

**Agenda Item:** 16.3

**Source:** Nortel Networks

**Title:** NBAP procedures for Communication Control Port management, Common Transport Channel management

**Document for:**

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## 1 Introduction

This contribution presents :

- The different NBAP procedures for communication control port management :
  - Communication Control Port (C-CP) Setup
  - Communication Control Port (C-CP) Delete
  - Communication Control Port (C-CP) Availability
  - Communication Control Port (C-CP) Establishment
- New NBAP procedures for Uplink and Downlink common transport channel :
  - Uplink Common Transport Channel Availability
  - Downlink Common Transport Channel Availability

## 2 Description

## 2.1 Communication Control Port Management

### 2.1.1 Communication Control Port Setup

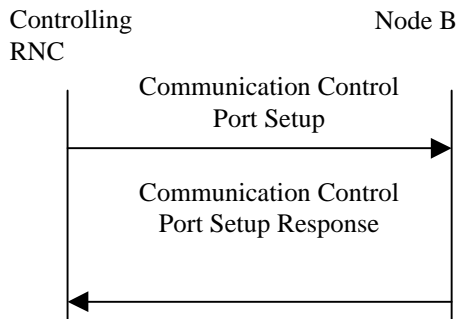
#### 2.1.1.1 Communication Control Port Setup procedure

This NBAP common procedure is used to configure one Communication Control Port in a Node B. This procedure is initiated by the RNC on Node B Control Port.

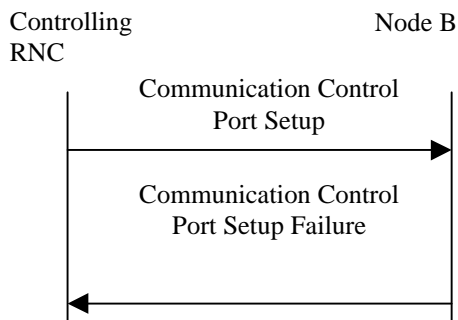
The RNC initiates a definition of Communication Control Port in Node B, which creates and configures a Communication Control Port context in the Node B. The result is communicated back to the RNC.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B



a) Successful case



b) Unsuccessful case

The COMMUNICATION CONTROL PORT SETUP message contains the following mandatory information:

- Transaction ID (assumed unique in the RNC)
- C-CP ID

The COMMUNICATION CONTROL PORT SETUP RESPONSE message contains the following mandatory information:

- Transaction ID

The COMMUNICATION CONTROL PORT SETUP FAILURE message contains the following mandatory information:

- Transaction ID
- Failure Cause

### 2.1.1.2 Communication Control Port Setup

This message is sent from the RNC to the Node B to request the setup and configuration of a communication control port in the Node B. One communication control port at a time can be setup using this procedure. The communication control port is supervised by the Node B after the successful completion of this procedure.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
C-CP ID		M

### 2.1.1.3 Communication Control Port Setup Response

This message is sent to inform the RNC about the communication control port that Node B has been able to define. Information on one communication control port at a time is given using this response.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

### 2.1.1.4 Communication Control Port Setup Failure

This message is sent to inform the RNC that the attempt to configure a communication control port has failed.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
Failure cause		M

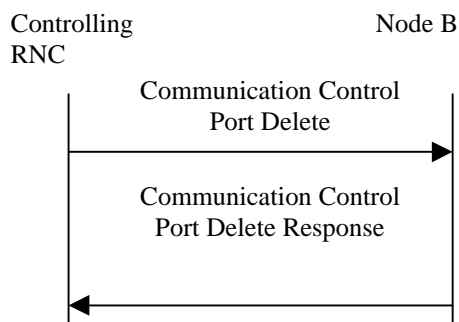
## 2.1.2 Communication Control Port Delete

### 2.1.2.1 Communication Control Port Delete procedure

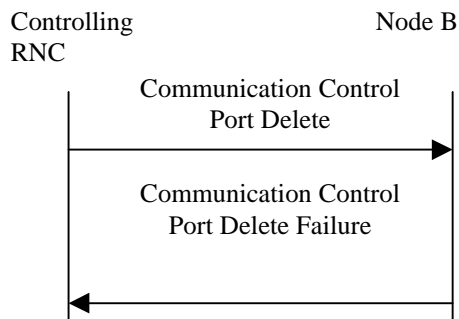
This NBAP common procedure is used to delete one Communication Control Port in a Node B. This procedure is initiated by the RNC on Node B Control Port.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B
- The Communication Control Port in question must be successfully configured in Node B



a) Successful case



b) Unsuccessful case

The COMMUNICATION CONTROL PORT DELETE message contains the following mandatory information:

- Transaction ID (assumed unique in the RNC)
- C-CP ID

The COMMUNICATION CONTROL PORT DELETE RESPONSE message contains the following mandatory information:

