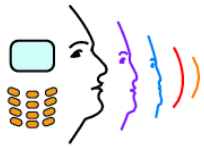

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Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 1: Management

Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: Sebastien Marcel **Revision:** 1

Author(s): S. Marcel (IDIAP), V. Devanthery (IDIAP)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

During this first reporting period, the MOBIO management team:

- consolidated the 2008 annual reports (financial and scientific),
- organized two plenary meetings (including a joint database collection day),
- faced and resolved a major issue with the request from one partner to leave the project.

2 Description of 3 month activity

- consolidated the 2008 annual reports (financial and scientific):
- organized two plenary meetings (including a joint database collection day):
  1. Martigny January 8-9, 2009
  2. Manchester March 30-31, April 1, 2009
- faced and resolved a major issue with the request from one partner to leave the project.

  We have been informed by eyePMedia about their decision "not to apply to the second phase of the MOBIO project" (see the email below) because they are changing their business priorities. As a consequence, EyePmedia is restructuring to focus more in desktop platforms and thus will not be able to carry on any developments on mobile devices.

  — copy of eyePMedia email —

  This message to inform you that after a business review, we have decided to not apply to the second phase of the MOBIO Project. Of course, eyeP Media is still committed on its deliverables for Phase 1.

  I would like to setup a call with you, possibly this week, to discuss with you about this decision.

  Thanks.

  Best Regards,

  Johan Kovacs COO

  eyeP Media SA Baumettes 15, 1020 Renens, Switzerland

  — end of email —

  This was a major problem for the project as the "second phase" of the integration is focused toward the development of embedded or partially embedded demonstration systems.

  During several weeks, we worked at solving this issue. We had several calls with eyePMedia to clarify the situation and we contacted also various companies to replace eventually eyePMedia.

  Finally, we prepared several possible "action plans". The retained action plan is essentially to introduce a new partner into the project to take the lead of the integration on mobile devices within the allocated budget.

  We contacted several companies and finally we converged to Visidon (www.visidon.fi). Visidon is a software development company with strong competence in image and

video processing and particularly highly optimized real-time face image processing and video enhancement for various embedded and mobile device platforms.

Visidon is willing to join MOBIO and to carry on the integration task left by eyeP-Media within the reminding budget allocated to eyePMedia.

The project board voted yes to the question: "Do you agree to accept Visidon as new partner in MOBIO to carry on the integration effort towards mobile devices within the allocated budget (no impact on your own budgets) ?".

On his side, eyePMedia confirmed the following commitment:

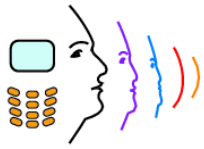
1. *we continue to deliver D6.3 and we will produce one or two demonstrators for September. We will be using the first funding to complete this work. The demonstrators would be based on the use case 5 and/or the use case 1.*
2. *Given the Mobile Market constraints and perspective, we cannot invest anymore into the development related to mobile implementation, whereas we have plan to use MOBIO's technology on desktop and server platforms. As a result we will not be implementing the deliverables D6.4 and D6.5. The second funding may be re-used by another industrial partner to make these deliverables.*
3. *Two people will take over you on this project: Carlos Bandeirinha for the engineering work and Jerome Dilay for the project management.*

3 Publications

not applicable.

4 Miscellaneous

none.



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Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 2: Use cases, Specifications and Databases
Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: Christopher Mc Cool **Revision:** 1

Author(s): C. McCool (IDIAP), S. Marcel (IDIAP)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

The goal of this work package is to define use-cases, specifications and databases. The definition of the use-cases and specifications were submitted with D2.1 in 2008. Based on comments this document was updated and re-submitted (in 2008) and currently the project partners are awaiting confirmation that the updates made to D2.1 have been accepted. Appropriate databases were explored in 2008, and summarised in D2.2, and it was found that it was necessary to collect a database. The data collection began in August 2008 and to date almost 40% of the database has already been captured.

