

TSG-RAN Working Group 1(Radio) meeting #2
Yokohama 22-25, February 1999

TSGW2#2(99)136

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3GPP RAN-TSG 2nd WG1 Meeting Minutes

Feb. 22nd, 9:00

1. Opening remark

The meeting was opened by Mr. Furuya, WG1 Convenor, NEC.

2. Approval of agenda

Nortel: request to add new agenda item before 10. (Output to other groups) to review contributions on new topics. Support by Siemens and Philips.

(Furuya: Items already included in ARIB or ETSI documentation are covered in agenda item 7. Report from editors)

Conclusion: New agenda item 10. New Technologies is inserted in the agenda.
Agenda approved.

3. Assignment of secretary

Temporary secretary Mr. Wilde (Ericsson) until Mr. Toskala (Nokia) arrives.

4. Adhoc group meeting (9:30- 12:30, 22nd Feb.)

Assignment of rooms for Adhocs:

1 (TDD): ~25 people

5 (Coding + Int.): ~30 people

6 (TX diversity): ~10 people

7 (Slot structure): ~20 people

Lunch

13:30

5. Adhoc group meeting (9:30- 12:30, 22nd Feb.)

(Editor Note: Minutes from this onward taken down by Antti Toskala, Nokia)

Ad Hoc 5 was agreed to have an evening session in the main meeting room after hearing that they were not able to complete during the morning sessions.

(session held 19.00 until midnight (approximately))

Other Ad Hoc were able to finish before lunch break. (See detailed report for remaininfg study items).

6. Input from other groups

Tdoc 72/99 Liason from ITU-R TG 8/1 WG5

The document was presented by Giovanni Romano from CSELT

The document contained two documents from ITU.

WG1 was requested to verify the baseband key characteristics table (table 2 from page 44 onwards) and provide comments if necessary.

Fredrik Ovesjö from Ericsson introduced the document 71 on UTRA Baseband Key Characteristics (source:Ericsson and Nokia)

Each of the table entries were presented for approval.

Comments made: Item 4. Spreading factors for FDD changed from 4 to 256 to 4 to 512

Item. 2: 1.024 Mcps.

Comment: 1.024 Mcps should not be included.

Comment: There is no agreement of 1.024 Mcps, that it should not be included.

Proposal: Note: Optional 1.024 Mcps.

Conclusions: Included in Key Characteristics, Note: Does not mean that will necessary be in the specification.

Item. 5: TDD synchronous operation ... (To be defined during coffee break).

The proposal after coffee break: TDD synchronous (symbol level with respect to highest spreading factor) (asynchronous possible), summarised by Anja Klein, Siemens

Item. 9 Random Access. WP-CDMA random access was mentioned as not being covered by current text. It was later agreed to have modifications to reflect T1P1 technology, see the section related to T1P1 general presentation later onwards.

TDD slotted aloha, 1 slots RACH (0.625 ms slots)

Item 12. TDD: Complex scrambling codes with length 16. Phase transition restrictions applied.

Item 13. WP-CDMA might have an impact (Concluded:Keep as it is)

Item 15. WP-CDMA might have an impact (See later conclusions)

Item 16. For DTX (FDD DL and TDD) (instead of "DL only")

Item 17. Selective transmit diversity for TDD mode. ODMA was noted to be missing. Was added.

Item. 19 WP-CDMA was mentioned to have handover procedure.

T1P1 presentations was given by Dr. Kourosh Parsa from Golden Bridge Technology

The main elements from WP-CDMA were given as (now focus on uplink common packet channel) (The slides were made available later as Tdoc 30/99)

1. Uplink Common Packet Channel.

- Common packet channel up to 2.048 Mbits/s.
- Constant power level preamble with 16 possible sequences.
- Closed loop power control, Preamble Ramp-Up mechanism.
- Fast L1 ACK mechanism.
- Collision Detection with low feedback delay (2 ms).
- Downlink Common Control Channel structure.

The main differences to ETSI RACH is the power control and variable message length in time domain. It was noted that fast power control for the message part was also discussed in ETSI although not documented.

- Proposal: Add to item 9. Common packet channel with closed loop power control, power ramping on preamble (1ms), followed by message.
- Questions on what to include to the ITU, only agreed items or items that are pending coming from 3GPP partners but still not accepted for specification.
- Conclusion: Item 9. FDD Random access mechanism with power ramping on preamble followed by message.

For item 15. conclusion: FDD: Open loop and optional closed loop power control for random access channels.

Split to FDD part. And add to that the following modification:

FDD closed loop for dedicated channels

TDD closed or open loop for dedicated channels

TDD: Open loop for random access channel

Proposal for item 1: Add (ODMA) for TDD.

Conclusions after discussions. For item 19. Add: TDD: ODMA (Opportunity Driven Multiple Access)

Baseband Key Characteristics was approved with the above mentioned modifications.

This is sent to Nicola Magnani / ITU Ad Hoc
Sourced as WG1 with a new Tdoc number.

Liaison from WG4 (Tdoc 63/99 and 88/99) Presented by Giovanni Romana, CSELT
Tdoc 63/99 was prepared by WG4 in their Espoo meeting on system level protocol aspects.
Tdoc 88/99 was later addition and was presented together. The document was from the WG4 meeting in Turin from the previous week.

The document was pointed to contain several overlaps with WG1 work atleast.

Mentioned items were:

- Definition and criteria for cell selection (which is WG2 item) WG4 is not expected to define the algorithm itself.
- Specifying the power control algorithm and range, where it was felt that WG4 role is to define the accuracy and how to test possible solutions standardised by WG1.
- WG4 should define minimum performances and how those performances can be met.
- Handover procedures is in the scope of WG2 as well.
- The only thing clearly in the scope of WG4 is the measurement accuracy.

A liaison should be written on the issues to next weeks RAN-TSG as inform WG4 what they are supposed to define. A liaison shall be drafted for Thursday. (see notes later for that from day 4)

Postponed: WG2 liaison (Not yet available in copies).
Close of Day 1.

(Day 4): Liaison from WG2 (Tdoc 108/99)

The liaison statement was presented by Antti Toskala, Nokia.
There is not immediate answer on RACH & out-of-sync indication.
The DSCH part of just a clarification, no need for action.

Where to handle the answers will be discussed later (see notes on later with agenda point on output to other groups).

Ad Hoc 5. 19.00-22.00
(Discussions to be reported separately)

Day 2. Start 9.00

7. Election of chairperson

Tdoc 73/99 & 41/99 Were the nomination letters (support letters) from Nokia for Antti Toskala and from NTT DoCoMo for Takehiro Nakamura respectively.

The election was done with consensus without voting as Mr. Toskala was the only candidate for chairman and Mr. Nakamura was the only candidate for vice-chairman.

Mr. Toskala was selected as chairman
Mr. Nakamura was selected as vice-chairman

The new officials presented themselves, thanked the WG1 for the support and shall take over starting from the next WG1 Meeting No. 3.

8. Report from editors

General: It was agreed to continue discussions on S1 documents over the reflector

With Fredrik Ovesjo responsible of the summarising the discussions on FDD documents and Makis Kasapakis on TDD documents. (Regarding the structure etc. issue)

8.1 S1.01 Physical layer – general description

Tdoc 47/99 was presented by Antti Toskala, Nokia

The section 7.1.1 will be revised by taking the picture from S2.02 and text will be revised accordingly for the next version.

The section 7.3 will be removed from the document.

Editors will reflect the outcome of the Ad Hoc discussions in the next revision.

8.2 S1.02 UE capabilities

Tdoc 48/99 was presented by Craig Bishop, Samsung.

Relation to this Tdoc 40/99 “UE Physical Layer Capabilities for UTRA“ was presented by Andrea Pascale, Omnitel.

The document presented the view from several operators on the physical layer capabilities. The main message was that features affecting layer 1 must be supported by all UE.

Tdoc 43/99 “Comments on optional and mandatory features” from Philips was presented by Tim Mousley. The document presented a view what kind of Layer 1 issues could be considered as mandatory and what issues as optional.

There was a suggestion that RAN TSG WG1 should make a proposal of the issues that are felt mandatory in UE or at network side.

Tdoc 104/99 “Proposed procedure for UE capabilities definition in 3GPP.

