



Distributed coding for video services

DISCOVER

Deliverable 6

Project dissemination – Version 1

Document description	
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1. INTRODUCTION

In addition to theoretical developments and practical demonstrations of Distributed Video Coding principles, one of the main objectives of DISCOVER is to disseminate the main findings of the consortium through adequate channels.

The objective of the present deliverable is to give a description of the main dissemination activities done in the first year of the DISCOVER project.

The document is organized as follows: in Section 2, the DISCOVER web page is described. In Section 3, the publications of the DISCOVER partners are presented with adequate references. In Section 4, other dissemination activities are presented. In Section 5, initial preparations for the DISCOVER workshop to be held at the end of the project are presented. Concluding remarks are given in Section 6.

2. DISCOVER WEB PAGE

The DISCOVER web page was set up at the very beginning of the project and has been one of the main sources of public dissemination for the objectives, activities and publications of the consortium. The web page is <http://www.discoverdvc.org/>. The information presented in the DISCOVER web page is:

Home

- Project description

The main objectives and goals of the project as described in the DISCOVER technical annex are presented.

- Partners list

Affiliations of partners and links to their corresponding web pages are presented.

- DVC references

The project is making a great effort to keep track of all relevant publications on DVC made worldwide. The main related publications with adequate references are presented. Every three months a DISCOVER partner is responsible to search and update all DVC publications.

- Partner's publications on DVC

All the partner publications on DVC published before and during the life of the project are presented.

- Public deliverables

Public deliverables generated by the consortium are linked in this section for dissemination purposes.

- Contact us

The e-mail address of the project coordinator is given for contact purposes.

External links

- IST – FET

The FET information web page is provided.

Internal use only

- Document register

This section is for internal use of the consortium members and allows access to all relevant documents, test sequences and software updates.

3. DISCOVER PUBLICATIONS

DISCOVER is very much committed to publish all the new research results obtained in all technical aspects of the project. This section presents all the publications of the partners during the first year of the project. Publications from the partners on DVC whose associated research has been done before the start of the project and have had an important impact on DISCOVER developments are also presented at the end of the section for completeness purposes. Note that all publications are paper conferences due to the still short life of the project. Efforts are under way to publish in selected journals. A great emphasis has been put to publish in the major image and video processing conferences. To this end, papers are grouped by conference to remark the importance of the contributions.

Conference publications

ACM International Workshop on Video Surveillance and Sensor Networks, Santa Barbara, CA, USA October 27, 2006.

- M. Ouaret, F. Dufaux, T. Ebrahimi, “Fusion-based multiview distributed video coding”.

International Conference on Image Processing (ICIP), Atlanta, USA, October 8-11, 2006.

- C. Brites, J. Ascenso, F. Pereira, “Studying temporal correlation noise modeling for pixel based Wyner-Ziv video coding”.
- J. Ascenso, C. Brites, F. Pereira, “Content adaptive Wyner-Ziv video coding driven by motion activity”.

- X. Artigas, L. Torres, “An approach to distributed video coding using 3D face models”.
- D. Kubasov, C. Guillemot, “Mesh-based motion-compensated interpolation for side information extraction in distributed video coding”.
- M. Maitre, C. Guillemot, Luce Morin, “3D scene modeling for distributed video coding”.

European Signal Processing Conference (EUSIPCO), Florence - Italy, September 2006.

- C. Brites, J. Ascenso, F. Pereira, “Feedback channel in pixel domain Wyner-Ziv video coding: myths and realities”.

International Society for Optical Engineering, SPIE Optics & Photonics, San Diego, California, USA, August 13-17, 2006.

- M. Ouaret, F. Dufaux, T. Ebrahimi, “On comparing JPEG2000 and intraframe AVC”.

International Conference on Signal Processing and Multimedia Applications (SIGMAP), Setúbal, Portugal, August 7–10, 2006.

- S. Klomp, Y. Vatis, J. Ostermann; “Side information interpolation with sub-pel motion compensation for Wyner-Ziv decoder”.

Nordic Signal Processing Symposium, (NORSIG), Reykjavik, Iceland, June 7-9, 2006.

- X. Artigas, E. Angeli, L. Torres, “Side information generation for multiview distributed video coding using a fusion approach”.

International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Toulouse, France, May 14-19, 2006.

- C. Brites, J. Ascenso, F. Pereira, “Improving transform domain Wyner-Ziv video coding performance”.
- M. Dalai, R. Leonardi, F. Pereira, “Improving turbo codec integration in pixel-domain distributed video coding”.
- X. Artigas, M. Tagliasacchi, L. Torres, S. Tubaro, “A proposal to suppress the training stage in a coset-based distributed video codec”.

Picture Coding Symposium (PCS), Beijing – China, April 24-26, 2006.

- C. Brites, J. Ascenso, F. Pereira, “Modeling correlation noise statistics at decoder for pixel based Wyner-Ziv video coding”.

Journal publications

IEEE Transactions on Signal Processing

- M. Dalai, R. Leonardi, “Approximation of One-Dimensional Digital Signals under the L^∞ Norm”, Volume 54B, pages 3111-3124, August. 2006.

IEEE Transactions on Image Processing

- M. Maitre, C. Guillemot, Luce Morin, “3D model based frame interpolation for distributed video coding”. Submitted for publication.