2 Description of 3 month activity

The priority for the first quarter of 2009 was to finalise the collection of Phase I of the MOBIO database. Phase I represents 40% of the database collection and all of the partners, except for EPM and IdeArk, contributed to this work. During this period several problems were encountered including problems with the acquisition device at two sites. As such an extension has been given to several sites to complete the data collection with the last of the data collection will be completed by the 15th of May 2009, this revised timeframe will still lead to the on-time delivery of Phase I of the database.

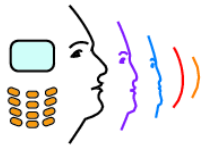
Other activities carried out include previous work to refine the use-cases and to begin planning for Phase II of the database collection. The refinement of the use-cases was work predominantly conducted in the second half of 2008 by EPM, although several other partner such as Idiap and IdeArk also contributed. The planning for Phase II of the database collection has been led by Idiap with significant contributions from all other partners except for EPM and IdeArk.

3 Publications

none

4 Miscellaneous

none



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Funded under the 7th FP (Seventh Framework Programme)
Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 3: Uni-Modal Segmentation and Authentication Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: T. Cootes **Revision:** 1

Author(s): Prof. T. Cootes (UMAN)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

Biometric authentication using mobile devices is becoming a convenient and important means to secure access to remote services such as telebanking and electronic transactions. Potential biometrics for authentication include facial appearance and speech characteristics. This work package addresses the need for improved accuracy in these two arenas by developing novel algorithms for: face detection; facial feature localization; face authentication; voice activity detection; and speaker authentication.

Later work packages address the problems of: fusing these two biometrics to improve authentication performance beyond that of either biometric alone (WP4); model adaptation for learning from unlabelled data and tracking changes in the biometrics over time (WP4); scaling each system to fit within the constraints of a mobile device (WP5); and integration into a working demonstrator (WP6).

1.1 Roles of the partners

The roles of each partner are as follow:

- **IDIAP**: Face detection and face authentication.
- **UMAN**: Facial feature localization.
- **UNIS**: Face authentication.
- **UOULU**: Face detection and face authentication.
- **UAPV**: Voice activity detection and speaker verification.
- **BUT**: Voice activity detection and speaker verification.

2 Description of 3 month activity

2.1 IDIAP

- **Bayesian networks to combine intensity and color information in face recognition**:
  We investigated generative models dedicated to face recognition [1]. Our models consider data extracted from color face images and use Bayesian Networks to model relationships between different observations derived from a single face. Specifically, the use of color as a complementary observation to local, grayscale-based features was investigated. This was done by means of new generative models, combining color and grayscale information in a principled way. Color is either incorporated at the global face level, at the local facial feature level, or at both levels. Experiments on the face authentication task were conducted on two benchmark databases, XM2VTS and BANCA. Obtained results have shown that integrating color in an intelligent manner improves the performance over a similar baseline system acting on grayscale only, but also over an Eigenfaces-based system where information from different color channels were treated independently.

- **Parts-based face recognition using local frequency bands**:
  We extended the Parts-Based approach of face verification by performing a frequency-based decomposition [2]. The Parts-Based approach divides the face into a set of blocks which are then considered to be separate observations, this is a spatial decomposition of the face. Our work extends the Parts-Based approach by also dividing the face in the frequency domain and treating each frequency response from an observation separately. This can be expressed as forming a set of sub-images where each sub-image represents the response to a different frequency of, for instance, the Discrete Cosine Transform. Each of these sub-images is treated separately by a Gaussian Mixture Model (GMM) based classifier. The classiffers from each sub-image are then combined using weighted summation with the weights being derived using linear logistic regression. It is shown on the BANCA database that this method improves the performance of the system from an Average Half Total Error Rate of 24.38% to 15.17% when compared to a GMM Parts-Based approach on Protocol P.

2.2 UMAN

- **A combined local/global model for facial feature localization**:
  Facial feature localization often appears in one of two forms: *global* model-based methods (e.g., Principal Component Analysis-based) where the location of every feature depends on every other feature; or *local* model-based methods where the location of a feature depends only on its neighbouring features (e.g., Markov Random Field-based). Our ongoing work in this field aims to bring these two approaches together to permit a greater dependency on the appearance model (for more accurate

localization) whilst enforcing more flexible constraints on the relative positions of the features for robustness. More specifically, combining a PCA-based global model with an MRF-based local model allows the relative positions of neighouring features (typically considered fixed by the MRF) to vary with the global shape model to account for variation in the shape of the face between users.

