TSG-RAN Working Group 3 (Meeting#6) **TSGR3#6(99) 862**
Sophia Antipolis, FRANCE, 23rd – 27th August 1999

Agenda Item: 16.4

Source: Motorola

Title: Cell Setup and Cell Delete message structures

Document for: Decision

---

1 Introduction

This paper presents message contents for the messages involved in the Cell Setup and Cell Delete procedures.

See Appendix for background information regarding use of transport layer addresses.

2 Discussion

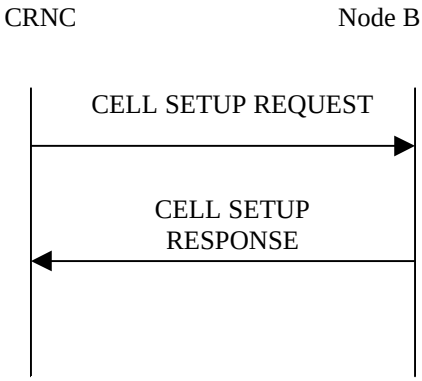
2.1 Cell Setup

This NBAP common procedure is used to configure one cell in a Node B. This procedure is initiated by the Controlling RNC.

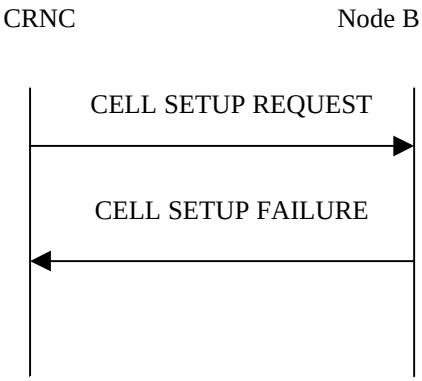
The RNC initiates a definition of a cell in Node B, which creates and configures a cell context is in Node B. The result is communicated back to the RNC.

For the procedure to be executed successfully the following is needed:

- Node B equipment has previously been defined and configured to support the cell on the Implementation Specific O&M interface.
- A Node B control port is available for communication between the RNC and the Node B, for the procedure to be executed successfully.
- The Node B has informed the CRNC of the existence of the local cell id and the resource capabilities of the cell via the Node B Resource Notification procedure.



a) Successful case



a) Unsuccessful case

Cell Setup Procedures

It is FFS as to how multiple carriers will be handled with the cell setup procedure. Currently, if a second carrier was to be added to a cell, the cell would have to be deleted first and then re-configured with the new carrier causing a cell outage.

The CELL SETUP REQUEST message contains the following administrative information:

- Local Cell Id (a pre-configured cell identity local to Node B, known by both RNC and Node B)
- Cell Id (The Cell Id to be used in all other NBAP messages, unique in UTRAN)
- Transaction Id (to identify this invocation of the procedure)

Information for Cell Configuration includes:

~~- Max transmission Power~~

~~- Frequency~~

~~- DL Scrambling Code~~

- Cell ID
- DL Scrambling Code
- Secondary SCH Sequence Number
- SCH Gain
- T Cell
- DL Frequency (per Cell Carrier)
- UL Frequency (per Cell Carrier)
- Maximum Transmit Power (per Cell Carrier)

The CELL SETUP RESPONSE message contains the following information:

- Transaction Id (same Id as in the corresponding CELL SETUP REQUEST message)
- Transport Layer Address (per carrier)

The CELL SETUP FAILURE message contains the following information:

- Transaction Id (same Id as in the corresponding CELL SETUP REQUEST message)
- Failed Element ID~~Reason~~
- Failure Cause

  The failure cause may include:
  - Value out of range
  - Cell ID does not exist
  - Carrier ID does not exist

2.2 Message Functional Definition and Content

2.2.1 Cell Setup

This message is sent from the CRNC to the Node B in order to configure a cell with the specified elements in the Node B.

Information Element	**Reference**	**Type**
Message Discriminator		M
Message Type		M
Transaction ID		M
Local Cell ID		M
Cell ID		M
DL Scrambling Code		M
Secondary SCH Sequence Number		M
SCH Gain		M
T Cell		M
Carrier Information		M
Cell Carrier ID		M
DL Frequency		M
UL Frequency		M
Maximum Transmit Power		M

2.2.2 Cell Setup Response

This message is sent from Node B to CRNC as a response to the Cell Setup message when the cell was successfully configured.

Information Element	**Reference**	**Type**
Message Discriminator		M
Message Type		M
Transaction ID		M
Carrier Information		M
Transport Layer Address		M

2.2.3 Cell Setup Failure

This message is sent from Node B to CRNC as a response to the Cell Setup message when the cell failed to be configured.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Transaction ID		M
Failed Element ID		FFS
Failure Cause		M

2.2.4 Cell Delete

This message is sent from the CRNC to the Node B in order to delete a cell(s) currently configured within the Node B.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Transaction ID		M
Cell Information		**M**
Local Cell ID		M

2.2.5 Cell Delete Response

This message is sent from Node B to CRNC as a response to the Cell Delete.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Transaction ID		M

3 Proposal

The following changes to TS 25.433 are proposed –

1. Replace section 8.1.5.1 – Cell Setup with the updated contents of Section 2.1 (Cell Setup)
2. Include a new section 9.1.x – Cell Setup with the contents of Section 2.2.1 (Cell Setup)
3. Include a new section 9.1.x – Cell Setup Response with the contents of Section 2.2.2 (Cell Setup Response)
4. Include a new section 9.1.x – Cell Setup Failure with the contents of Section 2.2.3 (Cell Setup Failure)
5. Include a new section 9.1.x – Cell Delete with the contents of Section 2.2.4 (Cell Delete)
6. Include a new section 9.1.x – Cell Delete Response with the contents of Section 2.2.5 (Cell Delete Response)

4 References

[1] 3GPP TS 25.433 - NBAP Specification v1.1.1

5 Appendix

The concept of having Node B direct the selection of the transport resource that is used to support a particular transport channel across Iub has been established. This concept is illustrated by the Transport Layer Address information element (presently specified as mandatory) in the Common Transport Setup Response message and in the Radio Link Setup Response message. A problem with this scenario (particularly for the case of radio link setup) is that the RNC is not aware of all the resources associated with the transport channel at the time its setup is being initiated. It is believed that the RNC could do a better job of resource management if it could allocate all of the necessary resources prior to initiating the setup procedure. To facilitate this process, it is proposed that Node B convey to the RNC the relationships between transport layer addresses and other Node B resources beforehand – specifically during the Cell Setup procedure. It is believed that associating transport layer addresses to cells/frequencies would provide a sufficient level of granularity for the resource relationship information. With this in mind, an information element is added to the Cell Setup Response message whereby Node B can provide a list of transport layer addresses for each cell/frequency.