Technical Specification Group, Radio Access Network
Meeting #2, Fort Lauderdale, 2-4 March 1999

TSGR#2(99)0

Source: **TSG-RAN WG1 Convenor**

Title: **Report from 3GPP WG1Convenor**

Document for:

Agenda Item: **6.1**

This document summarizes activity and current status WG1.

1. Meetings
First meeting: January 21-22. Espoo, Finland
Second meeting: February 22-25, Yokohama, Japan
Third meeting: March 22-26, Host requested
Fourth meeting: April 19-21, same place with TSGR#3

2. Chairpersons
Chairman: Antti Toskala (Nokia)
Vice Chair: Takehiro Nakamura (NTT DoCoMo)
Convenor: Yukitsuna Furuya (NEC)

3. Document structure
- It was agreed to adopt document structure based on TSGR#1(98)003.
- During the 2nd WG1 meeting, some modification was proposed and accepted. WCurrent WG1 document structure is in TSGR#2(99)087.
- In proceeding actual editing work, importance of reviewing the document structure was pointed out. The purpose is to confirm that current structure is good for specification. Relationship with other WGs will also be discussed in detail. Special ad hoc group handling document structure was established.
- It was agreed to attach Technical reports (TSGR#2(99)087).

4. Terms of references
As layer 1 specification, WG1 will work on S1.XX. There are several issues in relation with other groups. This is summarized in section 8 (relationship with other groups).

5. Work Plan
In the second WG1 meeting, work plan toward December specification was agreed (TSGR#2(99)089)

6. Initial Documents
WG1 is working on initial document by harmonizing ETSI XX document and ARIB Vol3. In the first meeting, major differences between two documents were identified.
Ten temporary Ad Hoc groups were established to resolve the differences. Also, temporary editors were assigned to create a harmonized document, with editing policy in [Attachment 1]. In the second meeting, all editors and ad hoc groups reported in the meeting. Although there are still unresolved issues, many of the differences are resolved. In the second WG1 meeting, drafts version from temporary editors were presented and approved, although hot issues discussed in Ad Hoc groups are still unresolved. They are put on the 3GPP server as version 0.1.0 as a working documents [1]-[12]. Comments on the drafts are summarized in the minutes of the second WG1 meeting.

7. Hot issues
Ad Hoc groups estabilshed in the 1st meeting are followings;
Ad Hoc 1, TDD: Continued
It was agreed to take ETSI approach mainly. Many items are remaining to be studied.
Ad Hoc 2, SCH: Closed
It was agreed to take ARIB approach mainly.

Ad Hoc 3, RACH: Continue
It was agreed to take ETSI approach mainly. There are small items remaining. Relationship with WG2 is to be considered.
Ad Hoc 4, Multiplexing: Continue
Harmonized solution between ETSI and ARIB was proposed from Ad Hoc group and was accepted. Several issues are remained for further study.
Ad Hoc 5, Channel coding and Interleaving: Continue
Turbo encoder: One of the ETSI solution, 8 state PCCC was adopted as a working assumption. Further study is needed for other cases, e.g. punctured case.
Code interleaver structure is for further study.
Ad Hoc 6, Tx diversity: Continue
It was agreed to take ETSI approach mainly. Some issues are remained for further study.
Ad Hoc 7, Slot structure: Continue
It was agreed to define sets of parameters for slot structure. Parameters defined in ARIB document will be included. There are many remaining issues for further study.
Ad Hoc 8, Handover preparation: Continue
Harmonized solution was proposed from the Ad Hoc group and was accepted. Several issues are remaining for further study.
Ad Hoc 9, Power control: Continue
Several parameters are taken from ARIB document as a starting point. Many issues are remaining for further study.
Ad Hoc 10, Spreading and scrambling
Some parameter is taken from ETSI, some from ARIB respectively. Small issue is remaining for further study.
Reports from Ad Hoc groups are in TSGR#2(99)088.

