

3GPP/3GPP2 Harmonisation meeting on 3GPP HSDPA and 3GPP2
1xEV-DV/1xEV-DO work RP-010726
East Brunswick, NJ, USA, 13-14 November 2001

Title: Draft Report of the 3GPP/3GPP2 Harmonisation meeting
on 3GPP HSDPA and 3GPP2 1xEV-DV/1xEV-DO work
(East Brunswick, NJ, USA, 13-14 November 2001)
Document for: Comment
Source: 3GPP support team

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20 November 2001.

1 Call to Order

Ed Tiedemann (Co-Chairman/Qualcomm/3GPP2 TSG-C Vice-Chairman) welcomed the delegates to New Jersey on behalf of 3GPP2.

2 Attendance registration and introductions

The meeting's officials and delegates introduced themselves.

3 Receive and number contributions

Clif Barber (3GPP2 TSG-C Secretary) numbered the contributions to the meeting following a 3-digit numbering scheme. For 3GPP, these numbers were to be preceded by "RPA010" (see Annex B).

NOTE: In 3GPP2, revisions of documents keep the old number, followed by a revision indication, unlike 3GPP, where revisions are allocated a new Tdoc number. In this particular meeting, two documents were revised: the agenda (document 001) and the output statement (document 010). For practical purposes, only the last version of the agenda was provided on the 3GPP server as document RPA010001, and the revision of document 010 was provided on the 3GPP server as document RPA010011.

4 Chair's remarks

RPA010001 Proposed agenda (Chairmen)

Ed Tiedemann (Co-Chairman) and Francois Courau (Co-Chairman/3GPP TSG-RAN Chairman) presented this document.

Decision: The agenda was approved.

5 Discussion of the goals of the workshop

The purpose of the workshop was to identify in which ways 3GPP and 3GPP2 could work together on the topic of high speed data. It was asked upto what layer the discussions on harmonisation could take place in this meeting. It was very difficult to decide what was possible with respect to harmonisation at this stage. It was discussed that it was important to be open-minded on what was possible to achieve, taking into account the different platforms from which the two groups had been evolved so far.

RPA010002 HSDPA and 1xEV-DV Harmonization opportunities (Bell Mobility)

Vino Vinodrai (Bell Mobility) presented this document.

Discussion: The document was an introduction on possibilities for harmonisation and could provide a starting point for further discussion. The reference document on the "Toronto accords" was provided on the server as T001--TECH_FRAM for background information.

Decision: The document was noted.

6 Assign contributions to agenda items

The contributions were allocated to the relevant agenda items.

7 Presentation of the status of work in 3GPPs

7.1 3GPP

Denis Fauconnier (3GPP TSG-RAN WG2 Chairman) presented an overview of the status of HSDPA in 3GPP. The Stage 2 for HSDPA had been finished in September. Almost everything, from physical layer to the Iub/Iur interfaces had now been decided. The core technology was scheduled to be finished for the December TSG-RAN plenary meeting, with the related performance to be finished by March 2002. It was explained that from a 3GPP perspective, HSDPA was an improvement and evolution of the existing radio interface rather than something completely new. As a result there was no specific Stage 1 needed.

7.2 3GPP2

RPA010003 Development of cdma2000 1xEV-DV/1xEV-DO in 3GPP2 (3GPP2)

Ed Tiedemann (3GPP2 TSG-C Vice-Chairman) presented this document.

Discussion: This was an overview of the status of 1xEV-DV and 1xEV-DO in 3GPP2.

Decision: The document was noted.

8 Presentation of technical material related to downlink packet channel (design ideas, analysis, evaluation methodology, etc.)

8.1 3GPP

RPA010008 HSDPA presentation (3GPP)

Denis Fauconnier (3GPP TSG-RAN WG2 Chairman) presented this document.

Discussion: The document presented an overview of HSDPA as an evolution and enhancement of R'99. It was clarified that HSDPA was an option, but that, *if* it was supported, a number of things in the standard were mandatory. In answer to questions, it was clarified that HSDPA's impact on what was in R'99 was very limited, but that it depended on the vendor how much equipment would need to be modified. The reference document TS 25.308 (the Stage 2 description) was made available on the server.

Decision: The document was noted.

RPA010009 HSDPA simulation (3GPP)

Denis Fauconnier (3GPP TSG-RAN WG2 Chairman) presented this document.

