio Link ID			O	
Neighbor Cell Information			O	
No. of DL spreading code			O	
DL spreading code id #1			O	
DL spreading code id #m			O	

9.2.3.1.3 RADIO LINK SETUP FAILURE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
Cause			M	

9.2.3.1.4 RADIO LINK ADDITION

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
Radio Frequency			O	
No. of Radio Links			M	
Radio Link ID			M	
Cell ID			M	
Soft Combination Indication			M	
Phase Difference			M	
Radio Link ID			O	
Cell ID			O	
Soft Combination Indication			O	
Phase Difference			O	

9.2.3.1.5 RADIO LINK ADDITION RESPONSE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC-SRNC	M	
Length			M	
Message Compatibility Information			M	
No. of DCHs			M	
DCH ID (# 1)			M	
ATM Binding ID			M	
ATM Address			O	
DCH ID (# n)			M	
ATM Binding ID			M	
ATM Address			O	
UL Interference Level			O	
No. of Radio Links			M	
Radio Link ID			M	
Neighbor Cell Information			M	
No. of DL spreading code			M	
DL spreading code id #1			M	
DL spreading code id #m			M	
Radio Link ID			O	
Neighbor Cell Information			O	
No. of DL spreading code			O	
DL spreading code id #1			O	
DL spreading code id #m			O	

9.2.3.1.6 RADIO LINK ADDITION FAILURE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
Cause			M	

9.2.3.1.7 RADIO LINK DELETION

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Compatibility Information			M	
No. of Radio Links			M	
Radio Link ID #1			M	
Radio Link ID #2			O	

9.2.3.1.8   RADIO LINK DELETION RESPONSE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC -SRNC	M	
Length			M	
Message Compatibility Information			M	

9.2.3.1.9   RADIO LINK RECONFIGURATION PREPARE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
No. of DCHs			M	
DCH ID (# 1)		For Addition	M	
TFS (for DCH ID# 1)			O	
DCH QoS			M	
DCH ID (# n)			O	
TFS (for DCH ID# n)			O	
DCH QoS			O	
TFCS (for DCHs)		For Reconfiguration	M	
UL spreading code type			M	
No. of UL spreading code			M	
UL spreading code id(s)			M	
DL spreading code type			M	
No. of DL spreading code			M	
No. of Radio Links		For Deletion	M	
Radio Link ID#1			M	
Radio Link ID#2			O	

9.2.3.1.10   RADIO LINK RECONFIGURATION READY

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC-SRNC	M	
Length			M	
Message Compatibility Information			M	
No. of DCHs			O	
DCH ID (# 1)		For Addition	O	
ATM Binding ID			O	
ATM Address			O	
DCH ID (# n)			O	
ATM Binding ID			O	
ATM Address			O	
No. of Radio Links		For Reconfiguration	M	
Radio Link ID			M	
No. of DL spreading code			M	
DL spreading code id #1			M	
DL spreading code id #m			M	
Radio Link ID		For Deletion	O	
No. of DL spreading code			O	

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
DL spreading code id #1			O	
DL spreading code id #m			O	

9.2.3.1.11 RADIO LINK RECONFIGURATION COMMIT

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
Execution Time			M	

9.2.3.1.12 RADIO LINK RECONFIGURATION FAILURE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC-SRNC	M	
Length			M	
Message Compatibility Information			M	
Cause			M	

9.2.3.1.13 RADIO LINK RECONFIGURATION CANCEL

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	

9.2.3.1.14 POWER CONTROL

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
DL Power Range			M	

9.2.3.1.15 OUTER LOOP POWER CONTROL

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-DRNC	M	
Length			M	
Message Compatibility Information			M	
Target UL Eb/Io			M	

9.2.3.1.16 DL USER DATA RETRIEVAL

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		RNC Target-SRNC	M	
Length			M	
Message Compatibility Information			M	
Old RNTI			M	
Old URA ID			M	

9.2.3.1.17 DL USER DATA RETRIEVAL RESPONSE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-RNC Target	M	
Length			M	
Message Compatibility Information			M	

9.2.3.1.18 RNC RELOCATION REQUEST

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		RNC Target-SRNC	M	
Length			M	
Message Compatibility Information			M	
Old RNTI			M	
Old URA ID			M	

9.2.3.1.19 RRC CONTEXT RETRIEVAL

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		RNC Target-SRNC	M	
Length			M	
Message Compatibility Information			M	
Old RNTI			M	
Old URA ID			M	

9.2.3.1.20 RRC CONTEXT RETRIEVAL RESPONSE

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		SRNC-RNC Target	M	
Length			M	
Message Compatibility Information			M	

9.2.3.1.21 DL CODE RECONFIGURATION REQUEST

INFORMATION ELEMENT	REFERENCE	DIRECTION	TYPE	LEN
Message Identifier		DRNC-SRNC	M	
Length			M	
Message Compatibility Information			M	

9.2.3.1.22 RESET (FFS)

9.2.3.1.23 RESET ACKNOWLEDGE (FFS)

9.2.3.1.24 CONFUSION (FFS)

9.2.4   Signaling Element Coding

This paragraph contains the CODING of the signaling elements used.
The following convention are assiugned for the sequence of transmission of bits and bytes:
   Each bit position is marked as 1 to 8. Bit 1 is the least significant bit and is transmitted first.
   In an element aoctets are identified by number, octet 1 is transmitted first, then octet 2 etc.

Length Indicator
   It is desirable to have Length for messages and parameters because future version of protocol may have
extension to the present message or parameter, and also variable size can be present in some parameters as
well.
   In case of message size exceeding 256 byte it is better to have 2 bytes for message LENGTH.
   However it is enough to have 1 byte for parameter LENGTH.

Length Indicator

Fig. 3.2.2-1 Length Indicator for Message

Length Indicator

Fig. 3.2.2-2 Length Indicator for Parameter
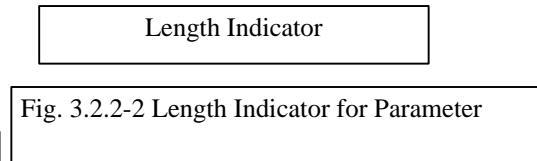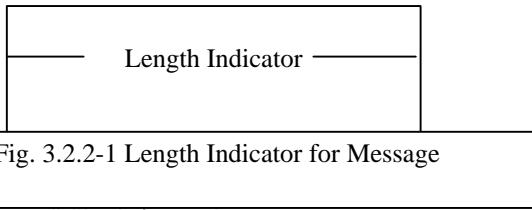
Compatibility Information
   Compatibility Information is used in the situation of unrecognized messages or parameter. This parameter
should be placed at a certain place then it is easy to pick up this parameter in any circumstances.