New Ad Hocs established during the 2nd meeting are;
Ad Hoc 11: Physical layer capabilities
(Responsible: Mr. Romano, CSELT)
Ad Hoc 12: Cell Search (CPM vs. current structure vs. Nortel Proposal)
(Responsible: Mr. Nakamura, NTT DoCoMo)
Ad Hoc 13: Specification Structure
(Responsible: Mr Ovesjö, Ericsson (FDD) Mr. Kasapakis, Panasonic (TDD))
Ad Hoc 14: Packet mode operation
(Responsible: Amitava Ghosh & Kourosh Parsa)

Ad Hocs are to be reviewed in the next meeting. (Working assumption: Ad Hocs will be closed at next meeting)

Several new technologies are proposed from T1P1 members as well as other members. These technologies will be discussed in Ad Hoc groups.

8. Relationship with other groups

8.1 UE capability

WG1 understand that UE capability relates to various WGs and TSG-T. Relationship with other groups is to be clarified. As for the action on UE capability within WG1, following discussion was made.
Physical Layer capabilities discussion inWG1
During the meeting, concerns were raised by several operators that if parts of the physical layer specification are not mandatory (for example, items like downlink transmit diversity and site selection diversity for the UE) it could harm network performance and operation.
As an outcome of the discussion, the group identified the need to provide indications in the specifications documents whether a physical layer capability is mandatory or not (both in the UE and on the network side).
WG1 established an ad-hoc group with the mandate to identify a list of physical layer capabilities and to provide indications to WG1 regarding their status.
The ad-hoc group will work mainly via e-mail and will report to WG1 by the next meeting.

8.2 Liaison with ITU Ad Hoc

During the second WG1 meeting, baseband key parameter for ITU RKEY was discussed. The meeting tried to include RTT proposals from ARIB, ETSI, TTA, and T1P1, although detail is not concluded yet. The output was summarized in Tdoc 105 and was sent to ITU Ad Hoc on Feb.22nd.

8.3 Relationship with TSG-RAN on link level simulations

The link level simulations need to clarified which group is in charge for which simulations. It was agreed to put the technical report on link level simulations with footnote that it needs to be clarified within TSG RAN which group is expected to provide link level simulation results that can be used as an input for performance requirements.

8.4 Relationship with TSG-RAN on the scheduling

The Convenor of WG1 shall suggest dates after the RAN meeting, as TSG RAN schedule is needed for scheduling WG1 meeting for the rest of the year.

8.5 Liaison statements with WG4

WG1 received liaison statement from WG4, Tdoc 63,88.
Response to liaison from WG4 (Tdoc 63,88): Answering TSGR#2(99)089 liaison was prepared. (TSGR#2(99)092). Separate liaison statement was prepared to WG4 (TSGR#2(99)091).

8.6 Liaison statements with WG2

-Response to Liaison from WG2 (Tdoc 108/99)

There is no immediate answer on RACH & out-of-sync indication. WG1 agreed to study this issue.

-Liaison to WG2 on RACH

It was proposed to move section 6 in S.1.14 to an annex in S1.14 and to write a liaison to WG2. It was commented that preamble transmission/retransmission issue is WG1 issue, not WG2 issue. This should be liaised to WG2 and mentioned in report in TSG RAN (and given as an annex in report).

Conclusion. Liaison is written and referenced in report. Section 6 is kept for the time being. (TSGR#2(99)093)

Note: AICH is part of the RACH conclusions.

-Liaison to WG2 , WG4 on TDD

-Relationship with WG2 on FAUCH

1. The current text on FAUCH should be retained in S1.11 for the moment, with a note indicating that the working assumption agreed by WG1 is that FAUSCH will not be part of the first release of the specification but can be included in the second release.
2. It will be removed from S1.11 when procedure is in place how to deal with matters not part of the first release.
3. WG2 should be informed.

-Handling relationship with WG2

The question was raised on the other issues that should be handled in WG2.

It was agreed that via email the document should be created, with names of the companies that can participate on creation (and that agree to have their names in the document of course).