Partner publications whose associated research on DVC has been done before the start of the project and have had an important impact on DISCOVER developments are also presented here for completeness purposes.

International Symposium on Information Theory (ISIT), Adelaide, Australia, September 4-9, 2005.

M. Dalai, R. Leonardi: “Non-Prefix Free Codes for Constrained Sequences”.

IEEE International Conference on Image Processing (ICIP), Genoa, Italy, September 11-14, 2005.

X. Artigas, L. Torres, “Iterative generation of motion-compensated side information for distributed video coding”.

International Workshop on Very Low Bitrate Video Coding, Sardinia, Italy, September 15-16, 2005.

A. Trapanese, M. Tagliasacchi, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, “Improved correlation noise statistics modeling in frame-based pixel domain Wyner-Ziv video coding”.

L. Natário, C. Brites, J. Ascenso, F. Pereira, “Extrapolating side information for low-delay pixel-domain distributed video coding”.

A. Trapanese, M. Tagliasacchi, S. Tubaro, J. Ascenso, C. Brites, F. Pereira, “Embedding a block-based intra mode in frame-based pixel domain Wyner-Ziv video coding”.

IEEE International Conference on Advanced Video and Signal-Based Surveillance, Como, Italy, September 15-16, 2005.

J. Ascenso, C. Brites, F. Pereira, “Motion compensated refinement for low complexity pixel based distributed video coding”.

4. OTHER DISSEMINATION ACTIVITIES

In addition to conference and journal papers, other dissemination activities have taken place in DISCOVER. Although Deliverable D7, *External Liaisons*, will explain in detail standardization activities and contributions within DISCOVER, let us mention that DISCOVER partners always attend MPEG (Moving Picture Experts Group) and JPEG (Joint Photographic Experts Group) meetings. During these meetings, dissemination activities have been carried out through formal

presentations and conversations with MPEG and JPEG delegates. During the first year of DISCOVER, the following MPEG and JPEG meetings have been attended:

MPEG meetings attended:

- The 74th MPEG Meeting, Nice, 17–21 October 2005.
- The 75th MPEG Meeting, Bangkok, 16–20 January 2006.
- The 76th MPEG Meeting, Montreux, 3–7 April 2006.
- The 77th MPEG Meeting, Klagenfurt, 17–21 July 2006.

JPEG meetings attended

- The 37th JPEG meeting, Singapore, November 14-18, 2005.
- The 38th JPEG meeting, Cupertino, March 13-17, 2006.
- The 39th JPEG meeting, Perugia, July 10-14, 2006.

Other dissemination activities have been carried out through invited talks, plenary speeches and conference panels given and participated by DISCOVER partners on Distributed Video Coding; in this context, the DISCOVER project has been introduced and objectives presented.

Invited talks:

L. Torres, Codificación de imagen: pasado, presente y futuro. Universidad del País Vasco-Euskal Herriko Unibertsitatea. Bilbao. July 2006, (in Spanish).

L. Torres, “A tour to the past, present and future of video coding”. IEEE Distinguished Lecturer Program, Reykjavik, Iceland, June 6, 2006.

L. Torres “Sistemas de codificación de vídeo distribuidos”. Universidad de Granada. Granada. June 2006, (in Spanish).

L. Torres, “Distributed Video Coding: Applications and new technical proposals”. Purdue University, West Lafayette, USA, February 2006.

S. Klomp, “Distributed source and video coding”, Robert Bosch GmbH, Corporate Research, Hannover, November 2005.

F. Pereira, “Distributed Video Coding: Achievements and plans”. Purdue University, West Lafayette, USA, November 2005.

F. Pereira, “Distributed video coding - basics and trends”, Second MPEG Workshop on Future Directions in Video Compression, Nice – France, October 2005.

Conference panels:

Fernando Pereira and Joern Ostermann, Picture Coding: History and Future at Picture Coding Symposium, Beijing – China, April 24-26, 2006.

Fernando Pereira and Joern Ostermann, Picture Coding: Distributed Video Coding at Picture Coding Symposium, Beijing – China, April 24-26, 2006.

5. DISCOVER WORKSHOP

One very important dissemination activity is the DISCOVER workshop to be held at the end of the project. During the workshop, DISCOVER will present its main DVC research findings and other researchers active in similar or related fields will be also invited to attend and to present their work. In order to assure widespread dissemination, workshop proceedings will be published. The consortium has already started to plan this activity and is considering to hold the workshop in conjunction with the Picture Coding Symposium (PCS) which will be held in Lisbon hosted by IST, a DISCOVER partner. PCS is considered as one of the major image coding conferences in the world and this option may prove to be an excellent opportunity to widely widespread DISCOVER results.

The proposal of the DISCOVER workshop will be made at the review meeting to be done at Brussels October 17, 2006. Once the venue and dates of the workshop be accepted, The objectives, methodology, audience, speakers, etc., of the DISCOVER workshop will be carefully planned very well in advance with the contribution of all partners.

6. CONCLUSIONS

Dissemination is considered a very important activity in DISCOVER. The consortium has dedicated a strong effort to the set up of a project web site and to publish papers in very important conferences related to the field of image and video coding. During the year of DISCOVER activities, 15 conferences papers have been published which is believed to be quite remarkable due to the short life of the project. Other dissemination activities mainly related to invited speeches and round table panels have also been carried out. Efforts are already underway to prepare the DISCOVER workshop at the end of the project.