Consequently, the format can be as follow:
     Message Identifier / Length / Compatibility Info / parameters
      Parameter Identifier / Length / Compatibility Info / Fields
      Figure 3 shows the coding format of message and Figure 4 shows the coding format of parameter.

Message Identifier
Length
Compatibility Information
Parameter
. .
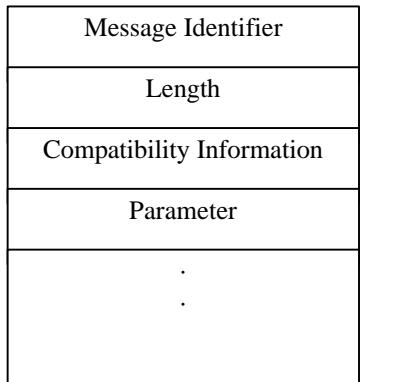
Fig. 3.2.2-3   Message Coding Format

Parameter Identifier
Length
Compatibility Information
Field
. .
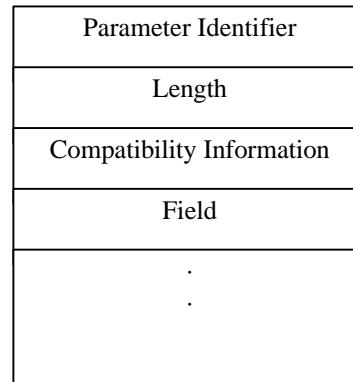
Fig. 3.2.2-4   Parameter Coding Format

Fixed size data and variable size data in Field
   It may have two types of filed i.e. with variable size or fixed size in data of field. It has no any problem to specify the
fixed size field. Figure5 shows an example of fixed size data in field.

Field

Fig. 3.2.2-5   Format for fixed size field
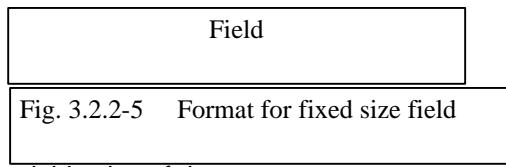
Regarding the variable size of data

field length
data of field
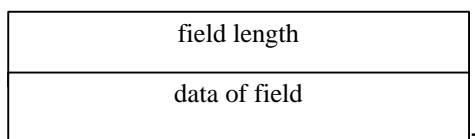
Fig. 3.2.2-6 Length method

The elements use~~... and then SOMETHING else~~

Element Identifier Coding	Element name	Reference
	ATM Binding ID	
	ATM Address	
	No of DCHs	
	DCH ID	
	TFS(for DCH)	
	TFCS(for DCHs)	
	Radio Frequency	
	UL scrambling code	
	UL spreading code type	
	No. of UL spreading code	
	UL spreading code ID	
	UL Interference Level	
	DL spreading code type	
	No. of DL spreading code	
	DL spreading code id	
	Cell Id	
	Neighbor Cell Information	
	Soft Combination Indication	
	Phase Difference	
	Radio Link ID	
	No. of Radio Links	
	Execution Time	
	Slot offset	
	Frame offset	
	Initial DL Power	
	DL Power Range	
	Target UL Eb/Io	
	Old RNTI	
	Old URA ID	
	DCH QoS	

Message Identifier

Message Type uniquely identifies the message being sent. It is a single octet element, mandatory in all messages.

8765 4321	
	RADIO LINK SETUP RADIO LINK SETUP RESPONSE RADIO LINK SETUP FAILURE
	RADIO LINK ADDITION RADIO LINK ADDITION RESPONSE RADIO LINK ADDITION FAILURE
	RADIO LINK DELETION RADIO LINK DELETION RESPONSE
	RADIO LINK RECONFIGURATION PREPARE RADIO LINK RECONFIGURATION READY RADIO LINK RECONFIGURATION COMMIT RADIO LINK RECONFIGURATION FAILURE RADIO LINK RECONFIGURATION CANCEL
	POWER CONTROL
	OUTER LOOP POWER CONTROL

	DL USER DATA RETRIEVAL
	DL USER DATA RETRIEVAL RESPONSE
	RNC RELOCATION REQUEST
	RRC CONTEXT RETRIEVAL
	RRC CONTEXT RETRIEVAL RESPONSE
	DL CODE RECONFIGURATION REQUEST

Message Compatibility Information

Message Compatibility Information is used in the situation of unrecognized messages.

8	7	6	5	4	3	2	1	
Message Compatibility Information								1(oct)
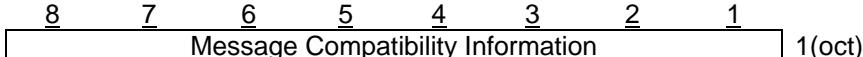
Fig.3.2.2.2 Message Compatibility Information

Table 3.2.2.2 Message Compatibility Information octet

Bit
8   Reserved
:
4   Pass On not possible
3   Discard Message
2   Send Notify (1)
1   Release Indicator

Information Transfer Capability

This element is included Information Transfer Capability which has been requested by the UE.
[Note: The following should be described the cording format.(The detail is FFS.)]

ATM Address

This element is included ATM address.
[Note: The following should be described the cording format.(The detail is FFS.)]

ATM Binding ID

This element is included ATM Binding ID.
[Note: The following should be described the cording format.(The detail is FFS.)]

Cell ID

This element uniquely identifies cell which a RNC and is of variable length containing.

