

**Meeting #5, Kyongju, Korea,
11-13 October 1999**

Title: Status Report on RAN#5
Document for: Discussion
Source: TSG RAN Chairman
Agenda Item:

1. Hook and Extension workshop

Two workshop was held regarding Hooks and Extensions. The first workshop was held by RAN and the second workshop was held by 3GPP2.

In the first workshop, the connection between UTRAN and ANSI41 network was discussed. An architecture was agreed and agreements on a division of work were made with 3GPP2.

In the second workshop, connection between cdma2000 MC and GSM MAP was mainly discussed.

Both workshops were quite satisfactory for attendees.

2. Status of specification documents

Specifications from WG4

Tdoc	TS	Presented as version	Title	Result	Final version
432/568	25.101	2.4.1	UE Radio transmission and reception (FDD)	approved¹⁾	3.0.0
539/569	25.104	2.4.1	BTS Radio transmission and reception (FDD)	approved¹⁾	3.0.0
542/570	25.102	2.1.0	UE Radio transmission and reception (TDD)	approved¹⁾	3.0.0
543/571	25.105	2.1.0	BTS Radio transmission and reception (TDD)	approved¹⁾	3.0.0
436/599	25.103	2.0.0	RF parameters in support of RRM	for info; endorsed	2.0.0
544	25.141	2.0.2	Base station conformance testing (FDD)	for info; endorsed	2.0.2
438	25.142	2.0.0	Base station conformance testing (TDD)	for info; endorsed	2.0.0
495	25.113	1.2.0	BTS (EMC)	for info; noted	1.2.0

1) taking into account the discussion on Tdoc 529 and Tdoc 530, to be added by MCC

Status of Specification Document of WG4

Spec. No.	Document Name	Items essential for release'99, but not agreed (or proposed) yet.	Items not essential for release'99 and still under discussion for release'99
25.101	UE Radio transmission and reception (FDD)	<ul style="list-style-type: none"> • ACLR values for higher power classes • Peak code domain error • Values of performance requirement based on link level simulation 	<ul style="list-style-type: none"> • Deployment of TDD in the 1920 to 1980 MHz
25.102	UE Radio transmission and reception (TDD)	<ul style="list-style-type: none"> • ACLR values for higher power classes • Peak code domain error • Transmit intermodulation • ACS value in brackets • Spurious emission in bracket • Values of performance requirement based on link level simulation 	<ul style="list-style-type: none"> • Deployment of TDD in the 1920 to 1980 MHz
25.103	RF parameters in support of RRM	<ul style="list-style-type: none"> • Text and values for idle mode tasks for FDD and TDD • Most of values are blank 	
25.104	BTS Radio transmission and reception (FDD)	<ul style="list-style-type: none"> • Peak code domain error • Primary CPICH power • Receiver dynamic range in bracket • Values of performance requirement based on link level simulation 	<ul style="list-style-type: none"> • BS max output power in extreme condition • Clock rate accuracy • Coexistence with GSM900 and DCS1800
25.105	BTS Radio transmission and reception (TDD)	<ul style="list-style-type: none"> • Power control cycles in bracket • Primary CPICH power • Spectrum emission mask • ACLR in bracket • Values of ACS • Receiver dynamic range in bracket • Spurious emission • Values of performance requirement based on link level simulation 	<ul style="list-style-type: none"> • Clock rate accuracy • Coexistence with GSM900 and DCS1800
25.113	Base station EMC	<ul style="list-style-type: none"> • Test conditions • Performance assesment • Performance criteria • Applicability 	
25.141	Base station conformance testing (FDD)	<ul style="list-style-type: none"> • Definitions of symbols • Values for transmitter and receiver have properly to be quoated • Test conditions • Values of performance requirement 	<ul style="list-style-type: none"> • Coexistence with GSM900 and DCS1800 ?
25.142	Base station conformance testing (TDD)	<ul style="list-style-type: none"> • Values for transmitter and receiver have properly to be quoated • Test conditions 	<ul style="list-style-type: none"> • Values of performance requirement • Coexistence with GSM900 and DCS1800 ?