- **Face normalization**:
  The purpose of accurately locating the features of the face is to ensure that corresponding regions of the face are compared between the query data and the model during authentication. A simple method of achieving this objective is to warp the detected face to a canonical co-ordinate frame for each frame of the input video, thus rendering the authentication almost invariant to pose and facial expression. To this end, UMAN produced an application that takes an input video and the corresponding results from the feature localization method, and outputs a series of normalized images of the face as input to the authentication algorithms developed in WP3.

- **Appearance modelling**:
  Ongoing research at UMAN is investigating existing and novel appearance models that describe the image region around each feature. In particular, we aim to determine which appearance models maximize accuracy (with respect to the true feature location) whilst minimizing false detections (local minima) in order to maintain efficiency of the graph-solving algorithms employed.

2.3 UNIS

- **User assistance in biometric trait acquisition**:
  UNIS investigated an audio-assisted interface for face video acquisition. The goal is to provide audio feedback to the user, especially for persons with visual impairment, to acquire "good" face images, i.e., as frontal as possible. Novel feedback mechanisms and acquisition procedures are currently being investigated. This work is a collaboration between UNIS' CVSSP and the psychology department within UNIS. Initial experiments show that a simple protocol for registering the frontal face image of the user, especially with eyes closed (to simulate visual impairment), with audio feedback is more effective than without audio feedback. Current progress includes estimating the head pose from a video sequence offline as well as examining the degree of tolerance of a face verification system to different head poses.

- **Advanced face authentication**:
  UNIS is currently investigating a novel rank-based cohort score normalization technique. Initial experiments on the MBGC/XM2VTS databases shows some promising results. UNIS will also collaborate with UOULU on novel facial feature representations.

- **Mechanism to counter spoof attack**:
  UNIS is currently investigating a Bayesian framework to integrate a verification score and a measure of spoof attack in order to obtain an optimal decision. The Bayesian framework provides a principled means to gauge the relationship between these two seemingly unrelated pieces of information. An important advantage of this approach is that it eliminates the need to define two thresholds for each measurement manually. Instead, the system designer needs only to specify the prior knowledge (prior probability of spoof attacks) which is then updated using the likelihood of the observation. This is a joint work with Dr. Daigo Muramatsu, Waseda University, Tokyo, Japan.

- **Measuring the extent of Doddington's menagerie**:
  An important phenomenon influencing the performance of a biometric experiment, attributed to Doddington et al (1998), is that the match scores (whether under genuine or impostor matching) are strongly dependent on the model or template from which the match scores have been derived. Although there exist studies to classify the characteristic of the template/model, as well as the query data, into animal names such as sheep, goats, wolves and lambs – so-called Doddington's menagerie, there is currently absence of means to characterize the extent of Doddington's menagerie. UNIS investigated a means to characterize this phenomenon [3].

- **Cohort-based normalization**:
  Biometric traits can be affected by the acquisition process which is sensitive to the environmental conditions (e.g., lighting) and the user interaction. In the literature, there are two ways one can handle such a mismatch: cohort normalization and quality-based normalization. The first approach relies on a set of competing cohort models, essentially making use of the resultant cohort scores, e.g., T-norm. In the second approach, the normalization is based on deriving the quality information from the raw biometric signal. This study consists of combining these two pieces of information simultaneously using logistic regression [4]. This study will be extended to multimodal biometric fusion.

See also the ICB2009 face video competition, the MBGC evaluation and the Biosecure multimodal evaluation in WP7.

2.4 UOULU

- **Facial representation using local phase quantization (LPQ)**:
  Local Phase Quantization (LPQ) is based on quantizing the Fourier transform phase in local neighborhoods. The phase can be shown to be a blur invariant property under certain commonly fulfilled conditions. In face image analysis, histograms of LPQ labels computed within local regions are used as a face descriptor similarly to the widely used Local Binary Pattern (LBP) methodology for face image description. The experimental results on CMU PIE and FRGC 1.0.4 datasets show that the LPQ

descriptor is highly tolerant to blur but still very descriptive outperforming LBP both with blurred and sharp images. The LPQ based facial representation is planned to be considered and tested for the development of the advanced face detection system.

