Draft Minutes of 3GPP TSG RAN WG4 Meeting #4 (revision 21), 19.5.1999

Meeting in: Kista, Stockholm, Sweden, 10-12 May 1999

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Contents

0 Introduction and Welcome to Delegates

These are the minutes of meeting number 4 of TSG-RAN working group 4, which took place at Electrum in Kista, Stockholm on 10-12 May 1999. It was chaired by Mr Howard Benn of Motorola and vice chair Mr Eisuke Fukuda of Fujitsu. The number of participants was about 60. The chairman Mr Howard Benn opened the meeting. Mr Johan Skold of Ericsson, the meeting host, welcomed delegates to Kista.

1 Appointment of Secretary

Mr David Cooper of Telecom Modus who used to be a secretary of last three WG4 meetings resigned the position as previously announced. Since chairman tried to ask the floor for a volunteer but failed, vice chair, Mr Fukuda temporarily took the charge for the meeting. Chairman encouraged companies to nominate someone for the position for the future meetings.

2 Adoption of Agenda   (Agenda Item 2)

Tdoc180
Agenda was approved in Tdoc180.
Report of WG4 #3 meeting #3 in Tdoc166 was approved.

3 Approval of meeting report #3   (Agenda Item 3)

Meeting report of TSG RAN WG4 #3 in Tdoc166 was approved.

4 Letters and reports from other groups   (Agenda Item 4)

Tdoc 183, 184, 185, 186, 187, 188, 189, 192, 202 and 206 were identified by the chairman.

Tdoc183
Liaison Statement (LS) from WG2 on Location Services (LCS) was presented by Chairman and it was decided to treat the document as Information Only. Mr Daniele Franceschini of CSELT pointed that new section should be included in the document of WG4. Chairman noted that it is WG2 to define its feasibility. Chairman suggested that interested companies to review the document and to respond to WG2 in next meeting.

Tdoc184
LS from TSG T2 as to multi-mode terminals was presented. Chairman suggested that there should be some lines in introduction of WG4 document. Question was raised on wheter whether multi-mode refers to TDD/FDD or GSM/UMTS. It was highlighted that relations exist between the Liaison request and some parts of S25.103; Daniele Franceschini, as editor of the document answered that there was no direct relation between the multi-mode issues and the subjects related to Handover present in S25.103. Mr Daniele Franceschini of CSELT is to produce LS to TSG T2 to provide an answer to the LS on find definition of multi-mode terminal in Tdoc238. It was pointed that if GSM (FDD) is the issue SMG2 is competent forum to discuss with.

Tdoc185
LS from TSG T2 on terminal capabilities was presented.

Chairman stated this was treated as information.
LS from TSG T2 on terminal capabilities was presented by Mr. Prem Sood of Sharp. Mr. Sood also described T2's intention for future work, and next actions he thought this group should consider.

Two issues were raised. (1) Further information regarding UE capabilities are requested to keep that either in Appendix or in the document. (2) TSG-SA will provide further requirement e.g. data rate or something on how these service requirement should be implemented.

Mr Peter van de Berg of Ericsson suggested that the relevant information (i.e. LS on the UE capabilities) should be kept in Annex in S4.01 and S4.02 since there will be some need to do such kind of work based on these information regarding UE capabilities. Mr Prem Sood of Sharp stated that service capabilities should be kept in the document. Chairman suggested that new document was easier to keep it but Mr Peter van de Berg of Ericsson said that Appendix was a better place to keep that. Mr Prem Sood of Sharp commented that it was important to put them in the document as to implementation and what baseline parameters were directly related to service capabilities.
Chairman concluded that we would put service capabilities in Annex, but raised a question how we could map them onto WG4 specifications in WG4. Mr Simon Pike of Lucent Technologies said that these seemed to relate to conformance testing rather than service capabilities as it was from WG4 point of view. Mr Peter van de Berg of Ericsson volunteered to co-ordinate the meeting for the documentation. Chairman stated that we needed the corresponding text.

Tdoc186
From WG1 on monitoring FDD cells.
Mr Simon Pike of Lucent Technologies raised a question on whether the measurement accuracy is within responsibility of WG4 and whether that is related to baseband processing or RF issue. Comment that it seems to be a baseband issue was made.
Chairman concluded that the issue was still open and that WG4 needed to send back another LS showing that it is not directly related to WG4. Chairman was to write the LS in Tdoc240.

Tdoc187
Mr Simon Pike of Lucent Technologies explained emission requirement on ERC TG1, where it was shown that the assumed spectrum masks (defined in the Annex A of the report) represent ACLR values approximately 40dB for MS and more than 60dB for BS. 40 dB for UE and 60 dB for BS were required. He also made comment that:;
ACLR in WG4 was defined differently,
Comparison between EU regulation and Japan was very difficult to compare,
WG4 needed to take the regulatory spectrum mask into account,
Guard band issue was increased,
Spectrum mask did not dictate directly to the ACLR value,
andAnd that next ERC would be after the next WG4 meeting.
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Mr Johan Skold of Ericsson commented that what we need to define here was not directly related with the LS. Chairman suggested that WG4 would discuss the adjacent channel property and pass latest information to ERC.

Tdoc188
Mr Simon Pike of Lucent Technologies made explanation that ERC TG1 suggested that restriction of carrier spacing should not be fixed and that 100 kHz raster was better than 200 kHz.

Tdoc202
Siemens presented modified carrier formula showing that the requested carrier positioning scenarios by ERC TG1 can be supported. carrier raster of 100 kHz was better than 200 kHz for more flexibility.

Mr Simon Pike of Lucent Technologies suggested that we should consider the frequencies in actual use to save time for searching. ~~. Mr Peter van de Berg of Ericsson commented that the proposal seemed to have more flexibility though we need to discuss the issue with TG1 anyway. Mr Simon Pike of Lucent Technologies proposed~~ proposing download capability of the frequency list to be used for efficient searching by using common pilot scheme. Mr Peter van de Berg of Ericsson pointed that we had not discussed global control channels and ~~. Mr Simon Pike of Lucent Technologies~~ suggested that we need~~ed~~ to find ~~a~~the way to reduce the number of channels actually being implemented.

Chairman concluded that we would use ~~the~~ modified text of Tdoc202 ~~in the LS~~ to pass to ERC TG1 and regional bodies in new LS ~~of~~ (Tdoc241).

Tdoc189

LS from WG1 to WG4 was presented on minimum requirements as to Space Time Transmit Diversity (STTD), regarding which Chairman concluded that STTD was to be studied in WG4.

Tdoc192

Mr ~~Jussi Numminen of Nokia of Nokia presented the LS from WG1 to WG4, where necessity to study of STTD was requested.~~ Jukka Vikstedt of Nokia presented the document on performance tests for TX diversity issues.

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Tdoc206

Mr Edgar Fernandes of Motorola presented.

Chairman decided to write ~~a~~ LS back to WG1 stating that WG4 was going to study STTD in Tdoc242. Motorola and Nokia will produce the LS in Tdoc242. As to how to implement text proposal to specification, Chairman concluded that it was needed to put some text in the document, which will be discussed in off-line. Mr Edgar Fernandes of Motorola pointed out that verification and performance requirement were separate issues.

5 Summary of TSG RAN and TSG SA meeting   (Agenda Item 5)

Tdoc232

Tdoc232 is a report presented by Chairman.

Chairman summarized the conclusion obtained in TSG RAN #3 in Tokyo, where version numbers and document status were decided with their definition. The original version, v2.0.0, was withdrawn and new document of 25 series was given version 1.0.0. TSG RAN chairman requested WG4 to take responsibility for system level simulation, which led WG4 to establish Ad Hoc group to do this.

Related documents introduced are given below.

TSGR#3(99)244	Liaison statement on document numbers and version conventions
TSGR#3(99)231	Liaison statement to ERC TG1
TSGR#3(99)248	Introduction of the Chinese narrow band key parameters and features for UTRA- TDD mode
TSGR#3(99)254	Responsibility for conformance test method and minimum performance requirement

Additional contents of Chairman's reported are as follows.

TSG RAN agreed to consider Chinese narrow band TDD and WG4 would consider this with WG1.

TSG RAN agreed that new technology had to be submitted with its testability.

WG4 was responsible only for RF area but Iu needs to be discussed later.

TSG RAN was not happy with not having Work Plan.

Meeting schedule was presented.

6 Work Plan   (Agenda Item 6)

Tdoc190

Mr Masaaki Iwasa of Motorola presented Work schedule.

It was agreed that document on TDD would be given version number of v2.0.0 at RAN#5 and v3.0.0 at RAN#6.

Mr Michael Farber and Mr Meik Kottkamp of Siemens commented that study items for TDD should be under investigation and extra items for TDD needed to be added to the document. Proposal was made to move v2.0.0 from June to October and v3.0.0 from October to December, respectively. Chairman suggested companies interested in TDD would produce Work Plan on TDD part.