8	7	6	5	4	3	2	1	
Parameter Identifier								1 (oct)
Length								2
Compatibility Information								3
spare				Cell identification discrimnator				4
Cell Identification								
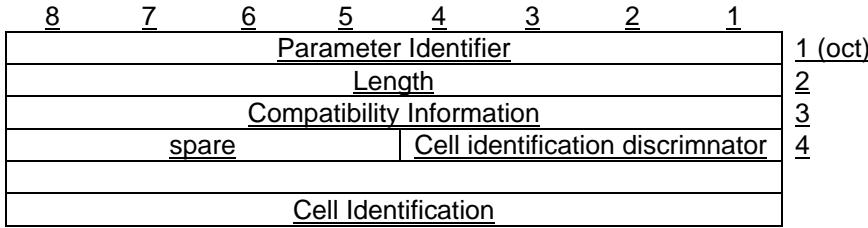
Fig.3.2.2.16 format of Cell Identifier

DCH ID

TFS(for DCH)

TFCS(for DCHs)

Radio Frequency

UL Interference level

UL scrambling code

UL spreading code type

No. of UL spreading code

UL spreading code ID

DL spreading code type

No. of Radio Links

Radio Link ID

No. of DL spreading code

DL spreading code ID

No .of DCHs

Neighbor Cell Information

Soft Combination Indicator

Phase Difference

Execution Time

Slot Offset

Frame offset

Initial DL Power

DL Power Range

This Information element defines the DL transmission power range to be used for the radio links used for the related RRC connection in the node-Bs within the Drift RNC.

Target UL Eb/I0

Old URA ID

Old RNTI

DCH QoS

Cause

This element is used to indicate the reason for a partcular event to have occurred and is coded as shown below. The cause value is a single octet element if the extension bit (bit 8) is set to 0. If it is set to 1 then the cause value is a 2octet field.

8	7	6	5	4	3	2	1	
Parameter Identifier								1 (oct)
Length								2
Compatibility Information								3
D.C	Cause Value							5
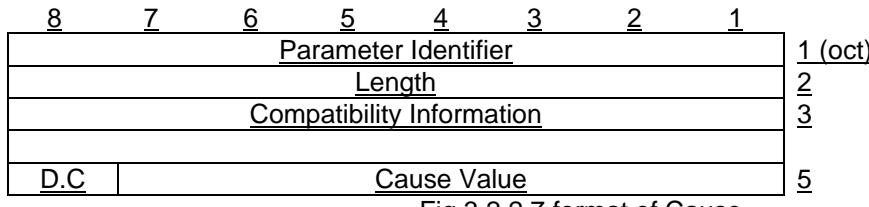
Fig.3.2.2.7 format of Cause

Cause Value:
Class : Normal event
Class: Normal event
Class: Resource unavailable
Class : Service or option not available
Class : Service or option not implemented
Class : invalid message (eg parameter out of range)
Class : protocol error
Class : interworking

The following table shows example of cause value.

Table3.2.2.7 cause value

Cause Value		
Class	value	
765	4321	

		Normal termination Mobile illegal (ex. Authentication NG) O & M intervention Equipment failure Protocol error Message type non-existent or not implemented Information element/parameter non-existent or not implemented Radio link failure BS approach link failure Timer expired Ciphering algorithm not supported Resource unavailable Other values are reserved

9.3 Transport Layer

9.3.1 General

[Editor´s note: This chapter should e.g. describe Radio Network Layer requirements on Transport Layer protocols. This text is copied from chapter 12.2.2 of [1].]

The following requirements on the RNSAP signalling bearer can be stated:
- Provide reliable transfer of control plane signalling messages in both connectionless mode and connection-oriented mode;
- Provide separate independent connections for distinguishing transactions with individual UEs;
- Supervise the 'UE connections' and provide connection status information to the Upper Layers for individual UEs;
- Provide networking and routing functions;
- Provide redundancy in the signalling network;
- Provide load sharing.

Addressing of RNSCs over the Iur Interface:

- For an RRC connection using a dedicated channel, the Iur standard shall allow the addition / deletion of cells belonging to any RNSC within the PLMN.
- The specification of the Iur interface shall allow the SRNSC to address any other RNSC in the PLMN for establishing a signalling bearer over Iur.
- The specification of the Iur interface shall allow the SRNSC to address any other RNSC within the PLMN for establishing user data bearers for Iur data streams.

Note : Connectionless RNSAP over Iur is for further studies.

9.3.2 Services provided by the signalling bearer

When considering the requirements that the upper layer, i.e. RNSAP, have on the SB, there are a number of services it has to provide and a number of functions to perform.

Table 1 gives an overview of the minimum set of services that the signalling bearer shall provide to the upper layers.

Table 1: **Network service primitives for the Signalling Bearer (SB)**

Primitives	
Generic name	**Specific name**

N-CONNECT	Request
	Indication
	Response
	Confirm
N-DATA	Request
	Indication
N-DISCONNECT	Request
	Indication
N-UNITDATA	Request
	Indication
N-STATUS	Indication

9.3.3 Signalling Bearer

Two alternative signalling bearers for the Radio Network Control Plane are shown in table x below.

	Alternative 1	Alternative 2
Radio Network Layer	RNSAP	
Transport Layer:	*TCP*	*SCCP*
Signalling Bearer		
	IP	*MTP3b*
		SSCF
		SSCOP
	AAL5	
	ATM	
Physical Layer	*PHY*	

Table x: Alternatives for the Iur protocol protocol stack (Radio Network Control Plane)

Note: These two alternatives are subject to further investigations. One of the two alternatives should be finally selected to be included in the standard.

10. I_{ur} -Interface Protocol Layer Specification for Transport Network Control Plane

10.1 Introduction

[Editor´s note: This chapter should describe general requirements and structure of the Transport Network Control Plane.]

10.2 Transport Layer

10.2.1   General

10.2.2   ALCAP

[Editor´s note: This chapter should refer to specifications of the Transport Network Control protocols represented by the generic name ALCAP. Limitations in usage of options of the protocol should be described.]

The AAL Type 2 Signalling Protocol (Q.aal2) developed by ITU SG11 [8] and [9] will be used for establishment of AAL2-connections over the Iur interface.

10.2.3   Signalling Bearer

[Editor´s note: This chapter should refer to specifications of the Signalling Bearer protocol(s). Limitations in usage of options of the protocol(s) should be described.]

