Title: **Report of the NBAP & RNSAP TDD Parameters Study Item: TDD parameters in RNSAP**

Source: **Italtel / Siemens**

Agenda Item: **16.1**

Document for: **Approval**

1.   Introduction

This contribution presents the results of the study item on TDD parameters in RNSAP protocol.
The following documents have been assumed as starting point for the discussion:

- #906: TDD Support of NRT Data Services with Dedicated Channels (InterDigital)
- #A46: TDD Parameters in RNSAP and NBAP RADIO LINK ADDITION Messages (Italtel/Siemens)

Contributions to the discussion have arrived from the following companies:
- Italtel /Siemens
- Interdigital
- Vodafone
- CSELT

The content of this report is based on version 0.4 of the working document of the NBAP & RNSAP TDD Parameters Study Item.

Proposals for RNSAP Messages

Information Element Functional Definition and Contents

It is proposed to add the following definitions to section 9.2.3 of TS 25.423

CCTrCH ACTIVATION CFN
The CFN of the frame in which the physical layer starts transmitting/receiving a CCTrCH.

CCTrCH DURATION
The CCTrCH Duration represents the number of frames for which the CCTrCH is activated.

Note: in case the Superframe Offset is not specified but only the CCTrCH Activation CFN, all DPCHs belonging to the same CCTrCH will start at the same time (i.e. at the CCTrCH Activation CFN).
In case neither the Superframe Offset nor the CCTrCH Activation CFN are specified, the Superframe Offset for all DPCHs belonging to the same CCTrCH is assumed to be 0.

Supporting CCTrCH ID
The Supporting CCTrCH ID indicates on which CCTrCH is mapped a DCH.

Cell Parameter
The Cell Parameter identifies unambiguously the Code Groups, Scrambling Codes, Midambles and Toffset (see table 7 of TS25.223)
The range of this parameter is 0..127.

PSCH and PCCPCH Allocation

In TDD the PSCH and PCCPCH are mapped on one or two downlink slots per frame. There are three cases of PSCH and PCCPCH allocation as follows:

Case 1) PSCH and PCCPCH allocated in a single TS#k

Case 2) PSCH in two TS and PCCPCH in the same two TS: TS#k and TS#k+8

Case 3) PSCH in two TS, TS#k and TS#k+8, and the PCCPCH in TS#i, pointed by PSCH.

The range of this parameter is therefore 1..3.

PSCH & PCCPCH Time Slot Pointer (k)

When the value of *PSCH and PCCPCH Allocation* is:

- *Case 1*, then this parameters assume the value *k=0....14*

- *Case 2 and Case 3*, then this parameter assumes the value *k=0...6*

PCCPCH Time Slot Pointer (i)

This IE is present only if *PSCH & PCCPCH Allocation = Case 3*.
In that case this parameter assumes the value *k=0...14.*

Message Functional Definition and Content

It is proposed:

1. to add the **UL CCTrCH Information** and **DL CCTrCH Information** groups to the following messages with the IE CCTrCH Activation CFN

   - RADIO LINK SETUP RESPONSE
   - RADIO LINK ADDITION RESPONSE

2. to add the CCTrCH Duration IE in the **UL CCTrCH Information** and **DL CCTrCH Information** IE groups of the following messages:

   - RADIO LINK SETUP REQUEST
   - RADIO LINK RECONFIGURATION PREPARE

3. to add the **UL DPCH Information** and **DL DPCH Information** group to the RADIO LINK RECONFIGURATION READY message.

4. to modify the **DSCH Information** and the **DSCH Information Response** IE Groups in all the messages as follow:

~~DSCH~~ Shared Channel Information		O
RL ID		M
Shared Channel Type		M
MACd-MACsh TFS		M

~~DSCH~~ Shared Channel Information		O
Shared Channel Type		M
~~DSCH~~ Shared Channel TFS		M
Binding ID		M

5. to replace the IE group **Neighbouring TDD cell information** in RADIO LINK SETUP RESPONSE and RADIO LINK ADDITION RESPONSE messages with the following:

Neighbouring TDD Cell Information		O
UC-Id		M
CN PS Domain Identifier		O
CN CS Domain Identifier		O
Primary CCPCH Radio Resource Information		M
UARFCN		M
Cell Parameter		M
PSCH & PCCPCH Allocation		M
PSCH & PCCPCH Time Slot Pointer (k)		M
PCCPCH Time Slot Pointer (i)		C1

6. to add the IE group **Neighbouring FDD cell information** (given in the table below) to the messages RADIO LINK SETUP RESPONSE and RADIO LINK ADDITION RESPONSE.

Neighbouring FDD cell information		O
UC-Id		M
CN PS Domain Identifier		O
CN CS Domain Identifier		O
Primary CCPCH Radio Resource Information		**M**
UARFCN		M
Primary CCPCH scrambling code		M
Primary CCPCH TX Power		O
Frame Offset		O