Mr Simon Pike of Lucent Technologies pointed that EMC was not fully considered. Mr Han Van Bussel of T-Mobil mentioned that the proposed time schedule looked ambitious and affordable, but RF parameters should be reviewed in later stage. Mr Prem Sood of Sharp raised the question regarding how we will meet the schedule. Mr. Sood also reminded the group that in Turin we had decided to temporarily put RF parameter values in brackets and that any values that had not received any comment were obviously not in question any more. He proposed that now all square brackets should be removed at this meeting.

Chairman concluded that we would go with Tdoc190 except TDD and that decision would be made on Wednesday 12th May. Mr Masaaki Iwasa of Motorola volunteered to get documentation completed to be presented on 12nd12th May.

Tdoc251

Mr Masaaki Iwasa of Motorola of Motorola presented work plan in S30.504 based on Tdoc190 with modification.

Mr Simon Pike of Lucent Technologies suggested moving v1 of BS EMC to WG4#6. Mr Meik Kottkamp of Siemens suggested moving v1 of BS conformance testing (TDD) to WG4#6. Both of these suggestions were agreed.

Mr Simon Pike of Lucent Technologies asked whether we had agreed that 4.01 and 4.02 were in status of v1. Response of Chairman was that we would come back to this document in the next meeting, thus companies were asked to check the time frame in table 2. S4.01 and 02 need to be checked on e-mail reflector to make sure they will get approved at the next WG4 #5 meeting.

Chairman suggested meeting date of RAN#5 should be checked. And he encouraged companies for contribution to Conformance Testing and other specification.

Tdoc253

Mr Daniele Franceschini of CSELT presented detailed work plan including preliminary study items for S25.103. Mr Jussi Numminen of Nokia stated that, in order to choose exact values for requirements, information on other working groups needsed to be investigatedcorrected. Chairman stated that as to work through out other WGs, dependency table should be shown. AH 42 was created to discuss issues related to RF parameters in support of RRM and for the approval of S25.103 workplan to be included in the WG4 workplan. And Ad hoc of AH43 was to be formed for Work Plan. Mr Masaaki Iwasa of Motorola was to chair the ad hoc.

7 Reports from Ad hoc Groups (Agenda Item 7)

Discussion in a number of email ad hoc groups has taken place since the last RAN WG4 meeting shown as below.

AH01   Test parameters for receiver BB tests

~~Mr Jukka Vikstedt of Nokia, a chairman of AH01 explained that AH01 had not been active for last six weeks. He also mentioned that since dynamic channel modeling was in email reflector hence simulation could be now started.~~ Mr Jukka Vikstedt of Nokia, a chairman of AH01 explained that AH01 had not been active for last six weeks. He also mentioned that there are two documents to be presented in this meeting both dealing with AH 01 issues, one about dynamic channel models and the other one proposes several modification to the current specifications. If these documents will be accepted in this meeting, we are in the position that most important test parameters for receiver baseband tests have been decided and therefore it would be possible to start simulation work. However RAN1 has not decided All the needed algorithms, so we have to wait for decisions made in RAN1.

Reconfigure to this AH was proposed by the chairman of AH1 since there was no secretariat. Mr Johan Skold of Ericsson ~~mentioened~~mentioned that this was common responsibility of WG1 and WG4 and that WG4 needed a liaison person to WG1 so that WG1 provides RF parameters. Mr Edgar Fernandes of Motorola proposed to send liaison statement on this issue to WG1 email reflector.

WG4 Chairman, Mr Howard Benn concluded that a liaison person would be sorted out and that performance requirement of UE was the mandate of the AH01.

AH02   Simulation parameters

Tdoc228

A chairman of AH02 ~~explaiend~~explained that physical meeting ~~will~~would be held in this week according to Tdoc228.

AH03   UE Power tolerance

No document was provided. Mr Simon Pike of Lucent Technologies explained that basic agreement on power class of UE had been completed and that the relevant document had been presented at TSG RAN. He added that tolerance for higher output class was the responsibility of this AH but that it had not been specified yet. Measurement accuracy was one issue left.

WG4 Chairman Howard suggested closing AH03.

AH05   FDD MS radio transmission

Tdoc226

Mr Edgar Fernandes of Motorola, a chairman of AH05 presented on S25.101.

WG4 Chairman commented that WG4 would review 9.2and 9.3. Note that Tdoc217 is the text proposal for this. WG4 Chairman noted that there was a chance to make any editorial changes since that still stays in v1.0.0.

AH07   FDD BTS radio transmission

No document was provided. Mr Johan Skold of Ericsson presented the status. He commented that blocking requirement had to be updated again ~~but it did not seem to be agreed yet~~. He added that S25.104 was revised according to the discussions on the email reflector.

AH31   BS TX spectrum requirements

Tdoc216

Mr ~~Jussi Numminen~~Sami Jokinen of Nokia presented the status saying that no results and no discussion had been made in email reflector. He commented that at least 3 documents had been to be put into WG4 meeting but not yet discussed in e-mail reflectors.

AH32   EMC issues

No document was provided. Mr Simon Pike of Lucent Technologies presented the status. No discussion has been made in email reflector. TSG T1 has set up Ad Hoc on UE EMC. The ad hoc meeting will be held this Friday.

AH33   LS to ERC TG1

Mr Simon Pike of Lucent Technologies explained that LS was presented and approved at TSG RAN.

~~Tdoc number of revised version of Tdoc187 was~~
Tdoc237

Tdoc237 was withdrawn. He proposed to close the AH33 since original mandate had been completed.

AH34   Partition between S4.01 and S4.03

Mr Daniele Franceschini of CSELT stated that this group was created during the last meeting in order to provide a way forward to solve overlapping between S25.103 and S25.101 about some power control issues. Between the editors it was decided to include in S25.103, in relation to those power control issues, only descriptive textual part and then references to the proper section to S25.101. The editor pointed out that S25.103 was noted by TSG RAN as version 0.1.0. ~~the new document had been approved by TSG RAN.~~

The ad hoc is now closed.

8   Issues for resolution (Agenda Item 8)

8.1.   Agenda 8.1: ACP

• Abstract and Conclusion

Tdoc197, 205, 209, 211, 212, 221, 227, 229 and 239 were identified by the chairman. Various companies presented simulation results related to ACLR, where 30 to 35 dB of ACLR for UE was proposed, which did not align with ~~operators~~operators' viewpoints. It was apparent discrepancy that preferred value of ACLR of manufacturers was 30 dB and that of operators was 35 dB, which led contentious confrontation, resulting in no consensus reached.

Discussion in four dedicated time slots through the WG4 #4 meeting were made including one Ad hoc meeting, where Chairman tried to find compromised solution between these two viewpoints to fail to reach agreement, hence, further discussion on email reflector was to be continued. Chairman concluded that if no agreement would be achieved indicative voting would be made in the next WG4 #5 meeting, followed by voting in RAN meeting.

• *Discussion on ACLR (Day 1)*

Tdoc197

Mr Daniele Franceschini of CSELTOmnitel presented the document, where it was emphasized that additional margin should be considered considering of various deployment scenario and the values had to be chosen ensuring a capacity loss less than 1% with references to simulation results presented during the last WG4 meeting in Stockholm.

Tdoc205

Mr Edgar Fernandes of Motorola presented the document, where for up-link, ACIR of 30 dB with 2% capacity loss was shown. Equation between ACIR and ACLR plus ACS was shown again, and 30 to 35 dB of ACLR for up-link and 35 to 40dB for down link were proposed. Note that the curve for worst case with TX diversity is hidden behind that of intermediate case.

Tdoc209

Mr Johan Skold of Ericsson presented that for up-link, the result was a bit different from Motorola's result but close, where 30 dB was proposed. Note that in figure 5, 30dB should be read as 25dB for correction the wrong gradient.

Tdoc211

Mr Tomohiro Dohi of NTT DoCoMo presented. Note that ACP means ACLR and that in section 3, 35 dB and 30 dB should be corrected as 40 dB and 35 dB, respectively.

Tdoc212

Rewritten to be represented.

Tdoc221

Alcatel presented that value between 30 and 35 dB was appropriate.

Tdoc227

Mr Yasushi Iwane of Mitsubishi presented that performance of amplifier degraded for 40 dB, showing that ACLR of 40 dB leads 3 times bigger size compared to ALCR of 30dB, where 30dB to 35dB was proposed. Note that ACPR should be corrected as ACLR.

Mr Peter van de Berg of Ericsson asked whether it had included margin for design for the worst case.

Mr Yasushi Iwane of Mitsubishi responded to that saying that this data was for worst case, but not for champion data and that typical one and worst one were hard to distinguish because it strictly depended on how to implement

Mr Simon Pike of Lucent Technologies asked what proportion of size calculation was made for HPA, to which question Mr Iwane responded that it was hard to answer because there were many kind of terminals.

Tdoc229

Mr Harri Lilja of Nokia of Nokia presented this, proposing ACLR of 30 dB as a minimum requirement for up-link and the range of 30-35 dB for downlink. And first uplink HCS scenario results were presented. It should be noted that figure numbering is wrong.

