



## **Minutes**

**The 9th MC meeting, University of Coimbra, Portugal, May 22-23, 2007**

### **1-3. Approval of the Agenda**

The Chair, Dr. Koucheryavy (TUT, Finland) starts around 11:00 the 9<sup>th</sup> MCM by welcoming all the participants and thanking Prof. Edmundo Monteiro of the University of Coimbra for the excellent organization of this event.

The agenda of the 9<sup>th</sup> MCM meeting is approved as follows:

1. Approval of the Agenda
2. Overview of the Action
3. Budget review for the 3<sup>rd</sup> operational year
4. 10<sup>th</sup> MC meeting details
5. 11<sup>th</sup> MC meeting hosting proposal
6. Report on activity of "COST 290 WiMAX Special Interest Group"
7. Discussion of the final report
8. Final Report review

This meeting is organized with the MC meeting plus technical sessions with 11 technical documents. This meeting is collocated with the 1<sup>st</sup> ERCIM workshop on eMobility on May 21, 2007, and the WEIRD workshop on May 22, 2007 and with the WWIC 2007 conference on May 23-25, 2007. Participants had the opportunity to attend the following plenary speeches:

- Dr. Sean Murphy (University College Dublin, Ireland) for the WEIRD workshop;
- Prof. Henning Schulzrinne (Columbia University, New York, USA) "Principles and Lessons for a New Internet and 4G Wireless Networks", for the WWIC 2007 conference;
- Prof. Nitin H. Vaidya (University of Illinois at Urbana-Champaign, USA) "Multi-Channel Wireless Networks: Theory to Practice", for the WWIC 2007 conference.

Prof. Ivar Jardar Aasen (University of Oslo, Norway) the Rapporteur of ESF COST office attended this MC meeting.

### **2. Update on the Action**

Dr. Koucheryavy provided a survey on the COST 290 action status.

At present, 24 countries plus Russia have signed the MoU of COST 290 Action.

In the third operational year we had 3 MC meetings (i.e., 7th/Split, 8th/Malaga, 9th/Coimbra) and the WWIC 2007 conference (i.e., the COST 290 official workshop), co-located with this 9<sup>th</sup> MC meeting.

Referring to the 2<sup>nd</sup> operational year, the results of the STSM from TUT, Finland, to INRIA, France, have been published on the COST 290 web site (document: STSM(06)003) and a related paper will be presented at WWIC 2007: R. Dunaytsev, K. Avratchenkov, Y. Koucheryavy "An Analytical Comparison of the Slow-but-Steady and Impatient Variants of TCP NewReno".

Referring to the 3<sup>rd</sup> operational year, an STSM of enlarged duration (3 months) from the University of Coimbra to TUT, Finland is just finished, dealing with "A Nonparametric Approach for Measurement Based Admission Control". Some related results are published and submitted as follows:

- T. Bohnert, E. Monteiro, Y. Koucheryavy, D. Moltchanov “Non-Parametric and Self-Tuning Measurement-based Admission Control”, *IFIP Networking 2007*, May 14 - 18, Atlanta, GA, USA. [Acceptance Rate = 22.5%]
- T. Bohnert, J. Jakubiak, M. Katz, Y. Koucheryavy, E. Monteiro, E. Borcoci “On Evaluating a WiMAX Access Network for Isolated Research and Data Networks using NS-2”, *submitted to NEW2AN 2007*.

Moreover, 2 STSMs are under review with the results to be made available in a short time:

- From the University of Glamorgan (UK) to the University of Applied Science (Fribourg, Switzerland), entitled: “Source Based Quality of Service Routing Using Complex Decision Making”
- From the University of Glamorgan (UK) to the University of Avignon (France), dealing with “Designing and Implementing of Scaleable Multicast Ad Hoc protocol”.

Finally, a STSM is in the final planning phase, from TUT (Finland) to the University of Siena (Italy), entitled “Development and Evaluation of Simulation Framework for implementation of Real-time services in IEEE 802.16e networks”.

The process for the evaluation of these 3 STSMs is responsibility of the evaluation team, chaired by Dr. Giovanni Giambene.

All the information about the approved STSMs is on the COST 290 Web site, page "STSM @ cost290.org".

### **3. Budget review for the 3<sup>rd</sup> operational year**

Dr. Koucheryavy described the budget situation for the third operational year (2006-2007). Action 290 has been granted with a 136,850 € budget for the third operational year to cover the expenditures for

- 3 MC meetings
- 1 Workshop
- STSMs
- Publications
- Secretariat.