The UE capabilities for document

It was agreed to set up an Ad Hoc group on the physical layer UE capabilities in order to have a more concrete list of the items involved. Giovanni Romano agreed to chair the Ad Hoc group. The work will be initiated by correspondence via email reflector.

8.3 S1.11 Transport channels and physical channels (FDD)

Tdoc 49/99 was presented by the editor, Andreas Wilde, Ericsson.

Issues related to Ad Hocs are not all fully yet edited, with respect the TX diversity for example.

The issue not covered by Ad Hocs. FAUSCH was discussed in connection with 48/99 by presenting the 42/99 “The FAUSCH Concept” from Philips, presented by Tim Mousley.

Tdoc 93/99 “Comments and Questions on FAUSCH from ARIB members” was presented by Takehiro Nakamura from NTT DoCoMo summarising some concerns from several ARIB members on FAUSCH channel in ETSI.

The operators from ETSI were asked for their opinion. The reply given by Vodafone was that there is some time needed to form an opinion on FAUSCH.

Anu Virtanen, Nokia raised the question on receiver side complexity with was replied by Philips not to be anymore an issue with merged FAUSCH and RACH concept formed in last ETSI meeting.

Tdoc 94/99 “Initial Response to Comments and Questions on FAUSCH from ARIB members “was by Tim Mousley, from Philips.

Chairman proposed to have Ad Hoc on FAUSCH.

It was proposed to have FAUSCH discussion some what later and not have FAUSCH necessary part of the release -99.

It was noted that WG2 is also involved in FAUSCH discussions and WG2 should be notified whether something is being done.

Philips hoped not to have still another ad hoc as there were not that many remaining technical issues from WG1 point of view.

Takehiro Nakamura from NTT DoCoMo agreed not to have another Ad Hoc and hoped to have quick decision on this.

2 solutions were mentioned

- A) Include FAUSCH in release -99 as an option
- B) Not to include FAUSCH in release -99

Conclusions on the FAUSCH discussions: The meeting will be polled for its opinion after the lunch.

The meeting had in the indicative voting rather even opinion for both including and not including FAUSCH in release -99. (Voting just by raising the hand to see the level of support for FAUSCH.

(DAY 4) FAUSCH discussion was resumed at day 4.

Tdoc 125/99 by Philips, proposed the solution for FAUSCH:

1. The current text on FAUSCH should be retained in S1.11 for the moment, with a note indicating that the working assumption agreed by WG1 is that FAUSCH will not be part of the first release of the specification but can be included in the second release.

2. It will be removed from S1.11 when procedure is in place how to deal with matters not part of the first release.

3. WG2 Should be informed.

This was agreed and shall be communicated to WG2 as well.

On the DSCH (Downlink Shared Channel) side there were no objections from ARIB members, thus DSCH is considered as part of 3GPP specification currently.

8.4 S1.12 Multiplexing and channel coding (FDD)

Tdoc 50/99 was presented by the temporary editors.

There were comments from Ericsson on the following points:

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

There was comment on the when use Turbo and when use convolutional coding, this is something that has been discussed but which is not part of the documents for time being. It was noted to be part of text edited for page 14, taken from ARIB specification.

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

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

Issues from Ad Hoc 8 were noted to have an impact by the Ad Hoc leader.

8.5 S1.13 Spreading and modulation (FDD)

The document was presented by Editors.

Question: Nortel asked whether the ARIB pulse shaping was identical to ETSI. This was the case. It was noted that Nortel has a proposal for pulse shaping to be dealt with later. (Later it was agreed to deal with that in connection

with Ad Hoc, see minutes on Day 4, Agenda item 10)

Anu Virtanen, Nokia, asked: The gain factor for PDCCH should be instead on PDDCH in figure 10. The gain factor was agreed to be moved to DPDCHs instead of DPCCCH and to give separate G on different channels and to later define whether they are the same or different. From the ARIB side it was clarified that the original picture contained an error. The change for the G factor for DPDCHs was accepted.

The question was raised whether there was actually error in the ARIB specification as the G factor had been there for quite a while, but never the less, there was no objections to the modification.

The gain factors, whether they are the same or not, are left for further study.

It was noted to section 7.2.3.2 that there is the 34 sequences in case if the figure and that in ETSI there is a proposal for having information in the neighbour list of the level of synchronisation of different base stations. The editors note referencing to other systems besides UTRA was mentioned to be removed.

8.6 S1.14 Physical layer procedures (FDD)

Editor, Fredrik Ovesjö from Ericsson, Introduced the document. Several items were mentioned waiting Ad Hoc outcome, such as Transmit Diversity and Random Access.

Site selection was mentioned as an issue where work split between WG1 & WG2 need to be clarified.

It was noted by Evelyne Le Strat, Nortel, that the SIR estimation does not need to be specified as being impossible to verify in practice as only UE behavior can be tested.

For the outer loop power control text from ETSI and ARIB was agreed to be given in Annex and report that to TSG RAN.(section 5.1.2.2.1)

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

Tdoc 112/99 was mentioned to be relevant for section 6 (Random Access Procedure). It was noted to be dealt with after RACH Ad Hoc.

The possible power offset values used in ARIB in section 5.2.3.1 were asked whether they have some limitation defined or not. After lengthy discussions it was concluded that it cannot be mandated to have specific power offset values. For the UE the issues impacting the power offset value need to be still discussed, mainly does the UE need to know the power offset values or not.

8.7 S1.15 Measurements (FDD)

The document (Tdoc 53/99) was presented by the editor, Evelyne Le Strat, Nortel. Certain items that were felt being not in the scope of WG1 were moved to an annex in order for the information not to get lost. For the slotted mode it was mentioned that the scope is to tell how to configure slotted mode, not to cover the exact implementation of slotted mode. Cell sets to be discussed with WG2.

The term soft handover in connection with active sets was clarified to cover also the case of soft and softer handover.

The matter of having different active sets for one UE with different channels was mentioned needing some attention in the future.

The question of maximum active set size was questioned. It was noted not necessary being the same number of "Rake fingers" at UE, as is the case with some systems.

The question was raised whether there should be 2 documents or not for measurement. One proposal was to have a additional document for measurements in idle mode as it might not be clear what is the difference in idle mode when multimode terminal is monitoring GSM cells.

It was agreed to merge S1.15 and S1.25. The document shall be S1.31, Measurements

Agenda Item 8.10

The TDD Ad Hoc report (Tdoc 74/99) was given before TDD documents. This was presented by Anja Klein, Siemens.

The table making recommendation of TDD parameter selections was proposed for approval from TDD Ad Hoc. The table(s) was agreed for basis of further work on TDD.

The agreed table is given in Annex 2, with listing of TDD parameters.

Tdoc 100/99 was presented by Panasonic listing items where further studies are needed in UTRA TDD.

Tdoc 114/99 presented answers to the ODMA related questions.

Tdoc 86/99 "Harmonisation of TDD & ODMA" was presented by Vodafone.

The ODMA was still left for further study.

Tdoc 115/99 was presented by Osamu Kato, Panasonic. It gave suggestion of the modifications to S1.21 based on the Ad Hoc discussions.

The modification will be seen in new versions if 115/99 for approval.

8.8 S1.21 Transport channels and physical channels (TDD)

Tdoc 54/99 was noted by Osamu Kato, Panasonic, and it was not presented in detail as there is a new version coming based on the Ad Hoc 1 outcome which shall be dealt with during Day 3 or Day 4.

DAY 3: The modified version of S1.21 (Tdoc 116/99) was presented by Osamu Kato, Panasonic. The modifications were agreed. (only note on SCH code was made that it is 256 chip sequence, not with a spreading factor 16. Editor shall correct this)

8.9 S1.22 Multiplexing and channel coding (TDD)

Tdoc 55/99 was presented by Jussi Kähtävä, Nokia.

The same comments as done for respective FDD document (for S1.12) apply for what is relevant for WG1 and what is not.

Specially issues like TFCI was mentioned to be an example and it was noted that several items need some changes after the merging results.

The section on slotted mode was noted to appear as simple cut and paste. However in TDD the measurement procedure can take benefit of the idle period between TX and RX. Also there is no continuous TX from the BS so the item should be further studied by the TDD group.