Specifications from WG1

Tdoc	TS	Presented as version	Title	Result	Final version
526	25.201	2.3.0	Physical layer –General Description	approved	3.0.0
475	25.211	2.5.0	Physical channels and mapping of transport channels onto physical channels (FDD)	approved	3.0.0
476	25.212	2.3.0	Multiplexing and channel coding (FDD)	approved	3.0.0
477	25.213	2.4.0	Spreading and modulation (FDD)	approved	3.0.0
478/ 531	25.214	2.0.0	FDD; physical layer procedures	approved ¹⁾	3.0.0
563	25.215	2.0.0	Measurements (FDD) (new)	approved	3.0.0
480	25.221	2.1.0	Physical channels and mapping of transport channels onto physical channels (TDD)	approved	3.0.0
481	25.222	2.3.0	Multiplexing and channel coding (TDD)	approved	3.0.0
482	25.223	2.4.0	Spreading and modulation (TDD) note3	approved	3.0.0
483	25.224	2.1.0	TDD; physical layer procedures	approved ²⁾	3.0.0
551	25.225	2.0.0	Measurements (TDD) (new)	approved	3.0.0
n/a	25.231	Split into 215, 225	Physical layer; measurements	-	n/a

1) editorial corrections: clean up references; remove editorial note Annex C; change references to 25.231 to 25.215

2) editorial correction: front page has two version numbers, it should be 2.1.0

Open Issues

- Harmonisation details finalised, Common Pilot Channel (CPICH) included, chip rate changes completed
- Additional slot structures included, considered as a hook for EVRC support after release -99.
- Open issue: CPCH monitoring and channel assignment (FDD,TDD)
- Work to be done on the parameter limitations and ranges for measurement values. For TDD monitoring new TGL durations needed
- Open: Tx diversity for BCH (TDD)

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- Open issue: AMR support related issue (TDD)

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Items for future release

- **DSCH Control Channel**
- **Physical Shared Channel Control Channel (PSCCCH)**
- **FAUSCH**
- **Hybrid ARQ**
- **RACH half burst**
- **Some RACH channel coding**
- **Some SCCC Turbo Coder**

Specifications from WG2

Tdoc	Agreed as spec.	Presented as version	Title	Result	Final version
460 (CRs) 575 (CR 008) 576 (CR 018)	25.301	3.1.0	Radio Interface Protocol Architecture	approved	3.2.0
461 (CRs)	25.302	3.0.0	Services provided by the physical layer	CR 003 postponed¹⁾; rest approved	3.1.0
462 (CRs)	25.303	3.0.0	Inter-layer procedures in connected mode	approved	3.1.0
464	25.304	1.6.0 ³⁾	UE procedures in Idle Mode	approved	3.0.0
463 (CRs)	25.321	3.0.0	MAC protocol specification	CR 005 withdrawn; CR 020 postponed; rest approved²⁾	3.1.0
465	25.322	1.3.0 ³⁾	RLC protocol specification	approved	3.0.0
466	25.323	0.1.0	PDCP protocol specification (new)	for info; noted	0.1.0
467	25.324	0.1.0	BMC protocol specification (new)	for info; noted	0.1.0
524	25.331	1.5.0 ³⁾	RRC protocol specification	approved	3.0.0

1) CR 003 to TS 25.302 is postponed. All CRs on this issue, which impacts WG1, to be issued for next RAN meeting.

2) CR 005 to TS 25.321 is withdrawn because it has been superseded by CR 021 to TS 25.321. CR 020 to TS 25.321 is postponed for the same reason as CR 003 to TS 25.302.

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- 3) Due to a misunderstanding of the approval procedure by WG2, these documents do not have version 2.0.0. However, these versions are presented by WG2 for approval and should therefore be considered to be in version 2.0.0.

Not yet complete items essential for release'99

Items with dependency with other WGs:

- UE capabilities management
 - Support of CN signalling (N(SD))
 - SRNS relocation
 - Routing of CN signalling messages
 - Outer Loop Power control for downlink

Items started but yet to complete:

- Ciphering
- Methodology for description of RRC specification
- Encoding of RRC messages
- Protocol error handling
- LCS
- BMC and PDCP protocols

Not complete items not essential for rel99 and under discussion for rel99

- Gated transmission
- Slow TPC

Items agreed to be for release'00

- FAUSCH
- Asymmetric reconfiguration
- Hybrid ARQ
- Multiplexing in the PDCP layer
- UE speed estimation

Location Service

Agreement with SA2 on way forward:

- SA2 to produce a System Stage 2, with UTRAN as "black box"
- RAN WG2 to write UTRAN stage 2, based on Technical Report 25.923
- need to change from TR to TS

UTRAN stage 2 well progressed, more work needed

First selection of Position Method

- OTDOA
- Network Assisted GPS

Hook and Extension

One hook identified and incorporated

- CN Type on BCCH

First list of extensions identified in H&E Workshop

Request from 3GPP2 to maintain "Up to date" specification

- Incorporation of CRs by WG2 after each meeting

Work on extensions to progress in next coming meetings

- Description methodology, in RRC ad-hoc 19-21st October
- Extensions in next coming RAN2 meeting

