

MINUTES
8th MCM and 2nd Workshop of COST 289
6-8 July 2005
Renaissance Antalya Beach Resort and Spa
Antalya, Turkey

1. Opening

The Chairman opened the meeting and welcomed the participants.

2. Adoption of the agenda and the approval of the minutes of 7th MCM.

The proposed agenda for the 8th MCM, given in Annex I, was adopted. The minutes of the 7th MCM was unanimously approved.

3. Annual Progress Report and the TC-TIST Meeting in Vitznau, Switzerland, 28 June-1 July 2005

The Chairman informed the participants about the TC-TIST meeting, which took place in Vitznau, Switzerland, during 29 June-1 July 2005. The Annual Progress Report for the period 1 July 2004- 30 June 2005 and the presentation made during this meeting is available in the Action web site.

4. The budget for 2005-2006 period

The Chairman informed the participants that the COST Office, following advice from the TC TIST, has decided provisionally to fund Action 289s activities with a budget of 98.000 Euro for the fiscal year 2005-2006, starting on July 1, 2005.

The Chairman informed the participants about a letter, dated 2 May 2005, from Tony Mayer, the director of the COST Office, which briefly states that 'the demand on the central STSM fund has been such that it has already been more than fully committed and so this fund is closed for the remainder of 2005. Other funding lines may be used to meet the existing commitments in this area. This is not to say that there will be no more STSMs during 2005 but only that the central fund has been exhausted. The Actions themselves may wish, and should be encouraged, to use funds within their current allocations for STSM support'.

5. Briefing about the COST activities by Brigid Bradley, COST Office, Brussels

Brigid Bradley from the COST Office, Brussels, gave an informative briefing about the COST: the aim, the structure, and the COST Actions in the domain of TIST (Telecommunications and Information Science and Technologies). The power point presentation is available in the Publications page of the Action web site.

6. Evaluation of the Workshop

The 2nd COST289 Workshop, July 6-7, 2005 was considered a success with four invited lectures and 21 presentations (see Annex II). The Workshop was organized in five sessions. In four of these sessions, the presentations followed invited lectures given by session chairmen.

For diversity reasons, it was considered to be more useful to increase the number of invited lectures and invite lecturers especially from the outside of the COST 289 community.

The discussions about the submissions were considered to be very useful and stimulating for the researchers and it was suggested to allocate more time to the discussions in the following Workshop.

The organization of joint scientific activities with other COST Actions was considered to be useful. Prof H. Rohling kindly accepted to contact the COST 273 for this purpose.

7. Presentation by Peter Fazekas on the Network of Excellence in Wireless COMMunication (NEWCOM); structure, aim and achievements.

Peter Fazekas from Budapest University of Technology and Economics gave a presentation about the structure, the aim and the achievements of the NoE NEWCOM.

This presentation created an opportunity to discuss the relative advantages of NoE's and COST Actions. The discussions led to a common understanding that combining the financial flexibility of NoE's and the administrative flexibility of COST Actions could lead to an optimum solution.

8. Technical reports and contributions

Technical reports and contributions were provided during the Workshop, 6-7 July 2005. The detailed program of the Workshop is given in Annex II. The hard and soft copies of the Workshop Proceedings are distributed to the participants and are also available in the Action web site.

9. Final Report

It was considered to be useful to initiate specifying the structure of the final report. The participants expressed willingness to contribute to the final report, which can be structured as follows:

Introduction (Hacettepe)

Wide Area Cellular System (DLR, Uppsala, Chalmers)

Short Range Cellular System (ETH Zurich, Madrid, Alveiro, Cluj, Florence, TUHH, Manchester)

OFDM, Coding and MIMO-OFDM (TUHH, Novi Sad, Kosice, SUPELEC, Sofia, Madrid, Cluj, Manchester, Ramon Llull, Hacettepe)

4G Design (Uppsala, TUHH)

Software Design Radio (Ramon Llull, Essen, BUTE, U. Polytechnic Catalunya)

This structure and contents will be revised during each MCM. Thus, it is believed that this will evolve towards the final report, representing the scientific achievements of the Action.

10. Cooperation of research efforts and STSMs

The Chairman announced that the document entitled 'The Titles of the Research Topics for Cooperation with Other Institutions' was updated and announced in the Action web site.