- **Pixelwise local binary pattern models of faces using kernel density estimation**:
  In face verification, we have studied LBP based representations that retain more accurate spatial information than the earlier block based models. These representations are based on the kernel density estimation of LBP histograms proposed in [5]. In that paper it was shown that this model produces significantly better performance in the face verification task on the BANCA dataset than the earlier block based models.

- **Rotation invariant image description with local binary pattern histogram Fourier features**:
  We have also worked on local descriptor development, especially for the case of rotation invariant image representations. This development is based on the work presented in [6], in which we proposed a rotation invariant image descriptor based on discrete Fourier transforms of local binary pattern (LBP) histograms. It was shown that this representation slightly outperforms original LBP even in face recognition despite that rotation invariance is not actually necessary in that task. We believe this result is partly due to increased statistical stability and this issue will be further investigated.

- **Spatiotemporal face analysis**:
  While many works consider moving faces only as collections of frames and apply still image-based methods, recent developments indicate that excellent results can be obtained using texture-based spatiotemporal representations for describing and analyzing faces in videos. Inspired by our recent success in using LBP for combining appearance and motion for dynamic texture analysis, we investigated the combination of facial appearance and motion for face analysis in videos. We studied an approach for spatiotemporal face and gender recognition from videos using an extended set of volume LBP features and a boosting scheme. Our experimental analysis assesses the promising performance of the LBP-based spatiotemporal representations for describing and analyzing faces in videos [7].

2.5 BUT

- BUT worked towards its advanced system that will contain full JFA analysis models. This will be based on the worked done for NIST 2008 evaluation and partly also on the results of JHU 2008 workshop.

- BUT hosted 2 scientists from Agnitio (leading company in speech biometrics): Niko Brummer and Albert Strassheim[1]. Although they were mainly working towards

[1] `http://speech.fit.vutbr.cz/en/short-news/niko-brummer-and-strasheim-albert-brno`

preparation of a joint BUT-Agnitio submission for NIST 2009 language recognition evaluation, the callibration and fusion work of Niko is also of great use in speaker verification.

- BUT prepared a Matlab toolkit for Joint Factor Analysis including training and test data (permission was obtained from LDC and NIST) and made it available to MOBIO partners [2].

2.6 UAPV

- **Advanced speaker verification**:
  UAPV have been developing their advanced speaker verification system, based on nuisance projection matrix adaptive training.

[2] `http://speech.fit.vutbr.cz/en/software/joint-factor-analysis-matlab-demo`

3 Publications

References

[1] G. Heusch and S. Marcel, "Bayesian networks to combine intensity and color information in face recognition," in *Proc. IEEE IAPR International Conference on Biometrics*, 2009, to appear.

[2] C. McCool and S. Marcel, "Parts-based face verification using local frequency bands," in *Proc. IEEE IAPR International Conference on Biometrics*, 2009, to appear.

[3] N. Poh and J. Kittler, "A biometric menagerie index for characterising template/model-specific variation," in *Proc. of the 3rd Int'l Conf. on Biometrics*, Sardinia, 2009, accepted.

[4] N. Poh, A. Merati, and J. Kitter, "Making better biometric decisions with quality and cohort information: A case study in fingerprint verification," in *Proc. 17th European Signal Processing Conf. (Eusipco)*, Glasgow, 2009, submitted.

[5] T. Ahonen and M. Pietikäinen, "Pixelwise local binary pattern models of faces using kernel density estimation," in *Proc. IEEE IAPR International Conference on Biometrics*, 2009, to appear.

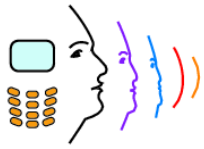
[6] T. Ahonen, J. Matas, C. He, and M. Pietikäinen, "Rotation invariant image description with local binary pattern histogram fourier features," in *Proc. Scandinavian Conference on Image Analysis*, 2009, to appear.

