

TSG-RAN Working Group 3 meeting #1
Bonn 2nd - 5th February 1999

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Agenda Item: 7

Source: NEC, NTT, Fujitsu, Mitsubishi Electric, NTT Comware, Panasonic,
Tu-ka Cellular Tokyo, Tu-ka Phone Kansai, Japan Telecom,
NTT DoCoMo

Title: Comparison of the UTRAN Architecture Description in TTC/ARIB
and ETSI

Comparison of the UTRAN Architecture Description in TTC/ARIB and ETSI

1. Introduction

This contribution presents a comparison of the TTC/ARIB and ETSI UTRAN Architecture Description documents. Hopefully, this will facilitate a smooth transition from regional standardization activities/documentation to the specification work in 3GPP.

2. Comparison

'E' denotes ETSI, 'TA' denotes TTC/ARIB, an 'X' in column three or four denotes the presence of a description in the chapter given in column one of the table. The Comments part indicates differences (technical or editorial); an empty Comments column implies that there are no differences.

<i>Item</i>	<i>E</i>	<i>T</i>	<i>Comments</i> <i>A</i>
Title	X	X	No difference
Keywords, contact address, Copyright Notification,	X		Should be changed for 3GPP document.
Contents	X	X	E: TA:
Intellectual Property Rights	X		E: Should be changed for 3GPP document. TA: No text
Foreword	X		E: Should be changed for 3GPP document. TA: No text
Scope	X	X	E: Noted that the assumption on requirements are documented in a separate document, "Requirements Relevqant for UTRAN Architecture" . TA: No document for the assumption on requirements.
Reference	X	X	E: Should be changed for 3GPP document. TA: Noted that it is basically based on the ETSI document.
Definitions	X	X	No difference
Abbreviations	X	X	TA: ME is not included.
Symbols	X	X	No difference
Notation	X	X	No difference
General Architecture	X	X	No difference
Basic Principle	X	X	No difference
UTRAN Logical Architecture	X	X	E: Mentioned that functions and internal structure of NodeB is FFS. TA: Deleted above sentence.
O&M of NodeB	X		E: Content exists. TA: It is not discussed yet.

	<i>Item</i>	<i>E</i>	<i>T</i>	<i>Comments</i> <i>A</i>
	Physical O&M	X		E: Content exists. TA: It is not discussed yet.
	Logical O&M	X		E: Content exists. TA: It is not discussed yet.
	Dedicated Connection	X	X	No difference
	Consequences for Mobility Handling	X	X	E: Cell level mobility is handled within UTRAN. TA: Cell level mobility is handled within UTRAN except for streaming cases.
	Radio Network Temporary Identity	X	X	E: Contents exist but should have consistency with MAC specification (Different description from 3GPP S2.21). TA: Only general description is shown and mentioned that the detail description is in 3GPP S2.21. E: RNTI is used on all transport CH type. TA: RNTI is used on DCCH (or possible on CCCH (ffs))
	RNTI format and allocation	X	X	E: It is mentioned as if RNTI-long is used on MAC header. TA: Noted that it is ffs whether RNTI-long is used on MAC header. E: It is mentioned that RNTI-long will not change for duration of the RRC connection. TA: Noted that RNTI-long will not change for duration of the RRC connection unless there is no allocation of RNTI-long from UTRAN. E,TA: There is a difference between the allocation trigger of RNTI-long.
	RNTI usage in UL Common channel transmission	X	X	E: It is mentioned as if RNTI-long is used on MAC header. TA: Noted that it is ffs whether RNTI-long is used on MAC header. Noted that RNTI-short is used on MAC header. E: RRC message names are listed which may use RNTI-long. TA: Added other messages which might be use RNTI-long based on 3GPP S2.31. TA: Noted that RNTI-short is used only when UE does not change its cell.
	RNTI usage in DL Common channel transmission	X	X	E: It is mentioned as if RNTI-long is used on MAC header. TA: Noted that it is ffs whether RNTI-long is used on MAC header. Noted that RNTI-short is used on MAC header.
	Synchronisation	X		E: Content exists. TA: It is not discussed yet.
	List of functions	X	X	E,TA: There is no difference.
	Functions related to overall system access control	X	X	E,TA: There is no difference.

	<i>Item</i>	<i>E</i>	<i>T</i>	<i>Comments</i> <i>A</i>
	System Information Broadcasting	X	X	E,TA: There is no difference. E,TA: Should be aligned with or merged with descriptions in 3GPP S2.01 and S2.31.
	Use of Tmeporary Identifier	X	X	E: IMSI. TA: IMUI
	Radio channel ciphering	X	X	E,TA: There is no difference.
	Radio channel deciphering	X	X	E,TA: There is no difference.
	Radio Environment Survey	X	X	TA: Total DL Transmission power per cell is added.
	Handover Decision	X	X	E,TA: There is no difference.
	Macro-diversity control	X	X	E,TA: There is no difference.
	Handover Control	X	X	E,TA: There is no difference.
	Handover execution	X	X	E: Uses "handover branch". TA: Uses "radio link"
	Handover complete	X	X	E,TA: There is no difference.
	SRNC Relocation	X	X	E,TA: There is no difference.
	Inter-system handover	X	X	TA: Handover to PDC system is added.
	Handover from UMTS to GSM	X	X	E,TA: There is no difference.
	Handover from GSM to UMTS	X	X	E,TA: There is no difference.
	Functions related to radio resource management and control	X	X	E,TA: There is no difference.
	Radio bearer connection set-up and release	X	X	E,TA: There is no difference.
	Reservation and release of physical radio channels	X	X	E,TA: There is no difference.
	Allocation and deallocation of physical radio channels	X	X	E,TA: There is no difference.
	Packet data transfer over radio function	X	X	E,TA: There is no difference.
	RF power control	X	X	E,TA: There is no difference.
	Radio channel coding	X	X	E,TA: There is no difference.
	Radio channel decoding	X	X	E,TA: There is no difference.
	Channel coding control	X	X	E,TA: There is no difference.
	Initial (random) access detection and handling	X	X	E,TA: There is no difference.
	Description of overall protocol architecture	X	X	E,TA: There is no difference.
	User plane	X	X	E: lu protocol is described. TA: It is mentioned to refer S3.11(Description of lu interface)