As for budget allocation, the following rules apply:

- Secretariat overhead is capped by 15% of actual expenses;
- Maximum 5.000 € for maximum one Workshop/Seminar per annum, or double this figure if Final Meeting.
- MCM and STSM allocations were based on the number of signatory countries.
- The MC may decide to shift funds between budget-lines, except for secretariat overhead.

The current budget breakdown according to ESF COST for 2006-2007 is as follows:

- Travel costs for 3 MCMs = 103,322.50 €
- Workshop = 5,000 €
- STSMs = 5,000 €
- Publications = 3,000 €
- Secretariat = 20,527.50 €
- TOTAL = 136,850 €

The current expenditures for the third operational year are as follows:

- 7<sup>th</sup> meeting expenses (28 MC members) = 23,834 €
- 8<sup>th</sup> meeting expenses (30 MC members + 1 invited speaker) = around 25,000 €
- STSMs = around 8,000 €
- Usual workshop support for WWIC 2007 = 5,000 €
- Invited speakers budget for WWIC 2007 = 5,000 €
- 5 Student travel grants are approved by ESF COST (each of 1000 €) = 5000 €

#### **4. 10<sup>th</sup> MC meeting details**

Vienna University of Technology (Austria) location for the 10<sup>th</sup> COST 290 MCM was presented by Michal Ries. The 10<sup>th</sup> MCM will take place on 1<sup>st</sup> - 2<sup>nd</sup> October 2007, as agreed via email voting procedure. The meeting (Vienna University of Technology) is located in the city center, close to 2 subway lines. The Vienna airport is the suggested arrival airport (there is also the possibility to use the Bratislava airport for low fare flights). The subway trip from the Vienna airport to the meeting location lasts 30 minutes. Dr. Michal Ries presents that a registration fee of maximum 85 € will be considered due to the higher costs of local service. Prof. Fernando Velez asked if it is possible for the local organizer to have sponsor support in order to reduce the registration fees. Dr. Michal Ries stated that unfortunately sponsor support is not possible, but the increased registration costs will be compensated by the reduced costs of local accommodations (low cost hotels nearby the venue will be suggested by the organizer). Final details and registration costs details will be provided by the local organizer. Participants to the Vienna meeting will receive a receipt at the arrival at the registration desk. Registration fees payment will be also possible via credit card. It will be possible also to buy tickets for accompanying persons (social event). Finally, it is requested to register and to book the hotel at least 2 weeks before the meeting dates.

#### **5. 11<sup>th</sup> MC meeting proposal**

Dr. Yevgeni Koucheryavy presented the venue for the 11<sup>th</sup> MCM to be held at the Tampere University of Technology, Finland. Possible date are:

- January 21-22 or 24-25
- February 11-12 or 14-15.

An invited talk will be organized (by NOKIA, TeliaSonera or VTT). A sauna evening event is guaranteed. According to the comments provided during this presentation, this meeting will be organized in Thursday-Friday days.

Tampere is the largest inland city of the Nordic countries with a population of 200,000. Was founded in 1779 on the banks of the Tammerkoski Rapids. Evolved into the most highly industrialized locality in Finland during the 19th century. Tampere is also a city of education and research on both national and international scale with two universities and numerous other institutions of education. Tampere University of Technology (TUT) was founded in 1965 and currently is the second largest technical university in Finland.

There are a wide variety of accommodations available in Tampere, ranging from modern first-class hotels to smaller traditional hotels and hostels. Near-to-campus hotel is available at approx. 65 euros/night.

Getting to Tampere is really easy and convenient There are frequent daily airline services via Helsinki (20 min), Stockholm (50 min), Copenhagen (1h 20 min), London, Frankfurt/Hahn and Tallinn.

As for climate, there is a lot of snow on January/February and temperature is on average from -10 to -15 (but could be also -30).

Finally, Dr. Yevgeni Koucheryavy reminds that the final COST 290 MCM will be co-located with WWIC 2008.

## 6. Report on “COST 290 WiMAX Study Group”

Thomas Bohnert (University of Coimbra, Portugal), the Chair of the COST 290 *WiMAX Study Group* (WSG), provided a report on this activity. A WSG roadmap was set in Malaga at the 8<sup>th</sup> MCM, as follows:

- Create a mailing list
- Create Web presence
- Set a first work objective.