[7] A. Hadid and M. Pietikäinen, "Combining appearance and motion for face and gender recognition from videos," *Pattern Recognition*, 2009, to appear.

4 Miscellaneous

The remaining deliverables for this work package are as follows:

- **D3.3**: Advanced uni-modal systems (due June 2009)
- **D3.4**: Report on evaluation of advanced uni-modal systems (due October 2009)



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Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 4: Joint Bi-Modal Authentication and Model Adaptation

Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: N. Poh **Revision:** 1

Author(s): Dr N. Poh (UNIS)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of WP4

Biometric authentication using mobile devices is becoming a convenient and important means to secure access to remote services such as telebanking and electronic transactions. Such an application poses a very challenging pattern recognition problem: the training samples are often sparse and they cannot represent the biometrics of a person. The query features are easily affected by the acquisition environment, the user's accessories, occlusions and aging.

The objectives of this WP are to tackle the above problems in two fronts:

- **Joint bimodal authentication**: to develop a novel fusion mechanism to combine the face and speech biometrics
- **model adaptation**: to investigate model adaptation techniques, or semi-supervised learning, i.e., learning from the vast unlabeled query/test data

The roles of each partners are as follow:

- **UNIS**: to coordinate the activities in WP4 and to design mechanisms for adaptive face and speech systems as well as experiments for their evaluation
- **IDIAP**: to study joint bimodal (feature level) fusion
- **UAPV**: to deliver an adaptive speech system
- **UMAN**: to provide a support for facial annotation needed for the adaptive as well as advanced face verification systems
- **BUT**: to provide phoneme conditioning for speaker verification system

2 Description of 3 month activity

- **Adaptive test protocols**:
  Status: Completed
  UNIS proposed some experimental protocols for testing adaptive systems on the BANCA database. These were adopted in the last Manchester meeting held on 1-2 April 2009.

- **Baseline fusion**:
  Status: Completed
  UNIS and IDIAP performed score-level bimodal fusion using normalization-based and joint fusion strategies, respectively, for the deliverable D4.1. A report (D4.2) will follow.

- **Facial landmark annotation and face warpper**
  Status: Completed
  UMAN delivered the following three pieces of software
  - a provisional face detector
  - a face localization module
  - a face warping module that transforms a non-frontal head pose to a frontal one

- **Minimizing the impact of cross-device matching**:
  Status: Completed
  UNIS investigated a Bayesian approach, in the context of multimodal fusion, in order to handle the matching of two biometric samples acquired using two (or more) different devices (cross-device matching) [1].

- **A Bayesian framework for adaptive systems**:
  Status: On-going
  UNIS identified four major research issues related to implementing adaptive systems. The issues are: online model updatation, training and inference with several models, quality-based criteria to control the creation of a new model, and person-specific time-dependent performance evaluation. For each issue, a solution is also proposed [2].

3 Publications

Past contributions relevant to this work package include the following:

- Survey on the state-of-the-art biometric [3]
- Selecting a subset of biometrics system for fusion [4]

References

[1] N. Poh, T. Bourlai, and J. Kittler, "Quality-based score normalisation with device qualitative information for multimodal biometric fusion," *IEEE Trans. on Systems, Man, and Cybernatics (part B)*, 2009, accepted for publication.

[2] N. Poh, R. Wong, J. Kittler, and F. Roli, "Challenges and research directions for adaptive biometric recognition systems," in *Proc. of the 3rd Int'l Conf. on Biometrics*, Sardinia, 2009, accepted.

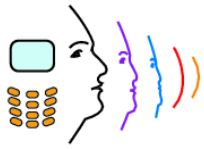
[3] J. Kittler and N. Poh, "Multibiometrics for identity authentication: Issues, benefits and challenges," in *IEEE Conference on Biometrics: Theory, Applications and Systems*, Washington, D.C., 2009, pp. 1–6.

[4] N. Poh and J. Kittler, "On Using Error Bounds to Optimize Cost-sensitive Multimodal Biometric Authentication," in *Proc. 19th Int'l Conf. Pattern Recognition (ICPR)*, 2008.