Tdoc239

Presented by Mr Johan Skold of Ericsson, proposing that the BS ACS should be 45 dB having margin of 10-15 dB.

Discussion was initiated with Chairman's inquiry to the floor, whether WG4 could accept the values simulated by various manufacturers with their average values and whether we could simply remove a square bracket from ACS of 45 dB.

Mr Simon Pike of Lucent Technologies suggested that outage and regulatory issues should be reflected and maybe as well as manufacturability. Mr Han Van Bussel of T-Mobil commented that we needed to consider of outage and meaning of capacity loss of 1% or 2%. Mr Harri Lilja of Nokia of Nokia commented that in 229, the results was similar

to the case of 1000 dB. Mr Han Van Bussel of T-Mobil asked what about the case where 2 Mbps user was close to BTS. Mr Johan Skold of Ericsson stressed that the results should be reliable. Mr Simon Pike of Lucent Technologies pointed that catastrophic environment when UE is very close to a BS should be looked at and that the ACLR for the case transmitting lower power should be incorporated. Skepticism for such case that micro cell is deployed with macro cell in the same area was raised, which is a similar problem of GSM.

Chairman again stressed that we needed to agree on a value, hence Ad hoc session was held in the evening, where Mr Howard chaired the ad hoc on ACLR.

- ## *Ad Hoc meeting on ACLR*

In the very beginning of Ad Hoc meeting on ACLR held on Monday evening, Chairman confirmed that objective was to clarify our understanding and to come up with an absolute value.

Nokia's presentation on HPA is as follows.
Mr Harri Lilja of Nokia made presentation on implementation impact based on Tdoc227, starting with comparison of 3G system with current 2G system, and emphasized that current WG4 requirement was tighter than major 2G systems. Regarding PA linearity, Nokia explained that class AB could be adopted for ACLR of 30 dB but that class A was needed for 35 dB. ACLR of 35dB requires some linearizer, but Cartesian feedback for narrower band can not be adapted for wide band system, which leads higher cost, taking longer in development. Minimum requirement is not the design target.

As to PA efficiency, Nokia presented that efficiency of PA for 30 dB was 5-10% better than 35 dB. 3 dB backoff for 30dB means 34% of efficiency. Regarding heating issue, taking into account losses after PA by duplexer, 21dBm terminal with 30dB ACLR is reasonable to avoid increase of size of the terminal, concluding that total dissipation power more than 0.8 W is not allowed considering of terminal size.

From viewpoint of Talk time, class B HPA biasing is recommended because saturated power ~~3dB~~ higher by 3dB makes the cost increase 4 times higher.

Nokia summarized that:~~;~~

(1) 35 dB could be a nominal value but not minimum requirement.

(2) It is impossible to make small terminals for 35 dB as a minimum spec value due to heat dissipation difficulties.

(3) ACRL should be 30 to 32 dB as a minimum spec requirement.

Mr Han Van Bussel of T-Mobil asked for comments for 23 dBm UE, to which response was that it could be implemented by larger battery but lead to be expensive terminal.
Siemens mentioned that Siemens had the same opinion as Nokia.

Mr Peter van de Berg of Ericsson~~'s~~ made presentation. Conclusion was similar to Nokia's one as to efficiency and talk time. Ericsson summarized that:~~;~~

(1) Tighter requirements than 30 dB will make it very difficult to be competitive ~~to~~with GSM.

(2) Design target ~~is~~will be about 5 dB better than specified value.

(3) ~~From terminal point of view, ACLR should be 30 dB since ACLR more than 35dB leads some difficulty to achieve small UE.~~Small handheld terminals will be very difficult to implement with 35 dB or more because of heating

~~Mr Daniele Franceschini of CSELT asked what the impact on dual modes of FDD and TDD is.~~
~~Mr Michael Farber of Siemens added that Siemens did not see any problems for TDD.~~
~~Alactel~~Alcatel made statement that it will support Nokia, Mitsubishi and Nokia, being in the side of 30 dB.

In relation to this Mr Daniele Franceschini of CSELT highlighted that one of the more stringent scenario for the choice of the ACLR value is the coexistence of TDD and FDD in the same band. And he asked Alcatel for comments on the relation between this scenario and the choice of a value of 30 dB.

Mr Michael Farber of Siemens added that Siemens did not see any problems for TDD.

Mr Edgar Fernandes of Motorola commented that Motorola support Nokia, Mitsubishi and Ericsson and that it was happy with a lower end of the range of 30 to 35 dB.

Mr Norimatsu of NEC stated that NEC supports Mitsubishi.

Tdoc243

Howard drafted document on screen to clarify standpoints of each manufacturer and operator.

Manufacturers' assumption was as follows.

Assuming output power of 21 dBm, aim of talk time as GSM and volume of 100 cc,

30 dB is OK.

35 dB is the limit of all manufacturers.

Some manufacturers see the limit between 30 to 35 dB.

Every dB from 30 dB impacts terminal design.

Mitsubishi and NEC confirmed that 30 dB was OK and that 35 dB was acceptable but power and size to become an issue. For 40 dB, much larger power is needed.

Nokia, Siemens, Ericsson, Alcatel and Motorola confirmed that 30 dB was OK. And they stated that for 35dB, high power and heat dissipation became an issue and that for 35-40 dB, linearized amplifier was needed.

Chairman asked the floor whether current 35 dB was nominal value or specification, to which Mr Yasushi Iwane of Mitsubishi responded stating that it was Minimum requirement for specification.

Chairman asked for operator's viewpoints, to which Mr Han Van Bussel of T-Mobil responded stating that worst case was that UE is close to BS transmitting 21 dBm. Dr Amer El-Saigh of Vodafone suggested that we needed to be careful about quality of service. He referred to busiest situation for GSM in London, where it was stressed that success rate was of the order of 98.5% in the busy hour and that we should aim to better this. 8.5% success rate should be considered, oOtherwise some other escape mechanismsscenario should be prepared such as handover to other frequency although this might not be an optimum solution since some spectrum allocations consists of 2 carriers only, both of which are not immune from ACI on the other channel. but there is no frequency available in UK.

Such requirement was raised that results for micro cell scenario need to be shown in terms of capacity loss by referring to calculation showing that +21dBm-30dB(ACLR)-50dB(coupling loss)=-59dBm, which may cause problem, especially for micro cell BTS. Mr Simon Pike of Lucent Technologies commented that capacity loss had to be taken in average. He also suggested possibility of having 35dB for lower power levels and 30dB for maximum TX power of 21dBm to relax the issue.

Mr Harri Lilja of Nokia of Nokia responded that distribution had been shown, where no difference had been seen. Mr Simon Pike of Lucent Technologies suggested again that simulation should take into account the worst case that may lead catastrophic situation and that specific situation should be modeled properly.

Chairman asked operators what value was preferred, to which Mr Han Van Bussel of T-Mobil responded stating that assuming coupling loss of -50 dB, ACLR of 35 dB gives problem. Mr Michael Farber of Siemens recommended that it might be appropriate to use the value for micro BTS of GSM case. Mr Han Van Bussel of T-Mobil stressed that we needed to assume UE transmitting at maximum power. Ms Nadia BenabdalahBenabdallah of Omnitel mentioned that Omnitel was happy to accept 35 dB asking why not continuing the simulation for micro cell environment. Mr Simon Pike of Lucent Technologies suggested coexistence with other systems, especially with satellite systems, should be

considered. Vodafone, T-Mobile and TIM stated that assuming UE transmitting 21 dBm, ACLR of 30 dB, MCL –50 dB, received power at BTS of -62 dBm, and -72 dBm at 10 MHz offset,
30-35 dB seemed to be maximum feasible and that more simulation was preferred to see for micro cell scenario.

Chairman confirmed that it was agreed that starting point was 35 dB without square bracket.

Mr Han Van Bussel of T-Mobil commented that the figure did not include implementation margin. Mr Peter van de Berg of Ericsson asked what was Japanese operator's view. Mr Takami of NTT DoCoMo responded that conclusion of NTT DoCoMo was that capacity loss was negligible for ACLR of 35 dB and that system level issues and size of terminal were both important, hence acceptable value was in the range of 30-35 dB. He added that micro cell issue sounded new.

Chairman asked manufacturers whether they were happy with 35 dB, but Nokia was against the value stating that it should be 32 dB because it is compromise. Mr Han Van Bussel of T-Mobil pointed that manufacturers need to convince ERC TG1 so that number of carriers will not reduced. ~~Mr Johan Skold of Ericsson pointed that before decision we needed results for micro and macro scenario but that this was not worse than the worst case he had presented.~~ Mr Johan Skold of Ericsson said that there would be more simulations presented for the micro/macro scenario, but it would be good to know exactly what results were expected by the operators from these simulations.

Chairman confirmed two values, which are 30 dB from manufactures while 35 dB from operators, asking the floor possibility of leading compromised value of 32 dB is acceptable. Mr Han Van Bussel of T-Mobil responded affirmatively on condition that it is at this meeting.