The STSMs that have been accomplished during the 1 July 2004-30 June 2005 are as follows:

- **Wide Area Coverage for 4G:**

Host: Prof. Arne Svensson, Chalmers University of Technology, Göteborg

Visitors:

Marc Deumal-Herraiz (Ramon Llull University, 13.9.2004 - 29.11, 2004),

Victor Pedro Gil-Jimenez (Univ. Carlos III of Madrid, 4.9.2004-9.12, 2004),

Simon Plass (DLR, 20.9.2004 - 24.9. 2004),

Jozef Krajnak (TU Kosice, 18.9.2004 - 3.10. 2004),

Serap Hasimoglu-Ertas (Hacettepe University, 20.9.2004 - 17.12, 2004)

Host: Prof. Hermann Rohling, TUHH, Hamburg, Germany

Visitor: Mihaly Varga (Technical University Cluj-Napoca, 13.06.2005-24.06.2005)

- **Software Defined Radio:**

Host: Polytechnic University of Catalunya (UPC), Barcelona

Visitors:

Ferenc Balazs (BUTE, 24.10.2004 – 4.11, 2004)

Pavol Galajda (TU Kosice, 18.10.2004 – 22.10, 2004)

Marc Deumal from Ramon Llull University, Barcelona, presented an agenda for the cooperation efforts on the SDR Research Project. This document, which is available in Annex III, is also forwarded to all the interested parties by e-mail.

Despite the shortage of funds for STSMs in 2005, as mentioned in Agenda item 4, a limited number of STSMs may be supported by using the budget allocated to the reimbursement of travel expenses.

11. Future meetings

- **9th MCM:** 3-4 November 2005, Madrid, Spain. Host: Prof. A. Garcia Armada, University of Carlos III
- **10th MCM:** March 2006, March 2006 (The exact date TBD). Host: Prof. D. Bajic, University of Novi Sad, Serbia and Montenegro
- **11th MCM:** July 2006, Trondheim, Norway (together with 3rd COST289 Workshop). Host: Prof. Geir E. Oien, NTNU (The exact date TBD)

12. Closing remarks and any other business

The Chairman thanked the participants, listed in Annex IV, for a very successful MCM and Workshop and invited them to the social event in Aspendos Amphitheater on Saturday, 9th July 2005 at 21:30. The detailed information about the show is presented in Annex V.

Annex I:

**8th Management Committee Meeting
8th July 2005, Friday
9:30 hours**

1. Opening
2. Adoption of the agenda and the approval of the minutes of 7th MCM.
3. Annual Progress Report and the TC-TIST Meeting in Vitznau, Switzerland, 28 June-1 July 2005
4. The budget for 2005-2006 period
5. Briefing about the COST activities by Brigid Bradley, COST Office, Brussels
6. Evaluation of the Workshop
7. Presentation by Peter Fazekas on the Network of Excellence in Wireless COMMunication (NEWCOM); structure, aim and achievements.
8. Technical reports and contributions
9. Final Report
10. Cooperation of research efforts and STSMs
11. Future meetings
12. Closing remarks and any other business

Annex II:

Programme of the 2nd COST289 Workshop 6-7 July 2005, Antalya, Turkey

Wednesday, 6th July 2005

9:00 – 9:10 Opening Address

Session 1: Pervasive Access for 4G Systems

Session Chair: Prof. Armin Wittneben, ETH Zurich

9:10 - 10:10 A. Wittneben
Recent Theoretical and Experimental Results in Multiuser Zero Forcing Relaying

10:10- 10:30 J. Zhao, A. Wittneben
Cellular Relaying Networks: State of the Art and Open Issues

10:30–11:00 Coffee break

11:00-11:20 I.Hammerström, J.Zhao, A.Wittneben
Temporal Fairness Enhanced Scheduling for Cooperative Relaying Networks in Low Mobility Fading Environments

11:20-11:40 S.Berger, A.Wittneben
Cooperative Distributed Multiuser MMSE Relaying in Wireless Ad-Hoc Networks

11:40-12:00 R. Fantacci, D. Tarchi, G.Izzo
A MAC Protocol for High-speed Multimedia WPANs

