EURO-TELEPATH
COST Action IC0604
http://www.conganat.org/eurotelepath

Dr. Marcial García Rojo. Chair.

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Minutes of the

COST Action IC0604
Telepathology Network in Europe: EURO-TELEPATH
Management Committee and Working Groups Meeting
Thursday, 02/Oct/2008 and Friday, 03/Oct/2008

Management Committee (MC) Meeting
(MC + COST Office representatives)
Hotel M'AR De AR Muralhas (ex-Hotel da Cartuxa), Evora (Portugal).

Thursday, 02/Oct/2008. 08:30h – 12:30 h
List of attendees:
MC delegates
Mikael Lundin (mikael.lundin@helsinki.fi). University of Helsinki, Finland
Jacques Klossa (jklossa@tribvn.com). Tribvn, France
Christel Daniel (Christel.Daniel@spim.jussieu.fr). INSERM, France
Bernd Blobel (bernd.blobel@klinik.uni-regensburg.de). University of Regensburg, Germany
Thomas Schrader (thomas.Schrader@computer.org), Charité Universitätsmedizin, Berlin, Germany
George Nikiforidis (gnikif@med.upatras.gr), Director of Department of Medical Physics. University of Patras Greece. In representation of Professor **Anastasios Bezerianos**)
Vincenzo Della Mea (vincenzo.dellamea@dimi.uniud.it). University of Udine, Italy
Vytenis Punys (vytenis.punys@ktu.lt). Kaunas University of Technology, Lithuania
Janina Slodkowska (j.slodkowska@igichp.edu.pl). Institute of Tuberculosis Lung Diseases, Poland
Luis Gonçalves (anatpat@hevora.min-saude.pt). Hospital do Espirito Santo, Evora, Portugal
Branimir Reljin (reljinb@etf.bg.ac.yu). University of Belgrado, Serbia
Marcial García Rojo (marcial@cim.es). Hospital General de Ciudad Real, Spain
Michael Ansorge (michael.ansorge@epfl.ch). EPF Lausanne, Switzerland
Mohammad Ilyas (mohammad.ilyas@nottingham.ac.uk). University of Nottingham, United Kingdom

Working Groups members and experts
Irini Reljin (irinitms@gmail.com). University of Belgrade, Faculty of Electrical Engineering, Serbia
Anna Orlova (aorlova@jhsph.edu) Public Health Data Standards Consortium, USA
Wendy Scharber (wendy@registrywidgets.com). CDC Contractor. Registry Widgets, USA
Antonio González (antoniogK@satec.es). SATEC, Spain
Ed Scharber (ed@registrywidgets.com). Registry widgets, USA
François Macary (francois.macary@gmsih.fr). HMSIH, France

Agenda:

1. **(08:30-09:00)** Welcome and consortium meeting introduction.
2. **(09:00-09:15)** Approval of the 2nd MC meeting (Madrid) minutes
3. **(09:15-09:45)** COST Action IC0604 current status
    a. Official status of the COST Action
    b. Agreement on recent approvals of members and the internal rules and procedures for the Management Committee:
        i. New members
        ii. Action Secretariat
        iii. Grant Holder
4. **(09:45-11:00)** Review of WG recent tasks. Implementation of the Memorandum of Understanding
    a. WG1 – Pathology Business Modelling (15 min)

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b. WG2 – Informatics Standards in Pathology (15 min)
c. WG3 – Images: Analysis, Processing, Retrieval & Management (30 min)
d. WG4 – Technology & Automation in Pathology (15 min)

5. **(11:00-12:00)** Working plan and budget for 2009
   a. Objectives for 2008
   b. Conference and Workshops
   c. Short-term Scientific Missions (STSM)
   d. Training schools
   e. Non-COST countries
   f. Coordination with other related running COST Actions
   g. Outputs planned for 2009
   h. Place and date of next MC and WG meetings

6. **(12:00-12:30)** Open technical discussion
7. **(12:30) Closing**

1. Welcome and consortium meeting introduction.

The consortium thanks Dr. Gonçalves for the warmest welcome to Evora and the logistics of the meeting.

