**3GPP TSG-RAN, Meeting #7** **TDoc TSGRP#7(00)0055**
**Madrid, Spain, March 13-17, 2000**

**Source:** Siemens AG
**Title:** Work Item Description 'NodeB Synchronisation for TDD'
**Document for:** Decision

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# Work Item Description

## Title

NodeB Synchronisation for UTRA TDD mode

## 1 3GPP Work Area

| | |
|---|---|
| X | Radio Access |
| | Core Network |
| | Services |

## 2 Linked work items

*none*

## 3 Justification

NodeB synchronisation is beneficial in UTRA TDD to minimise cross-interference in neighbouring cells. Currently, no method has been specified how NodeB synchronisation can be achieved with UTRAN's internal ressources such as signalling via the air interface.

The following benefits of the introduction of NodeB synchronisation by means of internal ressources are seen:

- A substantial reduction of the cost of the transmission network.
- An autonomous synchronisation procedure without the need of external references.
- An easily extendable method for the purpose of inter-system NodeB synchronisation.

## 4 Objective

The purpose of this new work item is to enable the synchronisation of NodeBs in UTRA TDD by means of UTRAN's internal ressources such as air interface signals and NodeB cross measurements. NodeB synchronisation involves

- radio frame und multi frame synchronisation and
- intra-system and inter-system synchronisation.

The following time schedule is considered for TSG RAN:

| **Task** | **Planned Start** | **Planned Finish** |
|---|---|---|
| Work Item Creation | 3/2000 | 3/2000 |
| Work Item Approval | | 3/2000 |
| Drafting and discussion, updates of specifications | 4/2000 | 9/2000 |
| Submission to TSG RAN for approval | | 9/2000 |
| Possible remaining corrections and clarifications | 09/2000 | 12/2000 |

**5 Service Aspects**

*None*

**6 MMI-Aspects**

*None*

**7 Charging Aspects**

*None*

**8 Security Aspects**

*None*

**9 Impacts**

| Affects: | USIM | ME | AN | CN | Others |
|---|---|---|---|---|---|
| Yes | | X | X | | |
| No | X | | | X | |
| Don't know | | | | | |

**10 Expected Output and Time scale (to be updated at each plenary)**

| New specifications | | | | | | |
|---|---|---|---|---|---|---|
| Spec No. | Title | Prime rsp. WG | 2ndary rsp. WG(s) | Presented for information at plenary# | Approved at plenary# | Comments |
| | | | | | | |
| | | | | | | |

| Affected existing specifications | | | | |
|---|---|---|---|---|
| Spec No. | CR | Subject | Approved at plenary# | Comments |
| 25.123 | | Requirements for Support of Radio Resource Management (TDD) | RAN #9 | |
| 25.221 | | Physical channels and mapping of transport channels onto physical channels (TDD) | RAN #9 | |
| 25.224 | | Physical Layer Procedures (TDD) | RAN #9 | |
| 25.225 | | Physical layer – Measurements (TDD) | RAN #9 | |
| 25.301 | | Radio Interface Protocol Architecture | RAN #9 | |
| 25.302 | | Services provided by the physical layer | RAN #9 | |
| 25.303 | | Interlayer procedures in connected mode | RAN #9 | |
| 25.321 | | MAC Protocol Specification | RAN #9 | |
| 25.331 | | RRC Protocol Specification | RAN #9 | |
| 25.402 | | Synchronisation in UTRAN Stage 2 | RAN #9 | |
| 25.433 | | UTRAN Iub Interface NBAP Signalling | RAN #9 | |
| 25.423 | | UTRAN Iur Interface RNSAP Signalling | RAN #9 | |

**11** **Work item raporteurs**

yet to be decided

**12** **Work item leadership**

to be decided at RAN

**13** **Supporting Companies**

Interdigital Communications, Nokia, NTT DoCoMo, Siemens, Vodafone

**14** **Classification of the WI (if known)**

| | |
|---|---|
| | Feature (go to 14a) |
| | Building Block (go to 14b) |
| | Work Task (go to 14c) |

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)