Discussion: The reference document TR 25.848 was made available on the server, although the assumed values should be considered with care, as this was a TR on a feasibility study and did not reflect all the latest agreements in 3GPP.

Decision: The document was noted.

8.2 3GPP2

RPA010004 1xEV-DV Forward Link Overview (3GPP2)

Ed Tiedemann (3GPP2 TSG-C Vice-Chairman) presented this document.

Discussion: This document presented an overview of 1xEV-DV Forward Link. No presentation had been prepared on 1xEV-DO, but the differences with 1xEV-DV could be summarised as follows:

- DO resides on its own channel;
- In DO there is a fixed packet size, but packet duration is variable if you take into account retransmissions;
- Retransmissions in DO are synchronous.

Decision: The document was noted.

RPA010005 1xEV-DV Reverse Link Overview (3GPP2)

Ed Tiedemann (3GPP2 TSG-C Vice-Chairman) presented this document.

Discussion: This document presented an overview (and status) of 1x EV-DV Reverse Link. The term "Reverse Link" was equivalent to "uplink". Reverse Link was far less mature than Forward Link and a large number of problems remained to be resolved.

Decision: The document was noted.

RPA010006 1xEV-DV Evaluation Methodology (3GPP2)

Byung Yi (3GPP2 TSG-C WG5 Vice-Chairman) presented this document.

Discussion: It was clarified that all evaluations had been done both with and without Tx diversity. For more background information, reference was also made to C50-20010820-026 1xEV-DV-Evaluation-Methodology-Addendum-V6 and C50-20010115-011R1 1xEV-DVDecisionCriteriaMatrix-Rev1.1, both of which were provided on the server.

Decision: The document was noted.

9 Discussion of work on channel modeling

RPA010007 Spatial Channel Modeling in 3GPP2 TSG-C (3GPP2)

Achilles Kogiantis (Lucent Technologies) presented this document.

Discussion: It was explained that in 3GPP similar work had been done in TSG-RAN WG4.

Decision: The document was noted.

10 Discussion on working together

Several suggestions were made to start off:

- Identification of commonalities already existing. Two had already emerged during the meeting: channel modelling and the simulation model;
- Definition of a goal for future;
- Establishment of a time plan.

In answer to this, it was suggested that minimal deviation for terminals was an important goal, to maximise the commonalities in terminal design. An example of this might be MIMO, where 3GPP and 3GPP2 might request a different number of antennas or different size memory if deciding independently. However, it would significantly decrease the cost of a dual-mode terminal if the hardware requirements for both systems were the same.

Outside terminal design, three areas were suggested where harmonisation would make a difference:

- Services. These should be transparent independent of the technology to achieve economy of scale. It was suggested that the hooks and extensions agreed between 3GPP and 3GPP2 in August 1999 were already in support of this;
- Radio spectrum (not for discussion here, but in WRC);
- All-IP (also not for discussion here, but for discussion between another set of experts).

The group of people in this meeting could really only concentrate on harmonisation of the TSG-C/TSG-RAN area, which included impacts on evolution of terminal design for future developments. In this respect, not only dual-mode terminals were important, but also the possibility for manufacturers to use the same terminal design for both systems to keep hardware cost down.

It was explained that it was too late to make changes to fundamental parameters on which decisions had been made in the past, and which were in part in line with older releases/versions of the respective systems. In 3GPP, there had been a lot of work for the past 1,5 years, with experts under pressure with high workload. It was therefore not possible to revisit past decisions. In addition, there was an ITU deadline for the provision of high speed packet which did not allow time for many changes. This did not prevent, however, from minimising deviations in the future.

A preference was expressed for building up harmonisation efforts gradually, as this meeting had shown that the participants in the two projects knew very little about each others' established working procedures and quite a few misunderstandings followed from that lack of understanding. A common way of working needed to be identified to have a chance of success for harmonisation efforts. Establishment of such a process was a necessary prerequisite for achieving the goal of harmonising future hardware requirements or even future parameters.

It was proposed to launch a specific e-mail exploder on harmonisation comprising all leaders from TSG-C and TSG-RAN (including their respective working groups). This could be used to exchange information, including the work plans with sufficient explanation. Later, this could lead to establishing official and formal liaison between the different working groups.

11 Determination of next steps

RPA010010 Output statement (Drafting group)

Ed Tiedemann (Co-Chairman) presented this document.