Planned to be approved in March RAN meeting

Broadcast Services

Only SMS-SCB shall be supported in rel 99

Agreement with SA2 on way forward

- Common Technical Report shall be used, 25.925

Agreement in RAN2 on mechanism for SMS-SCB

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- New logical channel created
 - Scheduling in the RNC
- New protocol started, Broadcast/Multicast Control (BMC) protocol
Proposed to be approved in December by RAN

Compression of IP headers

- Request from SA2 to add a new function in UTRAN, L3CE
L3CE renamed into PDCP, Packet Data Convergence Protocol
Agreement in RAN2 on architecture for PDCP
- model for rel 99 is 1 RAB / 1 PDCP / 1 RLC
 - rel 00 shall allow for n RAB / 1 PDCP / 1 RLC
- New protocol started, PDCP protocol
- TS 25.323
 - Proposed to be approved in December by RAN

Specifications from WG3

Tdoc	TS	Presented as version	Title	Result	Final version
442	25.401	2.0.0	UTRAN Overall Description	approved	3.0.0
485	25.402	0.0.1	Synchronization in UTRAN Stage 2 (new)	for info; noted	0.0.1
443	25.410	2.0.0	UTRAN Iu Interface: General Aspects and Principles	approved	3.0.0
no CRs	25.411	3.0.0	UTRAN Iu interface Layer 1	-	3.0.0
514 (CRs)	25.412	3.0.0	UTRAN Iu interface signalling transport	approved	3.1.0
447	25.413	1.3.1	UTRAN Iu interface RANAP signalling	for info; noted	1.3.1
517 (CRs)	25.414	3.0.0	UTRAN Iu interface data transport & transport signalling	approved	3.1.0
450	25.415	2.0.0	UTRAN Iu interface user plane protocols	approved	3.0.0
444	25.420	1.0.1	UTRAN Iur Interface: General Aspects and Principles	for info; noted	1.0.1
no CRs	25.421	3.0.0	UTRAN Iur interface Layer 1	-	3.0.0
515 (CRs)	25.422	3.0.0	UTRAN Iur interface signalling transport	approved	3.1.0
448	25.423	1.4.0	UTRAN Iur interface RNSAP signalling	noted	1.4.0
518 (CRs)	25.424	3.0.0	UTRAN Iur interface data transport & transport signalling for CCH data streams	approved	3.1.0
552	25.425	0.2.5	UTRAN Iur interface user plane protocols for CCH data streams	noted	0.2.5
520 (CRs)	25.426	3.0.0	UTRAN Iur and Iub interface data transport & transport signalling for DCH	approved	3.1.0

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			data streams		
453	25.427	2.0.0	UTRAN Iur and Iub interface user plane protocols for DCH data streams	approved	3.0.0
445	25.430	2.0.0	UTRAN Iub Interface: General Aspects and Principles	endorsed	2.0.0
no CRs	25.431	3.0.0	UTRAN Iub interface Layer 1	-	3.0.0
516 (CRs)	25.432	3.0.0	UTRAN Iub interface signalling transport	approved	3.1.0
449	25.433	1.3.0	NBAP specification	noted	1.3.0
519 (CRs)	25.434	3.0.0	UTRAN Iub interface data transport & transport signalling for CCH data streams	approved	3.1.0
452	25.435	2.0.0	UTRAN Iub interface user plane protocols for CCH data streams	approved	3.0.0
446	25.442	2.0.0	UTRAN Implementations specific O&M transport	approved	3.0.0

- 1) editorial correction: title should be corrected to the one in the 'Title' column of this table
- 2) editorial corrections: first word in 4.1 should be replaced by 'Common transport channel'; in 5.1.4, figure 5 caption should read 'USCH Data Transfer Procedure'

Major open issues in WG3

Open issues are listed per document further down. In addition, there are a few issues on overall UTRAN architecture that has not been addressed so far within RAN WG3. These include:

- **LCS / Positioning support on Iur/Iub.**
Positioning may be requested over Iu and results delivered to the CN. However, there has been no discussion in R3 for support on Iub and Iur interfaces for positioning methods.
- **Cell broadcast service.**
Only very limited discussions based on incoming LSs. The interface between CBC and RNC should in principle be within RAN WG3 scope (if CBC belongs to CN, this is part of Iu; if CBC belongs to UTRAN it is a new UTRAN-internal interface). However, R3 could not conclude on this issue.
- **Various L1 options**
There may be options within L1 that would need support on Iur/Iub, but that has not been discussed at all (e.g. gated transmission, slow power control, etc).
- **Extensions related to H&E workshop**