MTP3/SAAL-NNI is used as Signalling Bearer for Q.aal2 as shown in the figure below:
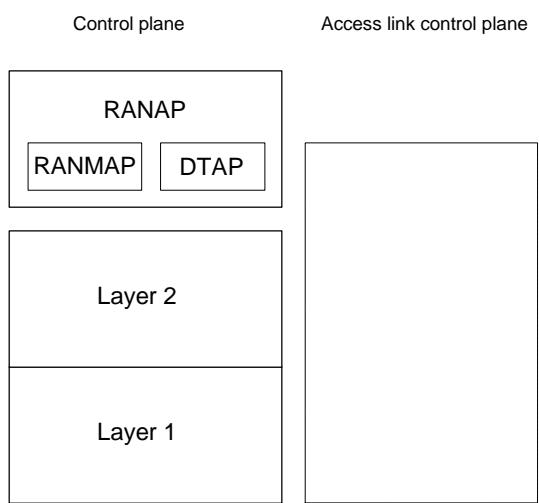
Figure 10-1: Signalling bearer for Q.aal2 on Iur.

11. I$_{ur}$ -Interface Protocol Layer Specification for User Plane

11.1 Introduction

11.2 Radio Network Layer

11.2.1 General

For the user plane of the radio network layer there are four frame handling protocols:

- Dedicated Channel Frame Protocol (DCH FP) for transport of Iur data streams carried on dedicated channels on the Uu-interface.

- Random Access Channel Frame Protocol (RACH FP) for transport of Iur data streams carried on RACH on the Uu-interface.

- Forward Access Channel Frame Protocol (FACH FP) for transport of Iur data streams carried on FACH on the Uu-interface.

- Downlink Shared Channel Frame Protocol (DSCH FP) for transport of Iur data streams carried on DSCH on the Uu-interface.

Note. Whether FAUSH data streams are carried over Iur is FFS.

11.2.2 Dedicated Channel Frame Protocol

The specification of the DCH data streams follows the Dedicated Channel frame Protocol as specified for the Iub/Iur DCH data streams. For a specification of the protocol see the Description of Iub Interface [4].

11.2.3 FACH Frame Protocol

The FACH Frame Protocol for Iur is FFS.

11.2.4 RACH Frame Protocol

The RACH Frame Protocol for Iur is FFS.

11.2.5 DSCH Frame Protocol

The DSCH Frame Protocol for Iur is FFS.

11.3 Transport Layer

ATM and AAL2 is used as transport bearer for Iur DCH data streams.

The transport bearer for Iur RACH/FACH/~~DSCH~~ data streams is FFS.

12. Physical Layer

13. Example Sequences

[Editor's note: This chapter should contain examples of sequences including both Radio Network Control and Transport Network Control.]

14. History

Document history		
Jan 29 1999	1.0.0	First draft

ANNEX Iur Parameters List

RAB Setup

Parameter Category	Iur Parameters	Iur Message							Note
		DCH to DCH					DCH to RA/FACH		
		RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION COMMIT	RADIO LINK RECONFIGURATION FAILURE	RADIO LINK RECONFIGURATION CANCEL (FFS)	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	m	-	-	-	-	-	-	
	DCH ID (# 1)	m	-	-	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	m	-	-	-	-	-	-	Set TFS when it is required
	:								
	DCH ID (# n)	m	-	-	-	-	-	-	
	TFS (for DCH ID# n)	m	-	-	-	-	-	-	
	TFCS (for DCHs)	m	-	-	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	-	-	-	-	
	DCH ID (# 1)	-	m	-	-	-	-	-	
	ATM Binding ID	-	m	-	-	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	-	-	-	-	
	:								
	DCH ID (# n)	-	m	-	-	-	-	-	
	ATM Binding ID	-	m	-	-	-	-	-	

	ATM Address	-	o	-	-	-	-	-	
Radio Frequency Info	Radio Frequency	-	-	-	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	-	-	-	-	-	
UL Radio Resources	UL scrambling code	-	-	-	-	-	-	-	Set UL Scrambling Code per UE
	UL spreading code type	m	-	-	-	-	-	-	
	No. of UL spreading code	m	-	-	-	-	-	-	
	UL spreading code id(s)	m	-	-	-	-	-	-	
DL Radio Resources	DL spreading code type	m	-	-	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	-	-	m	-	
	Radio Link ID	m	-	-	-	-	m	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	-	-	-	-	
	:								
	Radio Link ID	o	-	-	-	-	o	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	
	Phase Difference	-	-	-	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	-	-	
	Radio Link ID	-	m	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	-	-	
	DL spreading code id #1	-	m	-	-	-	-	-	
	:								
	DL spreading code id #m	-	m	-	-	-	-	-	
	:								
	Radio Link ID	-	o	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	-	-	
	DL spreading code id #1	-	o	-	-	-	-	-	
	:								
	DL spreading code id #m	-	o	-	-	-	-	-	
Execution Time	Execution Time	-	-	m	-	-	-	-	
Offset Values	Slot offset	-	-	-	-	-	-	-	
	Frame offset	-	-	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	-	-	For Initial DL Power Setting

	DL Power Range	-	-	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	-	-	For L1 Power Control
Cause	Cause	-	-	-	m	-	-	-	

m: mandatory, o: optional

*1: In TTC assumption, in the case of intra RFTR RL addition, same Iur ATM connection is used. Therefore, in case of RADIO LINK ADDITION resp.conf.(Inter RFTR), RACFd send existing binding ID to RACFa.

*2: Contents of this information is FFS. It is related to BS addressing scheme.