Discussion:

- There were several editorial comments that were taken into account;
- Not only ITU determined the pace of the agenda as had been explained before. This was adapted;
- A proposal was made to determine a date for a follow-up meeting. After some discussion, it was determined that Friday 28 June 2002 would be suitable, provisionally to be at the same location as TSG-RAN WG2's meeting held that week in Italy;
- Also, a meeting on models would be held in January.

Decision: With these changes, the document was approved. The revision was provided as RPA-010011.

RPA010011 Revised Output statement (Joint meeting)

Decision: The document was approved.

12 Open discussion

There were no further items for open discussion.

13 Adjournment

Ed Tiedemann and Francois Courau (Co-Chairs) stated that progress had been achieved during the meeting. They thanked both 3GPP2 for organising the meeting, which had been somewhat difficult to achieve, and the delegates for coming to New Jersey.

Annex A: List of delegates

ATTENDEE	REPRESENTED ORGANISATION	3GPP/ 3GPP2	E-MAIL
1. Arif Ansari	Nextel	3GPP2	Arif.ansari@nextel.com
2. Clif Barber	Tantivy Communications	3GPP2	cbarber@tantivy.com
3. François Courau	Alcatel	3GPP	Francois.Courau@alcatel.fr
4. Steve Crowley	DoCoMo US Laboratories	3GPP2	scrowley@attglobal.net
5. Guillaume Decarreau	France Telecom	3GPP	Guillaume.decarreau@francetelecom.com
6. Steve Dick	InterDigital	3GPP	Steve.dick@interdigital.com
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8. Kamran Etemad	WFI	3GPP2	kamran@wfinet.com
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11. Gerry Flynn	Verizon Wireless	3GPP2	Gerry.Flynn@verizonwireless.com
12. Francesco Grilli	QUALCOMM	3GPP	fgrilli@qualcomm.com
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16. Seok Ho Kim	Combasis Tech, Inc.	3GPP	sshkim@combasis.com
17. Youn Kwan Kim	LG Telecom	3GPP2	ykkim@lgtel.co.kr
18. Achilles Kogiantis	Lucent Technologies	3GPP2	Achilles@lucent.com
19. Wen-Yi Kuo	Wiscom Technologies	3GPP/ 3GPP2	wkuo@wiscomtech.com
20. Hyen Woo Lee	Samsung	3GPP	woojaa@samsung.co.kr
21. Bill Lye	ArrayComm	3GPP2	billlye@arraycomm.com
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26. Eshwar Pittampalli	Lucent Technologies	3GPP2	pittampalli@lucent.com
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28. Richard Ross	Sprint PCS	3GPP2	rross01@sprintspectrum.com
29. Ashok Rudrapatna	Lucent Technologies	3GPP/ 3GPP2	arudrapatna@lucent.com
30. Sadao Takenaka	Fujitsu	3GPP2	sadao.takenaka@fnc.fujitsu.com
31. Ed Tiedemann	QUALCOMM	3GPP2	etiedemann@qualcomm.com
32. Hans van der Veen	ETSI Mobile Competence Centre	3GPP	Hans.vanderVeen@etsi.fr
33. Giovanni Vannucci	Mitsubishi Electric Research Laboratoriess	3GPP/ 3GPP2	gv@merl.com

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34. Vino Vinodrai	Bell Mobility	3GPP2	cvinodra@mobility.com
35. Raziq Yaqub	Toshiba America Research, Inc.		ryaqub@tari.toshiba.com
36. Byung K. Yi	LGE	3GPP2	bkyi@lginfocomm.com
37. Jin Zhang	Mitsubishi Electric Research Laboratories	3GPP/ 3GPP2	jzhang@merl.com

Conference call participants

ATTENDEE	REPRESENTED ORGANISATION	3GPP/ 3GPP2	E-MAIL
38. Erik Dahlman	Ericsson	3GPP	erik.dahlman@era.ericsson.se
39. Walt Tamminen	Nokia	3GPP2	walt.tamminen@nokia.com
40. Noel Tin	Bell Mobility	3GPP2	noeltin@mobility.com