2. Approval of the 2nd MC meeting (Madrid) minutes

The text of the minutes of the previous IC0604 Management Committee meeting on February 2008, in Madrid, Spain, was approved by written procedure (e-mail distribution list) on March 2008. In this face-to-face meeting we confirm the approval of the previous MC meeting.

On September 15th, 2008 an updated text of the Scientific Progress Report (Nov 2007 to May 2008) with minor corrections was sent to COST Office.

3. COST Action IC0604 current status

Official status of the COST Action
The Annual grant budget plan is presented. In summary:

Total grant period: 2007-2011
Grant period: 01/02/2008 – 31/01/2009
Allocated 12 month budget: 90,000 €

- First part (Nov 2007-May 15th, 2008)… 40,000 €
- Final financial report (Feb-June 2008) -5,373.82 €

Allocated vs spent budget

TABLE 1 - ELIGIBLE COSTS	CONTRACT BUDGET EUR a	ACTUALS EUR b
A. Science expenditure		
A1. Total travel to Meetings (*)	27.533,00	23.438,91
A2. Total Workshops (*)	5.000,00	4.598,31
A3. Total STSMs (*)	1.250,00	1.200,00
A4. Training Schools (*)	-	-
A5. Dissemination, Publications (*)	1.000,00	872,50
A6. Others Total	-	-
Total Science Expenditure (sum 1 to 6)	34.783,00	30.109,72
B. Secretarial support (maximum 15% of A.)	5.217,00	4.516,46
C. Total eligible costs (= A + B)	40.000,00	34.626,18

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Summary of Travel costs (4 meetings):

- Madrid, Feb 1-2, 2008. Second IC0604 MC and first WGs meeting
  ……. 17 reimbursed participants …. 10.298,61 €
- Berlin, May 8-9, 2008. Second WG1 Business Modelling in Pathology meeting
  ……. 6 reimbursed participants …... 2.864,19 €
- Toledo, May 16-17, 2008. Second WG2 Informatics Standards in Pathology meeting
  ……. 12 reimbursed participants …. 9.247,14 €
- Larnaca, June 25-26, 2008. ARM. Annual Progress Conf
  ……. 1 reimbursed participant …….. 1.028,97 €

Summary of Workshop support / Conference support (2 meetings supported by IC0604):
- Madrid, Feb 1-2, 2008. Second IC0604 MC and first WGs meeting
  ……. 23 participants …. 3.598,31 €
- Berlin, May 8-9, 2008. Second WG1 Business Modelling in Pathology meeting
  ……. 7 participants …... 1.000,00 €
- Toledo, May 16-17, 2008. Second WG2 Informatics Standards in Pathology meeting
  ……. 30 participants …. 0 €
- Larnaca, June 25-26, 2008. ARM.
  Running Actions …. 0 € (COST Office organization)

Summary of STSM- Short Term scientific Mission (1 completed)
- Home institution: Università di Udine
- Host Institution: Hospital General de Ciudad Real
- Total budget: 1.200,00 €
We do not need to inform the COST office of the completion of each STSM.

Dissemination efforts:
- Website support
- Mailing list
- Total budget: 872,50 €

Agreement on recent approvals of members and the internal rules and procedures for the Management Committee:

New members

The consortium would like to confirm the approval of their participation and welcomes the new members of COST Action IC0604:
- **Switzerland**. Approved by MC by written procedure on May 16th, 2008.
  Prof. Touradj Ebrahimi and Prof. Michael Ansorge. EPF Lausanne
  Andreas Pospischil. Institut für Veterinärpathologie. Universität Zürich

- **Croatia**. Approved by MC by written procedure on June 8th, 2008.
  Assoc.Prof. Mislav Grgic, Ph.D.
  University of Zagreb, Faculty of EE and Comp Department of Wireless Communications

- **Cyprus**. Approved by MC by written procedure on June 8th, 2008.
  Constandinos Mavromoustakis
  University of Nicosia

- **Norway** (Approved by MC by written procedure on August 6th, 2008)
  Professor Andrew Perkis, Dr. Techn
  Norwegian University of Science and Technology Department of Electronics and

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Telecommunications
Petter Aadahl (Pending)

- **Greece** (Intention to sign)
  Anastasios Bezerianos. Biosignal Processing. Faculty Medicine. University of Patras.
  Deputy delegate in Evora: George Nikiforidis. Director of Department of Medical Physics.
  The IC0604 MC approves by unanimity the participation of Greece in our COST Action.