- Transaction ID

The COMMUNICATION CONTROL PORT DELETE FAILURE message contains the following mandatory information:

- Transaction ID
- Failure Cause

### 2.1.2.2 Communication Control Port Delete

This message is sent to inform the Node B about what communication control port the RNC no longer wants to be supported by the Node B. One communication control port at a time can be deleted using this procedure. The communication control port is no more supervised by the Node B after the successful completion of this procedure.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
C-CP ID		M

### 2.1.2.3 Communication Control Port Delete Response

This message is sent to inform the RNC about the communication control port that Node B no longer shall support. Information on one communication control port at a time is given using this response.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

### 2.1.2.4 Communication Control Port Delete Failure

This message is sent to inform the RNC that the attempt to delete a communication control port has failed.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
Failure cause		M

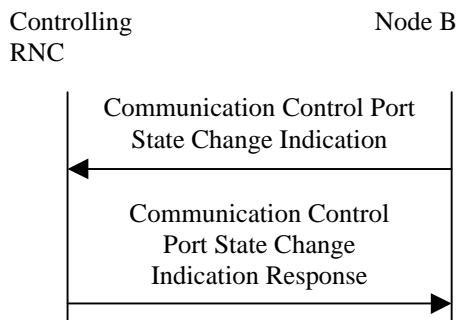
## 2.1.3 Communication Control Port Availability

### 2.1.3.1 Communication Control Port State Change Procedure

This NBAP common procedure is used by the Node B to inform the RNC of the availability or not of one Communication Control Port. This procedure is initiated by the Node B on each state change of a Communication Control Port, using Node B Control Port.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B
- The Communication Control Port in question must be successfully configured in Node B



The COMMUNICATION CONTROL PORT STATE CHANGE INDICATION message contains the following mandatory information:

- C-CP ID
- 
- C-CP operationalState
- C-CP availabilityStatus

C-CP operationalState and availabilityStatus parameters are compliant with TMN states defined in [R2] .

The COMMUNICATION CONTROL PORT STATE CHANGE INDICATION RESPONSE message contains standard mandatory information.

### 2.1.3.2 Communication Control Port State Change Indication

This message is sent to inform the RNC about the communication control port state change.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
C-CP ID		M
OperationalState		M
AvailabilityStatus		M

### 2.1.3.3 Communication Control Port State Change Indication Response

This message is sent to inform the Node B that the new state of the communication control port that has been taken into account by the RNC.

<b>Information Element</b>	<b>Reference</b>	<b>Type</b>
Message Type		M
Transaction ID		M

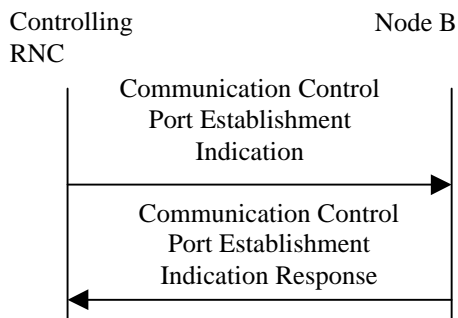
## 2.1.4 Communication Control Port Establishment

### 2.1.4.1 Communication Control Port Establishment Procedure

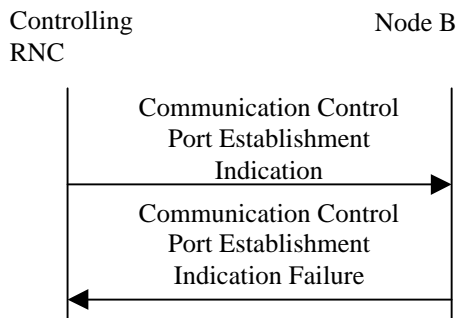
This procedure is used by the RNC to establish the communication control port on the corresponding signalling bearer. It gives to the Node B and RNC the capability to associate the logical object (communication control port) to the signalling bearer. The RNC uses the relevant Communication Control Port for the different exchanges relative to this procedure.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B
- The Communication Control Port in question must be successfully configured in Node B
- This transport bearer used by the Communication Control Port is available for communication between the RNC and the Node B (successful ALCAP establishment procedure)



a) Successful case



b) Unsuccessful case

The COMMUNICATION CONTROL PORT ESTABLISHMENT INDICATION message contains the following mandatory information:

- Transaction ID (assumed unique in the RNC)
- C-CP ID

The COMMUNICATION CONTROL PORT ESTABLISHMENT INDICATION RESPONSE message contains the following mandatory information:

- Transaction ID

The COMMUNICATION CONTROL PORT ESTABLISHMENT INDICATION FAILURE message contains the following mandatory information:

- Transaction ID



- Failure Cause

### 2.1.4.2 Communication Control Port Establishment Indication

This message is sent to establish between the Node B and the RNC the communication control port.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
C-CP ID		M

### 2.1.4.3 Communication Control Port Establishment Indication Response

This message is sent to inform the RNC about the successful establishment of the communication control port.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

### 2.1.5 Communication Control Port Establishment Indication Failure

This message is sent to inform the RNC that the attempt to establish a communication control port has failed.