And Chairman asked Japanese delegates whether it was possible to change the value by Japanese regulation after decision of 32 dB was made. Mr Kito of NEC responded that Japan would like to specify the single value of 32 dB without square bracket and that it is possible to change the value toward tighter one later.

Chairman concluded the Ad Hoc meeting stating that no agreement had been reached, encouraging offline discussion in the evening to have another session starting 32 dB without square bracket in order to reach agreement on Tuesday 11th May.

- ### *Discussion on ACLR (Day 2)*

Chairman reviewed basic views of manufacturers and operators and it was confirmed that everybody was happy with simulation for macro cell environment.

Mr Kito of NEC presented time frame of Japanese regulatory body, emphasizing that ACLR should be a single value without bracket and confirmed changing to tighter value was possible. And it was confirmed that there was no difference between regulation and standard in Japan, which was a response to the question Ericsson made on previous day. He stated that it is preferable to have ACLR of 32 dB, which could be changed to 35 dB at the next WG4 if necessary.

Chairman again asked the floor whether we could approve 32 dB without bracket. Mrs Nadia ~~Benabdalah~~Benabdallah of Omnitel made comment that moving from 32 to 35 was a lot different from moving 35 to 32. Chairman repeated that in the range of ACLR of 30-35 dB, simulation suggested that there was slight degradation in capacity loss. Dr Amer El-Saigh of Vodafone expressed the opinion ~~opposition against that saying~~ that operators are not comfortable with such attitude with pressure and he ~~. And he~~ commented that once the figure was approved it seemed difficult to change from 32dB to 35dB. ~~without firm evidence of necessity.~~

Mr Johan Skold of Ericsson made comment that Ericsson was running simulation for micro cell environment and it might be presented later.

Chairman concluded that the situation had been the same and that we would review the issue on Wednesday.

• *Discussion on ACLR (Day 3)*

Nokia presented results of ~~discussin~~discussion in Ad hoc meeting on micro cell environment. ~~The parameters such as TX power control dynamic range of 14 dB will be put into email reflector, but not in Tdoc number.~~It was agreed that in HCS scenario we can either allow 14 dB more noise rise or desensitize BTS receiver by same amount (14 dB). Results of experiences will be sent to the reflector.

Tdoc250

In response to comments and requests operators had made on previous day, Mr Johan Skold of Ericsson presented worst case scenario by using ACLR of 30 dB.

Mr Harri Lilja of Nokia added that when down link loses so many frames TX is shut down. Chairman pointed that there were two different issues in IS 95, that is when TPC command is lost or when Time Out occurs, and TX is shut down for both cases.

Mr Han Van Bussel of T-Mobil appreciated the contribution saying that this does help them understand the system to remove brackets. Mr Simon Pike of Lucent Technologies stated that it needs to be clarified whether it is for protocol to be implemented or requirement to be clarified~~.~~.

Dr Amer El-Saigh of Vodafone proposed that we needed to contact WG2 to get them be aware of this and emphasized that it needs to be ensured that TX immediately terminated when down link is lost. There was a comment that UE tries to keep link in case just after UE turned a corner, ~~which means~~which means that dropping time should be much longer than what is expected here.

Mr Eric Georgeaux of ~~Norte~~Nortel asked whether system collapse when distance UE and BS is less than 200 m and Coupling Loss (CL) is less. Mr Johan Skold of Ericsson responded that even in the case Pout was a maximum value of 21 dBm.

Chairman asked whether we accept ACLR of UE 32 dB in bracket having seen the presentation, ~~but Mr~~but Mr Han Van Bussel of T-Mobil was against it saying that preference was to keep 35 dB as further consideration was needed. M~~r~~s Nadia ~~Benabdalah~~Benabdallah of Omnitel supported the position of Mr Han Van Bussel. Dr Amer El-Saigh of Vodafone stated that Vodafone was in the same opinion.

Chairman pointed that if consensus would not be reached in the next meting indicative voting should be made, which was not chairman's preference. Mr Peter van de Berg of Ericsson pointed that this was based on Japan's requirement, and the value of 35 dB should be removed, leaving it blank in square brackets. Mr Takaharu Nakamura of Fujitsu clarified that Japan preferred a single value of 32 dB, and if necessary 35 dB might be acceptable. ~~Mr Daniele Franceschini of CSELT pointed out that simulation result for micro-cell scenario nor dynamic analysis had not yet been seen.~~Mr Luca Valentini of TIM pointed out that it was not possible to decide the ACLR value at the current meeting due to the fact that the simulation results on HCS scenario had not been presented yet and that other important issues (dynamic effects and quality of service, coexistence with other systems) raised during the meeting had not been taken into account.

Chairman asked the floor alternative possibility of removing 35 dB from bracket leaving blank. There was no objection to removing the value in brackets. The meeting agreed to remove the value of 35 dB from the specification and to leave empty brackets for the UE ACLR. Mr Han Van Bussel of T-Mobil mentioned that it was not intention of European operators to make compromise by voting. No decision was made on the ACLR value to put in brackets. Chairman concluded that starting from the value of 32 dB, if no agreement would be achieved indicative voting would be made in the next WG4 #5 meeting, followed by voting in RAN meeting.

9 Work related to combined document   (Agenda Item 9)

9.1 Introduction

Mr Takami of NTT DoCoMo presented the status. He asked whether WG4~~we~~ should keep the current title of the document. Suggestion was to remove the temporary section.

Chairman confirmed that it was agreed to remove the section.

9.2 Radio transmission and reception (FDD)

• *UTRA (UE) TS 25.101*

Tdoc191

Mr Jukka Vikstedt of Nokia presented proposal for modification to S25.101.

Proposed change to *6.1 General* was accepted.

Proposed change to *7.1 General* was accepted.

Proposal to delete three rows of *User Bit Rate*, *Channel Symbol Rate*, and *Rate Information* from *Tables 9*, *11-16* because of duplication in Annex A was accepted. It is confirmed that when changes on rate detection is made according change will be given to Annex A.

Dr Amer El-Saigh of Vodafone asked what the requirement of BER from SA was. Mr Prem Sood of Sharp mentioned that SA WG4 was responsible for services, and this parameter should be decided within RAN WG4. Mr Peter van de Berg of Ericsson suggested that RF parameters like NF should be separated from performance including baseband processing.

Proposal to put BER and its values in *Table 17* into brackets was rejected and it was confirmed that text in *Table 17* in S25.101 stays as it is.

Regarding issue on use of BER or FER, Mr Han Van Bussel of T-Mobil suggested that the information would be corrected from codec group. Chairman pointed that which is to be used needs to be addressed. Additional ~~commet~~comments that T1 was not responsible for definition of the target value. Chairman decided to leave this as it was.

Use of the term of *Bearer Bit R*ate was not accepted. Chairman mentioned it needed to be reviewed. And he also suggested Lucent to provide definition of *Bearer Bit Rate*.

Proposal to add 144kbps to each table according to 5.1.1 of Tdoc191 was accepted.

Mr Simon Pike of Lucent Technologies made the following comments.

144 kbps corresponds to 2B+D but which rate is good for data rate seems to be further study.

LS will be made to TSG-SA that indicates necessity of defining the quality in D-ch.

It may be the same for associated channel carrying signaling messages.

Proposal to delete 2048kbps from each table according to 5.1.2 of Tdoc191 was accepted.

Chairman commented that Table 17 was to be used to give reference for various services. Mr Simon Pike of Lucent Technologies suggested that the title was then misleading. Chairman pointed that specification easy to be understood was preferable. Mr Simon Pike of Lucent Technologies commented that the definition of the table and the corresponding text were ambiguous.

Mr Edgar Fernandes of Motorola pointed that Table 17 was duplicated in Table B1. It was agreed that her to remove the second paragraph and Table 17, meaning that the first paragraph remains.

Proposal to remove accuracy of Eb/Nt of +/-0.2 dB from relevant sentences was accepetedaccepted.

Chairman suggested that LS to terminal WG1 was needed.

Proposal to remove Ior/Ioc from Table 25-28 and 32 was accepted. Note that the proper values for geometry values will be determined later.

Proposal to remove columns having **Rate Information off** was accepted.

Change of text in **8.1.1 Test Environment** was accepted.

It is agreed to remove **Channel Symbol Rate** and **Rate Information** from relevant tables. Chairman pointed that this was linked to modification described in 4.1 in Tdoc191 and that some detailed discussion needed to be done in offline.

Proposal of adding A2 and A3 was accepted.

Proposal to change the term of **Channel Model** to Propagation Conditions was accepted

Change of propagation conditions in **Table B2** was rejected.

Chairman asked the floor how to specify non-fading case in section 8. It was pointed out by Mr. Sood that there was such inconsistency that Table B2 is for multi-path fading channel, on the other hand 8.1 is for non-fading channel. There are some objections to accept this changes, but e-mail discussion will take place till next meeting. Contribution in email reflector including test equipment manufacturers was encouraged. Mr Simon Pike of Lucent Technologies pointed that we needed to be careful about multiple integers. Mr. Prem Sood of Sharp said he agreed with operators that the multipath cases seemed too optimistic for the real world and the tap delays needed to include longer tap delay values.