- **The Netherlans** (Intention to sign)
  We had some preliminary contacts with Netherlands representative from the company Philips,
  Guido du Pree (Director Marketing & Sales Digital Pathology. Philips Healthcare Incubator).
  The IC0604 MC approves the participation of The Netherlands in our COST Action. The person
  participating in our Action should have a more technical profile.

Non-COST and neighbour countries:
India: Wipro Technologies (India, contact: Sandeep Sanwal) is interested in participation in COST
Action Activities.
During this plenary MC meeting in Evora we decided that since our COST Action is just starting, at this
moment we could establish a permanent agreement but we could find some specific areas of
collaboration between COST Action IC0604 and WiPro.

Georgia: The MC agrees that Dr. Eka Kldiashvili, Ph.D. from the Georgian Telemedicine Union
(Association) could participate in our COST Action as representative from Georgia.

We had an initial contact from United Kingdom: Ian Green (NHS) , but the interest of this person to
participate has not been confirmed.

Action Secretariat and Grant Holder
MC would like to express their gratitude to FISCAM, our Grant Holder which role has been essential in
the work in launching Action IC0604, and special thanks to María Ruiz for her excellent work in all
financial aspects.
FISCAM has prepared the first financial reports, in coordination with COST Office. Financial
Rappporteurs (Thomas.Schrader and Vincenzo Della Mea) report must be presented now.

FISCAM has make some clarification to Travel Reimbursement Rules for the MC of COST Action
IC0604 (see file TRR rules.doc). Cost Office budgets approximately up to 640 euros per person and
meeting. (1 day before or 1 days after meeting).

Grant Agreement for 2008-09
On September 19th we received from COST Office (ICT Administrative Officer) the Grant Agreement for
2008-09. This includes the budget of our COST Action IC06704 for the next period (1 July 2008 to 30
June 2009)
There has been a reduction in 5,000 euros (85,000 euros instead of 90,000 euros).
Since Meeting support amount has been reduced by COST Office, MC decides to maintain the budget
for Evora and Warsaw meeting (2,500 euros each), and distribute the reduction of COST in the
meetings that will be organized in 2009. The reason to do this is that we cannot ask the meetings
organizers to reduce the budget a few days before those meetings take place.

COST Action Ic0604 title
Michael Ansorge pointed out last September that two versions of title of our Action were circulating:
"Telepathology Network in Europe: EURO-TELEPATH" and "Anatomic Telepathology Network (EURO-
TELEPATH)". We asked COST Office to unify these two versions in the title that was in included in the
Memory of Understanding: "Telepathology Network in Europe: EURO-TELEPATH". On September
30th, our COST Office ICT Administrative Officer, Sophie Beaubron, confirms us that "Title of Action

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IC0604 has been changed back to its original title, as per the MoU: Telepathology Network in Europe: EURO-TELEPATH"

<u>Dissemination activities</u>

COST Action IC0604 was presented with details in a conference during the 9th European Congress of Pathology that was held in Toledo, Spain 15-17 May 2008, by Marcial García Rojo and Luis Gonçalves.

During COST Actions Review meeting (ARM) in Larnaca, June 25-26, 2008, oir COST Action activities were presented by Marcial García Rojo. The conclusion was that COST action has just started, but we should foster STSMs and training school activities.

COST IC0604 was presented by Prof. Ebrahimi / EPFL to the JPEG plenary audience on July 9[th.] (JPEG Committee. Poitiers meeting, July 7-11, 2008)
"Prof. Ebrahimi tells us that the JPEG community has well received the information on the COST Action, and that JPEG is looking forward to contributions from COST IC0604 in the projects JPSearch, and JPEG 2000, whereas it is drawing the attention of members of COST IC0604 to the JPEG XR and AIC image compression activities and encourages further inputs in these projects as well from IC0604."
The press release is publicly available at: http://www.jpeg.org/newsrel22.html

During the XIV Meeting of the European Association for Haematopathology, in Burdeos, France (September 24th) COST Action IC064 was also described by Marcial García Rojo.