RAB Reconfiguration

Parameter Category	Iur Parameters	Iur Message					Note
		DCH to DCH					
		RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION COMMIT	RADIO LINK RECONFIGURATION FAILURE	RADIO LINK RECONFIGURATION CANCEL (FFS)	
Transport CH Info	No. of DCHs	m	-	-	-	-	
	DCH ID (# 1)	m	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	m	-	-	-	-	Set TFS when it is required
	:						
	DCH ID (# n)	m	-	-	-	-	
	TFS (for DCH ID# n)	m	-	-	-	-	
	TFCS (for DCHs)	m	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	-	-	
	DCH ID (# 1)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	-	-	
	:						
	DCH ID (# n)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	
	ATM Address	-	o	-	-	-	
Radio Frequency Info	Radio Frequency	-	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	-	-	-	
UL Radio Resources	UL scrambling code	-	-	-	-	-	Set UL Scrambling Code per UE
	UL spreading code type	m	-	-	-	-	

	No. of UL spreading code	m	-	-	-	-	
	UL spreading code id(s)	m	-	-	-	-	
DL Radio Resources	DL spreading code type	m	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	-	-	
	Radio Link ID	m	-	-	-	-	
	Cell ID	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	-	-	
	:						
	Radio Link ID	o	-	-	-	-	
	Cell ID	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	
	Phase Difference	-	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	
	Radio Link ID	-	m	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	
	DL spreading code id #1	-	m	-	-	-	
	:						
	DL spreading code id #m	-	m	-	-	-	
	:						
	Radio Link ID	-	o	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	
	DL spreading code id #1	-	o	-	-	-	
	:						
	DL spreading code id #m	-	o	-	-	-	
Execution Time	Execution Time	-	-	m	-	-	
Offset Values	Slot offset	-	-	-	-	-	
	Frame offset	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	For L1 Power Control
Cause	Cause	-	-	-	m	-	

*1,*2: Same as the previous.

RAB Release

Parameter Category	Iur Parameters	Iur Message							Note
		DCH to DCH					DCH to RA/FACH		
		RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION COMMIT	RADIO LINK RECONFIGURATION FAILURE	RADIO LINK RECONFIGURATION CANCEL (FFS)	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	m	-	-	-	-	-	-	
	DCH ID (# 1)	m	-	-	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	-	-	-	-	-	Set TFS when it is required
	:								
	DCH ID (# n)	m	-	-	-	-	-	-	
	TFS (for DCH ID# n)	-	-	-	-	-	-	-	
	TFCS (for DCHs)	m	-	-	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	-	-	-	-	-	-	
	DCH ID (# 1)	-	-	-	-	-	-	-	
	ATM Binding ID	-	-	-	-	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	-	-	-	-	-	-	
	:								
	DCH ID (# n)	-	-	-	-	-	-	-	
	ATM Binding ID	-	-	-	-	-	-	-	
	ATM Address	-	-	-	-	-	-	-	
Radio Frequency Info	Radio Frequency	-	-	-	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	-	-	-	-	-	
UL Radio Resources	UL scrambling code	-	-	-	-	-	-	-	Set UL Scrambling Code per UE

	UL spreading code type	m	-	-	-	-	-	-	
	No. of UL spreading code	m	-	-	-	-	-	-	
	UL spreading code id(s)	m	-	-	-	-	-	-	
DL Radio Resources	DL spreading code type	m	-	-	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	-	-	m	-	
	Radio Link ID	m	-	-	-	-	m	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	-	-	-	-	
	:								
	Radio Link ID	o	-	-	-	-	o	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	
	Phase Difference	-	-	-	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	-	-	
	Radio Link ID	-	m	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	-	-	
	DL spreading code id #1	-	m	-	-	-	-	-	
	:								
	DL spreading code id #m	-	m	-	-	-	-	-	
	:								
	Radio Link ID	-	o	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	-	-	
	DL spreading code id #1	-	o	-	-	-	-	-	
	:								
	DL spreading code id #m	-	o	-	-	-	-	-	
Execution Time	Execution Time	-	-	m	-	-	-	-	
Offset Values	Slot offset	-	-	-	-	-	-	-	
	Frame offset	-	-	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	-	-	For L1 Power Control

Cause	Cause	-	-	-	m	-	-	-	

*1,*2: Same as the previous.

RRC Connection Release

Parameter Category	Iur Parameters	Iur Message		Note
		DCH to IDLE		
		RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	Set TFS when it is required
	:			
	DCH ID (# n)	-	-	
	TFS (for DCH ID# n)	-	-	
	TFCS (for DCHs)	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	
	ATM Binding ID	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	-	
	:			
	DCH ID (# n)	-	-	
	ATM Binding ID	-	-	
	ATM Address	-	-	
Radio Frequency Info	Radio Frequency	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	
UL Radio Resources	UL scrambling code	-	-	Set UL Scrambling Code per UE
	UL spreading code type	-	-	
	No. of UL spreading code	-	-	
	UL spreading code id(s)	-	-	
DL Radio Resources	DL spreading code type	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	Same number of codes for all Radio Links

	No. of Radio Links	m	-	
	Radio Link ID	m	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	
	:			
	Radio Link ID	o	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	
	Phase Difference	-	-	
DL Radio Resources	No. of Radio Links	-	-	
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	**FFS***2
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
	:			
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	FFS
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
Execution Time	Execution Time	-	-	
Offset Values	Slot offset	-	-	
	Frame offset	-	-	
Power Control Info	Initial DL Power	-	-	For Initial DL Power Setting
	DL Power Range	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	For L1 Power Control

*1,*2: Same as the previous.

Transport CH Reconfiguration

Parameter Category	Iur Parameters	Iur Message							Note
		DCH to DCH					DCH to RA/FACH		
		RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION COMMIT	RADIO LINK RECONFIGURATION FAILURE	RADIO LINK RECONFIGURATION CANCEL (FFS)	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	m	-	-	-	-	-	-	
	DCH ID (# 1)	m	-	-	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	m	-	-	-	-	-	-	Set TFS when it is required
	:								
	DCH ID (# n)	m	-	-	-	-	-	-	
	TFS (for DCH ID# n)	m	-	-	-	-	-	-	
	TFCS (for DCHs)	m	-	-	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	-	-	-	-	
	DCH ID (# 1)	-	m	-		-	-	-	
	ATM Binding ID	-	m	-	-	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	-	-	-	-	
	:								
	DCH ID (# n)	-	m	-	-	-	-	-	
	ATM Binding ID	-	m	-	-	-	-	-	
	ATM Address	-	o	-	-	-	-	-	
Radio Frequency Info	Radio Frequency	-	-	-	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	-	-	-	-	-	
UL Radio Resources	UL scrambling code	-	-	-	-	-	-	-	Set UL Scrambling Code per UE

	UL spreading code type	m	-	-	-	-	-	-	
	No. of UL spreading code	m	-	-	-	-	-	-	
	UL spreading code id(s)	m	-	-	-	-	-	-	
DL Radio Resources	DL spreading code type	m	-	-	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	-	-	m	-	
	Radio Link ID	m	-	-	-	-	m	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	-	-	-	-	
	:								
	Radio Link ID	o	-	-	-	-	o	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	
	Phase Difference	-	-	-	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	-	-	
	Radio Link ID	-	m	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	-	-	
	DL spreading code id #1	-	m	-	-	-	-	-	
	:								
	DL spreading code id #m	-	m	-	-	-	-	-	
	:								
	Radio Link ID	-	o	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	-	-	
	DL spreading code id #1	-	o	-	-	-	-	-	
	:								
	DL spreading code id #m	-	o	-	-	-	-	-	
Execution Time	Execution Time	-	-	m	-	-	-	-	
Offset Values	Slot offset	-	-	-	-	-	-	-	
	Frame offset	-	-	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	-	-	For L1 Power Control

Cause	Cause	-	-	-	m	-	-	-	

*1,*2: Same as the previous.