An e-mailing list has been set up right after the 8<sup>th</sup> MCM with address: [cost290wsg@cs.tut.fi](mailto:cost290wsg@cs.tut.fi). This email list is managed at <https://mailman.cs.tut.fi/mailman/listinfo/cost290wsg>. At present, there are 31 members. The use of this email list should be increased. It is a very useful tool for sharing general WiMAX resources (papers, slides, etc.), ideas and to post related cfps.

As for the Web presence, it has to be organized. At present, only two groups submitted the member description, that is the University of Siena and the University of Malaga. A second call for activity descriptions will be resent by Thomas Bohnert.

The work objectives of this WSG have been surveyed as follows. This WSG is organizing the 1<sup>st</sup> *Broadband Wireless Access* (BWA) Workshop, Sept. 2007, Cardiff, UK, and several COST290 WSG members volunteered as TPC members. The deadline for paper submissions has been extended to June 3, 2007. Moreover, WSG is contributing one invited paper by Dirk Staehle from the University of Wuerzburg. Other contributors in the context of the WSG are:

- G. S. Kuo, BUPT, Beijing, PRC
- The WEIRD project/UoC.

The key note speaker will be Max Riegel, CoChair of the WiMAX Forum NWG. General BWA workshop information can be found at the following URL: <http://bwaws.nginet.de>. The next BWA workshop has been proposed as part of IEEE CCNC, January 2008, Las Vegas.

As an outcome of the WiMAX activity, a paper has been submitted to NEW2AN'07, entitled “On Evaluating a WiMAX Access Network for Isolated Research and Data Networks using NS2”. This is a joint work of TUT and the WEIRD project. This paper deals with the study if two publicly available ns-2 modules for WiMAX.

Ideas for future activities on this subject were presented by Thomas Bohnert, including a call for book chapter proposal on “WiMAX Network Planning and Optimization” (1-2 pages by July 30, 2007) and the suggestion to investigate the differences between WiMAX and other wireless technologies (e.g., HSDPA, IEEE 802.11g, etc.).

A contact to COST 2100 (“Pervasive Mobile & Ambient Wireless Communications”) has been established by the COST 290 WSG. A possible joint workshop has been proposed by the Chair of COST2100. Prof. Vasos Vassiliou stated that the University of Cyprus participates to COST 2100 action and is available to support the initiative of a joint workshop.

## **7. Discussion of the final report**

Dr. Koucheryavy reported on the method adopted to organize the work for the COST 290 final report. He recalled that we agreed what follows:

- To organize the report in a form of book and to look for the Springer publisher;
- The book chapter structure should be WG-based, but more chapters could be needed especially for big WGs. This is due to the fact that we have heterogeneous WGs. For instance, WG1 attracted the highest number of TDs.
- To ask for missing TDs, and, at present, 90% of them have been submitted.

Dr. Koucheryavy informed that with the help of Dr. Giovanni Giambene has been in touch with Springer US that has soon expressed their interest in publishing the COST 290 final report.

Dr. Giambene presented important guidelines on how to provide high-quality figures, as requested by Springer. In particular, figures in eps format have to be provided with 1200 dpi resolution (even lower values could be accepted, but in any case not lower than 800 dpi). In the figures, we should avoid any color; only gray scales or patterns have to be used. It is important that the gray color scales have a very good contrast. Springer is very stringent with the requirements for pictures. Failure in adhering to the appropriate figure format/quality may cause a delay of months to the publication of the book. Finally, Dr. Giambene also explained that contributions with already copyrighted materials are possible, but this information has to be declared to accomplish a procedure with the copyright owner.

Dr. Koucheryavy also reminded that a preliminary discussion of the book work was carried out in the Bern 6<sup>th</sup> MCM and in the Split 7<sup>th</sup> MCM. At the 8<sup>th</sup> MCM in Malaga, WG chairs and COST action Chair and vice-Chair had a discussion (in a stand-alone meeting) on how to organize the work for the book in order to identify a proposal to be presented to MC members. This proposal was distributed as an Annex in the minutes of the 8<sup>th</sup> MCM. According to this, we have 6 Chapters in the book with related topics, as detailed below:

### **Chapter 1 “Introduction”, Editor: Yevgeni Koucheryavy**

- Survey of COST 290 objectives
- Organization of the work in COST 290
- Some material from the annual report

### ***Organization of work for WG1 by Dirk Staehle***

### **Chapter 2 “Packet Scheduling and Congestion Control”, Editor: Giovanni Giambene**

- Congestion/Flow Control
- Channel-Awareness / Cross Layer
- Service Differentiation
- Radio Resource Management
- Transport Protocols over Wireless