Other issues related with WG2

-Relationship with WG2 on Multiplexing and channel coding (FDD)

There were comments from Ericsson on the following points:

- 7.2.1 CRC calculation. Contains a lot of material that is not needed for WG1.
- 7.2.5 Downlink discontinues transmission, especially section 7.2.5.2 was not relevant for specification
- 7.2.6 Contained material for Layer 2 to decide.

The matters that are being considered as clearly WG2 matter will be removed and some verification is needed to ensure that the matters shall be actually covered by WG2. The matters were real guidance is needed should be covered in a liaison to WG2.

It was asked by the editors whether section 7.4.2.2 could be removed. It was not agreed to remove it for the time being.

-Relationship with WG2 on Transmission stop and resumption

The WG2 should be asked about the transmission stop and resumption control. Also it was mentioned as such a topic where further clarifications are needed and the underlying reasons. Editors will work to elaborate this part.

- Relationship with WG2 on Measurement

Certain items that were felt being not in the scope of WG1 were moved to an annex in order for the information not to get lost. For the slotted mode it was mentioned that the scope is to tell how to configure slotted mode, not to cover the exact implementation of slotted mode. Cell sets to be discussed with WG2.

-Relationship with WG2 on Multiplexing and channel coding (TDD)
The same comments as done for respective FDD document (for S1.12) apply for what is relevant for WG1 and what is not.
Specially issues like TFCI was mentioned to be an example and it was noted that several items need some changes after the merging results

-Relationship with WG2 on the handover proposal from T1P1
It was suggested to contribute to WG2 as the handover procedure seen to be in the scope of WG2.

-Relationship with WG2 on Hybrid ARQ
61/99, by Panasonic, on Hybrid ARQ techniques for efficient support of packet data. Was not presented in detail. The question was rather made what is the relation of Hybrid ARQ to the WG1. It was commented that ARQ is handled by WG2 and thus there should be input from that direction if that is affecting WG1 issues (Layer 1).
(It was noted that hybrid ARQ clearly has physical layer implications).

9. References

[1] S1.01 ver0.1.0 Physical layer – general description
[2] S1.02 ver0.1.0 UE capabilities
[3] S1.11 ver0.1.0 Transport channels and physical channels (FDD)
[4] S1.12 ver0.1.0 Multiplexing and channel coding (FDD)
[5] S1.13 ver0.1.0 Spreading and modulation (FDD)
[6] S1.14 ver0.1.0 Physical layer procedures (FDD)
[7] S1.15 ver0.1.0 Measurements (FDD)
[8] S1.21 ver0.1.0 Transport channels and physical channels (TDD)
[9] S1.22 ver0.1.0 Multiplexing and channel coding (TDD)*
[10] S1.23 ver0.1.0 Spreading and modulation (TDD)*
[11] S1.24 ver0.1.0 Physical layer procedures (TDD)*
[12] S1.25 ver0.1.0 Measurements (TDD)

***** : These documents reflects Ad Hoc 1 ‘s discussion results.

Attachment 1

TSG RAN Working Group 1 meeting #1 **TSGW1#1(99)017**
Espoo, Finland
January 21-22, 1999

Source: **Yukitsuna Furuya (WG1 Convenor)**

Title: **Proposal how to proceed with the merging of documents from ARIB and ETSI into the first 3GPP/WG1 documentation**

Introduction

During the first day of the 3GPP WG1 #1 meeting (Jan 21) the main differences in technical contents between ARIB and ETSI specifications were identified. Input document [1] was used as a basis for that discussion, and the list of differences were further refined during the meeting. Furthermore, a number of Ad Hoc groups were agreed upon, in order to handle these identified main technical differences.

However, since major parts of the two specifications from ARIB and ETSI are similar it is desirable to create (by merging) a common set of specifications even before the above mentioned main differences are resolved. The merged specifications will most likely show that minor differences also exist, and these should be indicated. This will enable members to contribute towards the single set of specifications until the next meeting. *Emphasis should initially be made on proposals that aim at harmonizing the differences visible in the merged specifications.* Proposals that aim at improving the readability of the draft text is of course also welcome.

