

**TSG-RAN Working Group 3, meeting #6 TSGR3#3(99) 865**  
Sophia Antipolis, FRANCE, 23<sup>rd</sup> – 27<sup>th</sup> August 1999

**Agenda Item:** 16.3 & 16.4

**Source:** Motorola

**Title:** Capability Exchange Procedure – Message Content and Format

**Discussion for:** Decision

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## 1 Introduction

This contribution discusses the message content and format of the Capability Exchange procedure.

## 2 Discussion

The purpose of a capability exchange is to allow Network Elements (CRNC and Node B) to run unaligned versions of software. A capability exchange is necessary in order to negotiate the software capabilities to be used between NEs. If a feature/functionality affects the interface between NEs, it is included in a capability exchange. If a feature/functionality is isolated to a particular NE, it is not controlled by a capability exchange. Cross-NE functionality is only available when it is supported by NEs on both ends of an interface. Thus, only the greatest common capabilities between NEs are supported.

The Capability Exchange Procedure requires two types of messages, a CAPABILITY INDICATION and a CAPABILITY INDICATION ACK.

### 2.1 Message Functional Definition and Content

The CAPABILITY INDICATION message is sent from the Network Element (NE) initiating the Capability Exchange to the NE on the other end of the link. All features and versions supported by each feature are specified in the message.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Transaction ID		M
<b>Functionality Set</b>		
Functionality ID		M
Version ID		M

The CAPABILITY INDICATION ACK message is sent from the receiving NE to the initiating NE. The features and version for each feature that comprise the greatest common feature set are specified in the message.

Information Element	Reference	Type
Message Discriminator		M
Message Type		M
Transaction ID		M
<b>Functionality Set</b>		
Functionality ID		M
Version ID		M

## 2.2 Message Types

This section defines the message types for the Information Elements introduced in section 2.1 yet not already defined in section 9.2 of 25.433.

### 2.2.1 Functionality ID

The Functionality ID identifies functionality supported by a Network Element. This identifier is unique across both RNC and Node B network elements. For Release '99, the initial set of functionality that can be specified include TDD, FDD, SSdT, and Softer HO Combining. Future functionality may include Dual Band Cells.

### 2.2.2 Version ID

The Version ID identifies a version that is supported for a given Feature ID. This identifier is unique for a given Feature ID. For Release '99, the initial set of version IDs that can be specified can include Release 99 and Release 00.

## 2.3 Example Usage

The following is an example Capability Exchange between a Node B and RNC.

In this example, the Node B initiates the Capability Exchange by sending the following CAPABILITY INDICATION message to the RNC.

Information Element	Contents
Message Discriminator	Common NBAP message
Message Type	CAPABILITY INDICATION
Transaction ID	<transaction ID>
<b>Functionality Set</b>	
Functionality ID	Softer HO Combining
<b>Version Set</b>	
Version ID	Release 99
Functionality ID	FDD
<b>Version Set</b>	
Version ID	Release 99
Version ID	Release 00

In this example, the RNC does not support Softer HO Combining yet supports Release 99 for both FDD and TDD. On receipt of the CAPABILITY INDICATION message, the RNC determines the greatest common capabilities supported by both the Node B and RNC. The greatest common capabilities would include only FDD for Release 99. The RNC responds to the Node B with the following CAPABILITY INDICATION ACK message.

Information Element	Contents
Message Discriminator	Common NBAP message
Message Type	CAPABILITY INDICATION ACK
Transaction ID	<transaction ID>
<b>Functionality Set</b>	
Functionality ID	FDD
Version ID	Release 99

## 3 Proposal

To add sections 2.1 and 2.2 to the Elements for NBAP Communication sections (9.1 and 9.2) of 25.433.