Proposal for use of the terms of Case 1, 2 and 3 was accepted

Proposal for adding that "Down link power control is turned off during the measurement " in **8.1 General** was accepted.

Perch channel power of –10m dB was accepted.

The issue on terminology will be discussed in e-mail reflector.

Tdoc193
Tdoc194

Mr Bo Olsson of Telia presented requirement for test method of UE antenna, and description of the test method, showing that median loss for 1800 MHz was 6-7 dB. Refer to COST259. Email address is given as bo.g.olsson@telia.se. He mentioned that it was hoped that the method would be agreed and used for certification of handset.

Mr Han Van Bussel of T-Mobil suggested that the contribution wasbe recommended to be included in S25.101 as soft requirement. Mr Michael Farber of Siemens pointed out that no ideas were seen on what UE antenna will look like in the future. Mr Edgar Fernandes of Motorola pointed that this handled only hand-held terminals, asking whether this

influence the requirement. Nokia made comment that practically, simple chamber measurement procedure was adapted for GSM terminal and that too much complicated measurement shall be avoided. Mr Peter van de Berg of Ericsson stated that current specification was premature though antenna issues were important. Mr Han Van Bussel of T-Mobil proposed that the first two paragraphs of Summary of Tdoc193 were to be added to Section 4 of 25.101 and 25.104 as a soft requirement rather than a hard requirement. But against this proposal, objection was raised stating that description like "antenna loss should be less than 5 dB" seemed too much strong because there are various types of UEs such as data terminal and etc.

Chairman's decision was that the proposal was not accepted since it seemed premature. Further discussion was encouraged.

Tdoc207,

Mr Edgar Fernandes of Motorola proposed text for pulse shaping filter of Root-raised cosine (RRC) filter.
Tdoc235,
-Tdoc246

Hewlett Packard presented equation of RRC pulse shape.

Mr Edgar Fernandes of Motorola stated that this should be endorsed in TSG RAN

It was approved to use the equation as baseline document.

Tdoc224

Mr Eric Georgeaux of Nortel of Nortel presented Kaiser-Bessel pulse shaping.

Mr Harri Lilja of Nokia pointed that it was impossible to meet the FCC requirement by looking at 2.5 MHz in Fig.2. Nokia also pointed that much difference could not been seen in Fig 5.

Mr Yasushi Iwane of Mitsubishi stated that in implementation, characteristics was better by truncating taps for RCCRRC to have less taps and that no benefits were seen. Mr Eric Georgeaux of Nortel added that degradation might be seen in modulation accuracy when truncated.

Mr Harri Lilja of Nokia emphasized that RCCRRC was the best pulse shapingpulse-shaping filter.

It was not accepted because the benefit was not significant.

Tdoc215

Denis Yann of Nortel presented request to amend document in section 5.3 of S25.101 for Variable Duplexing.

Takami mentioned that variable duplexing should be introduced depending on marketing demand and that Japan was not interested in variable duplexing, referring to decision that WG4 had approved that fixed spacing was mandatory and that variable duplexing was optional. Mr Michael Farber of Siemens commented that this feature should be treated very carefully and decided if it is mandatory or optional. Mr Simon Pike of Lucent Technologies commented that it was not applicable to put this as mandatory requirement considering of regional spectrum strategy. Mr Peter van de Berg of Ericsson pointed that it was unclear when this service will be available. Mr Michael Farber of Siemens pointed that if only fixed spacing became mandatory operator would see problems in handling asymmetric traffic. Mr Donald Zelmer of Bellsouth asked what the added complexity of the terminal was. Mr Simon Pike of Lucent Technologies responded to that by stating that variable duplexing induces considerable complexity. Mr Prem Sood of Sharp pointed that if implication was that UE shall be dual mode terminal of FDD/TDD, variable duplexing should not be mandatory. Mr Peter van de Berg of Ericsson repeated that this was the feature to be added in the future. Dr Amer El-Saigh of Vodafone commented that asymmetric traffic was the issue more for down link.

Chairman gave conclusion to each point as follows.

Point 1: Proposal is "*UTRA/FDD UEs shall support variable transmit--to--receive frequency separation.*"

It is not mandatory to realized variable spacing on day one. There is nothing stopping operator to do so and manufacture such terminals.

Mr Michael Farber of Siemens commented that if this were not mandatory requirement few operators would use it like frequency hopping and half-rate codec in GSM, expressing that it should be mandatory.

Chairman concluded that WG4 could not support Point 1 and further discussion was needed, meaning that this will stay as an option for the moment.

Point 2: Proposal is "UTRA/FDD UEs shall be, at least, capable of managing a duplex spacing in the range of 175 MHz to 205 MHz."

Mr Peter van de Berg of Ericsson commented that the range for variable duplexing spacing may be between these values, but that this should not be a minimum requirement.in the range could be kept.

Chairman concluded that if WG4 optionally took the proposal, LS to WG2 was needed, summarizing that the proposal was accepted if replacing "UEs shall be, at least, capable " to "UEs may be capable" and that confirmation was to be obtained by the end of the WG4 meeting.

Point 3: Proposal is "UTRA/TDD UEs shall be capable of running in the entire FDD UL bandbands [1920-1980 MHz]."

Mr Simon Pike of Lucent Technologies pointed that decision of ERAERC was that TDD was optional.

Chairman concluded that this was not accepted, meaning that WG4 will leave this as option.

Mr Han Van Bussel of T-Mobil commented that if we defined this as an option, signaling was needed, which means LS to WG2 would be needed. Mr Peter van de Berg of Ericsson stated that usage of spectrum was unclear, hence it was too early to require anything.

Chairman was to trace LS from WG2.

Tdoc213

Mr Edgar Fernandes of Motorola presented.

Chairman asked the floor for general idea on how to remove square bracket. Mr Prem Sood of Sharp commented that square bracket seemed to have stayed long after the WG4 in Turin, suggesting that square bracket should be removed. Mr Peter van de Berg of Ericsson expressed that Ericsson supported the previous idea. Mr Han Van Bussel of T-Mobil comentedcommented that only way to meet the schedule was to remove square bracket in the next meeting.

Chairman pointed that terminology being used should be defined. Discussed in the email reflector will be continued.

Tdoc217

Mr Peter van de Berg of Ericsson presented correction of S25.101, which was approved.

Tdoc218

Mr Peter van de Berg of Ericsson presented new dynamic channel models; (1) moving two paths to test UE capability of tracking moving 2 path, and (2) birth-death channel to test that UE can find new path

Mr Edgar Fernandes of Motorola commented that the channel models were for further discussion because the two papers confused editor. Mr Peter van de Berg of Ericsson responded that Ericsson was not changing the current table, but proposing to add new dynamic channel models.

Mr Peter van de Berg of Ericsson gave explanation that moving channel is for capability of UE to track channels because there are fixed delays in current document. Chairman commented that considering of RAKE receiver, it was useful to know this performance and also useful to network to know the case where UE is moving. Mr Simon Pike of Lucent Technologies pointed that WG4 needed to be careful to put this on requirements of UE.

Chairman encouraged discussion on email reflector and concluded that the paper was accepted at this moment to add the text to S25.101.

Tdoc219

Mr Peter van de Berg of Ericsson proposed 10 occurrence for spurious response testing in S25.101.

A question on whether this was for in-band blocking or out-band blocking was raised. Mr Peter van de Berg of Ericsson responded that this is for out-of-band blocking. frequencies to be used should be defined and added. Mr Simon Pike of Lucent Technologies commented that exception should be clarified. Mr Han Van Bussel of T-Mobil commented that the reason why 10 are the maximum was not clear. He also commented that exception in in-band should be zero otherwise type approval would be failed. Dr Amer El-Saigh of Vodafone asked how the value of -44 dBm was affecting the performance of W-CDMA. Mr Simon Pike of Lucent Technologies commented that this was for arbitrary test in practice.

Chairman concluded that the change in Toc219 was approved here. And he suggested the editor to delete Tables 14 and 15 and to check how to change the corresponding description. Mr Han Van Bussel of T-Mobil added that version 4 of GSM spec was old, hence that version 6 should be referred.

Tdoc220

Mr Peter van de Berg of Ericsson proposed to remove bracket on Modulation Accuracy.

Chairman confirmed that the change was approved. , adding that before getting it approved an exact value should be worked out. Ericsson was to forward the background for the value that to an editor of RF system scenario. Note that the other brackets in for the text in *6.8.1 (Table 9)* areis still remained.

Tdoc230

Nokia proposed to add text on spurious emission to GSM band.

Mr Peter van de Berg of Ericsson made comments that for DECT and PHS the situation was the same, hence this should be added. Mr Simon Pike of Lucent Technologies commented that people needed to be cautious about addition of requirement whichrequirement that may draw global attention to protect their systems. Mr Michael Farber of Siemens commented that we should be careful about co-citing GSM and AMPS, especially in Asia. Mr Simon Pike of Lucent Technologies suggested us to look at other systems bands.