8.10 S1.23 Spreading and modulation (TDD)

Tdoc 56 was presented by Kenji Ito, Siemens.

No specific comments were made.

A revised version was presented as Tdoc 120/99 by Kenji Ito, Siemens.

No comments were made, approved. (This included Ad Hoc 1 changes agreed)

8.11 S1.24 Physical layer procedures (TDD)

Tdoc 57/99 was presented together with Tdoc 75/99 by Anja Klein, Siemens.

Tdoc 57 contains the S1.24 and Tdoc 75 contains the "Merge Proposal for 3GPP TSG RAN S1.24: Physical Layer Procedures.

The contents in Tdoc 75/99 was agreed and a new version of S1.24 will be provided for approval based on suggestion in Tdoc 75/99.

It was pointed out by Vodafone that intersystem synchronisation issues are not captured and should be added as a study item to S1.24. A subtitle is added in 6.2.1 on inter-system synchronisation (between operators).

A revised version was presented as Tdoc 121/99. The modifications were agreed, but the editors note on page 6 is removed.

8.12 S1.25 Measurements (TDD)

It was approved.

The TDD study items will be summarised on the reflector

The need for Ad Hocs to continue will be evaluated on Thursday with agenda point 9.

9. Report from adhoc groups

9.1 SCH (Ad Hoc 2)

Tdoc 98/99 was presented by Ad Hoc responsible, Mr Nakamura, NTT DoCoMo. The report summarised the differences between ETSI & ARIB in SCH multiplexing.

The report recommended to adopt the ARIB solution due to resulting lower envelope variations. The recommendation in Tdoc 98/99 was accepted.

The annex in Tdoc 98/99 contained the text proposal for SCH multiplexing, editors shall incorporate the text proposals in the new document versions.

9.2 Physical channel slot structure, spreading factor, power offset (Ad Hoc 7)

The revised version of Ad Hoc 7 report (Tdoc 59/99) was based on the email discussions and on the physical meeting results from the meeting on 22nd.

Main points:

- Spreading factor:
 - UL DPDCH 256-4
 - UL DPCCH 256 (128 FFS)
 - DL DPDCH/DPCCH 512-4 (Need for 512 still to be verified)
 - DL Operator: definable gain factors
 - UL gain factors: Define a limited set
 - Field orders: Define a limited set ?

The comment was that field orders should be taken from ARIB. The FBI field position is remaining issue that will be dealt with after Ad Hoc 6.

(Field for both uplink and downlink can be taken from ARIB)

Comment was made that field order should not vary in the sets, rather the number of bits in different fields.

The gain factors for (clarification):

- Uplink: Define a set (no detailed set given in ETSI or ARIB)
- Downlink: Range should be defined (no detailed proposal on the range available)

RSTS technology impact was discussed, it was noted that on the downlink no FBI field as such is needed, as the only proposed technology to use downlink FBI field is RSTS needed only 1 bit per 20 ms.

The recommendations and differences between ETSI and ARIB are given in Table 1 and 2 in Tdoc 59/99 (below)

Table 1 Differences of Dedicated physical channels

Channel	Item	ETSI	ARIB	Proposal (** see Note)
Uplink / Downlink	UE RX/TX offset (T_o)	TBD	Defined (cf. 3.2.2.4.3)	Should be optimized for UL/DL field structure
Uplink DPDCH	Gain factor	Undefined	Defined (cf. 3.2.6.7.1.2.1 (2))	Define a limited set
	Spreading factor	256 – 4 (16 – 1024 kbps)	256 – 1 ⁵ (16 – 4096 kbps)	256 – 4
	Field option	Non	Option: Pilot, TPC fields ⁴	Non
Uplink DPCCH	Spreading factor	256 – 4 (16 – 1024 kbps)	256 (16kbps)	256 (128 ffs ^{**})
	Field order	Pilot / TPC / FBI / TFCI Option: reserved field	Pilot / TFCI / TPC ^{*1}	Define a limited number of field structures. The ARIB set is a part of solutions.
	Bit allocation to each field	TBD Number of bits is negotiated during connection set up and may change during a connection via higher layer signalling.	Defined: Table 3.2.2-10	
	Pilot pattern	TBD	Defined: Table 3.2.2-11	
Downlink DPDCH / DPCCH	Gain factor	Undefined	Defined (cf. 3.2.6.7.2 (3))	Gain factors (The operator defines them)
	Spreading factor	256 – 4 (16 – 1024 kbps)	512 ^{**2} – 1 ⁵ (8 – 4096 kbps)	512 ^{**} – 4
	Field order	Pilot / TPC / TFCI / Data	TFCI / Data1 / TPC / Data2 / Pilot ^{*1}	Define a limited number of field structures. The ARIB set is a part of solutions.
	Bit allocation to each field	TBD Number of bits is negotiated during connection set up and may change during a connection via higher layer signalling.	Defined: Table 3.2.2-6 TFCI repetition ^{*3}	
	Pilot pattern	TBD	Defined: Table 3.2.2-7	

*1: DPCCH field order in ARIB

ARIB defines the field order in uplink and downlink to maximise the cell radius in which closed-loop transmitter power control with one slot delay can be achieved. See 3.2.2.4.3.

*2: Downlink 8ksps channel in ARIB

This channel is defined to control uplink transmission power where there is no or almost no downlink data. For example, uplink packet transmission without downlink packets.

*3: Downlink TFCI repetition in ARIB

For bit error protection, TFCI is repeated four times at bit rates higher than 32ksps.

*4: Pilot and TPC fields in Uplink DPDCH in ARIB

These are defined for future extension, but they are not used in the current specification.

*5: DPDCH SF 1 and 2 in ARIB

This extension is for single code approach for high data rate transmission.

Table 2 DPCCH fields

Channel Bit Rate (kbps)	Channel Symbol Rate (ksps)	SF	Bits / Frame	Bits / Slot	N_{pilot}	N_{TPC}	N_{TFCI}	N_{FBI}
16	16	256	160	10	8	2	0	0
16	16	256	160	10	6	2	2	0
16	16	256	160	10	8	1	0	1
16	16	256	160	10	6	1	2	1

9.3 Transport channel multiplexing

Tdoc 87/99 was presented by Mr Okumura, NTT DoCoMo. The report from Ad Hoc 4 summarised the major differences and recommendations,

- Multiplexing of TrCHs with same QoS before channel coding: Proposal ARIB scheme
- Order of 1st interleaving (Inter-frame) and rate matching: Proposal: ETSI for uplink, ARIB for downlink. Open issues as options: ETSI scheme for downlink and ARIB scheme for uplink (working assumption is the proposal, other options are for further study, with need to study complexity as well if decided so)
- Physical Channel segmentation: Proposal: Merged scheme between ETSI & ARIB i.e. Physical channel segmentation after multiplexing of TrCHs with different QoS and before 2nd interleaving.
- Code multiplexing: ARIB Uplink: ETSI: Downlink (open issue)
- Physical Channel Mapping in Downlink: For Transport Channels not relying on TFCI for rate detection (Blind RD) the positions of the transport channels within the frame should be fixed. For Transport Channels relying on the TFCI for rate detection, the positions of the transport channels could be fixed or not-fixed. Open issue: The exact details on how to use non-fixed positions in the case with explicit rate signalling using TFCI.

See 87/99 for complete details of the report.

Question on the physical channel segmentation: What way was the code multiplexing still supported. In the uplink there would be only one Coded Composite Transport Channel, while on the downlink there could be more. From the multiplexing options point of view it is possible to divide the data to individual codes. The uplink control field would provide information for all codes, in the downlink this is not necessary the case.

It was noted that downlink shared channel is a multiplexing example with separate coding chain etc..

It was hoped that the view given to WG2 should be clarified.

The control field was asked in downlink, how it should be used with separate codes. The answer was that it is not necessary to have two control fields in the downlink even if there is two separate codes used.

The meaning of the dotted lines in figures 1 & 2 was asked, and it was clarified that the rate matching is coordinated between different services.

It was asked if there is a problem to have the rate matching coordination to span also over the service specific coding. This is left for future study. A comment was made that maybe other blocks should take that service into account, but not to modify the rate of the service specific coding.