	<i>Item</i>	<i>E</i>	<i>T</i>	<i>Comments</i> <i>A</i>
	Control plane	X	X	E: Iu protocol is described. TA: It is mentioned to refer S3.11(Description of Iu interface) E: CM,MM are listed. TA: CM,MM,GMM,SM are listed.
	Radio interface	X	X	E,TA: There is no difference.
	Radio interface	X	X	E,TA: There is no difference.
	Iu interface, assumptions	X	X	E,TA: There is no difference.
	Access Network Triggered Streamlining	X	X	E,TA: There is no difference.
	Core Network Triggered Streamlining	X	X	E,TA: There is no difference.
	Iu interface protocol	X	X	E,TA: There is no difference.
	Iur interface protocol	X	X	E: Iur CCH and DSCH for data stream exist TA: Only DCH for data stream E: It is mentioned that Information exchanged across the Iur on signalling involves "Modify radio bearer characteristics" TA: It is changed to "Modify radio link characteristics"
	Macro-diversity Combining	X	X	E,TA: There is no difference.
	Control of Macro-diversity Combining/Splitting Topology	X	X	E,TA: There is no difference.
	Handling of DRNS Hardware Resources	X	X	E,TA: There is no difference.
	Allocation of Downlink Channelisation Codes	X	X	E,TA: There is no difference.
	Up-Link Power Control	X	X	TA: Added "Uplink" before the "Transmitted power" and "interference" for clarification.
	Down-Link Power Control		X	E: It is not discussed yet. TA: Content exists.
	DRNS Logical Model	X	X	E,TA: There is no difference.
	Logical Model Elements	X	X	E: Resource for radio link is allocated and controlled by the RNC. TA: Resource for radio link is allocated and controlled by the NodeB. E: The association for Iur CCH data stream is FFS.. TA: No description regarding this. Assumption is that there is no Iur CCH.
	Iur Interface protocol	X	X	E,TA: There is no difference.

<i>Item</i>	<i>E</i>	<i>T</i>	<i>Comments</i> <i>A</i>
lub Interface	X	X	E: The RACH transport frame header includes synchronisation information. TA: Deleted above sentence. E: The FACH transport frame header includes synchronisation information. TA: Deleted above sentence. E: Includes description of DSCH data stream. TA: No description regarding DSCH.
lub General Principles	X	X	E,TA: There is no difference.
Management of dedicated resources	X	X	E: Some freedom is left for NodeB to have some function like allocation of codes. TA: NodeB has a function of allocating DL codes..
Management of common radio channels	X	X	E,TA: There is no difference.
Control of traffic flows	X	X	E,TA: There is no difference.
Macro-diversity Combining of Radio Frames	X	X	E,TA: There is no difference.
Control of Macro-diversity Combining/Splitting Topology	X	X	E,TA: There is no difference.
Soft Handover Decision	X	X	E,TA: There is no difference.
Handling of Node B Hardware Resources	X	X	E,TA: There is no difference.
Allocation of Downlink Channelisation Codes	X	X	E: Allocation of DL channelization codes is performed in the CRNC. TA: Allocation of DL channelization codes is performed in the NodeB.
Up-Link Power Control	X	X	E,TA: There is no difference.
Down-Link Power Control		X	E: It is not discussed yet. TA: Content exists.
Logical model of the Node B	X	X	E,TA: There is no difference.
Elements of the logical model	X	X	E,TA: There is no difference.
Node B Communication Contexts for Dedicated Channels	X	X	E,TA: There is no difference.
Common Channels	X	X	E: It includes DSCH. TA: There is no DSCH.
lub Interface Protocol	X	X	E,TA: There is no difference.
UTRAN INTERNAL BEARERS	X	X	E,TA: There is no difference.

3. Conclusion

The major differences found when comparing ETSI and TTC/ARIB with respect to the Architecture Description documents are the following:

- O&M of NodeB is included in ETSI, but not in TTC/ARB

- Use of RNTI is dependent on the conclusion of TSG RAN WG2 in TTC/ARIB where ETSI document is not aligned with TSG RAN WG2.
- Synchronization is included in ETSI, but not in TTC/ARB.
- DSCH is included in ETSI, but not in TTC/ARB.
- Down-link power control is included in TTC/ARB, but not in ETSI.
- DL channelization code is allocated by NodeB in TTC/ARIB but by CRNC in ETSI.

4. References

[1] TTC/ARIB, UTRAN Architecture Description, V1.0.0, January 29

[2] ETSI UMTS ZZ.01, UTRAN Architecture Description, V0.0.13, 1999-01