Chairman concluded that the change was accepted, adding that but additional information was needed in off-line.

Tdoc231

Nokia proposed to remove brackets from 3 lines from the top of *Table 11* in section *7.3 Static reference sensitivity level*.

It waszwas confirmed that the changes were for Ior of –110 dBm, -1 dB of Perch and –7 dB of DPCH. Note that rest of the table had already been removed in previous discussion.

Chairman concluded it was approved.

Tdoc234

Mr Donald Zelmer of Bellsouth of Bell_South presented current US frequency band plan, adding that PCS band of UL/DL was upside-down to that of UMTS.

Tdoc247

Nokia proposed addition of wide band noise of –50 dBm/4.096 MHz in *Table 6*.

This was approved.

Chairman commented that STTD would be addressed in the next meeting. Motorola mentioned that Motorola was working with Nokia and that would be available in the next meeting.

• *UTRA (BS) TS 25.104*

Tdoc208

Mr Johan Skold of Ericsson presented S25.104

Mr Simon Pike of Lucent Technologies suggested that it was better that ACLR for the third channel is treated as spurious emission.

It was suggested that only chapter 7 of Blocking was revised after e-mail approval and that some difference between BS and MS should be solved so that BS may be aligned with UE.

Tdoc201

Mr Yoshiharu Ohsaki of Panasonic presented showing necessity of both category A and B.

Tdoc223

Mr Simon Pike of Lucent Technologies proposed new text on spurious emission for separate co-existing scenarios with GSM, DCS1800 and PHS.

Mr Donald Zelmer of Bellsouth expressed that US was reluctant to have more stringent requirement than FCC regulation, followed by response that as for ACLR, separate description will be available if needed. Mr Simon Pike of Lucent Technologies commented that it was possible to have ACLR value inside of the spectrum and that if Japan adopts category A, according change could be made with careful wording given.

Off-line discussion was encouraged.

Tdoc225

Mr Eric Georgeaux of Nortel of Nortel proposed separate specification of BS emission limits for Outside Block and Inside Block. Mr Simon Pike of Lucent Technologies pointed that LS from ERC TG1 says the similar points.

It was identified by Chairman that two different structures had been proposed, in Tdoc223 and Tdoc225, respectively, followed by discussion on which to be adopted to conclude that the structure presented in Tdoc223 was accepted as a starting point because Lucent's proposal seemed clearer and was supported by many participants. It was confirmed that Mr Simon Pike of Lucent Technologies would produce another working document taking into account Japanese contribution of Tdoc201 and US requirement.

A question was raised that in average measurement video BW and measurement BW were equivalent, to which was responded that measurement bandwidth was equivalent to resolution bandwidth, but video bandwidth needed to be well considered. Mr Johan Skold of Ericsson asked whether ACLR value presented in Tdoc237 met the document. Mr Simon Pike of Lucent Technologies responded that the last Line in section 7.5 of 25.104 on page 13 might be changed to " …with a level of 44 dB higher."

Tdoc239

Ericsson proposed a value of 45 dB for BS ACS.

Comment was raised that if BS reference sensitivity level has another data rate ACS will have another column according to it. And in case that dB description is ~~used~~ ,used, highest data rate should be applied since spreading factor affects it but in case that dBm description is ~~used~~ ,used, it should be the same as interference specification.

The meeting agreed to state a BS ACS value of [45 dB] as an editor's comment in 25.104. The actual specification of ACS will be based on this value."

Tdoc222

Mr Kito of NEC proposed to have ACS of BS of 10 dB higher than ACLR, and –42 dBm for Blocking, Spurious response and Intermodulation.

Mr Michael Farber of Siemens asked where 3 dB in section 2.1.2 came from by adding comment that it seems too tight as a blocking spurious response, followed by response of Mr Kito that it would be clarified in the next meeting. Mrs Nadia ~~Benabdalah~~Benabdallah of Omnitel asked what "acceptable capacity loss" meant. Chairman responded that Motorola had given the figure relating to 0.1% of time of blocking. Mr Howard Benn of Motorola commented that Blocking specification shall be specified relative to noise made by UEs. Ericsson raised concern about measurement of -70 dBc using test equipment. HP commented that it was quite challenging but on the edge.

Chairman concluded that regarding blocking, spurious response and intermodulation characteristics, we would for the time being leave whole specification with text of -42 dBm with bracket as a starting point considering that if new simulation results come out the values will be changed, encouraging for further contribution. For ACLR, "45dB" ~~was taken~~was taken as a working assumption at the moment. Chairman understood that we would leave this as being open because more contribution needed to be presented at next meeting. It was confirmed that the values were kept as a starting point.

Tdoc204

Mr Nakamura of Fujitsu proposed reference sensitivity of –122 dBm.

Mr Nakamura confirmed that 4.4 dB included coding gain and that hardware margin of M is 2 dB.

Ericsson asked whether it needed to specify for micro cell BS and micro cell BS, followed by comments of Mr Nakamura that this is only for macro cell. Chairman pointed that this issue should fall into every specification. Mr Johan Skold of Ericsson asked again whether this was for only single branch or for both SD and single branch.

Chairman concluded that the value without bracket was accepted with suggestion that we need to check the figure for SD.

Chairman pointed that ACLR for BS was missing, to which Mr Johan Skold of Ericsson commented the value for down link was similar for UE and that the value 10 dB higher could be proposed. Chairman asked the floor whether ACLR of 45 dB with bracket for BS was acceptable, concluding that 45 dB and 55 dB were accepted as a stating point.

Mr Johan Skold of Ericsson pointed that spectrum mask for FCC24 and ACLR were specified separately. Mr Simon Pike of Lucent Technologies added that US requirement had to be looked at and that operator's views needed to be addressed. Mr Han Van Bussel of T-Mobil commented that scenario calculation needed to be looked at.

9.3 Radio transmission and reception (TDD)

Tdoc199

Tdoc ~~&~~ 200

Mr Meik Kottkamp of Siemens explained the status of TDD documentation. No special inputs were available. Mr Peter van de Berg of Ericsson pointed minor changes should be covered.

Chairman asked the editor to check them.

Tdoc233

Alcatel presented.

Mr Peter van de Berg of Ericsson suggested that current chapter should be edited.

Mr Simon Pike of Lucent Technologies suggested that frequency band should be more general because TDD in band of 1920MHz to 1980MHz was still an open issue.

Chairman concluded to add study items in Annex rather than into Chapter 5.

Chairman express concern that there were small inputs available on TDD while a lot on FDD.

9.4　Support of RF parameters in Radio Resource Management

Tdoc181

Mr Daniele Franceschini of CSELT presented current version S25.103, presenting the last changes to the document the editor highlighted that during the e-mail discussion it was decided to put in square brackets some values related to Handover to GSM, and to put in S25.103 references to S25.101 in relation to some power control issues discussed during the last meeting. pointing that handover in chapter 10 had some brackets according to the discussion in RAN nad that power control schemes were also some of issues.

Chairman pointed out that there were no points to increase the version number since it was not 50% complete. Dr Amer El-Saigh of Vodafone emphasized necessity of communication among WGs. Chairman realized that information path between each WG was one issue in TSG-RAN.

Tdoc182

Mr Daniele Franceschini of CSELT proposed parameters for S25.103 regarding cell selection and handover including overall soft handoff delay, signal strength measurement accuracy, reporting period, maximum number of cells to be monitored and speed measurement accuracy.

Mr Peter van de Berg of Ericsson asked information about a Tdoc referenced in the document and presented to the last WG2 meetingwhat the document status was, to which Daniele responded that the document was for discussion in WG2, and the requirement part of and that contribution was reported in Tdoc 182. Tdoc 182 starting from some of those requirements proposes a list of requirements to be included in S25.103made to complete the document. Mr Peter van de Berg of Ericsson asked what the discussion in WG2 was. , to which Daniele responded that after the presentation of the document on the Cell selection and reselection it was decided to start a discussion on the e-mail reflector that had been kicked off a few days ago in the e-mail. Daniele pointed out that the WG2 discussion is related to strategies and for this the parts related to requirements were included in Td182 for discussion in WG4. and that more requirements were identified. Dr Amer El-Saigh of Vodafone pointed that strategy was not reported. Mr Jussi Numminen of Nokia of Ericsson pointed that Idleidle mode discussion was needed.

To inquiry by Chairman on how values for FFS are to be determined, Daniele commented that it was not easy but values should be specified, adding that it would be by simulation or experimental results. Chairman summarized the status by concluding that how it proceeds should be identified in the next meeting and that manufacturers were encouraged to make contributions. He added that study items and time plan were also needed to be discussed in email reflector.

Mr Yasushi Iwane of Mitsubishi of Mitsubishi commented that mechanism for sell re-selection would be needed to examine this documentsthese documents. Daniele answered that the requirements related to time constraint for cell selection and re-selection were related to the overall procedure also if the time constraints for the single steps which compose the overall procedure are important requirements. Chairman stressed that many items should be investigated, encouraging people to work it out.