It was noted that coordination is necessary between all services at least in the uplink.
The possibilities in the downlink are for further study.

It was proposed that channel interleaving should be handled as part of Ad Hoc 4 as it has impact on the multiplexing. It was also noted in another comment that Tdoc 106/99 contains discussion in the interleaving.

9.4 RACH

Tdoc 85/99 contained the report from RACH Ad Hoc and was presented the Ad Hoc Vice-responsible, Mr. Nakamura from NTT DoDoMo.

The recommendation was given as follows:

- Adopt ETSI RACH scheme, including the use of power ramping and preamble.

This was agreed.

It was noted from the Interdigital that they shall provide material on the proposal for modified preamble structure to be discussed in the coming meetings.
(Secretary note: This is the non-coherent preamble structure proposal)

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

Conclusion. Liaison is written and referenced in report. Section 6 is kept for the time being.

Note: AICH is part of the RACH conclusions.

It was reminded that Siemens made a proposal to study spreading factor 512 for RACH (during the email discussions for Ad Hoc 7, Ad Hoc did not agree on the proposal) (This was noted to be missing from the report and is thus reflected in meeting minutes).

9.5 Channel coding and interleaving

Tdoc 111/99 presented (by Dr Hammonds, Hughes Network System) the summary from the Ad Hoc 5 developments during the email discussions and two physical meetings held during WG1 meeting No. 2

Ad Hoc Recommendation agreed during the evening session between Day 1 & Day2: For data services 10E-3 to 10E-6 the recommendation is to use 8-state PCCC be adopted as the working assumption. If data services requiring quality of service below 10E-6 are to be specified, the possibility of adopting 4-state SCCC for those services should be considered for further study.

Turbo interleaver: The process is on going for interleaving selection. (See exact text in 111/99)

Tdoc 117/99 was presented by Lucent to highlight some important aspects in the turbo codes selection, but the purpose of the document was not to challenge Ad Hoc 5 decisions. The main technical points raised were:

- Implementation complexity
- Minimum hamming distance

- Code versatility for different data rates and QoS

As non-technical point it was proposed to postpone the decision with another month.

There was no support from any other company on the proposal. Thus the working assumption is as the result agreed in Ad Hoc 5. It was noted that a working assumption can be challenged later if problems arise at later phase, with respect the puncturing etc.

9.6 Spreading and Scrambling

Tdoc 113/99 presented (by Mr. Kato, Panasonic) the report from Ad Hoc 10, spreading and scrambling.

The report summarised the differences between ETSI and ARIB and presented the recommendation:

- Uplink short code family se to S(2)
- Uplink scrambling code period was set to 10 ms

Ad Hoc 10 suggestions was agreed for working assumptions.

The question was raised by Vodafone, whether the inter-frequency handover is affected and make actually somewhat worse by this. There was not reason seen why this would be the case.

9.7 Closed loop power control

The Tdoc 84/99 was presented (By Evelyne Le Strat, Nortel) summarising the Ad Hoc 9 (closed loop power control) discussions.

The Ad Hoc reached no conclusions in the report.

It was noted (not confirmed) that WG4 has decided step sizes to be 1 dB +-0.5dB

It was proposed to sent liaison to WG4 to ask about the possibility of smaller step sizes.

It was pointed out the real issues being implementation issues and on the other hand performance issue.

On the issues where there was no ETSI material, the ARIB material can be taken as starting point inline with merging principles. This was done for:

- Uplink PC for variable rate transmission:
- Uplink PC for discontinuos transmission
- Uplink PC for multicode
- Downlink PC for variable rate transmission
- Downlink power control in discontinuos transmsion.

Conclusions: Agreed: Starting point is ARIB (still work to be done) with these points.

On the matter for uplink power control in SHO, ETSI scheme is adopted. (Agreed)

A clarifying question was made on the level of stardardisation for uplink PC in SHO. (FFS)

The opinion was given that the timing requirements for downlink power control shall be reflected rather in the performance requirement side than with a timing requirement as such. FFS.

9.8 Downlink Tx diversity

Tdoc 24/99 was contained the report from Ad Hoc 6 (DL Tx diversity) and was presented by Kari Pehkonen, Nokia.

The report recommended adoption of ETSI scheme for Tx Diversity.

The report recommended that methods are option in the infrastructure side but would be mandatory in the UE side. The study point was whether closed loop is mandatory for all kind of terminals.

Tdoc 82/99 Presented the minutes of Ad Hoc 6.

The documents were agreed to reflect the Ad Hoc 6 situation correctly.

There was concern raised on the detection of the use of open loop TX diversity on the common channels that need to be detected. (When no information exists of DL Tx diversity at UE)

- The value for detection as replied by TI was 30ms to 250 ms
- Was noted to that could be indicated in the neighbour list
- Concern was raised on overloading such lists with too much information.

The use of TX diversity for primary common channel is for further study (working assumption, not used)

The Ad Hoc conclusions on DL TX diversity methods were approved.

The FBI field/bit provision was discussed. There were comments that it should be taken from the pilot instead of TPC field.

The proposal was agreed that for FBI there should be exact proposal and the decision shall be made then. Left for further study.

It was noted that in general the UE features being mandatory or optional is an item for further study.

9.9 Handover preparation

Tdoc 79/99 is the report from Ad Hoc 8, presented by Bruno Schuffenecker, France Telecom

The conclusions were agreed.

The modes in figure 7-23 in S1.12 can be considered as working assumptions.

It was asked whether the uplink slotted mode is needed with dual receiver as well. The answer was that for uplink slotted mode the same need remains as with single receiver. (due to the close proximity of the measured band with respect to TX band)

The question raised for Ad Hoc 6 (in report from Ad Hoc 8) on SHO and Tx Diversity.

Answer from Ad Hoc chair: Study item.

Report was agreed.

General concern was expressed that the use of slotted mode should be minimised.

(By CSELT and shared by other companies as well)

9.10 TDD (This was presented during Day 2 already)

The TDD Ad Hoc report (Tdoc 74/99) was given before TDD documents. This was presented by Anja Klein, Siemens.

The table making recommendation of TDD parameter selections was proposed for approval from TDD Ad Hoc. The table(s) was agreed for basis of further work on TDD.

The agreed table is given in Annex 2. On TDD parameters.

Tdoc 100/99 was presented by Panasonic listing items where further studies are needed

On TDD.

Tdoc 114/99 presented answers to the ODMA related questions.

Tdoc 86/99 "Harmonisation of TDD & ODMA" was presented by Vodafone.

The ODMA was still left for further study.

Tdoc 115/99 was presented by Osamu Kato, Panasonic. It gave suggestion of the modifications to S1.21 based on the Ad Hoc discussions.

The modification will be seen in new versions if 115/99 for approval.

Technology input from T1P1

T1P1 contributions on WP-CDMA were presented by Mr. Pasha, Golden Bridge Technology.

The slide set of the first presentation is given in Tdoc 30/99.

The presentation covered basically all the T1P1 input documents, submitted by Golden Bridge Technology.

The presentation continued during day 4.

The status of different proposals that were presented from T1P1 (overview in Tdoc 30/99) Presentations made by Dr. Parsa, Golden Bridge.

- Uplink Common Packet Channel (Slides in Tdoc 31/99, text in 26/99)
 - New proposal, FFS.
- Downlink Common Control Channel (Tdoc 27/99, slides in Tdoc 32/99)
 - New proposal, FFS
- Intra-frequency Hard Handover (Tdoc 33/99)
 - Included in UTRA, but details are for further study
- Quick handover
 - Not only WG1 issue, should be presented to WG2.
- WP-CDMA Common Control Physical Channel
 - Seen already accommodated in UTRA
- Multi-code option
- Higher APC rate

Questions on the uplink common packet channel

- Assumed resource available on the uplink.
- Reliability of CD information (need & impact on the performance)

Questions on the downlink common control channel

- Relation to the adaptive antennas and downlink power control
- To be clarified of-line

Comments on the handover issues

- It was suggested to be contributed to WG2 as the handover procedure seen to be in the scope of WG1.

Comments on the uplink/downlink packet mode operation issues.

- It was felt useful in the further elaboration

10. Work plan

Milestones toward December

Tdoc 62/99 was presented by Fredrik Ovesjö, based on the earlier version and received comments between the first and second meeting.