**Chapter 3 “Performance Evaluation and Traffic Modelling”, Editor: Dirk Staehle**

- System/Flow Level
- Packet Level
- Simulation/Testbed
- Multimedia, User-Perceived QoS
- Network planning, capacity

***Organization of work for WG2 by Francisco Barcelo***

**Chapter 4 “Mobility Support”, Editor: Francisco Barcelo**

- Mobility Characterization
- Location Awareness
- Handover Techniques
- IP Mobility Protocols
- QoS and Mobility
- Multicast

***Organization of work for WG3 by Torsten Braun***

**Chapter 5 “Self Organizing Networks”, Editor: Torsten Braun**

- Service Level Agreements
- Peer-to-Peer and Content Delivery Networks
- Context and Service Discovery
- Multi-Hop Wireless Networks
- Energy-Saving Issues

***Organization of work for WG4 by Vasilis Siris***

**Chapter 6: “Services, Optimization, and Economic Aspects”, Editor: Vasilis Siris**

- Services and Deployment Scenarios
- Charging, Accounting, and Business Models
- Optimization based on User/Application Requirements and Cost/Revenues Aspects

It has been explained by Dr. Yevgeni Koucheryavy that in this proposal Chapter 2 and 3 are related to the same WG (i.e., WG 1), since this WG has received many contributions. The aim of the organization in the above structure is to avoid overlaps among Chapter contents. A first round of expressions of interests has been requested by the chapter editors to the COST 290 participants and many contributions have been already submitted.

It was also agreed to have a first draft version of the Chapters by September 2007 to be distributed before the 10<sup>th</sup> MCM in Vienna. We have one year to complete the final report to be presented at the next May MCM of COST 290 so that Springer could have 3 months available to publish the book (expected by September 2008). Hence, there could be also the possibility to ask a project extension of 3 months with one additional meeting in order to present the book in an MCM in Tampere in September 2008.

Following this initial discussion, the proposed status and structure of the 6 Chapters has been presented by Yevgeni Koucheryavy, Giovanni Giambene, Dirk Staehle, Francisco Barcelo, Torsten Braun, and Vasilis Siris. For each chapter, the proposed structure has been presented as well as the contributions received (i.e., expressions of interest) and those that at present are missing.

Comments were requested to MC members on the book structure by Dr. Yevgeni Koucheryavy. A discussion followed to clarify some details. The MCM then approved the proposed list of Chapters with the possibility to swap in the order Chapters 2 and 3.

Details on the chapter structure will be circulated via the COST 290 email list in order to inform and to allow also the participation of the MC members that were unable to attend this MCM. With these emails, chapter editors will also ask contributions especially for those parts that are at present not well/fully covered. A new call for expressions of interest will be sent by chapter editors with deadline to provide a reply (each of 1-2 pages) of June 15, 2007. All the expressions of interest must be related to TDs that are already presented or that will be presented within the end of the COST 290 Action.

The current agreement with Springer refers to a 250-page book, thus meaning about 40 pages per chapter. Chapters must have a homogeneous length, even if some small variations are acceptable.

It was also agreed that the chapter editors may ask the support of section editors that will work on chapter sub-parts. Finally, chapter editors may organize chapter meetings to coordinate better this work (attending people will be reimbursed following the COST MCM rules); it would be better to organize these meetings before the end of June 2007.

Dr. Yevgeni Koucheryavy states that a Web site will be organized where all the materials of the different chapters will be stored for the best coordination of this work among the partners. Moreover, in the front matter of each chapter we will have:

- Chapter editor
- Sub-chapter editors (if any)
- Contributors.

Names will be in alphabetical order.

Finally, Dr. Yevgeni Koucheryavy proposed that the book editors will be himself, the vice-chair (Dr. Giovanni Giambene) and the WG leaders. That was agreed by the MC.

## **8. Close of the meeting**

The 9<sup>th</sup> MC meeting was closed by Dr. Koucheryavy on May 22 at 13:00, thanking all the participants. Then, technical sessions started.

Reimbursement forms should be sent by mail to Dr. Yevgeni Koucheryavy:

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These minutes have been written by Dr. Giovanni Giambene (University of Siena, Italy).

