

TELESUN - A world wide multimedia TELEteaching System for Universities

Coordinator : Université Joseph Fourier, Grenoble France (Pascal Sicard)

OBJECTIVES:

- Implementation of a teleteaching multimedia system for universities based on Internet and high performance communication tools.
 - Master level courses modelisation, production and diffusion.
 - System behaviour studies and performance analysis through different platforms.
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ACTIVITIES:

- The project presentation and the main results (deliverable, lectures access ...) can be obtained at the following url: **<http://www-telesun.imag.fr>**
 - The co-operation is conducted on six sites, three located in Africa (Cameroon, Morocco, Tunisia) and the three others in Europe (Belgium, France).
 - Every partner is dedicated to work on one of the following parts of the project:
 - A virtual Video Cassette Recorder for real-time playback of audio and video clips.
 - MMS base extended to different multimedia streams.
 - Design and implementation of a distributed test and knowledge evaluation application.
 - Design and implementation of mechanisms to assist the selection and the administration control of the appropriate communications elements.
 - Implementation of remote or local image processing.
 - Design and implementation of secure procedures to handle confidential data like examination procedures and grading.
 - With the designed environment each university will offer a teleteaching course at the master level in accordance with the following pedagogical process:
 - A self-teaching phase. (www and other developed tools): Students can access text and still illustrations through a World Wide Web (WWW) client interface.
 - A tele-consultancy phase. (mailing system, white board ...): Students can set individual appointment with the lecturer in charge of the course by means of a mailing system. They will then use a white board for interactive questioning, answering and sketching.
 - A class phase.(teleconferencing ...): The lecturer is conducting a teleconferencing with all of the students taking the course.
 - A phase of remote test and knowledge evaluation (with developed tools)
 - Platform exploitation in the local and the international context.
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EXPECTED RESULTS:

- **SCIENTIFIC-TECHNICAL**

- A complete and adaptable teleteaching environment over the project partners.
- It is expected that the project will contribute to:
 - an efficient use and exploitation of the new communication technologies and multimedia concepts.
 - increase the co-operation between the different partners.
- The teleteaching platforms are installed in the 6 sites. Every partner has today a Internet connection.
- The multimedia teleteaching course (in HTML with video clips) corresponding to a self-teaching phase have been implemented (Security, Processor Architecture, Distributed Applications, Imaging processing, Networks Architecture, Aerial Manufacturing).
- The specification and implementation phases of differents teleteaching applications are finished.

- **DELIVERABLES**

Coordinateur : P. Sicard , Projet Européen INCO 950363 *TELESUN: a worldwide multimedia TELEteaching System for Universities* .

- Workpackage 1: « Etude de faisabilité - Enseignements proposés - Thématiques de recherches » - Juin 1996
- Workpackage 2: « Mise en place des plates formes de télé-enseignement - Définitions et élaborations des télé-enseignements - Documents électroniques correspondants aux télé-enseignements » - Janvier 97
- Workpackage 3: "Définitions et spécifications des applications impliquées dans le télé-enseignement : Serveur vidéo temps-réel sur des réseaux IP et ATM, Système de communication pour automatismes, Outil d'évaluation de connaissance à distance, Outil d'aide au choix des communications, Outil d'aide au télé-enseignement du traitement d'image, Sécurisation du télé-enseignement » , juin 1997.
- Workpackage 4: "Implémentation des applications impliquées dans le télé-enseignement » , mars 1998.

FOLLOW-UP:

- The next phase will take place within the last three months of the project. Each of the pilot universities will offer a lecture at the master (bac+5) level to other universities as multimedia material using the pedagogical process (self-teaching, tele-consultancy, tele-conferencing, test and knowledge evaluation) and developed tools during the project.
- Within this experimentation, we will study the communication infrastructure impacts on the developed applications.