In addition, a large number of open item was presented from WG3 chairman. TRG-RAN agreed to give priorities on the list and encouraged WG3 to have complete specifications on the selected items and fix the remaining item in March'00 meeting as a part of Release'99. (Attachment 1)

List of open issues on specification documents

25.401 UTRAN Overall Description

- List of functions may still need some update and review
- Performance requirements
- Support for positioning

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- Support for Cell broadcast service

25.402 Synchronisation in UTRAN

- Complete Synchronisation overview
- Detailed check with WG1 and WG2 assumptions/specifications
- Rounding of parameters
- Granularity/Range/coding of timing parameters in the application protocols
- Time of day handling

25.420 UTRAN Iur Interface: General Aspects and Principles

- DRNS logical model is incomplete
- Addressing scheme: Details, description, needed.
- Compatibility issue
- Mapping of frame protocols onto transport bearers
- GT addressing format
- Basic principle for DSCH over Iur
- Number of priority classes for FACH data streams

25.430 UTRAN Iub Interface: General Aspects and Principles

- Restructuring / rewriting of section 5 (function list and function split)
- Completion of the Node B logical model

25.413 UTRAN Iu interface RANAP signalling

- Error cases for some procedures remain to be defined
- Further details on compatibility handling,
- Specification text
This specification needs to be improved to be more of a specification rather than the present descriptive text. This applies to all chapters of the specification.
- Services from Signalling Transport (Chapter 6)
- Details in the Relocation procedure
- Representation of areas in location reporting (cells, geographical coordinates, others?)
- SoLSA (related to area representation)
- Cell broadcast service (possible impact on Iu?)
- Parameter definitions and ranges.
- ASN.1 description and coding

25.423 UTRAN Iur interface RNSAP signalling

- Compressed Mode
- Positioning
- TDD
A lot of issues remains to be sorted out, e.g. parameters, differences between FDD and TDD, etc.
- DL Power Control
Added as a consequence of the Tdocs A08 and 924: The handling of the DL power control is an additional open issue. (For instance, how shall the DL Reference Power be used?)
- Error Cases/Error Handling
- Timers
- Load Information (Load Information Request)
- Compatibility and Version handling
- Specification text
This specification needs to be improved to be more of a specification rather than the present descriptive text. This applies to all chapters of the specification.

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- Services from Signalling Transport (Chapter 6)
- Parameters for DSCH
- Parameter definitions and ranges.
- ASN.1 description and coding

25.433 UTRAN Iub interface NBAP signalling

- Compressed Mode
- Positioning
- TDD:Some issues remains to be sorted out, e.g. parameters, differences between FDD and TDD, etc.
- DL Power Control: The handling of the DL power control is an additional open issue. (For instance, how shall the DL reference Power be used?)
- Error Cases/Error Handling
- Timers
- Compatibility and Version handling
- Specification text: This specification needs to be improved to be more of a specification rather than the present descriptive text.
- Common procedures for resource handling (“logical O&M”) unstable
- Services from Signalling Transport (Chapter 6)
- Parameters for CPCH
- Parameter definitions and ranges
- Cause parameters for most of response messages
- System Information Update message parameters
- SSDT
- ASN.1 description and coding

25.415 UTRAN Iu interface user plane protocols

- Error handling
- Extension mechanisms – compatibility principles
- The exact coding, length and value range of the Ies
- The replacement of data frame length by a TFI-like IE in RACH/FACH data frames
- FACH power control
- DSCH flow control
- FACH flow control procedure text
- Mapping between transport bearers and DSCH/USCH
- DSCH and USCH data frame structure
- DSCH flow control frame structure
- RACH/FACH and DSCH data transfer procedures
- Format of user data blocks and indication of format over Iur

25.435 UTRAN Iub interface user plane protocols for CCH data streams

- Backward compatibility and definition of the compatibility information
- Support for CPCH

25.427 UTRAN Iur and Iub interface user plane protocols for DCH data streams

- Version handling and backward compatibility.
- Interaction between incorrect UL TFCI decoding and UL silent mode, and need of the UL normal mode.

3. ITU submission

Since the deadline for ITU-R TG8/1 is Oct. 15, TSG-RAN revised the contribution and approved. The major topics are harmonization with CWTS proposal. A scenario to harmonize with CWTS proposal

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within ITU-R was proposed and agreed. Although there were no delegates from CWTS, agreement was obtained via e-mail exchange.

During the meeting, some modification on specification was made related to ITU submission. They are;

- Acceptance of frequency band value for region 2 in WG4 documents
- Acceptance of lower chip rate value for TDD.