The meeting schedule.

Agreed to aim for 6 week period for the meetings after April.

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

The changes in the milestones were summarised.

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

The question was asked on the milestone plan, whether it is the living document.
(Answer was yes)

The relation of new contributions with respect to milestones was asked. It was given as an example that in ETSI UMTS-L1 a new contribution was not typically accepted when first time presented that there was at least time for the next meeting for the participants to study the technology. No hard rule shall be written to the plan but for new contributions it is encouraged that they are submitted well before the expected milestone.

For the milestone 2 it was proposed that then there should not be item FFS in the specification. A text clarifying the milestone 2 meaning will be inserted in the document after being drafted.

The sections were reviewed.
Site Selection diversity will be added with milestone 6/99

For S1.31 (merged measurements document) it was put together and
Section were added for TDD with deadline in August -99.

The version numbering was discussed. For the TDD documents (except 1.22) the version number is 0.1.0 and for others it is 0.0.x as there was not time to formally approve the version based on the Ad Hoc decisions due to required editor work on the documents.

The handling of the features (technologies etc.) not necessary part of the release -99 were discussed. The following text was presented by Keith Mayes, Vodafone. (Text in these minutes includes now some terminology changes that were made by the secretary during the discussion to the text on the screen.)

TEXT FOLLOWS: (NOT APPROVED FOR INCLUSION, MAIN POINT AGREED WAS THAT NEW FEATURES/TECHNOLOGIES SHOULD BE CONTRIBUTED AS SOON AS POSSIBLE IN ORDER TO ALLOW TO COMPLETE THE WORK IN TIME TO MAKE IT POSSIBLE TO INCLUDE SUCH FEATURES IN RELEASE -99)

Proposal:

Treatment of New Technologies within 3GPP Specifications

TSG RAN WG1 recognises the importance of considering new features for improving the performance of 3G systems however the work and milestone plan of TSG RAN WG1 (refer TSGR1#2(99)62) demands that we must conclude discussions at some point in order to stabilise our specification documents for Release 99 and allow 3GPP members to plan product development and consider detailed deployment issues.

There are 2 classes of new features to be considered.

- 1) New Concepts - these are based on features which do not appear in any of the existing WG1 draft specifications (S1x.xx series)*
- 2) Existing Concepts - these are described within the existing draft specifications but may be incomplete or have topics which are for FFS.*

New Concepts would need the most time to reach a level of detail suitable for Release 99 - and should be submitted to WG1 at the earliest opportunity.

Existing Concepts will continue to be developed within the standards specification documents but with an editors note <inclusion in Release 99 - FFS> . Decision on inclusion will be made prior to milestone 2. If the feature cannot be

included in Release 99 - the text in the specifications will be moved to another document - as input to discussions on the next Release.

Actions toward next meeting:

The following Ad Hoc were agreed to continue:

Ad Hoc continuation after meeting No. 2

Ad Hoc 1: TDD : Proposal to continue
(PC, scrambling, control CH, SHO...)

Ad Hoc 2: SCH : Closed

Ad Hoc 3 : RACH : Continue

Ad Hoc 4: Continue with Multiplexing and channel interleaving

Ad Hoc 5: Channel Coding :Continue
(Low data rates, Turbo interleaving etc.)

Ad Hoc 6: Tx Diversity: Continue

Ad Hoc 7: Proposal to continue with field definitions (FBI including)

Ad Hoc 8: Handover: Proposal to continue with slotted mode
UL slotted mode structure
TFCI with slotted mode
SF change vs. puncturing usage

Ad Hoc 9: Power Control: Proposal to continue

Ad Hoc 10: Spreading & Scrambling: Continue

New Ad Hocs

Ad Hoc 11: Physical layer capabilities
(responsible: Mr. Romano, CSELT)

Ad Hoc 12: Cell Search (CPM vs. current structure)
(Responsible: Mr. Nakamura, NTT DoCoMo)

Ad Hoc 13: Specification Structure
Responsible: Mr Ovesjö, Ericsson (FDD) Mr. Kasapakis, Panasonic (TDD)

Ad Hoc 14: Packet mode operation
(Responsible: Amitava Ghosh & Kourosch Parsa)

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

Ad Hocs to be polled for need to meet at the next meeting. (1-2 weeks before the meeting, (new)

chairman will take care of that)

Documentation

Editors for the S1-documents.

S1.01 2nd editor to continue
S1.02 1st editor to continue
S1.11 1st editor to continue
S1.12 1st editor to continue
S1.13 1st editor to continue
S1.14 1st editor to continue
S1.15 Merged to S1.31
S1.21 1st editor to continue
S1.22 1st editor to continue
S1.23 1st editor to continue
S1.24 1st editor to continue
S1.25 Merged to S1.31
S1.31 1st editor of S1.15 & S1.25 to continue.(Secretary note: 1st editor was the same for both S1.15 & S1.25)

Tdoc 127/99 listed the documents (S.1.31 presented as S1.15)

Technical Reports:

R1.01 Study items (Nortel will act as an editor)

R1.02 Link Level Simulation Results

R1.03 Items not for inclusion for release –99

(Exact details to be agreed later)

Features starting from R1.11 document.

(Practice to be discussed in TSG-RAN)

11. Output to other groups

Reporting to TSG-RAN

Convenor, Mr. Furuya will present the reporting to the next TSG RAN.

Tdoc 122/99 Annex 1. (On physical Layer Capabilities) as agreed to be part of the report To TSG RAN.

Liaison to other groups

Tdoc 123/99 is liaison to WG4, made by the drafting group. This was presented by Evelyne Le Strat.

The references to exact S4-documents shall be removed.

The document was agreed with modifications in the beginning (agreed on the screen). And is sent to RAN TSG to clarify work split between WG1 & WG4. (Not WG4 directly)

Tdoc 124/99 is liaison to WG2, made by the drafting group. This was presented by Evelyne Le Strat.

There was a comment to the last paragraph. Add: This power ramping scheme may be parameterised under the control in WG2..... (e.g. message retransmission procedures).

Also it was indicated that preamble ramping on RACH is the working assumption.

The liaison was agreed.

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

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

Tdoc 107/99 "Liason 3GPP RAN WG2, WG3 and WG4 on TDD DCA.
Was presented by Osamu Kato, Panasonic.

This document was agreed (will be sent to RAN TSG as well)

Tdoc 129/99 "Draft liaison statement to WG4 on closed loop power control status in WG1, presented by Evelyne Le Strat, Nortel.

It will be clarified that this is for FDD only due to different time schedule for TDD.

12. Other business

Tdoc 128/99, sourced by ARIB secretariat, presented an option that had been left out from the ARIB documentation due editorial error and it was asked to be included in S1.13. It was agreed to deal with this in Ad Hoc 10 and decide in the next meeting what to do with this, whether to include in S1.13 or not as part of 3GPP specification.

(As was not seen by non-ARIB members earlier, thus appears as a new technology)

Tdoc 126/99, sourced by Lucent, proposed to include their position on the RAN-TSG report regarding Turbo coding. The chairman noted that he will include the status of turbo coding with respect to the working assumption as was agreed in the meeting. If there is need to inform some additional to TSG-RAN than what will be in the chairman's report, proponents are suggested to contribute themselves to RAN-TSG.

Tdoc 44/99 from Nokia was presented briefly. It's proposed to define the "relative signal strength" more precisely. The document was noted

Tdocs 46 and 66 for downlink shared channels from Nokia & Motorola were not presented as they were no objections of adopting the methods now in the specification.

They can be discussed later if there is such a need. (Secretary note: these were distributed on the WG 1 reflector before the meeting in relation to DSCH)

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

64/99, by Motorola, On Uplink Shared channel was presented briefly. It was noted and shall be dealt with Ad Hoc 14.

65/99 by Motorola, Timing of uplink shared channel. Presented timing issues related by uplink shared channel operation. The document was noted and shall be discussed in Ad Hoc 14.

81/99, by Motorola, was not presented. This is a slide set of the shared channel contributions made by Motorola and considered self explanatory.

Tdoc 90/99 by Nortel, handled sequences for cell search. It was noted and shall be discussed within Ad Hoc 12. The proposal will only impact the 2nd step of the cell search algorithm.

