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Meeting Summary

GERAN RLC/MAC Drafting

29 November 2000
Grand Hotel Gooiland
Hilversum • Netherlands

Present

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Summary

1. Call to Order and Registration

Al Sacuta [Chairman] called the meeting to order at 09:00 on 29 November 2000. An attendance roster was circulated.

2. Contributions

The following contributions were entered into the record:

Number	Title	Agm.
GAHW-000123	**Objectives and Agenda [Chairman]**	3
GAHW-000124	**3GPP TS 04.60** **3rd Generation Partnership Project; Technical Specification Group GSM EDGE Radio Access Network; General Packet Radio Service (GPRS); Mobile Station (MS) – Base Station System (BSS) interface; Radio Link Control / Medium Access Control (RLC/MAC) protocol [Editor, Lucent]** Incorporates editor's notes to 04.60 version 8.6.0. The notes describe how the stage-2 description of GAHW-000149 affects the existing stage-3 text. The first editor's note states the following: • In general, this is a poor document to be using as a baseline for GERAN. The GERAN MAC, and to a lesser extent the GERAN RLC, differ markedly from the MAC and RLC specified here. Therefore, the new MAC and RLC don't fit well into the existing structure. (Actually, the existing MAC and RLC don't fit well into the existing structure.) It would be easier, faster, and less error-prone for us to write new documents that reference this document as required. The remaining editorial comments assume the GERAN drafting meeting rejects creating new documents.	7.1
GAHW-000125	**3GPP TS 04.60 V8.7.1** **3rd Generation Partnership Project; Technical Specification Group GSM EDGE Radio Access Network; General Packet Radio Service (GPRS); Mobile Station (MS) – Base Station System (BSS) interface; Radio Link Control / Medium Access Control (RLC/MAC) protocol (Release 1999) [Editor]** Latest draft of 04.60. The meeting used this draft as its baseline.	7.3
GAHW-000126	**3GPP TS 04.60 V8.7.1** **3rd Generation Partnership Project; Technical Specification Group GSM EDGE Radio Access Network; General Packet Radio Service (GPRS); Mobile Station (MS) – Base Station System (BSS) interface; Radio Link Control / Medium Access Control (RLC/MAC) protocol (Release 1999) [GERAN RLC/MAC Drafting Group]** Starting from GAHW-000125, this contribution incorporates changes and editor's notes adopted during the meeting. Names within angled brackets (*e.g.*, <Alcatel>) indicate companies that volunteered to prepare contributions addressing individual editor's notes.	7.3
GAHW-000148	**Analysis of GERAN RR Functionality [Nokia]** § 4.19 describes MAC procedures on PCCCH. The section proposes to leave these procedures in 04.60.	7.3
GAHW-000149	**3GPP TS 43.051 V4.0.0** **3rd Generation Partnership Project; Technical Specification Group GERAN; GSM/EDGE Radio Access Network (GERAN); Overall Description – Stage 2; (Release 4) [Editor]** Latest version of the GERAN stage-2 description. The standard illustrates how GERAN realizes services requested by a GSM/UMTS Core Network. It describes functions related to the *Iu* interfaces; it does not detail functions related to the *A* and *Gb* interfaces. It does not detail interfaces towards the core network, but rather, references appropriate specifications.	7.3

3. Review Objectives and Agenda

The objectives and agenda were adopted as written.

4. Review Summary of Previous Meeting

Since this was the first meeting of the drafting group, there was no summary of previous meeting.

5. General Discussion

Each person introduced himself.

6. Old Business

There was no old business.

7. New Business

7.1 04.60 Walk-through

The chairman presented GAHW-000124. General discussion was deferred to agendum 7.2.

7.2 Document strategy

Some members wanted to keep using the existing 04.60; others wanted to create new documents to improve clarity. In the end, the group decided to start with GAHW-000125 and develop changes to this document.

7.3 04.60 Change request

In conjunction with GAHW-000124 and GAHW-000149, GAHW-000125 was reviewed section by section. The editor incorporated any specific changes adopted by the group. In editor's notes, the editor recorded high-level decisions and any issues pending resolution. GAHW-000126 incorporates these changes and editor's notes.

GAHW-000148 was not reviewed.

8. Assignments

The following table lists assignments from GAHW-000126:

Section	Responsible	Description
Stage 2	unknown	Update § C.2 to match the following 04.60 § 3.1 definitions: • MAC idle state. • MAC shared state. • MAC dedicated state. • MAC DTM state.
new	Ericsson	Add a new top-level section on security (ciphering, integrity protection, *etc.*)
new	Alcatel	Add a new top-level section on *MAC procedures in MAC dedicated state.*
1.	Editor	Add EGPRS and GERAN to the first paragraph.
1.	Editor	Add text that states this TS covers operation in *Iu* mode and *A/Gb* mode. See 44.018 for definitions of these modes. Clarify what *EGPRS* refers to.
1.	Editor	Update references. Use new 3GPP document numbers.
1.	Editor	Add section on *Use of logical traffic channels.* See stage 2 § 6.8.3.1.
2.	Editor	Add reference to TS 43.051. Update references to latest 3GPP TSs.
3.	Editor	Add stage 2 §§ 3.1 and 3.2.
3.1	Editor	Define following terms: • RRC control. • RR control. • MAC idle state. • MAC shared state. • MAC dedicated state. • MAC DTM state. Specify that these *states* apply when MAC is being controlled by RRC; other *modes* apply when MAC is being controlled by RR. Pull in definitions from stage 2.
3.1	Editor	Add text to definition of *RR connection* that distinguishes RR from RRC. RR applies in *A/Gb* mode and RRC applies in *Iu* mode. Refer the reader to 44.018 for definitions of *A/Gb* mode and *Iu* mode.
3.1	Editor	Replace *Temporary Block Flow* with definition in stage 2 § 6.1.4.
4.	Editor	Add paragraph describing that there are two modes of control (RR and RRC). The existing text describes the RR flavour. Add text to describe the RRC flavour. Incorporate stage 2 figure 10. Update figure 10 to include the control channels shown in this document's figure 1. Try to show both sides of the air interface. Add text to indicate the control channels are the same.
4.1.2	Editor	Add section on *Layer services under RRC control.* Include subsections on *Services provided by RLC* (see stage 2 § 6.5.1) and *Services provided by MAC* (see stage 2 § 6.6.1).
4.2.2	Alcatel	Add subsections on *Additional MAC functions for RLC transparent mode* and *Additional MAC functions for RLC non-transparent mode.* Alcatel will prepare a contribution, possibly by the Dec GERAN meeting.
4.3	unknown	Update 04.07 (or whatever is current) with the service primitives for PDCP.