In order to quickly create the first version of the common set of 3GPP/WG1 specifications an editing policy is proposed in this document. The documentation from the ARIB Volume 3 version 1.0 and the latest versions from the ETSI/SMG2 Layer 1 expert group documentation should be used as input in this process.

The specification structure proposed in [2] should be used when creating the first version of the 3GPP specifications. The detailed policy and guidelines for the editing work is outlined in the next chapter.

Editing policy

In this chapter a number of guidelines are outlined. The intention is that the temporary drafting editors should get clear and unambiguous instructions on how to perform their work.

- Assignment of **"temporary drafting editors"** should be elected by WG1 at the second day of the first TSG-RAN WG1 meeting. One editor from ETSI and one editor from ARIB should be elected for each document as listed in [2] . One of the two editors is assigned to be the main responsible. The exact roles of the two editors should be agreed mutually between the two editors (meaning the division of work between the editors and how they arrange further details in editing)

- The goal is to create a 3GPP/TSG-RAN/WG1 baseline set of specifications

- The editors should use the contents of the latest ETSI SMG2 Layer 1 Expert Group (XX.01, XX.02 etc) documents as a basis for the specification text. The editors should use the ARIB Volume 3 version 1.0 contents as input in the merging process. The editors should write one text (to the furthest possible extent) and seek consistency from the two input documents.

- If the technical contents of the two input documents are the same, a single text should be produced.
- If there are minor difference in technical contents the editors should merge the descriptions and *if possible* make a recommendation (based on their technical judgment) for technical contents. In the merged text an **editors note** should be included in these cases. This should be done so that other members clearly can see the

result of the merging process.

- If it is not possible to merge the text (or tables or figures or parameter values etc), i.e. there are **two different solutions** in the ARIB and ETSI documents, both alternatives should be included, but within **square brackets**. If needed, a clarifying **editors note** could be added below the square brackets also in this case.
- Contents that only exist in either ARIB or ETSI input documents should be included, and indicated with an **editors note**.

    - The editors also should check and confirm the ongoing activities in the Ad Hoc groups, which were defined on the first day of the first WG1 meeting. This means that the editors should be aware of what technical items of the specification that are being discussed in the Ad Hoc groups. For instance, they should be aware that the channel coding and interleaving is being discussed and decisions are pending.

- The editors should **start** the merging process by focusing on parts which are not discussed in Ad Hoc groups
- After finalizing parts not related to Ad Hoc activities, the editors should work on the "Ad Hoc related" parts of the specifications. The goal is to write one single text, to the furthest possible extent, i.e. it may be possible to write the "generic" part of the specification even though there may be a decision pending regarding exact technology and parameters.
- It is also possible for the editors to refer to the items being discussed in Ad Hoc groups. Furthermore, the proposals that are under discussion in the Ad Hoc groups (e.g. MIL, GF, algebraic etc. types of interleavers) should be listed in the specifications if possible.
- It is of course **not required** (nor allowed) that the editors draft recommendations for technology choice, for the items that are being handled by the Ad Hoc groups.

    - The proposed time schedule for the initial merging process, is that the merged specifications should be made available to the other members on **Friday the 12th of February 1999**.

- Comments on the merged specifications could then be sent via email to the editors (and other members) before the next WG1 meeting.

    - The documents should be put on the 3GPP document server. A notice should also be sent out on the 3GPP/WG1 reflector (and maybe other reflectors) stating that one (or several) new documents are available. The administration of sending out e-mails on the reflector should be handled by **one person,** Mr Toyoshima (stoyo@arib.or.jp).

References

[1] Tdoc TSG/RAN/WG1 #1 009/99, "Proposal for merging ETSI and ARIB Layer 1 documents to one common 3GPP Layer 1 document", Nokia,
[2] TSG/RAN/WG1 #1 005/99, "Proposal for TSG RAN WG1 specification structure