Tdoc 91/99 by Nortel, proposes a new pulse shaping for UTRA..

Questions: ACPR protection impacts with the new pulse shape. The figures given in the document are before RF, which will introduce some spreading due non-linearities.

This will be dealt with in connection with Ad Hoc 10.

Tdoc 106/99, by Nortel, Discussed the channel interleaving issues, by looking at the alternatives for interleaving issues. This is was noted to be Ad Hoc 4 issue, and shall be dealt in connection with multiplexing issues there.

The documents not covered in Ad Hoc will be covered in the next meeting (or the revised versions of them).

The chairman encouraged to participate actively on the Ad Hoc discussions.

13.Closing

The Convenor thanked the participants for the good progress during the two meetings he chaired and asked everybody to work hard to meet the deadlines and to have a good specification.

The meeting thanked Mr. Furuya for chairing the two first WG1 meetings.

The meeting was closed around 18.00

Annex 1. Tdoc 122/99 on physical layer capabilities

TSG RAN Working Group 1 meeting#2

TSGR1#2(99)122

Yokohama 22-25, February 1999

Source: Drafting group

Title: Text proposal for meeting report on physical layer capabilities

Physical Layer capabilities

During the meeting, concerns were raised by several operators that if parts of the physical layer specification are not mandatory (for example, items like downlink transmit diversity and site selection diversity for the UE) it could harm network performance and operation.

As an outcome of the discussion, the group identified the need to provide indications in the specifications documents whether a physical layer capability is mandatory or not (both in the UE and on the network side).

Wg1 established an ad-hoc group with the mandate to identify a list of physical layer capabilities and to provide indications to Wg1 regarding their status.

The ad-hoc group will work mainly via e-mail and will report to WG1 by the next meeting.

ANNEX 2. Tables from TDD Ad Hoc.

	ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
Multiple Access	TDMA/CDMA	TDMA/CDMA	-; ETSI basic WA (working assumption)	
Chip Rate	4.096 Mcps, (1.024, 8.192, 16.384 Mcps)	4.096 Mcps	difference, same as FDD	take ARIB, chip rates in brackets FFS
Carrier Spacing	Flexible with 200kHz carrier raster	Flexible with 200kHz carrier raster	-	
Inter BS Sync.	Synchronous	Synchronous	-	
Cell Search Scheme	3 step code acquisition based on non-scrambled symbols, 8 DL slots used, no tgap, no toff	primary and secondary synchronisation, two step approach, predefined codes of length 256 chips, 2 DL time slots used, tgap, toff	Difference	length 256 primary synchr. sequence, length 256 secondary synchr. sequences, spreading factor less or equal to 16, tgap, toff; FFS: pointing from secondary synchronisation sequence to CCCH slot and in which and how many time slots to send SCH and CCCH
Frame Length	10 ms (16 slots)	10 ms (16 slots)	-	
VSF (spreading code)	1-512	1-16 ¹	difference; ETSI basic WA	take ETSI
Intra-frequency HO	SHO	HHO (SHO: FFS)	Difference	HHO is a requirement; SHO: FFS
Inter-frequency HO	HHO	HHO	-	

¹ This value was chosen to support uncoordinated operation

		ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
DL	Data mod	QPSK	QPSK	-	
	Spreading mod.	QPSK	QPSK, phase transition restrictions	Difference	take ETSI
	Spreading code	1 symbol length OVSF	1 symbol length OVSF	-	
	Scrambling code (cell identification)	10 ms	16 chips	difference; ETSI basic WA	take ETSI; longer scrambling code ffs in case of insufficient performance of short codes
	Training sequence	TCH dedicated pilot symbols, option: TCH dedicated sequence (midamble) Time multiplexed in the middle of the burst	TCH dedicated sequence (midamble) Time multiplexed in the middle of the burst	difference; ETSI basic WA -	take ETSI
	Detection	Coherent	coherent	-	
	Power control	closed loop (0.1-0.8 kbps DCH SIR based)	closed loop (0.1-0.8 k cycles/sec)	-	
	Variable rate accommodation	Orthogonal VSF + Multi-code + Variable_num_slots + DTX + Rate matching	Orthogonal VSF + Multi-code + Variable_num_slots + DTX + Rate matching	-	

		ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
UL	Data mod.	QPSK	QPSK	-	
	Spreading mod.	HPSK	QPSK, phase transition restrictions	difference	take ETSI
	Spreading code	1 symbol length	1 symbol length	-	
	Scrambling code (user identification)	$2^9 \times 720$ ms	16 chips	difference; ETSI basic WA	take ETSI
	Training sequence	TCH dedicated pilot symbols, option: TCH dedicated sequence (midamble) Time multiplexed in the middle of the burst	TCH dedicated sequence (midamble) Time multiplexed In the middle of the burst	difference; ETSI basic WA	take ETSI
	Detection	Coherent	Coherent	-	
	Power control	closed loop (0.8-0.1 kbps DCH SIR based) + fast open loop	Closed loop (0.1-0.8 k cycles/sec), fast open loop for further study	difference	FFS
	Variable rate accommodation	Orthogonal VSF + Multi-code + Variable_num_slots + DTX + Rate matching	Orthogonal VSF + Multi-code + Variable_num_slots + DTX + Rate matching	-	

	ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
Burst parameters	Certain number of data symbols, TFCI, training sequence elements	Certain number of data symbols, TFCI, training sequence elements	difference of figures	take ETSI figures, TPC bits should be introduced in burst structure
Channel Coding	Convolutional codes Turbo codes	Convolutional codes RS codes, Turbo codes	difference, like FDD	will be aligned with FDD
Interleaving	10/20/40/80ms	10/20/40/80ms	-	
Joint detection	Option	shall not be prevented	difference; ETSI basic WA	take ETSI
Rate detection	fixed TFCI (with/without blind detection)	variable TFCI	difference, like FDD	take ETSI, i.e. concept (not the figures) aligned with FDD, exact details FFS
Random Access	message (10 ms), SF = 128, 32	RACH dedicated slot(s)	difference; SF ETSI basic WA	One slot RACH, details (concerning round trip delay & delay spread) FFS

	ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
CCCH	all DL slots	one or two slots for CCCH	difference; ETSI basic WA	introduce a one-slot concept (SCH and CCCH in TS#k); a concept with SCH in two TS and with CCCH in the same two TS (SCH and CCCH in TS#k and TS#k+8); a concept with SCH in two TS and with pointing to <u>the first CCCH slot</u> (SCH in TS#k and TS#k+8, CCCH in TS#i, i=0...15, pointing to TS#i); complexity of pointing and changing cycles to be investigated; position of SCH (value of k) in frame can change on a long term basis
Dynamic channel allocation	None	Supported	difference; ETSI basic WA	take ETSI; DCA required; especially the measurements need to be standardised which are the inputs for the DCA algorithm; details FFS
Tx antenna diversity	Mandatory	open	difference	Take STD from ARIB; add sentence on antenna distance ² ; other schemes FFS; capacity benefit to be investigated

² The sentence reads: „STD can be applied if the distance between the different transmit antennas is small enough so that the delay profile from each antenna is almost the same“

	ARIB-TDD	UTRA-TDD (ETSI)	difference?	Recommendation in case of difference
Switching point configuration	Flexible	flexible	-	
Timing advance	None	included	difference	take ETSI
Multi-Frame Length	720 ms	720 ms	-	
DTX	pilot symbols sent	not defined yet in detail	difference	DTX included, details FFS
ODMA	not included	included	difference	this has been identified at the WG1#1 meeting as a new concept for non-ETSI members; we encourage non-ETSI members to investigate and study ODMA and send their feedback; [some information has recently been distributed in 3GPP and cf. also TDoc 86/99]