12:00-13:30 Lunch

Session 2: Adaptive Modulation and Coding

Session Chair: Prof. Dr. Han Vinck, University of Essen

13:30-13:50 A.J.H.Vinck
Coding for a Terrible Channel

13:50-14:10 Z.Polgar, F.Ardelean, M.Varga, V.Bota
Performance Comparison of LDPC Codes Generated with Various Code-Construction Methods

14:10-14:30 A. Zsiros, A. Fülöp, G.Jeney
Extending UTRAN Physical Layer with Coded Modulation Schemes

14:30-14:50 A.Mengi, G.Bauch, A.J.H.Vinck
Space-Time Differentially Coded Orthogonal Matrix Modulation using QAM

14:50-15:20 Coffee Break

Session 3: Channel Estimation and Equalization

Session Chair: Prof. Dr. Andreas Polydoros, University of Athens

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|-------------|--|
| 15:20-16:20 | A. Polydoros
Radio flexibility at the PHY layer |
| 16:20-16:40 | M.A.Dangl, J.Lindner
Turbo Equalization with Parametric Uncertainties: Comparison of SNR Estimation Algorithms |
| 16:40-17:00 | H.Şenol, H.A.Çırpan, E.Panayırçı, M.Çevik
KL-Expansion Based Channel Estimator for Space-time/frequency Coded OFDM Systems with Transmitter Diversity |
| 17:00-17:20 | S.Sand, R.Raulefs, A.Dammann
Iterative Channel Estimation for MIMO MC-CDMA |
| 17:20-17:40 | V. Poulkov, G.Iliev
Channel Equalization for OFDM |

Thursday, 7th July 2005

Session 1: OFDM Systems

Session Chair: Prof. Dr. H. Rohling, Technical Un. of Hamburg-Harburg

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|-------------|--|
| 09:00-10:10 | H. Rohling
OFDM Systems and Related Multiple Access Schemes |
| 10:10-10:30 | S.Sezginer, H.Sari
An Overview of Symbol Predistortion Techniques for PAPR Reduction in OFDM and OFDMA Systems |
| 10:30-11:00 | Coffee Break |
| 11:00-11:20 | M. Deumal, I. Gutierrez and J. L. Pijoan
PAPR Reduction in Orthogonal MC and MC-SS Systems |
| 11:20-11:40 | V.Jimenez, A.G.Armada
Reducing the feedback information in OFDM-based Adaptive Modulation Systems for 4G |
| 11:40-12:00 | C. Toker, S. Lambotharan
Sensitivity of the Orthogonalization Methods for QO-STBC to Feedback Errors in an OFDM Environment |
| 12:00-13:30 | Lunch |

Session 2: 4G Systems

Session Chair: Mikael Sternad, Uppsala University

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|-------------|---|
| 13:30-14.40 | M. Sternad
The WINNER Beyond 3G Radio Interface Concept |
| 14:40-15:00 | M. Varga, V. Bota, and Z. Polgar
User-Bin Allocation Methods for Adaptive-OFDM Downlinks of Mobile Transmissions |
| 15:00-15:30 | Coffee Break |
| 15:30-15:50 | D. Radovic
Effects of Channel on Multiuser CFO Estimation for Interleaved OFDMA Uplink |
| 15:50-16:10 | M.E.Çelebi, S.Şahin, Ü.Aygözü
Space-time Block Code Selection for More Than Two Transmit Antennas |
| 16:10-16:30 | K.A. Hamdi
On the Multiple-access Capability of a Shared Rayleigh Wireless Channel |
| 16:30-16:50 | D.Kocur, J.Čížová, S.Marchevský
Sub-optimum MSF-MUD for CDMA Systems |

Annex III:

Dear colleagues of Working Group on Software Radio:

From some months ago, there has not been activity in our working group. As we said during the STSM in Barcelona, it is quite difficult to work on something that is not exactly what you are supposed to do in your daily research work and what you are paid for.

Moreover, talking about Software Radio techniques and Hardware Abstraction Layers is quite difficult if you don't have an specific test bed to run your algorithms into.