Jacques Klossa attended the DICOM Working Group 26 (Pathology) Meeting (September 27, 2008) in San Diego, California, in representation of the consortium.

Next COST Action IC0604 activities

The list of agreed next activities is as follows:

<u>**Next in 2008**</u>:

<u>3rd WG3 (Images: Analysis, Processing, Retrieval & Management) and WG4 (Technology & Automation in Pathology) meeting during the Workshop Quantitative Immunohistochemistry in Digital Pathology</u>
Warsaw, Poland. November 28-29, 2008.

MC agrees that the Publication of the Proceedings of the workshop on:" Quantitative Immunohistochemistry in Digital Pathology" (Warsaw, Nov. 29th, 2008) can be economically supported as an activity of our COST Action.

The consortium need to foster new STSMs. Wojciech Staniszewski (PRECOPTIC Co) has been collaborating in the organization of our next WG3 and WG4 meeting in Warsaw. He would like to visit UK Nikon facilities to gain necessary scientific knowledge about digital telepathology.

MC members should remember that MC and Grant Holder need to be informed when a STSM request is made in COST website (the generated PDF file must be sent to MC chair).

<u>**Next in 2009**</u>:

A date to remember (not part of IC0604 activities): **January 11 - 16, 2009.** Orlando, FL, USA. HL7 Working Group Meeting.
March 2009, 12-13. Paris, France. <u>4th COST Action IC0604 MC and joint WGs meeting</u>.
April 20-24. Vienna, Austria. <u>IHE Europe 2008 Connectathon</u>. Monday April 20th 2009 to Friday, April 24th.

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May 7. Berlin, Germany. COST Action IC0604 WG1 and WG2 meetings. In conjunction with the 4rd Workshop of the Open European Nephrology

A date to remember (not part of IC0604 activities): **May 10 - 15, 2009**. Kyoto, Japan. HL7 Working Group Meeting.

August 29 - September 2. Sarajevo, Bosnia & Herzegovina. 22nd International Congress of the European Federation for Medical Informatics.

September 3-9. Florence, Italy. 22nd European Congress of Pathology. Related activities:
- Precongress meeting 1: Business Modeling & Informatics Standards), linked to the activities of the COST-Action IC0604
- Precongress meeting 2: Innovative fixation techniques (HOPE) connected with automated image analysis
- Precongress meeting 3: Measurements of image quality and derived standards
- Precongress meeting 4 (workshop): Telemedicine and teleteaching in practice
- Symposium (150 min): Virtual slides and AI in tissue based diagnosis
- Symposium (160 min): Telepathology, Continuous education, Teleteaching
(Proposal: Joint meeting with DICOM WG26)

A date to remember (not part of IC0604 activities): **September 20-25**. Atlanta, GA, USA. 23rd HL7 Annual Plenary & Working Group Meeting. Sheraton Atlanta Hotel.

December 3-4. Lausanne, Switzerland. 5th COST Action IC0604 MC and joint WGs meeting. Ecole Polytechnique Federale de Lausanne.

Suggestions for July 2009-June 2010:
Following a suggestion from Mohammad Ilyas, a Training School on "ImageJ - Open Source tools for image Processing and Analysis in Pathology". could be organized by Nottingham University.

Next in 2010:
10th European Congress on Telepathology and 4rd International Congress on Virtual Microscopy. Vilnius, Lithuania.

WGs recent tasks
A brief review of WGs recent tasks was presented:
WG1 – Pathology Business Modelling
WG2 – Informatics Standards in Pathology
WG3 – Images: Analysis, Processing, Retrieval & Management
WG4 – Technology & Automation in Pathology

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IC0604 Working Groups Meeting
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3rd. Working Group 1. *WG1 – Pathology Business Modelling* Meeting
Joint meeting with IHE Anatomic Pathology Planning Committee

Thursday, 02/Oct/2008. 13:30h – 16:00 h
(see list of attendees above – MC meeting)
Agenda:

13.30 - 14.00	Current status of the Business process modeling - Presentation and Discussion of the basic model