Annex.3 List of participants

AGIN	Pascal	Alcatel
DA_ROCHA	Alexandre	Alcatel Business System
ASANUMA	Yutaka	Toshiba
BELAICHE	Vincent	Mitsubishi Electric France
BENEDETTO	Sergio	Lucent Technologies
BISHOP	Craig	Samsung Electrincs Research Institute
BOWEN	Donald J.	AT&T
BURBIDGE	Richard	Motorola Ltd.
CHAMBERS	Peter	Siemens
PARK	Changsoo	SAMSUNG
CIOCI	Sergio	Italtel
CORDEN	Ian	LUCENT TECHNOLOGIES
COSTE	Emmanuel	VLSI Techonology
CUDAK	Mark	Motorola
DABAK	Anand	Texas Instruments
DARIDOVICI	Sorin	Golden Bridge Technology
DE-BENEDITTIS	Rossella	Italtel
DEPASQUALE	Andrea	OMNITEL PRONT ITALIA
DICK Ph.D.	Stephen	InterDigital comm. corp.
DRAKUL	Spase	Lucent Technologies
EROZ	Mustafa	Hughes Network Systems
FURUYA	Yukitsuna	NEC
FUTAKATA	Toshiyuki	NTT DoCoMo
GAUTHIER	Catherine	Nortel Networks
GHOSH	Amitava	Motorola
GIORDANO	Nino	Golden Bridge Technology
HALLAM-BAKER	Nick	SYMBIONICS LTD.
HAMABE	Kojiro	NEC
HAMMONS	Roger	Hughes Networks
HENRIKSSON	Anders	TELIA AB
HIKUMA	Akihiro	DoCoMo EUROPE
HIRAMATSU	Katsuhiko	Matsushita Communication Ind.
HIRAYAMA	Koji	AMD Ltd.
HOEHN	Volker	Mannesmann Mobilfunk
HONMA	Kouichi	Matsushita Communication Ind.
IKEDA	Masayuki	Seiko Epson Co.
ITO	kenji	Siemens K.K.
JACKLIN	Bill	PrairieComm, Inc.
JANSEN	michel	Ericsson
KAHTAVA	jussi	Nokia Mobile Communications K.K.
KANTERAKIS	Emmanuel	Golden Bridge Technology
KASAPIDIS	Makis	Panasonic(Matsushita Comm. Lud. UK Ltd.)

KATO	Osamu	Matsushita Communication Ind.
KIM	Tae-Joong	ETRI
KIM	Jung-Im	ETRI
KINJO	Shigenori	Texas Instruments
KIRIMURA	Masayuki	JAPAN RADIO COMPANY
KLEIN	Anja	Siemens AG
KOMATSU	Hiroshi	Japan Telecom Co., Ltd.
KRAUSS	Herbert	Philips Semiconductors, TCMC
KRISHNAN	Murali	CADENCE DESIGN SYSTEMS, INC.
KWON	Sung-Lark	LG Information Communication
LAUKKANEN	Mika	Nokia Mobile Communications K.K.
LE_STRAT	Evelyne	Nortel Networks
LE-BARS	Philippe	Canon CRF
LEDANTEC	Claude	Canon CRF
LEE	Hyeonwoo	Samsung
LEHTINEN	Otto-Aleksanteri	Nokia
LI	Jifeng	Fujitsu
MAEDA	Yutaka	ARIB
MANGOLD	Peter	Bosch
MASON	Philippa	Telecom Modus Ltd.
MAUCKSCH	Thomas	Rohde&Schwarz
MAYES	Keith	Vodafone Ltd.
MEYER	Jan	Lucent Technologies
MIYA	Kazuyuki	Matsushita Communication Ind.
MOCHIZUKI	Takashi	NEC Co.
MOHEBBI	Behzad	Fujitsu Europetelecom
MONTORSI	Guido	Lucent Technologies
MURAI	Hideshi	Mitsubishi Electric CO.
NAKAGAWA	Ichiro	Golden Bridge Technology
NAKAMURA	Takaharu	Fujitsu
NAKAMURA	Takehiro	NTT DoCoMo
NASSHAN	Markus	Siemens
NIEMINEN	Esko	Nokia
OESTREICH	Stefan	Siemens
OHGAMI	Takayuki	Advantest Co.
OKAMOTO	Takeshi	Sharp
OKUMURA	Yukihiko	NTT DoCoMo
OKUYAMA	Nobutaka	LSI Logic
OVESJO	Fredrik	Ericsson L.M
OZLUTURK	Fatih	InterDigital comm. corp.
PARSA	Kourosch	Golden Bridge Technology
PEHKONEN	Kari	Nokia Mobile Communications K.K.
ROMANO	Giovanni	TELECOM ITALIA (CSELT)
RUDOLF	Marian	Mitsubishi Electric
SANO	Hiroyasu	Mitsubishi Electric CO.
SASAKI	Akio	ARIB
SCHNARE	Dirk	E-PLUS MOBILFUNK GMBH

SCHUFFENECKER	Bruno	France Telecom
SEIDEL	Eiko	PANASONIC EUROPEAN LFIB
SHIN	Sung-Hyuk	InterDigital communications corp.
SUDA	Hirohito	NTT DoCoMo
SUZUKI	Takao	Oki Electric Industry., Ltd
TANAKA	Yoshinori	Fujitsu
TANAKA	Shunichi	Lucent Technologies Japan
TARKIAINEN	Markku	Nokia
THORNBERG	Magnus	Nippon Ericsson K.K.
MOULSLEY	Tim	Philips
TONG	Wen	Nortel Networks
TOSKALA	Antti	Nokia
TOYOSHIMA	Shigeru	ARIB
TRAN	Jimmy	Golden Bridge Technology
TRUELOVE	Stephen	NEC Technologies
UKONMAANAHO	Mauri	Nokia Mobile Communications Co., Ltd.
ULRICH	Thomas	Siemens AG
VIRTANEN	Anu	Nokia Telecommunications
VOYER	Nicolas	Mitsubishi Electric ITE
WATANABE	Shintaro	KENWOOD Corporation
WHINNETT	Nick	Motorola S.A. France
WILDE	Andreas	Nippon Ericsson K.K.
YAMADA	Jun	QUALCOMM JAPAN
YAMAMOTO	Kazushi	Mitsubishi Electric CO.
YANO	Yasuhiro	Mitsubishi Electric CO.
YOSHIDA	Satoshi	VLSI Techonology

Annex 4. Document list

TSG-RAN Working Group 1 (Radio Layer 1) meeting #2
Yokohama 22-25, February 1999

TSGR1#

Agenda Item:

Source: Secretary
Title: Documents List
Document for: Information

Docu	Elec	Type	Title	Source	Topic	Who?	Agend	Spec #
23	yes	doc/pdf	draft agenda	Convenor				
24	no		Report from Ad Hoc #6: DL Tx diversity	Nokia				
25	yes	doc/pdf	Modified Ad Hoc S Proposal for Primary Common Control Physical Cannel	Golden Bridge Technology, Inc.			5	
26	yes	doc/pdf	Uplink Common Packet Channel	Golden Bridge Technology, Inc.			5	
27	yes	doc/pdf	Downlink Common Control Channel Structure	Golden Bridge Technology, Inc.			5	
28	yes	doc/pdf	Hard Handover	Golden Bridge Technology, Inc.			5	
29	yes	doc/pdf	Quick Handover Procedure	Golden Bridge Technology, Inc.			5	
30	no		An Overview of WP-CDMA Distinguishing Features	Golden Bridge Technology, Inc.			5	
31	no		Uplink Common Packet Channel Advantage (A WP-CDMA feature)	Golden Bridge Technology, Inc.				
32	no		Downlink Common Control Channel (A WP-CDMA feature)	Golden Bridge Technology, Inc.				
33	no		Hard Handover (WP-CDMA feature)	Golden Bridge Technology, Inc.				
34	no		Advantages of Quick Handoover (WP-CDMA feature)	Golden Bridge Technology, Inc.				
35	no		Advantages of Modified Ad-Hoc S approach (WP-CDMA feature)	Golden Bridge Technology, Inc.				
36	no		Performance comparison of serial and parallel concatenated codes	Lucent Technologies				
37	no		Comparison of different code-embedded interleaves	Lucent Technologies				
38	no		Performance comparison of serial and parallel concatenated codes over the wireless fading channel	Lucent Technologies				Confidential
39	no		Application of serially concatenated codes with interleavers to low data rate services	Lucent Technologies				
40	yes	doc/pdf	UE physical layer capabilities for UTRA (UMTS Terrestrial Radio Access)	CSELT/TIM, Vodafone, France Telecom, T-Mobil, Telia, Omnitel, Mannesmann Mobilfunk				
41	yes		Candidate for Vice Chairman of TSG-RAN WG1	NTT DoCoMo				
42	yes		The FAUSCH concept	Philips				
43	yes		Comments on mandatory and optional features	Philips				