Anyway, the group from the UPC in Barcelona and my group think that we can still cooperate in a realistic way and we would like to propose a comfortable way of cooperation, that is:

- 1.- To have a **low cost common hardware platform** where the Hardware Abstraction Layer (P-HAL) could be tested. This platform could emulate a complete mobile terminal and it is formed by:
 - A **commercially available DSP board** from Texas (C6000 DSK). The cost is approximately 400 \$.
 - A state-of-the-art **FPGA board** with **A/D** and **D/A** converters fully compatible with the DSP board. That board is going to be designed by the UPC by the end of year. Interested people would only have to pay the fabrication costs, which are also quite low.
 - The drivers for using the P-HAL with these two boards will be distributed among the participants. The integration of other hardware is quite a tedious work, since all the drivers for P-HAL should have to be developed.

Once this common platform has been established, a short seminar on using this hardware and P-HAL could be held, joint to the MCM of November 2005.

- 2.- Using the Hardware Abstraction Layer and the common HW platform, **to develop parts of the downlink proposal of WG1**, or a similar version. It is a multicarrier environment with time and frequency spreading and flexible resource allocation. Interested people should have to decide what topic is going to be addressed.

- 3.- **Human resources.** As there is no money for this cooperation and there are no PhD students available at the moment, every institution should have to provide a minimum of 2 finalist students, such as their **master thesis** should contribute to the work of WG3. We know that good results are not guaranteed in this way but it is worth to try. A PhD student, of course, would be welcomed.

My institution (URL) and the UPC are interested in this joint work. Although there is an initial cost, it is a way to keep the people that work on implementation together and may be a seed for future cooperations. This platform can also be used for learning purposes.

Tentative schedule

July 2005:

This proposal is explained and discussed in Antalya. Interested partners commit to participate and buy the hardware.

September 2005:

The specific topics for implementation are selected and the two students of every institution begin the work. Although the FPGA board is not available, they can start working on the DSP board.

November 2005:

The FPGA board is available. The short seminar could be held joint to the 9th MCM in Madrid.

July 2006:

Initial results are presented.

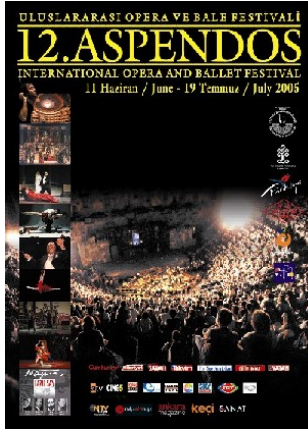
Annex IV:**List of Participants**

	NAME	ORGANIZATION	COUNTRY	E-MAIL
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Annex V:

Social Event 9th July 2005



12th Aspendos International Opera and Ballet Festival:

9th July 2005 at 21:30 Rosegarden Dance B. Murphy and M. Dede

Please refer to the following link for further details:

<https://secure.dobgm.gov.tr/aspandos12/aspandos12.asp>

Aspendos



Aspendos is founded by Greek colonists from Argos that came to Pamphylia after the Trojan War around 13th century BC. Soon, the city became an important trade centre and was one of the first cities in the region to strike coinage under its own name. In the 6th century BC, Lydian King Croesus conquered the city. Persians dominated Aspendos after they won the fight with Lydians. In 467 B.C, Lydians got the city back with a surprise attack. However, their domination did not last long, Persians attacked and took over.

Aspendos was dominated by Alexander, The Great, who used the city as a base in the 3rd century BC. When he died, Kingdom of Pergamum ruled Aspendians until Roman Empire expanded in the region. In the 2nd and 3rd centuries AC, with wine yards and olive trees all around, Aspendos got wealthier and wealthier. Built in the 2nd Century A.C. during the reign of Marcus Aurelius, Aspendos Theatre is one of the products of cultural and economical welfare. Aspendos Theatre was designed by the architect Zenon, and, according to inscriptions on it, given as a gift from two brothers, Curtius Crispinus and Curtius Auspicatus, to the Roman gods and the Imperial House. The famous aqueduct was constructed in the same period by a local architect and presented to the ruler.

Aspendos was gifted by nature, having such fertile soil and the river Eurymedon where the merchants took ships to Mediterranean Sea. It is also told that the city had the strongest horses of the time that were exported in West Mediterranean region.

Seljuk Turks settled in the region in the 13th century and restored the magnificent theatre while using it as a place for governors. During the rule of Ottomans, the historical value of the region was not noticed.

Aspendos became known all around the world after The First World War and the theatre was restored during the 1930s.