Physical CH Reconfiguration

Parameter Category	Iur Parameters	Iur Message							Note
		DCH to DCH					DCH to RA/FACH		
		RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION COMMIT	RADIO LINK RECONFIGURATION FAILURE	RADIO LINK RECONFIGURATION CANCEL (FFS)	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	-	-	-	-	-	-	-	
	DCH ID (# 1)	-	-	-	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	-	-	-	-	-	Set TFS when it is required
	:	-							
	DCH ID (# n)		-	-	-	-	-	-	
	TFS (for DCH ID# n)	-	-	-	-	-	-	-	
	TFCS (for DCHs)	-	-	-	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	-	-	-	-	-	-	
	DCH ID (# 1)	-	-	-	-	-	-	-	
	ATM Binding ID	-	-	-	-	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	-	-	-	-	-	-	
	:								
	DCH ID (# n)	-	-	-	-	-	-	-	
	ATM Binding ID	-	-	-	-	-	-	-	
	ATM Address	-	-	-	-	-	-	-	
Radio Frequency Info	Radio Frequency	-	-	-	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	-	-	-	-	-	
UL Radio Resources	UL scrambling code	o	-	-	-	-	-	-	Set UL Scrambling Code per UE

	UL spreading code type	o	-	-	-	-	-	-	
	No. of UL spreading code	o	-	-	-	-	-	-	
	UL spreading code id(s)	o	-	-	-	-	-	-	
DL Radio Resources	DL spreading code type	o	-	-	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	o	-	-	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	o	-	-	-	-	m	-	
	Radio Link ID	o	-	-	-	-	m	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	-	-	-	-	
	:								
	Radio Link ID	o	-	-	-	-	o	-	
	Cell ID	-	-	-	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	-	-	
	Phase Difference	-	-	-	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	-	-	
	Radio Link ID	-	m	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	-	-	
	DL spreading code id #1	-	m	-	-	-	-	-	
	:								
	DL spreading code id #m	-	m	-	-	-	-	-	
	:								
	Radio Link ID	-	o	-	-	-	-	-	
	Neighbor Cell Information	-	-	-	-	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	-	-	
	DL spreading code id #1	-	o	-	-	-	-	-	
	:								
	DL spreading code id #m	-	o	-	-	-	-	-	
Execution Time	Execution Time	-	-	m	-	-	-	-	
Offset Values	Slot offset	-	-	-	-	-	-	-	
	Frame offset	-	-	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	-	-	For L1 Power Control

Cause	Cause	-	-	-	m	-	-	-	

*1,*2: Same as the previous.

Cell Update

Parameter Category	Iur Parameters	Iur Message			Note
		RNC RELOCATION REQUEST	DL USER DATA RETRIEVAL (FFS)	DL USER DATA RETRIEVAL RESPONSE (FFS)	
DL Radio Resources	DL spreading code type	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	
	Radio Link ID	m	-	-	
	Cell ID	-	-	-	
	Soft Combination Indicator	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	
	:				
	Radio Link ID	o	-	-	
	Cell ID	-	-	-	
	Soft Combination Indicator	-	-	-	
	Phase Difference	-	-	-	
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	For L1 Power Control
Signaling Address	Signaling Adress	m	-	-	
RNTI	RNTI	m	m	-	
URA ID	URA ID	m	m	-	

URA Update

Parameter Category	Iur Parameters	Iur Message			Note
		RNC RELOCATION REQUEST	DL USER DATA RETRIEVAL (FFS)	DL USER DATA RETRIEVAL RESPONSE (FFS)	
DL Radio Resources	DL spreading code type	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	
	Radio Link ID	m	-	-	
	Cell ID	-	-	-	
	Soft Combination Indicator	-	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	-	
	:				
	Radio Link ID	o	-	-	
	Cell ID	-	-	-	
	Soft Combination Indicator	-	-	-	
	Phase Difference	-	-	-	
Signaling Address	Signaling Address	m	-	-	
RNTI	RNTI	m	m	-	
URA ID	URA ID	m	m	-	

Hard Handover (Inter-NodeB)

Parameter Category	Iur Parameters	Iur Message					Note
		RADIO LINK SETUP	RADIO LINK SETUP RESPONSE	RADIO LINK SETUP FAILURE	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	m	-	-	-	-	
	DCH ID (# 1)	m	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	m	-	-	-	-	Set TFS when it is required
	:						
	DCH ID (# n)	m	-	-	-	-	
	TFS (for DCH ID# n)	m	-	-	-	-	
	TFCS (for DCHs)	m	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m		-	-	
	DCH ID (# 1)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	-	-	
	:						
	DCH ID (# n)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	
	ATM Address	-	o	-	-	-	
Radio Frequency Info	Radio Frequency	m	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	m	-	-	-	
UL Radio Resources	UL scrambling code	m	-	-	-	-	Set UL Scrambling Code per UE
	UL spreading code type	m	-	-	-	-	
	No. of UL spreading code	m	-	-	-	-	
	UL spreading code id(s)	m	-	-	-	-	
DL Radio Resources	DL spreading code type	m	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	m	-	

	Radio Link ID	m	-	-	m	-	
	Cell ID	m	-	-	-	-	
	Soft Combination Indicator	-	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	m	-	-	-	-	
	:						
	Radio Link ID	o	-	-	o	-	
	Cell ID	o	-	-	-	-	
	Soft Combination Indicator	o	-	-	-	-	
	Phase Difference	o	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	
	Radio Link ID	-	m	-	-	-	
	Neighbor Cell Information	-	m	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	
	DL spreading code id #1	-	m	-	-	-	
	:						
	DL spreading code id #m	-	m	-	-	-	
	:						
	Radio Link ID	-	o	-	-	-	
	Neighbor Cell Information	-	o	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	
	DL spreading code id #1	-	o	-	-	-	
	:						
	DL spreading code id #m	-	o	-	-	-	
Execution Time	Execution Time	-	-	-	-	-	
Offset Values	Slot offset	m	-	-	-	-	
	Frame offset	m	-	-	-	-	
Power Control Info	Initial DL Power	m	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	m	-	-	-	-	For L1 Power Control
Cause	Cause	-	-	m	-	-	

*1,*2: Same as the previous.