    ? Limitations

    ? necessary extensions and detailing

14.00 - 14.30	Extension & Detailing: Telepathology
14.30 - 15.00	Extension & Detailing: Reporting in Pathology
15.00 - 15.15	Short Break
15.15 - 16.00	Validation of the brief proposals.
	Cancer Registry Pathology Reporting (CRPR) Profile: work flow

Current status of the Business process modeling

The development of business cases from the sketch (Informal) and formal level is presented
The cases will be related to Diagnosis, Research (both colleting biological material and research activities), and education (including e-learning, present learning, and CME).
It was suggested to split the diagnostic process into different subprocesses such as
• Cytology
• Hematocytology
• Frozen section
• Biopsy
• Teleconsultation
• Fresh tissue processing
• Teleconsultation
After the analysis of the business process the classification was refined.

IHE actors and transactions, processes and use cases are reviewed.

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Evaluation of the status

Advantage
- Abstract overview about the processes
- Modeled as "best practice"
- Allowed to modify the processes
- Transferable to BPMN

Disadvantage
- No relationship to IHE workflow elements expressed
- Open issues
  - Reporting & Billing
  - Image Management
  - Teleconsultation
  - Usage automatons, specimen processing

The Result of Analysis is:
* Missing actor for order process steps
* Missing actor for report generation, management and distribution
* Missing actor for telepathology consultation

Extension & Detailing: Telepathology
Motivation for telepathology:
* Discussion Role of Telepathology
* As a part of the diagnostic process
* As a diagnostic process itself
* Requirement specification for telepathology network

Extension & Detailing: Reporting in Pathology
Motivation for Reporting in Pathology:
* Integration of CDA to pathology report structure
* IHE: Cancer Registry Pathology Reporting

Brief proposal & Cancer Registry Pathology Reporting (CRPR) Profile

Current brief proposals:
- Anatomic Pathology Value Sets (Sharing Value Set Integration Profile(ITI)) (C.Daniel, V.Della Mea) : Using standard terminologies to code reports and image contents in anatomic pathology
- Structured reporting in Anatomic pathology
    Structured reports white paper (T.Schrader, C.Daniel)
- Cancer Registry Pathology Report (with CDC) (W.Schaber)
- Integrating automatons IP (with LAB)
- Inter-departments workflow IP (with LAB)

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3rd. <u>Working Group 2 Meeting</u>. *WG2 – Informatics Standards in Pathology*
Joint meeting with IHE Anatomic Pathology Technical Committee

Thursday, 02/Oct/2008. 16:00h – 18:30 h
(see list of attendees above)

16:00-17:00	Cancer Registry Pathology Reporting (CRPR) Profile : technical discussion (standards)
17:00-18:00	Validation of the Change Proposals to IHE Anatomic Pathology TF

18:00-18:30 : WG2 specific issues : jpeg2000, DICOM WG26.

IHE Pathology
- ? New co-chairs : M.Garcia – T.Schrader
- ? IHE Anatomic Pathology : official domain
- ? Googlegroup : ihe-anatomic-pathology-committee@googlegroups.com
- ? Wiki: http://wiki.ihe.net/index.php?title=Anatomic_Pathology (Road map and Brief proposals)
- ? FTP site: ftp://ftp.ihe.net/AnatomicPathology/CPs/

In IHE pathology process, users and vendors are described. The participation of US groups (CAP, CDC, NAACCR) is important.
IHE Anatomic Pathology TF roadmap:
- ? 2008-09 cycle (January-April connectathons)
  - – Anatomic Pathology Workflow (APW)
    - ? Specific integration profile addressed by the
    - ? For trial implementation
  - – 12 change proposals completed
- ? 2009-10 cycle : 5 brief proposals
  - – Cancer Registry Pathology Report (CDC, NAACCR)
  - – Anatomic Pathology Structured Reports (White paper)
  - – Anatomic Pathology Value Sets (Sharing Value Set Integration Profile (ITI))
  - – Integrating automatons (with LAB)
  - – Inter-departments workflow (with LAB)

Other standardization domains to be considered are: HL7 Anatomic Pathology SIG (FM), DICOM WG26 (JK), Jpeg2000 (MA), SNOMED CT.