4 Miscellaneous

The following changes in schedule have been adopted:

- D4.1 was deferred to m15 and submitted on 31 March 2009
- D4.2 was deferred to m16 (end of April 2009)
- D4.5 was deferred to m17



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Funded under the 7th FP (Seventh Framework Programme)
Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 5: Scalability

Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: J-F. Bonastre **Revision:** 1

Author(s): Prof. J-F. Bonastre (UAPV)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

The use of biometric authentication systems on mobile device requires high level of performance with limited resources. Limited processor performance, energy consumption and memory capacity are important examples of such limitations.
Development of biometric system scalability allows to deal with such constraints. The scalability study will investigate a number of important parameters taking into account the cell-phone specications or the amount of transferred data.

MOBIO will study the scalability of the following uni-modal systems:

- face localisation,
- face alignment and facial localisation,
- face authentication,
- speech/silence segmentation,
- speaker authentication.

but also of multimodal systems.

The deliverable D5.1 is postponed from June 2009 to November 2009.
Evaluation of scalable systems will be run on the BANCA database.

2 Description of 3 month activity

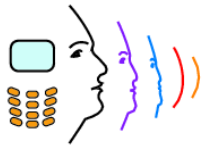
Considering that the WP5 activity depends on other work package activities, the WP5 activity was postponed of 3 months.

3 Publications

none

4 Miscellaneous

none



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Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 6: Demonstration
Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: Giorgio Zoia **Revision:** 1

Author(s): Dr G. Zoia (EPM)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

During the second year of MOBIO, WP6 will implement the first prototype of a biometry-enabled telecommunication multimedia system that integrates the technology and algorithms developed during the project. During the first 12 months, a draft API specification has been made available for integration of biometric modules into the selected eyeP Media softphone application. Q1 of 2009 has been dedicated to the first steps towards the implementation of D6.3: "System specification (stage 3) and prototype implementation with draft biometric modules; user device simulated using a laptop", which is due at M18.

The preparatory work done in this quarter has been basically performed by eyeP Media. EPM media stack has been chosen as the base software tool where MOBIO technology will be integrated for the first demonstrator, and the stack will be further used as the core of the EPM softphone application, desktop release. In spite of the announcement of eyeP Media to withdraw from MOBIO after deliver of D6.3, it has been recognized an interest in pursuing this integration for two main reasons: 1) the EPM media stack architecture constitutes a typical example of this kind of tools, and then adaptation to other stacks for the mobile phase should not constitute a major update in libraries interface; 2) some baseline systems in MOBIO are not yet adapted to real-time requirements in terms of algorithms execution, and then this first work of integration will in any case constitute a fundamental step towards a real-time oriented application.

2 Description of 3 month activity

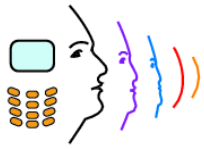
The main task implemented during Q1 has been the code template that will allow MOBIO partners to proceed with integration of their own functionality into EPM media stack. The template code has been delivered first as a Windows library with Visual Studio project, and in a second release as a platform-independent library with both VS projects and makefiles for Linux OS. The simple application, named mobio-filter-runner, allows running a simple signal processing filter using basic initialization, control and process functions as done in the complete media stack. The provided example is based on audio error concealment functionality specified in ITU-T G.711 standard, Annex I. This code is aiming at allowing the different partners to adapt their code to the EPM filter interface, so that integration in the complete stack will be straightforward. A final release has been planned immediately after the Manchester meeting (March 31-April 1), which includes a further example making use of video buffers. Furthermore, always targeting the first demonstrator in D6.3, eyeP Media proceeded to internal discussion and analysis to prune the use case list delivered in D2.1 to select the best candidates for the demonstrator according to market conditions. UC5 and possibly UC1 has been selected.