Information Element	Reference	Type
Message Type		M
Transaction ID		M
Failure cause		M

## 2.2 Common Transport Channel Management

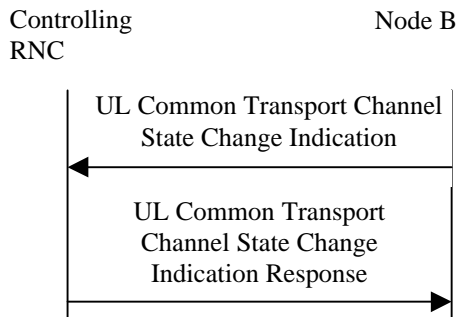
### 2.2.1 Uplink Common Transport Channel Availability

#### 2.2.1.1 Uplink Common Transport Channel State Change Procedure

This NBAP common procedure is used by the Node B to inform the RNC of the availability or not of one Uplink Common Transport Channel. This procedure is initiated by the Node B on each state change of an Uplink Common Transport Channel, using Node B Control Port.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B
- The cell including the Common Transport Channel has previously been defined and configured
- The Uplink Common Transport Channel in question must be successfully configured in the cell within the Node B



The UL COMMON TRANSPORT CHANNEL STATE CHANGE INDICATION message contains the following mandatory information:

- Cell ID
- Common transport channel type and Identifier
- Common transport channel operationalState
- Common transport channel availabilityStatus

C-CP operationalState and availabilityStatus parameters are compliant with TMN states defined in [R2] .

The UL COMMON TRANSPORT CHANNEL STATE CHANGE INDICATION RESPONSE message contains standard mandatory information.

#### 2.2.1.2 UL Common Transport Channel State Change Indication

This message is sent to inform the RNC about the UL common transport channel state change.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

Cell ID		M
UL common transport channel type		M
UL common transport channel ID		M
OperationalState		M
AvailabilityStatus		M

### 2.2.1.3 UL Common Transport Channel State Change Indication Response

This message is sent to inform the Node B that the new state of the UL common transport channel that has been taken into account by the RNC.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

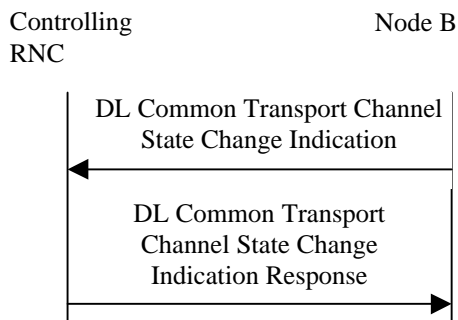
## 2.2.2 Downlink Common Transport Channel Availability

### 2.2.2.1 Downlink Common Transport Channel State Change Procedure

This NBAP common procedure is used by the Node B to inform the RNC of the availability or not of one Downlink Common Transport Channel. This procedure is initiated by the Node B on each state change of a Downlink Common Transport Channel, using Node B Control Port.

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

- Node B equipment has previously been defined and configured
- A Node B control port is available for communication between the RNC and the Node B
- The cell including the Common Transport Channel has previously been defined and configured
- The Downlink Common Transport Channel in question must be successfully configured in the cell within the Node B



The DL COMMON TRANSPORT CHANNEL STATE CHANGE INDICATION message contains the following mandatory information:

- Cell ID
- Common transport channel type and Identifier
- 
- Common transport channel operationalState
- Common transport channel availabilityStatus

C-CP operationalState and availabilityStatus parameters are compliant with TMN states defined in [R2] .

The DL COMMON TRANSPORT CHANNEL STATE CHANGE INDICATION RESPONSE message contains standard mandatory information.

### 2.2.2.2 DL Common Transport Channel State Change Indication

This message is sent to inform the RNC about the DL common transport channel state change.

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

DL common transport channel type		M
DL common transport channel ID		M
OperationalState		M
AvailabilityStatus		M

### 2.2.2.3 DL Common Transport Channel State Change Indication Response

This message is sent to inform the Node B that the new state of the DL common transport channel that has been taken into account by the RNC.

Information Element	Reference	Type
Message Type		M
Transaction ID		M

### **3 Proposal**

- Sections 2.1.1.1, 2.1.2.1, 2.1.3.1, 2.1.4.1, 2.2.1.1 and 2.2.2.1 of this contribution to add in section 8.1 of [R1]
- Other sections of this contribution to add in section 9.1 of [R1]

### **4 Reference**

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- [R1] : TS 25.433 – V.1.1.1
- [R2] : CCITT Rec. X.731: Information technology - open systems interconnection – system management: state management function