Hard Handover (Intra-NodeB)

Parameter Category	Iur Parameters	RADIO LINK ADDITION	RADIO LINK ADDITION RESPONSE	RADIO LINK ADDITION FAILURE	RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	Note
Transport CH Info	No. of DCHs	-	-	-	-	-	
	DCH ID (# 1)	-	-	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	-	-	-	Set TFS when it is required
	:						
	DCH ID (# n)	-	-	-	-	-	
	TFS (for DCH ID# n)	-	-	-	-	-	
	TFCS (for DCHs)	-	-	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	-	-	
	DCH ID (# 1)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	-	-	
	:						
	DCH ID (# n)	-	m	-	-	-	
	ATM Binding ID	-	m	-	-	-	
	ATM Address	-	o	-	-	-	
Radio Frequency Info	Radio Frequency	o	-	-	-	-	Set Radio Frequency per UE
	UL Interference Level	-	m	-	-	-	
UL Radio Resources	UL scrambling code	-	-	-	-	-	Set UL Scrambling Code per UE
	UL spreading code type	-	-	-	-	-	
	No. of UL spreading code	-	-	-	-	-	
	UL spreading code id(s)	-	-	-	-	-	
DL Radio Resources	DL spreading code type	-	-	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	m	-	

	Radio Link ID	m	-	-	m	-	
	Cell ID	m	-	-	-	-	
	Soft Combination Indicator	m	-	-	-	-	Indicates May, Must, Must not
	Phase Difference	m	-	-	-	-	
	:						
	Radio Link ID	o	-	-	o	-	
	Cell ID	o	-	-	-	-	
	Soft Combination Indicator	o	-	-	-	-	
	Phase Difference	o	-	-	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	-	-	
	Radio Link ID	-	m	-	-	-	
	Neighbor Cell Information	-	m	-	-	-	**FFS***2
	No. of DL spreading code	-	m	-	-	-	
	DL spreading code id #1	-	m	-	-	-	
	:						
	DL spreading code id #m	-	m	-	-	-	
	:						
	Radio Link ID	-	o	-	-	-	
	Neighbor Cell Information	-	o	-	-	-	FFS
	No. of DL spreading code	-	o	-	-	-	
	DL spreading code id #1	-	o	-	-	-	
	:						
	DL spreading code id #m	-	o	-	-	-	
Execution Time	Execution Time	-	-	-	-	-	
Offset Values	Slot offset	-	-	-	-	-	
	Frame offset	-	-	-	-	-	
Power Control Info	Initial DL Power	-	-	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	-	-	For L1 Power Control
Cause	Cause	-	-	m	-	-	

*1,*2: Same as the previous.

Handover Radio Link Addition (Inter-NodeB)

Parameter Category	Iur Parameters	Iur Message			Note
		RADIO LINK SETUP	RADIO LINK SETUP RESPONSE	RADIO LINK SETUP FAILURE	
Transport CH Info	No. of DCHs	m	-	-	
	DCH ID (# 1)	m	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	m	-	-	Set TFS when it is required
	:				
	DCH ID (# n)	m	-	-	
	TFS (for DCH ID# n)	m	-	-	
	TFCS (for DCHs)	m	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	
	DCH ID (# 1)	-	m	-	
	ATM Binding ID	-	m	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	
	:				
	DCH ID (# n)	-	m	-	
	ATM Binding ID	-	m	-	
	ATM Address	-	o	-	
Radio Frequency Info	Radio Frequency	m	-	-	Set Radio Frequency per UE
	UL Interference Level	-	m	-	
UL Radio Resources	UL scrambling code	m	-	-	Set UL Scrambling Code per UE
	UL spreading code type	m	-	-	
	No. of UL spreading code	m	-	-	
	UL spreading code id(s)	m	-	-	
DL Radio Resources	DL spreading code type	m	-	-	Same code type for all Radio Links
	No. of DL spreading code	m	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	
	Radio Link ID	m	-	-	

	Cell ID	m	-	-	
	Soft Combination Indicator	-	-	-	Indicates May, Must, Must not
	Phase Difference	m	-	-	
	:				
	Radio Link ID	o	-	-	
	Cell ID	o	-	-	
	Soft Combination Indicator	o	-	-	
	Phase Difference	o	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	
	Radio Link ID	-	m	-	
	Neighbor Cell Information	-	m	-	**FFS***2
	No. of DL spreading code	-	m	-	
	DL spreading code id #1	-	m	-	
	:				
	DL spreading code id #m	-	m	-	
	:				
	Radio Link ID	-	o	-	
	Neighbor Cell Information	-	o	-	FFS
	No. of DL spreading code	-	o	-	
	DL spreading code id #1	-	o	-	
	:				
	DL spreading code id #m	-	o	-	
Execution Time	Execution Time	-	-	-	
Offset Values	Slot offset	m	-	-	
	Frame offset	m	-	-	
Power Control Info	Initial DL Power	m	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	m	-	-	For L1 Power Control
Cause	Cause	-	-	m	

*1,*2: Same as the previous.