PUBLICATIONS:

- D. Conil, J.F. Guillaud et P. Sicard. *Une plate-forme multimédia de télé-enseignement sur ATM* . PRC-GdR ANM - 4eme Symposium Architectures Nouvelles de Machines - Rennes 13-14 décembre 95
- D. Conil, J.F. Guillaud and P. Sicard. *A video Traffic Behavior Study on an ATM LAN Platform..* First Workshop on ATM Traffic Management - WATM'95- IFIP, WG.6.2 Broadband Communication, Paris, 6-8 December 1995

- S. E. Kannat, D. Conil, P. Sicard, "*Une expérience de télé-enseignement pour autoroute de l'information*", CETSIS-EEA'97: Premier colloque sur l'enseignement des technologies et des sciences de l'information et des systèmes, 20 et 21 novembre 1997, Paris.
- * S. E. Kannat, D. Conil, P. Sicard, "*A distributed Multimedia teleteaching system for universities*" WCCEE'98: The 7th world Conference on Continuing Engineering Education, April 1998, Torino, Italy.
- * S. E. Kannat, D. Conil, P. Sicard, "*A Study of a Teleteaching Application on an ATM LAN Platform*", ATM Developments'98, march 1998, Rennes, France.
- S. E. Kannat, D. Conil, P. Sicard, « *Telesun project: distributed multimedia teleteaching system for universities* », EUROAMERITEL '98 Conference, June 8th - 10th Santiago, Chile
- B. Maaref, S. Nasri, P. Sicard. *Application Programming « Interface Framework for Distributed Environment based on Object-Oriented Communications. »* Communication Networks and Distributed Systems Modeling and Simulation Conference - Phoenix, Arizona, USA, 12-15 January 1997
- Brahim Maaref, Salem Nasri, Pascal Sicard, "*Performance Evaluation of MMS/ATM implementation*", 2nd IEEE International Workshop on Factory Communication Systems, WFCS'97, Barcelona, Spain, October 1-3, 1997.
- Brahim Maaref, Salem Nasri, Pascal Sicard, "*Communication System for Multimedia Applications in Industrial Automation*", IEEE International Symposium on Industrial Electronics, ISIE'97, Guimaraes, Portugal, July 7-11, 1997.
- Brahim Maaref, Salem Nasri, Pascal Sicard, "*An Architecture for Flexible High Level Communication Services*", 1st IEEE International Conference on ATM, ICATM'98, June 22 - 24. 1998, Colmar, France, June 22 - 24. 1998
- D. Pilar, J-M Kabasele, M. Lobelle, H. Olivie, « *Multimedia Integration into an Engineering Course: a lesson learned* », 4th International conference on Computer Aided Engineering Education, Krakow, Poland sept 11-13 1997
- J-M Kabasele, « *Specifying security in a composite system* », ISW'97, LNCS 1396, Okamoto Davida Mambo(eds), 1997
- * J-M Kabasele, M. Lobelle, « *Threats in Tele-teaching* », The 7th world Conference on Continuing Engineering Education, 10-13 April 1998, Torino, Italy.
- J-M Kabasele, « *Toward an Object-Based Access Control Model* », IFIP-SEC, Vienna 1998
- Etienne Loupias, Stephane Bres and Jean-Michel Jolion, « *Automatic selection of illustrations for teaching image processing* », 14th IAPR Int. Conf. on Pattern Recognition, Brisbane, Aout 1998.
- * Etienne Loupias, Stephane Bres and Jean-Michel Jolion, « *Process-based selection of images for teleteaching system* », 5th Int. Workshop on Systems, Signals and Image Processing, June 3-5 1998, Zagreb, Croatie.
- Etienne Loupias, Stephane Bres and Jean-Michel Jolion, « *Construction automatique d'illustrations pour l'enseignement du traitement d'images* », ORASIS, Sophia-Antipolis, 6-10 octobre 1997.
- * R. Mrabet and M.D. El Kettani, « *EDILE : Exam Distance Learning Environment* », 7th World Conference on Continuing Engineering Education- 10-13 Avril 1998, Torino, Italy.

***: The most important papers published relative to the content of project**

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