5.1	Editor	Add procedures related to management of dedicated physical resources. MAC includes ciphering. Describe modes and states related to *RR control* or *RRC control*. Add MAC state model, as amended. Describe that the applicability of MAC procedures depends on either the RR state in *A/Gb* mode or MAC state in *Iu* mode.
5.2.4	unknown	Need to properly define DTM. Is it a feature, or is it a mode, or is it both? What does DTM mean in *Iu* mode? In 03.64 § 6.2.4, DTM is shown as an RR operating mode. In 44.018 § 3.l.2.7, DTM is specified as simultaneous dedicated mode and packet transfer mode. Somebody needs to fix this discrepancy.
5.3a	Editor	Add section on *MAC idle state*.
5.4b	Editor	Add section on *MAC dedicated state.*
5.4c	Editor	Add section on *MAC shared state.*
5.4d	Editor	Add section on *MAC DTM state.*
5.5	Ericsson	Update text to include *RRC control* in addition to existing *RR control.*
5.5.1.8a	unknown	Add section on *G-RNTI management in Iu mode*.
5.6	Nokia	Add new RRC states applicable where *packet idle mode* appears. Define correspondence between MM states and RRC states (Some mobility management has moved from core network to RAN). How does this affect measurement reporting?
6.	Lucent	Update text to include *RRC control* in addition to existing *RR control*. The objective is no longer just establishment of RR connection or cell update prior to downlink packet transfer, but also establishment of dedicated or shared physical subchannel for RRC establishment, or cell update in GRA_PCH. Is paging required to move the MS from *RRC cell shared* state to *RRC cell dedicated state*? The following transitions should be covered: *MAC shared* to *MAC DTM* and *MAC idle* to *MAC dedicated.* How is paging coordinated between *Iu-cs* and *Iu-ps*? Where is this specified? When to page is determined by network interface (*Iu-ps* or *Iu-cs*) and MAC state.
7.	Siemens Possibly others	Update text to include RRC control in addition to existing RR control. 44.018 may have to be updated for procedures on CCCH. These procedures apply in *packet idle mode* and *MAC idle state.* Radio-bearer concept needs to be introduced, *e.g.*, RBid (RLC instance identity) needs to added to messages; the upper-layer PDU request in § 7.2.1 can use the MAC SAP for the specific radio bearer instead of priority level, QoS profile, requested RLC mode, etc. Can all instances of TLLI be replaced by G-RNTI? This may not be straightforward. In *A/Gb* mode, TLLI was used to identify a flow and an MS. In *Iu* mode, G-RNTI is just used to identify an MS. What do we use to identify the flow (RBid or something else)? How do existing GPRS MS classes (Class A, Class B, Class C) apply in *Iu* mode? By the Dec GERAN meeting, Siemens will flag any need for others to assist.
7.	Lucent	This section currently deals with TBF establishment on shared channels. Can we establish TBFs on dedicated channels? If so, we should probably add a new section. Lucent will propose something at the Dec GERAN meeting.
7.1	Editor	Add that another TBF may be established using PACCH if there is already an uplink TBF established (multiple TBF case).

7.1	unknown	Are multiple TBFs allowed for *A/Gb* mode?
8.	Nokia	Update text to include *RRC control* in addition to existing *RR control.* 44.018 may have to be updated for procedures on CCCH. These procedures apply in *packet transfer mode, RR DTM operation, MAC shared state,* and *MAC DTM state.* Procedures must be added to support multiple TBFs in the same direction (includes TBF establishment). Transitions between states need to account for multiple TBFs, *e.g.*, last paragraph of § 8.1.2.8. Radio-bearer concept needs to be introduced, *e.g.*, RBid (RLC instance identity) needs to be added to messages. Can all instances of TLLI be replaced by G-RNTI? This may not be straightforward. In *A/Gb* mode, TLLI was used to identify a flow and an MS. In *Iu* mode, G-RNTI is just used to identify an MS. What do we use to identify the flow (RBid or something else)? How do existing GPRS MS classes (Class A, Class B, Class C) apply in *Iu* mode?
9.3a	Editor	Add section on *Operation during RLC data block transfer in transparent mode*. See stage 2 § 6.5.2.1.

9. Next Meeting

The drafting group planned no future meetings.

10. Adjournment

The meeting adjourned at 16:00 on 30 November 2000.

Al Sacuta
Chairman, GERAN RLC/MAC Drafting Group