Handover Radio Link Addition (Intra-NodeB)

Parameter Category	Iur Parameters	Iur Message			Note
		RADIO LINK ADDITION	RADIO LINK ADDITION RESPONSE	RADIO LINK ADDITION FAILURE	
Transport CH Info	No. of DCHs	-	-	-	
	DCH ID (# 1)	-	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	-	Set TFS when it is required
	:				
	DCH ID (# n)	-	-	-	
	TFS (for DCH ID# n)	-	-	-	
	TFCS (for DCHs)	-	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	m	-	
	DCH ID (# 1)	-	m	-	
	ATM Binding ID	-	m	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	o	-	
	:				
	DCH ID (# n)	-	m	-	
	ATM Binding ID	-	m	-	
	ATM Address	-	o	-	
Radio Frequency Info	Radio Frequency	o	-	-	Set Radio Frequency per UE
	UL Interference Level	-	m	-	
UL Radio Resources	UL scrambling code	-	-	-	Set UL Scrambling Code per UE
	UL spreading code type	-	-	-	
	No. of UL spreading code	-	-	-	
	UL spreading code id(s)	-	-	-	
DL Radio Resources	DL spreading code type	-	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	-	

	Radio Link ID	m	-	-	
	Cell ID	m	-	-	
	Soft Combination Indicator	m	-	-	Indicates May, Must, Must not
	Phase Difference	m	-	-	
	:				
	Radio Link ID	o	-	-	
	Cell ID	o	-	-	
	Soft Combination Indicator	o	-	-	
	Phase Difference	o	-	-	
DL Radio Resources	No. of Radio Links	-	m	-	
	Radio Link ID	-	m	-	
	Neighbor Cell Information	-	m	-	**FFS***2
	No. of DL spreading code	-	m	-	
	DL spreading code id #1	-	m	-	
	:				
	DL spreading code id #m	-	m	-	
	:				
	Radio Link ID	-	o	-	
	Neighbor Cell Information	-	o	-	FFS
	No. of DL spreading code	-	o	-	
	DL spreading code id #1	-	o	-	
	:				
	DL spreading code id #m	-	o	-	
Execution Time	Execution Time	-	-	-	
Offset Values	Slot offset	-	-	-	
	Frame offset	-	-	-	
Power Control Info	Initial DL Power	-	-	-	For Initial DL Power Setting
	DL Power Range	-	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	-	For L1 Power Control
Cause	Cause	-	-	m	

*1,*2: Same as the previous.

Handover Radio Link Deletion (Inter-NodeB)

Parameter Category	Iur Parameters	Iur Message		Note
		RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	Set TFS when it is required
	:			
	DCH ID (# n)	-	-	
	TFS (for DCH ID# n)	-	-	
	TFCS (for DCHs)	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	
	ATM Binding ID	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	-	
	:			
	DCH ID (# n)	-	-	
	ATM Binding ID	-	-	
	ATM Address	-	-	
Radio Frequency Info	Radio Frequency	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	
UL Radio Resources	UL scrambling code	-	-	Set UL Scrambling Code per UE
	UL spreading code type	-	-	
	No. of UL spreading code	-	-	
	UL spreading code id(s)	-	-	
DL Radio Resources	DL spreading code type	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	

	Radio Link ID	m	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	
	:			
	Radio Link ID	o	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	
	Phase Difference	-	-	
DL Radio Resources	No. of Radio Links	-	-	
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	**FFS***2
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
	:			
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	FFS
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
Execution Time	Execution Time	-	-	
Offset Values	Slot offset	-	-	
	Frame offset	-	-	
Power Control Info	Initial DL Power	-	-	For Initial DL Power Setting
	DL Power Range	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	For L1 Power Control

*1,*2: Same as the previous.

Handover Radio Link Deletion (Intra-NodeB)

Parameter Category	Iur Parameters	Iur Message		Note
		RADIO LINK DELETION	RADIO LINK DELETION RESPONSE	
Transport CH Info	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	DCH ID or each DCH
	TFS (for DCH ID# 1)	-	-	Set TFS when it is required
	:			
	DCH ID (# n)	-	-	
	TFS (for DCH ID# n)	-	-	
	TFCS (for DCHs)	-	-	Set TFCS per UE
Transport Layer Addressing Information	No. of DCHs	-	-	
	DCH ID (# 1)	-	-	
	ATM Binding ID	-	-	(TTC) 1 Binding ID for 1 DCH *1
	ATM Address	-	-	
	:			
	DCH ID (# n)	-	-	
	ATM Binding ID	-	-	
	ATM Address	-	-	
Radio Frequency Info	Radio Frequency	-	-	Set Radio Frequency per UE
	UL Interference Level	-	-	
UL Radio Resources	UL scrambling code	-	-	Set UL Scrambling Code per UE
	UL spreading code type	-	-	
	No. of UL spreading code	-	-	
	UL spreading code id(s)	-	-	
DL Radio Resources	DL spreading code type	-	-	Same code type for all Radio Links
	No. of DL spreading code	-	-	Same number of codes for all Radio Links
	No. of Radio Links	m	-	

	Radio Link ID	m	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	Indicates May, Must, Must not
	Phase Difference	-	-	
	:			
	Radio Link ID	o	-	
	Cell ID	-	-	
	Soft Combination Indicator	-	-	
	Phase Difference	-	-	
DL Radio Resources	No. of Radio Links	-	-	
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	**FFS***2
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
	:			
	Radio Link ID	-	-	
	Neighbor Cell Information	-	-	FFS
	No. of DL spreading code	-	-	
	DL spreading code id #1	-	-	
	:			
	DL spreading code id #m	-	-	
Execution Time	Execution Time	-	-	
Offset Values	Slot offset	-	-	
	Frame offset	-	-	
Power Control Info	Initial DL Power	-	-	For Initial DL Power Setting
	DL Power Range	-	-	For Correcting DL Power Drifting during DHO
Outerloop Power Control Info	Target UL Eb/Io	-	-	For L1 Power Control

*1,*2: Same as the previous.

Power Control

Parameter Category	Iur Parameters	Iur Message	Note
		POWR CONTROL L	
Power Control Info	Initial DL Power	-	For Initial DL Power Setting
	DL Power Range	o	For Correcting DL Power Drifting during DHO

Outer-loop Power Control

Parameter Category	Iur Parameters	Iur Message	Note
		OUTER-LOOP POWR CONTROL	
Outerloop Power Control Info	Target UL Eb/Io	o	For L1 Power Control