44	yes		Monitoring of UTRA FDD Cell on the Same Frequency	Nokia				
45	no		TSG RAN WG1 Work Plan for 1999	Nokia				
46	yes	ppt/zip	Downlink Shared Channel (DSCH) Associated with a Dedicated Channel	Nokia				
47	yes		Physical layer - general description	Temporary Editor				
48	yes		UE capabilities	Temporary Editor				
49	yes	doc/pdf	Transport channels and physical channels (FDD)	Temporary Editor				
50	yes		Multiplexing and channel coding (FDD)	Temporary Editor				
51	no		Spreading and modulation (FDD)	Temporary Editor				
52	yes		Physical layer procedures (FDD)	Temporary Editor				
53	yes		Measurements (FDD)	Temporary Editor				
54	yes		Transport channels and physical channels (TDD)	Temporary Editor				
55	yes		Multiplexing and channel coding (TDD)	Temporary Editor				
56	yes		Spreading and modulation (TDD)	Temporary Editor				
57	yes	doc/pdf	Physical layer procedures (TDD)	Temporary Editor				
58	yes		Measurements (TDD)	Temporary Editor				
59	no		Report from Ad hoc 7: Slot structure	Ad hoc 7				
60	yes	doc/pdf	3 rd Generation Partnership Project(3GPP);TDD multiplexing, channel coding and interleaving description;	Nokia				
61	no		Hybrid ARQ techniques for efficient support of packet data	Panasonic European Laboratories GmbH				
62	yes	doc/pdf	Proposal for TSG RAN WG1 work plan (revised)	Ericsson				
63	yes	doc/pdf	Liaison to 3GPP TSG RAN WG2 and WG1 on system level protocol aspects cc: 3GPP TSG RAN	3GPP TSG RAN WG4				
64	yes	doc/pdf	Operation of the Uplink Shared Channel	Motorola				
65	yes	doc/pdf	Timing of the Uplink Shared Channel	Motorola				
66	yes	doc/pdf	State Occupancy Estimations for Shared Channel Concept	Motorola				
67	no		Simulation Results for 8-state Turbo Codes vs. 4-state Serial Concatenated Codes	Hughes Network Systems				
68	no		Decoder Complexity of 8-state Turbo Codes vs. 4-state Serial Concatenated Codes	Hughes Network Systems				
69	yes	doc/pdf	1 dimensional algebraic interleavers for turbo codes (AL-C)	CANON CRF				

70	no		S1.02 (UE Capabilities)	Samsung Electronics Research Institute				
71	no		Proposal for 3GPP baseband key characteristics	Ericsson				
72	yes	doc/pdf	Liaisons from ITU-R TG 8/1 WG5	TSG RAN ITU Ad Hoc Contact Person				
73	yes	doc/pdf	Call for nominations for 3GPP RAN WG1 Chairman and Vice Chairmen, Feb 1, 1999	Nokia Group				
74	no		Report from Ad Hoc #1: TDD	Ad Hoc #1				
75	no		Merge Proposal for S1.24 - TDD Physical Layer Procedures	Siemens AG, Communication on Air				
76	no		Merge Proposal for S1.23 - TDD Spreading and Modulation	Siemens AG, Communication on Air				
77	no		S1.24 text proposal by TDD adhoc	Siemens AG, Communication on Air				
78	no		S1.23 text proposal by TDD adhoc	Siemens AG, Communication on Air				
79	no		report from adhoc#8 : Handover preparation	ad hoc 8				
80	yes	doc/pdf	Report of the 1st WG1 meeting	Secretary				
81	no		Shared Channels for Packet Data Transmission in W-CDMA	Motorola				
82	no		Minutes of Ad Hoc #6 meeting	Ad Hoc #6				
83	no		STTD ENCODING FOR PCCPCH	Texas Instruments				
84	no		Report from ad-hoc #9, Closed Loop Power control	ad-hoc chairman				
85	yes	doc/pdf	Report from ad hoc #3: RACH	Ad hoc #3				
86	no		Harmonisation of TDD & ODMA	Ericsson, Siemens, NEC, NTT DoCoMo, Vodafone, Panasonic				
87	no		Report from Ad Hoc 4: Transport channel multiplexing	Ad Hoc 4				
88			Liaison from WG4	WG4				
89			A final comparison among the 4-state SCCC, 4-state PCCC, and 8-state PCCC	Lucent Technologies				
90			Synchronization Channel with cyclic hierarchical sequences	Nortel Networks				
91			A new pulse shaping for FDD mode of UTRA	Nortel Networks				
92			Comparison of Turbo Interleavers for 3GPP	Nortel Networks				
93			Comments and Questions on FAUSCH from ARIB members	ARIB Members				
94			Initial Response to Comments and Questions on FAUSCH from ARIB members	Philips				
95			A study on Turbo-interleaver Flexibility	NTT DoCoMo				
96			Hardware Complexity Evaluation of Turbo-MIL	NTT DoCoMo				
97			A study on Merging the Turbo-interleaver Candidates	NTT DoCoMo				
98			Report from Ad Hoc #2 SCH multiplexing	Ad Hoc #2				
99			Extended STTD with Switching for Open Loop Transmit Diversity for more than 2 Antennas	Motorola France				

100		Unresolved Technical issues (TDD)	Panasonic				
101		A Low Complexity and Flexible Turbo Interleaver with Good Performance	Hughes and Nortel				
102		Agenda for AdHoc 5 Meeting (2/22/1999)	ad-hoc 5 chairman				
103		Fixed block-shape multi-stage Interleaver (FS-MIL) for channel Interleaver	NTT DoCoMo				
104		Proposed Procedure for UE capabilities definition in 3GPP	Samsung Electronics				
105		3GPP baseband key characteristics	WG1				
106		Discussion on channel interleaver for 3GPP selection	Nortel Networks				
107		Liaison to 3GPP RAN WG2, WG3 and WG4 on TDD DCA	WG1				
108		Liaison statement to SMG2 UMJTS L1 Expert Group	SMG2 L23				
109		Additional TDD Features	Ericsson				
110		A quantitative measurement of the VLSI implementation complexity versus block size for 4 –state SCCC and 8-state PCCC	Lucent Technologies				
111		Recommendation and Report from AdHoc 5	AdHoc 5				
112		Recommendations concerning the merging process for RACH	Nortel Networks				
113		Report from Ad Hoc#10:Spreading and Scrambling	AdHoc 10				
114		Response to PANASONIC “Concerns v Positive “ Points on ODMA	Vodapone				
115		Recommendation on Merging Process for 3GPP TSG RAN WG1 specification document : S.1.21 TDD Transport channels and Physical channels Description	Panasonic Vodafone Siemens				
116		S.1.21 Transport channels and physical channels (TDD)	Panasonic Siemens				
117		Recommendations concerning the selection of turbo coding scheme	Lucent Technologies				
118		The effect of power control step size in downlink	Nokia				
119		Discussion on Rate matching block in relation with service specific	Nortel Networks				
120		S.1.23 v0.02 Spreading and modulation (TDD)	Editor				
121		S.1.24 v0.02 TDD, Physical Layer Procedures Description	Editor				
122		Text Proposal for Meeting Report on Physical Layer Capabilities	Drafting Group				
123		Draft liaison to WG4 on work split between WG1 and WG4 on Radio link procedures	Drafting session				
124		Draft liaison statement to WG2 on work split for random access procedures	Drafting session				
125		Proposal for treatment of FAUSCH concept	Philips				
126		Inclusion of Lucent Position into TSG-RAN report	Lucent Technologies				
127		Proposal for an WG1 output document from TSG RAN WG1 on documentation structure	Nortel Networks				
128		Inclusion of “FDD Downlink multiplexing scheme with rotation” existing in ARIB Vol.3 into S1.13 (Spreading and Modulation specification)	ARIB Secretariat				
129		Draft liaison statement to WG4 on closed loop power control status in WG1	Drafting session				