COST Workplan - July08-June09
- ? Active participation International standards (DICOM, HL7, SNOMED, CEN) and IHE initiative.
- ? Define a set of standardized DICOM file headings for pathology microscopic images.
- ? Definition of new types of messages needed for pathological image information exchange
  - – templates & values sets for structured report and messages
  - – integrating automatons, tissue banks and TMArrayers to Pathology Information systems.
- ? Increase the European scientific leadership in the Anatomic Pathology domain (IHE-Anatomic Pathology, HL7, SNOMED): A meeting of the WG2 in conjunction with the HL7 working group meeting

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Next WG2 meetings & workshops:

2008	November, 2008	Warsaw, Poland	COST workshop - WG3
2009	January 11 - 16, 2009	Orlando, FL	HL7 Working Group Meeting
2009	March 12 and 13, 2009	Paris	COST MC, WG 1234
2009	May 2009	Berlin	COST WG 1&2
2009	May 10 - 15, 2009	Kyoto, Japan	HL7 Working Group Meeting
2009	June		COST Annual Progress Conference

IHE Pathology. Planning & Technical Committee meeting
The following agenda was covered:
- ? Discussion of the 5 brief proposals
  - Cancer Registry Pathology Report (CDC, NAACCR) (workflow (WG1) & standards)
  - Anatomic Pathology Structured Reports (White paper)
  - Anatomic Pathology Value Sets (Sharing Value Set Integration Profile (ITI))
  - Integrating automatons (with LAB)
  - Inter-departments workflow (with LAB)
- ? Validation of the Change Proposals to IHE AP TF : 2008-09 cycle (January-April connectathons)
  - Anatomic Pathology Workflow (APW) for trial implementation
  - 12 change proposals completed

SDOs' Activities in the Context of Telepathology and the Framework of Standardization
Bernd Blobel presented "**SDOs' Activities in the Context of Telepathology and the Framework of Standardization**" (this presentation took place on October 3rd, during WG4 meeting). In this presentation, after an introduction on Personal Health Paradigm, the Interoperability Levels were described:

    Technical interoperability
    Structural interoperability
    Syntactic interoperability
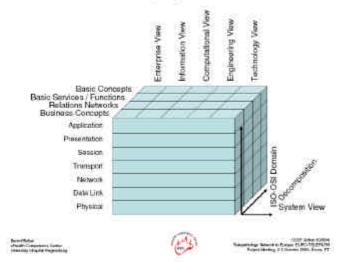   Semantic interoperability
    Organizations/Service interoperability

The requirements for achieving interoperability and harmonisation can be summarized as a model-driven architecture. The terms "Model", "Knowledge", and "Concept" are defined.
A Generic Component Model (GCM) is presented. The architecture paradigms for future-proof Health Information Systems are described with the Supported Characteristics.
Mathematical models could be applied.

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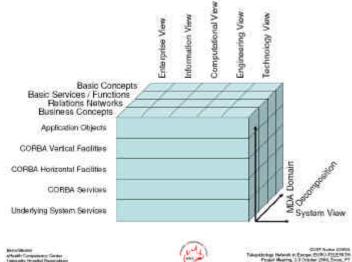http://www.conganat.org/eurotelepath

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2nd. Working Group 3 Meeting. *WG3 – Images: Analysis, Processing, Retrieval & Management (part one)*
Thursday, 02/Oct/2008. 18:30h – 20:00 h
WG3 scientific meeting

Michael Ansorge presents a EPFL research project that will be submitted as Swiss national proposal, expected to be supported by COST Switzerland. The project is entitled "Unusual Event Detection in Anatomic Telepathology Applications for Virtual Microscopy".

After discussion of this presentation, COST Action IC0604 MC agrees that the orientation and objectives of this Swiss national proposal presented by EPFL can be of high interest to our consortium since it is a very innovative approach without precedents in Europe, and we agree that it can have a significant benefit in improving the quality and clinical efficiency of the diagnosis of microscopic images using telepathology platforms.