Annex B: List of documents

Doc.No.	Title	Source	Ag.It.	Comments
RPA010001	Proposed Agenda	Chairmen	4	
RPA010002	HSDPA and 1xEV-DV Harmonization opportunities	Bell Mobility	5	
RPA010003	Development of cdma2000 1xEV-DV/1xEV-DO in 3GPP2	3GPP2	7.2	
RPA010004	1xEV-DV Forward Link Overview	3GPP2	8.2	
RPA010005	1xEV-DV Reverse Link Overview	3GPP2	8.2	
RPA010006	1xEV-DV Evaluation Methodology	3GPP2	8.2	
RPA010007	Spatial Channel Modeling in 3GPP2 TSG-C	3GPP2	9	
RPA010008	HSDPA presentation	3GPP	8.1	
RPA010009	HSDPA simulation	3GPP	8.1	
RPA010010	Output statement	Drafting group	11	RPA010011
RPA010011	Revised output statement	Joint meeting	11	

Annex C: 3GPP TSG-RAN Meeting schedule

NOTE: Updates to meeting dates, hosts and/or venues are indicated in red and underlined.

TSG-RAN

Meeting	Date	Host	Location
RAN#14	11 - 14 December 2001	ARIB, TTC	Kyoto, Japan
RAN#15	05 - 08 March 2002	TTA	tbd, Korea
RAN#16	04 - 07 June 2002	Motorola	Marco Island, FL, USA
<u>3G_2HSDPA</u>	<u>28 June 2002</u>	<u>3GPP</u>	<u>tbd, Italy</u>
RAN#17	03 - 06 September 2002	Alcatel	Biarritz, France
RAN#18	03 - 06 December 2002	North American Friends of 3GPP	New Orleans, LA, USA
RAN#19	11 - 14 March 2003	UK Friends of 3GPP	Jersey, Channel Islands (British Isles)
RAN#20	10 - 13 June 2003	Nokia	tbd, Finland
RAN#21	16 - 19 September 2003		
RAN#22	09 - 12 December 2003		

TSG-RAN WG1

Meeting	Date	Host	Location
#23	19 - 23 November 2001	Samsung Electronics	tbd, Korea
#24	08 - 11 January 2002		
#25	18 - 22 February 2002	North American Friends of 3GPP	Cocoa Beach, FL, USA
#26	09 - 12 April 2002		
#27	14 - 17 May 2002	Samsung Electronics	tbd, Korea
#28	25 - 28 June 2002		
#29	20 - 23 August 2002		
#30	24 - 27 September 2002		
#31	12 - 15 November 2002		

TSG-RAN WG2

Meeting	Date	Host	Location
#25	26 - 30 November 2001	Fujitsu, NEC	Makuhari, Japan
#26	07 - 11 January 2002	ETSI	Sophia Antipolis, France
#27	18 - 22 February 2002	Motorola	Cocoa Beach, FL, USA
#28	08 - 12 April 2002	J-Phone	tbd, Japan
#29	13 - 17 May 2002	Samsung Electronics	tbd, Korea
#30	24 - 28 June 2002	Omnitel	tbd, Italy
#31	19 - 23 August 2002		Europe (tbc)
#32	23 - 27 September 2002	CATT	tbd, China
#33	11 - 15 November 2002		Europe (tbc)

TSG-RAN WG3

Meeting	Date	Host	Location
#25	26 - 30 November 2001	Fujitsu, NEC	Makuhari, Japan
#26	07 - 11 January 2002		Europe (tbc)
#27	18 - 22 February 2002	North American Friends of 3GPP	Cocoa Beach, FL, USA
#28	08 - 12 April 2002	J-Phone (tbc)	tbd, Japan (tbc)
#29	13 - 17 May 2002	Samsung Electronics	tbd, Korea
#30	24 - 28 June 2002	Omnitel (tbc)	tbd, Italy (tbc)
#31	19 - 23 August 2002		Europe (tbc)
#32	23 - 27 September 2002	CATT (tbc)	tbd, China (tbc)
#33	11 - 15 November 2002		Europe (tbc)

TSG-RAN WG4

Meeting	Date	Host	Location
#20	12 - 16 November 2001	North American Friends of 3GPP	East Brunswick, NJ, USA
#21	28 January - 01 February 2002	ETSI	Sophia Antipolis, France
#22	13 - 17 May 2002	Samsung Electronics	tbd, Korea
#23	12 - 16 August 2002	Nokia	tbd, Finland
#24	11 - 15 November 2002		USA (tbc)