Outcome of TSG GERAN WG1 # 32 meeting
14-16 November 2006, Sophia Antipolis, France

November 17th, 2006

Miscellaneous (1/3)

- A CR to TS 45.008 Rel-7 has been agreed, clarifying that EGPRS MSs have to report MEAN_BEP and CV_BEP both on data blocks and control blocks (provided the TFI is present in the RLC/MAC control block header).
- The concept of Flexible Timeslot Assignment has been agreed but the corresponding CRs have been postponed because of different views on which option to choose to apply the concept to multislot class 12.
- On PS Handover, various CRs to TS 43.129 Rel-6 have been agreed. A CR to TS 43.129 Rel-6 introducing CAMEL trigger points has been agreed, but an inconsistency with TS 23.060 has been detected and therefore an LS is sent to SA2 to ask for their feedback.
- On MBMS, CRs have been agreed introducing NPM Transfer Time in TS 43.246 Rel-6 and Rel-7. A CR has been agreed introducing the MBMS session update procedure in Rel-7 TS 43.246.

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Miscellaneous (2/3)

> A CR introducing RLC non persistent mode in TS 43.064 Rel-7 has been agreed.

> A CR to TS 44.006 Rel-6 removing wrongly placed performance requirements for repeated ACCH has been endorsed. A further clarification might be required in TS 45.005.

> The proposal for enhanced handling of multi-block Handover Command messages has been re-discussed (with a corresponding CR to 44.006), but concerns have been expressed on potential impact on legacy terminals and more information has been requested on the benefits of the proposal.

> A proposal allowing to take advantage of the silent speech periods of one user to send packet data for another user (in the UL) has been presented.

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Miscellaneous (3/3)

> The proposal to relax some of TS 45.005 specifications on BTS intermodulation, spurious emissions and blocking requirements in order to allow introduction of BTS GSM multicarrier transceivers has been investigated further. A discussion paper and CRs to TS 45.005 and TS 51.021 have been presented. Some concerns have been expressed that this should not jeopardize GSM quality. Comments have been made that will help in further investigations of the concept.

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GSM on board aircraft

> The report from the ERM/MSG GSM OBA group has been presented.

> Two documents are under development within the group:

- a Harmonized Standard;
- a Technical Specification.

> February 2007 has been indicated as a realistic date for completion of the work within the group.

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MS Rx diversity (DARP Phase 2)

- A CR to TS 45.005 Rel-7 introducing DARP Phase II requirements has been agreed (values left in square brackets).
- Another CR to TS 45.005 will be needed in order to clarify the legacy requirements of the DARP Phase II terminals.
- DARP Phase II will be introduced as a release independent feature and a CR to TS 45.015 will be provided.
- A draft CR to TS 24.008 Rel-7 introducing the DARP Phase II capability indicator has been endorsed and an LS will be sent to CT1.

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GAN

- Rel-7 CRs to TS 43.318 (GAN Stage 2) and TS 43.129 (PS HO Stage 2) introducing the GAN PS handover have been agreed.
- On Enhanced GAN, the A/Gn solution has been presented and discussed. The discussions will proceed during a specific E-GAN workshop in January.

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Dual carrier in the downlink

> Main achievement is an agreed CR to TS 45.002 Rel-7 introducing the DL dual carrier multislot classes.

> A corresponding draft CR to TS 24.008 Rel-7 has been endorsed and an LS will be sent to CT1.

> The concept of allowing a DL dual carrier capable MS to be granted USFs on any of two carriers even if the MS is not in a DL dual carrier assignement has been agreed (with a CR to TS 43.064 Rel-7).

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HUGE

> A number of Stage 2 working assumptions have been proposed and have been accepted as "pre-working assumptions".

> It is not 100% clear if the HUGE WID restricts the usage of turbo-codes to 32-QAM or not.

> It has been proposed to use training sequences with better cross correlation properties for higher order modulations. This will be further investigated.

> It has also been proposed to include QPSK with increased symbol rate in the HUGE concept if it is confirmed that it improves performances at the cell edge.

> Preliminary investigations on link performance and interference impact on voice quality of HUGE have been presented.

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Latency reductions (1/2)

> A CR to 43.064 Rel-7 introducing R-TTI has been agreed.

> There was no consensus on a proposal to use different TTIs for UL and DL TBFs of a same MS.

> Merits of SSN-based approach and time-based approach for the DL ack/nacks have been compared.

> A proposal on how to introduce in the specifications the SSN-based approach with variable size bitmap has been presented.

> A proposal for new coding schemes with and without bitmap has been made, assuming a fixed size bitmap and constant payload irrespectively of whether the bitmap is present or not (using different puncturing rates); link level performance has been shown.

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Latency reductions (2/2)

> Simulation results from one company have been presented for VoIP, indicating that a fixed size bitmap should be sufficient and that a time-based approach would be needed for adequate support of VoIP.

> A proposal on how to implement EDA over R-TTI has been discussed.

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GERAN evolution (1/4)

> Type 2 MSs:

- a contribution highlighting some issues when combining type 2 MSs and DTM has been presented;
- operators have confirmed their interest on the topic of type 2 MSs.

> 8-PSK pulse shaping:

- 8-PSK with wider transmit filter and legacy symbol rate has been proposed for the DL;
- performance improvements are obtained for low C/I values; sensitivity is increased and PAR reduced;
- concerns expressed that increased interference due to wider transmit spectrum could cause problems to legacy terminals.

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GERAN evolution (2/4)

> HOT: various aspects discussed:

- system level performance;
- blind detection of modulation: seems to work fine;
- HOT on the BCCH carrier: more work needed in order to conclude on real impact;
- compressed QAM modulation: further details provided on algorithm;
- multiplexing HOT with legacy MSs: impacts seem rather limited;
- EGPRS statistics from live networks of one vendor seem to indicate high average C/I values and hence high potential improvements by introducing higher order modulations;
- most results incorporated in the Feasibility Study via CRs.

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GERAN evolution (3/4)

> MORE:

- concept presented: DL counterpart of HUGE;
- proposal for burst format for MORE compatible with USF decoding for legacy EGPRS MSs: would solve the multiplexing loss issue but implies different symbol rates within the same burst;
- concept introduced in the Feasibility Study, without the proposal for the burst format.

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GERAN evolution (4/4)

> HOT or MORE ?

- discussion held before closing the meeting;
- 8-PSK with legacy symbol rate and modified pulse shaping was proposed as a possible first phase of a modified MORE concept that could be implementable by all vendors on legacy BTS HW;
- another proposal was to take the (16-QAM, 32-QAM + 20% higher symbol rate) of MORE as a possible further evolution of the baseline HOT concept;
- MORE not reaching consensus because of concerns on impacts on legacy MSs of increased DL interference due to wider transmit spectrum;
- Further discussions expected in plenary.

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Deadline for submission of documents

> The deadline for the submission of documents to WG1 is maintained to Wednesday 4 am CET the week before the meeting.

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