Followings are outputs to ITU-R:

3GPP TSG RAN contribution of Section 5.x.1 of IMT.RSPC : Tdoc 558

Revision of the 'Overview' of 3GPP Radio Interface Specifications for ITU (FDD). (5.x.2): Tdoc 559

Revision of the 'Overview' of 3GPP Radio Interface Specifications for ITU (TDD).(5.x.2): Tdoc 582

3GPP Radio Interface Specifications (Section 5.x.3/FDD): Tdoc 580

Material from TSG-T (a reference list) will be added to Tdoc 580 and the new version will be sent to ITU without further need for discussion in TSG-RAN (the ITU-Ad Hoc Contact Person will check the TSG-T material editorially). The new version is Tdoc 597.

3GPP Radio Interface Specifications (Section 5.x.3/TDD) : Tdoc 581 As with Tdoc 580, a new version will be produced for the TSG-T material, with the same approach. The new version is Tdoc 598.

Letter to Organizational Partners on references in section 5.x.3 of IMT.RSPC :Tdoc 555 The update will be Tdoc 596.

Roadmap Document ITU-T IMT-2000 (Ericsson): Tdoc 546 This document is to be co-ordinated in the Kyongju TSG-SA plenary meeting. RAN recommends to ITU-T to refer to the SDO documents instead of 3GPP. A common answer from the entire 3GPP is needed.

4. Discussions

LS on Definitions used for the Mobile Station/Terminal (TSG-T).

It proposes to use the term 'Mobile System (MS)' instead of 'terminal', 'UE' etc. There was a lot of opposition to this proposal, with as main argument that UE has been accepted universally three years ago. The consensus is that a clearer definition of UE is needed. A small ad hoc group discussed the UE definition, and it was decided to refer in the vocabulary document to the specification. It was confirmed that "UE" is in line with the definition in 23.101.

TSG RAN agreed the general principle on terminology from TSG-T.

Tdoc 577 Proposed scope of Technical Report 'UE radio access capabilities definition'.

According to the request from WG1, a small Ad Hoc group discussed the possibility of having a UE capability report that can be closed to RAN. The group proposes that WG2 maintain this document, (the approval procedure is, as with all reports, under control by the plenary of course). The proposal is approved and the report number is TR 25.926.

Tdoc 419 The use of repeaters in UTRA (Allgon). Allgon presented this document. It was decided to start a feasibility study to see if a repeater specification can be added as a RAN Work Item for Release 2000.

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Attachment 1

3GPP TSG-RAN meeting #5
Kyongju, South Korea
October 6 – 8, 1999

TSGR#5(99)574

Source: RAN, R1, R2, R3 chairmen, RAN vice chairmen
Title: Prioritisation for R3 regarding Release 99

Contents of Release 99

As a starting point, all functions defined in Uu for Release 99 should be considered as part of Release 99 of Iub, Iur and Iu.

Prioritisation principle

Regarding prioritisation the following applies:

- R3 should prioritise to complete all TSs with good quality by RAN#6 for the basic functions / features. Good quality means clear and unambiguous specification text and complete specification of normal and error cases. Also good compatibility and extension mechanisms must be finalised.
- R3 should finalize the below functions / features for inclusion into TSs by RAN#7
- TRs are treated with lower priority except when needed internally in R3 to progress a TS

This should ensure to firstly have complete specifications allowing interoperability (“open interfaces”) during 1999, and secondly to include the additional features and functions into Release 99 at RAN#7.

Features / functions for RAN#7

The following (unordered list of) features and functions should be considered for completion to RAN#7, i.e. to be included in Release 99 but not focused on before RAN#6. Note that the other open issues reported in R3 Status Report (RP-99458) are to be solved until RAN#6.

- Cell broadcast protocols between SMS-CBC and RNC
- Support for specific positioning methods (OTDOA, GPS-assisted) on Iur and Iub
- FACH power control on Iur
- DSCH over Iur
- USCH on Iur
- SoLSA on Iu
- Load information on Iur (pure optimisation)
- CPCH
- SSDT (unless the simple solution considered by R3 can be accepted by R1 – LS to be answered)
- Iu time alignment

Any new functions / features for Release 99 not already included in the Iu / Iur / Iub specifications should be also considered for RAN#7 rather than RAN#6.

In addition, complex performance optimisations may be considered as lower priority for RAN#6.

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The NBAP common procedures (“logical O&M”) should be complete for basic interoperation with subject of minimising operator testing. It is however recognised that in order to have Iub stable in Release 99, there may be a need to limit the extent of features. Additional features will be progressed in future releases.