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Minutes of the

Working Groups Meeting

Hotel M'AR De AR Muralhas (ex-Hotel da Cartuxa), Evora (Portugal).
Thursday, 02/Oct/2008 and Friday, 03/Oct/2008

2nd. <u>Working Group 3 Meeting.</u> *WG3 – Images: Analysis, Processing, Retrieval & Management (part two)*

Friday, 03/Oct/2008. 09:00h – 10:15 h

List of attendees:
Management Committee members
Mikael Lundin (mikael.lundin@helsinki.fi). University of Helsinki, Finland
Jacques Klossa (jklossa@tribvn.com). Tribvn, France
Christel Daniel (Christel.Daniel@spim.jussieu.fr). INSERM, France
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Thomas Schrader (thomas.Schrader@computer.org), Charité Universitätsmedizin, Berlin, Germany
George Nikiforidis (gnikif@med.upatras.gr), Director of Department of Medical Physics. University of Patras Greece. In representation of Professor **Anastasios Bezerianos**)
Vincenzo Della Mea (vincenzo.dellamea@dimi.uniud.it). University of Udine, Italy
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Marcial García Rojo (marcial@cim.es). Hospital General de Ciudad Real, Spain
Mohammad Ilyas (mohammad.ilyas@nottingham.ac.uk). University of Nottingham, United Kingdom

Working Groups members and experts
Irini Reljin (irinitms@gmail.com) University of Belgrade, Faculty of Electrical Engineering, Serbia.
Anna Orlova (aorlova@jhsph.edu) Public Health Data Standards Consortium, USA
Pablo Castan (pablocastan@biotools.net). Biotools, Spain
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François Macary (francois.macary@gmsih.fr). HMSIH, France

Agenda:

1. **(09:00-09:30)** WG3 recent activities
    a. WG members
    b. Tasks distribution
    c. Outputs
    d. Objectives and output for 2009
2. **(09:30-10:15)** WG3 scientific meeting. Programme for 2009. Open discussion

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The complete list of WG3 is presented.
The expected output for 2008 is described:
  a) Review the literature and select a model for the IHC analysis study.
  b) Collection of the pathological material and clinical data
  c) Selection and access to the automated image analysis systems (Dako ACIS III and Aperio Scanscope)

EURO-TELEPATH
COST Action IC0604
http://www.conganat.org/eurotelepath

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d) WSI quantitative analysis
e) Comparative analysis of ihc results obtained by light micros copy and AIAs for HER-2
f) Comparative analysis of ihc results for ER/PrR with the clinical data

The group mentions the Scientific contribution to the European Congress on Telepathology (Toledo, 17-19.05.2008): Assessment of HER-2/neu expression in breast carcinoma: a comparative approach by Automated Cellular Imaging System (ACIS III) and ScanScope Aperio.

The next activity of the WG3 is the organisation of the workshop on:" Quantitative Immunohistochemistry in Digital Pathology" (Warsaw, Nov. 29th, 2008). The publication of Proceedings of the workshop will be economically supported (partial or totally) by COST Action IC0604.

* Implementing STSMs (Aperio, U.K. – is programmed)

The initial Programme for 2009 was to incorporate and standardize current image technology in the system aids pathologists used for detection, classification and/or counting of cells and tissues. The aims can be the precise evaluation of Ki67 index in some specific types of pancreatic and SNC tumours, also including the elaboration of mathematic computerized software which help neuropathologists in differentiation between types of glial tumours.

Some open discussion topics are also presented:
- ✍ Consider also further topics additionally to image analysis
- ✍ Include the image analysis study on the basic histological staining.
- ✍ Initiate in 2008 also starting activities in medical image processing
- ✍ (RoI detection, segmentation, further analysis / feature extraction functions, compression, Search & Retrieval, storage organization, etc.). Possibly contribute to elaborating Open Source Toolboxes that can be made available to the open community.
- ✍ Content based image analysis
- ✍ Requirement: do not send the complete image to the analysis server

It is concluded that next activities should be:

1) To prepare recommendations for obtaining digital slides of good quality related to:
 a) various pathological material, including Histological (Frozen section, Surgical / core biopsy, Resected specimen) and Cytological (FNB, Hematology, and BAL [difficult]) material.
 b) Various pathological techniques : H & E, ihc, immunofluorescence, confocal, EM, microarrays (?)