**Attached list of delegates, COST 290 9<sup>th</sup> MC meeting, University of Coimbra, Portugal, May 22-23, 2007**

	Name	Country	Organization	MC	Presentation title
1	Ulla Birnbacher	Austria	Graz Univ. of Technology	X	
2	Michal Ries	Austria	INTHFT – TU Wien		
3	Sylwia Romaszko	Belgium	Univ. of Antwerp	X	TD(07)028: Controlled contention-based access to the medium in ad hoc WLANs
4	Seferin Mirtchev	Bulgaria	Technical University of Sofia	X	
5	Rossitza Goleva (subs. S. Poryazov)	Bulgaria	Technical University of Sofia	X	
6	Vasos Vassiliou (subs. A. Pitsillides)	Cyprus	University of Cyprus	X	
7	Yevgeni Koucheryavy	Finland	Tampere Univ. of Technology	X	
8	Roman Dunaytsev (subs. J.Harju)	Finland	Tampere Univ. of Technology	X	
9	Aleksi Penttinen (subs. Jorma Virtamo)	Finland	Helsinki Univ. of Technology	X	TD(07)022: Flow-optimized random access for wireless multihop networks
10	Salim Nahle	France	LIP6		
11	Dirk Staehle (subs. P. Tran-Gia)	Germany	University of Würzburg	X	
12	Paulo Mendes	Germany	NTT DoCoMo		
13	Vasilios Siris	Greece	FORTH-ICS	X	
14	Vassilis Tsaououssidis	Greece	Democritus University	X	
15	Sean Murphy	Ireland	UCD	X	Invited Talk: Wireless mesh networks: An Overview
16	Giovanni Giambene	Italy	Univ. of Siena	X	
17	Saverio Mascolo	Italy	Politecnico di Bari	X	

18	Luca De Cicco	Italy	Politecnico di Bari		TD(07)023: TCP Congestion Control over 3G Communication Systems: an Experimental Evaluation of New Reno, BIC and Westwood+
19	Cristina Nardini	Italy	Univ. of Rome "La Sapienza"		
20	Algimantas Kajackas	Lithuania	Vilnius Technical University	X	
21	Aurimas Anskaitis (subs. S. Paulikas)	Lithuania	Vilnius Technical University	X	TD(07)030: Peculiarities supporting of QoS at edge of cells
22	Hans van den Berg	The Netherlands	TNO ICT	X	
23	Geert Heijen (subs. R. Litjens)	The Netherlands	Univ. of Twente	X	
24	Irene de Bruin	The Netherlands	Twente Institute for Wireless and Mobile Communications		TD(07)029: Performance analysis of VoIP over HSDPA in a multi-cell environment
25	Ivar Jardar Aasen	Norway	Univ. of Oslo		Rapporteur at ESF COST office
26	Fernando Velez	Portugal	University of Beira Interior	X	
27	Edmundo Monteiro	Portugal	University of Coimbra	X	
28	Thomas Bohnert	Portugal	University of Coimbra		
29	Virgil Dobrota	Romania	Technical University of Cluj-Napoca	X	
30	Gabriel Lazar	Romania	Technical University of Cluj-Napoca		TD(07)021: Cross-Layer Architecture for H.264 Video Streaming in Heterogeneous DiffServ Networks
31	Katarina Bachrata (subs. M. Klimo)	Slovakia	Univ. of Zilina	X	
32	Jana Uramova	Slovakia	Univ. of Zilina		TD(07)024: Modelling of Packet Flow by Unary Code
33	Gorazd Kanduz	Slovenia	Jozef Stefan Institute	X	
34	Francisco Barcelo	Spain	UPC	X	
35	David Morales	Spain	University of Malaga		TD(07)025: Impact of Feedback Channel Delay on Adaptive

					OFDMA Systems
36	Torsten Braun	Switzerland	University of Bern	X	
37	Martin Waldburger (subs. B. Stiller)	Switzerland	Univ. of Zurich	X	TD(07)027: Legally Compliant Contract Formation for Commercial Value Added Services in the Internet
38	Andreas Kassler	Sweden	Karlstad University	X	TD(07)020: On Packet Aggregation for VoIP in Wireless Meshed Networks
39	Maria Kihl	Sweden	Lund University	X	
40	Emrah Tomur	Turkey	METU		
41	Veselin Rakocevic (subs. G. Pavlou)	UK	City University London	X	TD(07)026: Cross-Layer Traffic Control in Mesh Networks
42	Firas Albalas (subs. K. Al-Begain)	UK	University of Glamorgan	X	
43	Henning Schulzrinne	USA	Columbia University, New York		Invited talk: Principles and Lessons for a New Internet and 4G Wireless Networks
44	Nitin H. Vaidya	USA	University of Illinois at Urbana-Champaign		Invited talk: Multi-Channel Wireless Networks: Theory to Practice