3 Publications

none

4 Miscellaneous

none



MOBIO

Mobile Biometry

http://www.mobioproject.org/

Funded under the 7th FP (Seventh Framework Programme)
Theme ICT-2007.1.4 [Secure, dependable and trusted Infrastructure]

WP 7: Dissemination and Exploitation

Quarterly Report 1, 2009

Period: January-March 2009 **Submission date:** 02/04/2009
WP Manager: H. Cernocky **Revision:** 1

Author(s): Dr H. Cernocky (BUT)

Project funded by the European Commission in the 7th Framework Programme (2008-2010)		
Dissemination Level		
PU	Public	No
RE	Restricted to a group specified by the consortium (includes Commission Services)	Yes
CO	Confidential, only for members of the consortium (includes Commission Services)	No

Contents

1 Activities Overview of your WP

WP7 dissemination activities concerned mainly scientific publications, dissemination to general public, evaluations, Web pages, Community of Interest (CoI) with related MOBIO newsletter, trade fairs and projects related to MOBIO.

Most of the activity from the beginning of the project until this quarter is summarized in MOBIO D7.3, delivered to the Comission on 11/03/2009.

2 Description of 3 month activity

2.1 IdeArk

IdeArk is the partner mainly reposnible for dissmination activities. CoI[1] is the key channel for communication of MOBIO with industrial partners. In 2009, CoI was launched by Ideark with the help of personal contacts of project members. Around 75 direct and indirect contacts were asked for CoI participation. CoI so far attracted interest of 14 industrial partners.

2.2 IDIAP

- As part of MOBIO, IDIAP researchers, Chris McCool and Sbastien Marcel will participate to the 3rd IAPR/IEEE International Conference on Biometrics on 2-5 June 2009 to present two papers resulting from MOBIO research activities.

- Additionally, Chris McCool and Sbastien Marcel have been selected to attend the 6th Summer School on Biometrics on June 8-12 2009.

2.3 UOULU

- Prof. Janne Heikkila of UOULU presented the face recognition method based on local phase quantization (Ahonen et al, ICPR 2008) developed partially within the MOBIO project in a collaboration meeting of Nokia Corporation and Finnish universities, Nokia Tampere, Finland, 12.3.2009.

2.4 UNIS

- **Multimodal Biometric Grand Challenge (MBGC)**:
  As part of benchmarking effort, UNIS participated in MBGC[2] organized by the National Institute of Standards and Technology (NIST). UNIS took place in the last meeting on 5 Dec 2008. This program will continue through Spring 2010. This is a joint work of with the University of Cambridge.

- **Organization of ICB2009 face verification competition**: UNIS has coordinated the first known effort in assessing *video-to-video* face matching under unconstrained environment (with mobile devices). The result of the competition was accepted for publication and will be presented in the Int'l Conf. on Biometrics 2009 to be held in Sardinia, Italy. Six academic institutes have participated, including IDIAP.

  Current progress includes timing the system of each participant. All results are due on 31 March 2009.

[1] `http://www.mobioproject.org/community-of-interest/`
[2] `http://face.nist.gov/mbgc`

- **Benchmarking effort on Quality-based fusion**: Status: Completed
  UNIS has also coordinated the first known effort in assessing quality-based multimodal biometric fusion involving 22 fusion algorithms from seven teams. A journal paper has been accepted for publication.The evaluation was carried out on the Biosecure database(in which the MOBIO project was acknowledged for some funding).

2.5 BUT

- BUT continues its participation in research-projects strongly related to MOBIO speaker recognition technologies, namely "Security-Oriented Research in Information Technology"[3] sponsored by Czech Ministry of Education under No. MSM0021630528, and "Overcoming the language barrier complicating investigation into financing terrorism and serious financial crimes" sponsored by Czech Ministry of Interior under No. VD20072010B16.

- In February 2009, BUT hosted the CEO and CTO from Agnitio (Spain), Emilio Martinez and Avery Glasser, to discuss cooperation on projects concerning speaker verification. A framework agreement was signed between FIT BUT and Agnitio.

- In March/April, BUT hosted Niko Brummer and Albert Strassheim from Agnitio South Africa (see also WP3 section). Niko Brummer held 2 widely attended seminars for BUT researchers, on system calibration and fusion, and new Matlab toolkit.

[3] `http://www.fit.vutbr.cz/research/vzamer/np`

3 Publications

Several papers were proposed to conferences and journals. According to the consortium agreement, the abstracts were sent to the MOBIO mailing list.

4 Miscellaneous

NONE.