Dr Amer El-Saigh of Vodafone stetedstated that some parameters for GSM could be provided.

Mr Michael Farber of Siemens commented that SMG2 had started to analyze handover from GSM to UMTS and that some parameters might be rail guide to the issues. Chairman encouraged Daniele to produce the way forward and time frame and Mr Daniele Franceschini promised that the time frame would be presented to WG4 as soon as possible in the next WG4 meeting in order to reach consensus in JuneJuly meeting.

9.5　Basestation conformance testing (FDD)

No document was provided.

Nakamura of Fujitsu explained the status of the document.

Chairman encouraged companies to make inputs to the documents.

Tdoc195

IFR ~~Ltd~~Ltd. proposed a method to measure ACP for BS conformance testing.

David of HP sated that measurement of traditional spectrum analyzer was still valid for FDD, but IFR responded that the value was not correct for spectrum analyzer. Mr Simon Pike of Lucent Technologies pointed need to be cautious about spectrum mask of FCC with steep slope. David of HP was to respond to the contribution next time.

Chairman concluded that the paper was accepted.

Mr Edgar Fernandes of Motorola suggested that the spec should be consistent with UE and BS.

Chairman express concern that lack of contribution was seen in the area, encouraging BS manufactures to look at the document.

9.6 Basestation conformance testing (TDD)

Mr Michael Farber of Siemens explained the status, saying that the document contains almost nothing. Chairman encouraged companies to make contribution.

9.7 Basestation EMC

Tdoc198

Esa of Nokia presented EMC requirements to Japan, EU and US.

Chairman pointed that Korean position would be available in email reflector.

Mr Simon Pike of Lucent Technologies pointed that there was some difference in implication between Japan and EU though the same EMC description was referred. For instance, as for Japan, EMC at the antenna port emission was specified as product standard.

Tdoc214

Mr Prem Sood of Sharp presented.

Mr Simon Pike of Lucent Technologies suggested that some correction should be needed in the table.

Mr Edgar Fernandes of Motorola pointed that we needed to be careful for vehicle mounted equipment.

Mr Simon Pike of Lucent Technologies made comment that in 3GPP~~,~~ EMC issues should be standardized by being converted from regional regulations but that US approach was different. Esa stated that Nokia was going to produce a common paper for EU and Japan.

Chairman pointed that Ad Hoc group AH32 had been~~was~~ set up in email reflector to treat the issue~~..~~.

All LSs in electrical version need to be handed to Chairman.

9.8 RF System scenarios

Tdoc196

Mrs Nadia ~~Benabdalah~~Benabdallah of Omnitel presented the document of 25.942, where changes were added mostly in Section 5.1, section 5.2 was added, section 7 was moved to section 4, section 8.1, 8.2 and 9 were added.

Mr Edgar Fernandes of Motorola commented that ACLR value was to be put into this document.

Dr Amer El-Saigh of Vodafone asked what result, to which Mr Edgar Fernandes of Motorola responded by referring to results of Alcatel, Ericsson, Nokia, NTT DoCoMo and Motorola, and their average.

Chairman gave guideline that this would be discussed in higher level like PCG.

Mr Meik Kottkamp of Siemens suggested that document status needed to be shown in consistency.

Chairman suggested removing section 9 and moving it to Annex, leaving this version 0. Change it to version1 in next meeting was encouraged.

Tdoc210

Seppo of Nokia presented FDD/FDD coexistence scenario based on discussion in email reflector.

Chairman concluded that the changes were approved, and encourage Editor to incorporate the changes.

10 Liaison and output to other groups (Agenda Item 10)

Tdoc236

Tdoc236 is withdrawn, replaced by Tdoc249.

Tdoc249

Mr Johan Skold of Ericsson produced LS, where joint ad hoc email email reflector on link level simulations was proposed. Chairman pointed out necessity of liaison person. Mr Jussi Numminen of Nokia commented that link level simulations were quite important and quite big task. It was agreed that Ericsson and Motorola would work on the matter and that nomination of the liaison person would be made later in email reflector. Joint e-mail AH with WG1 named "AH01" is proposed. Tdoc249 was approved and was to forward toed WG1 by Chairman.

Tdoc238

Mr Daniele Franceschini of CSELT presented LS to TSG T2 on multi mode terminal.

Dr Amer El-Saigh of Vodafone asked for clarification definition of multi mode. Mr Prem Sood of Sharp suggested the difinitiondefinition of multi mode as between 3GPP and 2G. Tdoc238 was approved and it was agreed that Mr Prem Sood of Sharp volunteered for the liaison person. taking Tdoc238 liaison statement to T2 and posting on the TSG-T and T2 reflectors.

Tdoc240

Howard presented LS to WG1 and WG2 on measurement accuracy of E_c/I_o.

Mr Simon Pike of Lucent Technologies pointed that where it was to be defined was not clear in GSM case. It was confirmed that WG2 need to provide measuring strategies such as sliding window but that it was clear that WG4 was responsible for this. The LS was accepted as it was and to be sent directly to the other WGs.

Tdoc241

LS to ERC TG1 was approved.

Tdoc-248

Mr Simon Pike of Lucent Technologies presented.

Dr Amer El-Saigh of Vodafone asked how this scheme was related to roaming. Mr Simon Pike of Lucent Technologies stated that a complete set of frequency was used throughout the UMTS community. Dr Amer El-Saigh of Vodafone proposed possibility of broadcasting of other users but Mr Simon Pike of Lucent Technologies stated that the number of frequencies UE needs to search should be limited.

Tdoc203

Mr Meik Kottkamp of Siemens presented draft of LS to TG1 on flexibility in frequency allocation.

Chairman asked the floor whether the LS was to be sent to TG1 or to delay it. Mr Peter van de Berg of Ericsson pointed UK TAG meeting would be held this week. Mr Simon Pike of Lucent Technologies commented that ERC TG1 would not have UK TAG hence that there was no benefit to send the LS to TG1. Mr Meik Kottkamp of Siemens said that we needed to seek some guidance in TG1. Mr Simon Pike of Lucent Technologies repeated that basic concept of the LS had already been sent to TG1 and proposed to withdraw this and to send another, clarifying that Lucent would not agree to send the LS this time.

Chairman concluded that the LS could not be accepted at his moment and proposed that Ad hoc 41 meeting ~~was~~be to be formed in email reflector. Mr Meik Kottkamp of Siemens volunteered to be the chair, having an aim to produce LS to interested parties for presentation at next WG4.

Tdoc242

Mr Jussi Numminen of Nokia presented LS to WG1 on TX diversity. Mr Edgar Fernandes of Motorola suggested that "Performance and test requirement" should be added in the first text. Chairman decided that Test requirements would be included in the third sentence. The modified version was approved as Tdoc254 and to be put into email reflector. Text proposal will be available in the next meeting in Miami.

Tdoc212

Mr Edgar Fernandes of Motorola presented modification in definition on ACS just for clarification and Chairman confirmed it was correct and the document was approved.

Tdoc244

Mr Simon Pike of Lucent Technologies proposed text for BS spurious emission.

Mr Edgar Fernandes of Motorola suggested that the definition of ACP should be applied to UE and BS. Mr Simon Pike of Lucent Technologies stated Resolution Bandwidth (RBW) was 1% of Occupied Bandwidth (OBW), implying 45 kHz. RBW should be defined separately. Chairman approved this as it was.

Tdoc245

Mr Peter van de Berg of Ericsson proposed text for terminal capabilities in Annex D and added that what should be in this table was to be discussed in email reflector. Baseline terminal capabilities were accepted as proposed in Tdoc245.

11 Future meetings (Agenda Item 11)

Chairman introduced that WG4 #5 meeting was to be held on 14 to 16 in Miami. Chairman concerned that three days were not sufficient to cover all the issues, hence possibility to have a 1-day parallel session was proposed. Mr Han Van Bussel of T-Mobil opposed against such arrangement by stating that European operators could send only one person. Mr Donald Zelmer of Bellsouth expressed concern that separate rooms would not be available. Chairman understood the situation and decided to have a consecutive single meeting starting at 8:00 finishing at 19:00.

As to future WG4 meetings, it was agreed to extend meeting period to 4 days instead of having a parallel session in 3-days meeting from the meeting to be held in Scotland.

12 Any other business (Agenda Item 12)

Chairman pointed that documents should be put into email reflector at least 1 week earlier in the next meeting.

13 Closing the meeting (Agenda Item 13)

The meeting closed at about 15:00 of Wednesday 12th May as scheduled.