2) To produce recommendations for scanning:
> Diagnostic report based on H & E
> Additional techniques (Research - prognostics factors)
- a) Preliminary localization of the RoI (in view of controlling resolution of RoI, folder size, scanning time, …
- b) Accessibility of VS for further analysis of various telemicroscopical systems

3) Produce recommendations for the standardization of the image acquisition, archiving and searching processes.

4) Instrumental aspects: Description of instrumental bias.
- ✍ Inputs expected from WG4 for 3) + 4) wrt specialized instruments

5) Interpretation aspects, including Search in Databases , Correlation of microscopic data both morphological (H&E) and functional (IHC), and Correlation of heterogeneous data (micro, macro, radiological data, clinical data and analysis results).

g) Meeting with industrial partners
1. **(10:15-10:30)** Nucliber
2. **(10:30-10:45)** Grupo Taper

2nd. Working Group 4 Meeting. *WG4 – Technology & Automation in Pathology*

Friday, 03/Oct/2008. 10:45h – 12:30 h
(see list of attendees above – WG3 meeting)

1. **(10:45-11:00)** WG4 recent activities
    a. WG members
    b. Tasks distribution
    c. Outputs
    d. Objectives and output for 2009
2. **(11:00-12:30)** WG4 scientific meeting
    a. Scanning technology
    b. Digital slide viewers
    c. New trends in tissue processing and custom TMA solutions
    d. Storage solutions

(12:30) Meeting wrap-up

(12:30) Lunch

The list of WG4 membersis presented.

The planned work for 2008 is the study of automation / scanning solutions
1. Full study analysis of **microscope brands**.
2. Analysis of implementation of **database** engine, **search** facilities, and **viewer modules** of virtual slides database for clinical, educational and research purposes.
3. Study of **integration** of web-based telepathology **services** with the existing pathology information systems and the electronic health record of the patient.
4. Study of integration of **multimedia** communication tools.
5. Providing trustiness in management of **confidential medical data** and legal parameters to be included in the pathological image visualization standard.
6. Collaborating in action **dissemination** (WG1)

WG4 activities must be in collaboration with:
    ? WG1: Processes automation
    ? WG2: Standards in daily practice
    ? WG3: File formats, viewer, searching

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- ? One Short-term Scientific Missions (STSM) completed: Serendipia SESCAM's Project (standards based regional digital pathology system).
- ? A technical report on best existing scanning solutions and emerging imaging solutions should be drafted.

WG4 Objectives and output for 2009:
- ? *Automation in Pathology: Analysis of Scanning solutions for Pathology microscopic slides.*
- ? *Implementation of Interoperability between information systems*

Related to COST Action IC0604 **Scientific programme: 2) efficient scanning solutions for microscopy:**
- ? *Scanning pathology daily workload (up to 100 slide digitisation per day)*
- ? *Highest image quality available*
- ? *Software integration*
- ? *Application in Clinical and Research fields (eg. Tissue Micro-Array -TMA analysis)*

Related to COST Action IC0604 **Scientific programme: 4) virtual slide standard viewer specifications:**
- ? Selecting the best viewer design based on standardized JPEG2000 format (and other standards) for microscopic pathology images
- ? Pathologists must feel as comfortable as using conventional microscopes.
- ? Facilitating access to Anatomic Pathology images by other medical specialties

- ? Existing and upcoming Virtual Slide systems:
    - ? Aperio ScanScope
    - ? Zeiss Mirax Scan
    - ? Olympus SIS .slide
    - ? Next: Bioimagene iScan
    - ? Hamamatsu Nanozoomer,…
- ? Coming soon: Siemens, Philips,…?
- ? Bright field, fluorescence, multispectral…

Both Hardware (Slide loading, Optical system (resolution, NA), light source, Capture (camera), Focusing / z-stacks..) and Software (Tissue detection, Image management) aspects will be analyzed. Some of the WSI Technology report variables could be: Scanning Speed (mm2/s), Image quality (H&E, cytology, IHC, Direct IF, FISH), Image analysis (WG3), Image formats, Compression techniques…