Annex A: ~~I~~List of documents

(Whole table to be revised)

NUMBER	TITLE	SOURCE	ON DISC	ITEM	STATUS
R4-99166	Draft Minutes of 3GPP TSG RAN WG4 Meeting #3 (revision 3), 12.4.909	Secretary David Cooper	A	3	Approved
R4-99180	agenda	Chairman WG4	A	2	Presented
R4-99181	version 0.1.0 of S25.103 as noted by RAN	CSELT	A	9.4	Presented
R4-99182	S25.103 "RF parameters in support of RRM"	CSELT	A	9.4	Taken in AH42
R4-99183	LS on Measurement Requirements for LCS	R2	A	4	Presented
R4-99184	LS on ongoing work in T2 SWG5 - Multi-mode terminals	T2	A	4	Presented, modified as Tdoc238
R4-99185	Report of the current status on terminal capabilities	T2	A	4	Presented
R4-99186	Liaison statement to TSG RAN WG 2 and WG 4 on monitoring of UTRA FDD cells	R1	A	4	Presented, LS240
R4-99187	Subject: Definition of ACLR and emissions requirements	ERC TG1	A	4	Presented,
R4-99188	Response to 3GPP TSG RAN LS on Carrier Frequency Raster	ERC TG1	1	4	Presented
R4-99189	Liaison statement to TSG-T WG1 and TSG-R WG4 on transmit diversity testing issues	R1	1	4	Presented
R4-99190	Work plan	Motorola	2	6	Presented,
R4-99191	Modifications to S25.101 v2.0.0	Nokia	2	9.2	Partially accepted
R4-99192	Performance tests for TX diversity schemes	Nokia	2	4	Presented
R4-99193	Antenna test methods	Telia	1	9.2	Not accepted
R4-99194	Antenna test methods	Telia	1	9.2	Not accepted
R4-99195	Power and ACP measurement for BS conformance testing (FDD and TDD)	IFR international	2	9.5	Presented
R4-99196	system scenario report Doc 25.942 v003	Editor	4	9.8	Presented
R4-99197	choice of ACIR value	CSELT	3	8.1	Presented
R4-99198	contribution on EMC	Nokia	1	9.7	Presented
R4-99199	25.102	Editor	3	9.3	Presented
R4-99200	25.105	Editor	3	9.3	Presented
R4-99201	BS Spurious emissions requirement	Panasonic, NTT DoCoMo, NEC, Fujitsu	2	9.2	Presented
R4-99202	Suitability of channel raster for various scenarios	Siemens	4	4	Presented, LS241
R4-99203	Proposed LS on channel raster	Siemens		10	Not accepted
R4-99204	Proposal for "Reference sensitivity level" of BS in FDD mode	Fujitsu	2	9.2	Accepted
R4-99205	UL/DL ACIR simulation results based for the macro layer to macro layer scenario	Motorola	2	8.1	Presented
R4-99206	Minimum performance requirements and conformance test issue for TX diversity	Motorola	2	4	Presented
R4-99207	Pulse shaping text proposal	Motorola	2	9.2	Presented
R4-99208	TS 25.104 v1.0.0 UTRA (BS) FDD; Radio transmission and Reception	Editor	3	9.2	Presented

R4-99209	ACIR simulation results for the macro-macro scenario	Ericsson	3	8.1	Presented
R4-99210	FDD to FDD coexistence update	Omnitel	2	9.8	Accepted
R4-99211	Down-link System Simulation for ACIR discussion	NTT DoCoMo	3	8.1	Presented
R4-99212	Definition of ACS	Motorola	4	10	Accepted
R4-99213	TS 25.101	Motorola	2	9.2	Presented
R4-99214	Draft EMC/Regulatory Table 1 of Regional Requirements for Terminals	NTT, Sharp	2	9.7	Presented
R4-99215	Variable duplex spacing for 3G systems	Nortel	1	9.2	Partially accepted
R4-99216	AH31 report	Chairman	2	7.7	Presented
R4-99217	Correction of S25.101	Ericsson	2	9.2	Accepted
R4-99218	Dynamic channel models	Ericsson	2	9.2	Accepted
R4-99219	Text for FDD UE Spurious response spec	Ericsson	3	9.2	Partially accepted
R4-99220	Reference for modulation accuracy	Ericsson	3	9.2	Accepted
R4-99221	FDD Up-link simulation results	Alcatel		8.1	Presented
R4-99222	Proposal for Adjacent channel selectivity, Blocking, Spurious response and Intermodulation specification	NEC	2	9.2	Accepted
R4-99223	BS Spurious response	Lucent	3	9.2	Presented, accepted
R4-99224	Proposal for a pulse shaping function for the FDD and TDD modes of UTRA	Nortel	Email	9.2	Not accepted
R4-99225	Recommendation for BTS Emission limit specification	Nortel	Email	9.2	Not accepted
R4-99226	AH05 report	Motorola	2	7.4	Presented
R4-99227	Proposal for ACPR value of UE, based on the estimation of HPA complexity	Mitsubishi	4	8.1	Presented
R4-99228	AH02 report	Chairman	2	7.2	Presented
R4-99229	ACIR simulation results for up and downlink	Nokia	3	8.1	Presented
R4-99230	FDD UE Spurious emission	Nokia	2	9.2	Accepted
R4-99231	FDD UE reference sensitivity	Nokia	2	9.2	Accepted
R4-99232	RAN status report	WG4 chairman	4	5	Presented,
R4-99233	Modification proposal to 25.102 and 25.105	Alcatel	1	9.3	Presented
R4-99234	Current US band plan	Bell South	2	9.2	Presented
R4-99235	Update pulse shape equation	HP	2	9.2	Accepted
R4-99236	LS to WG 1 on link level simulation	WG4		10	Withdrawn, replaced by 249
R4-99237	LS from WG4 to ERC TG1	WG4		7.8	Withdrawn
R4-99238	LS to TSG T2 SWG5 on multi mode terminals	WG4		10	Approved output as LS to T2
R4-99239	Choice of BS ACS value	Ericsson	3	8.1/9.2	Presented
R4-99240	LS to WG1 on Ec/Io	WG4	4	10	Approved output to WG1 and WG2
R4-99241	LS to ERC TG1 etc on channel raster	WG4		10	To be expected
R4-99242	LS to TSG R1 on diversity testing	WG4	4	10	Accepted as modified to Tdoc 254
R4-99243	Adhoc report from ACLR Adhoc	Chairman	4	8.1	Presented
R4-99244	Updated BTS spurious emission specification	Lucent	4	10	Accepted
R4-99245	Text for terminal capabilities	Ericsson	4	10	Accepted
R4-99246	Update pulse shape equation with plot	HP		9.2	Accepted
R4-99247	UE ACP specification min power level	Nokia	4	9.2	Accepted
R4-99248	Channelisation	Lucent	Email	10	Presented

R4-99249	Proposed LS to WG1 on simulation	Ericsson	4	10	Approved output to WG1
R4-99250	Presentation on system scenarios and escape mechanisms	Ericsson	4	8.1	Presented
R4-99251	Work plan	Editor	4	6	Taken in AH43
R4-99252	TDD input on work plan	Siemens		6	Expected from AH41
R4-99253	25.103 work plan	Editor	Email	6	Taken in AH43
R4-99254	Modified LS on TX diversity testing	WG4	4		Approved output to WG1
R4-99255					
R4-99256					
R4-99257					
R4-99258					
R4-99259					
R4-99260	Draft minutes of TSG RAN WG4 #4 (Kista) meeting (Version 1)	Secretary Eisuke Fukuda	Email		

Annex B: ~~s~~Status of email discussions

(To be revised)

No. of Ad hoc	Responsibility	Chairman	Status
AH01	Test parameters for receiver BB tests	Jukka Vikstedt, Nokia	Continues
AH02	Simulation parameters	Seppo Hamalainen, ~~Jukka Vikstedt,~~ Nokia	Continues
AH 03	UE Power tolerance	Simon Pike, Lucent Technologies	Closed
AH05	FDD MS radio transmission	Edgar Fernandes, Motorola	Continues
AH06	FDD BTS radio transmission	Johan Skold, Ericsson	Continues
AH31	BS ~~tx~~TX spectrum requirements	Jussi Numminen, Nokia	Continues
AH32	EMC issues	Simon Pike, Lucent Technologies	Continues
AH33	LS to ERC TG1	Simon Pike, Lucent Technologies	Closed
AH34	~~Parition~~Partition between S4.01, S4.03	Daniele Franceschini, CSELT	Closed
AH41	Flexibility of frequency allocation	Meik Kottkamp, Siemens	Created in WG4#4
AH42	S25.103 "RF parameters in support of RRM"	Daniele Franceschini, CSELT	Created in WG4#4
AH43	Work Plan	Masaaki Iwasa, Motorola	Created in WG4#4

Annex C: Participants list

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(To be revised)

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Skold	Yonan	Ericsson	Sweden	Mr.
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Georgeaux	Eric	Notel Networks Europe	(France?)	Mr.
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Annex D: Summary of outputs and liaisons

Note: please open embedded documents to see the LS.

Tdoc no.	Title	Embedded document
R4-99238	Liaison to TSG T2 on Multi-mode Terminals	R4-99238.DOC
R4-99240	Liaison statement on monitoring of UTRA FDD cells	R4-99240.DOC
R4-99241	LS to ERC TG1 etc on channel raster	To be expected
R4-99249	Proposed Liaison to WG1 on Link Level Simulations	R4-99249.doc
R4-99254	Liaison statement on TX diversity testing	R4-99254.doc

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