



European Project
(FP6 / IST / FET)



HAPTEX

HAPtic sensing of virtual TEXTiles

Project-Nr.:

IST-6549 (12/04 – 11/07)

Project Officer:

Dr. Walter Van de Velde



Information Society
Technologies

Project Coordinator:

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About HAPTEX

HAPTEX is a research project on multimodal perception of textiles in virtual environments. Its main goal is to develop a complete Virtual Reality System for visuo-haptic interaction with virtual textiles.

The HAPTEX System will display a realistic 3D representation of the simulated virtual textile. Users of the system will be able to "feel" the displayed virtual textile through a novel haptic/tactile interface. The project will provide several demonstrators to test different integration phases of the overall system.

We expect HAPTEX to investigate how far it is possible to provide a user with a completely reliable sense of fabric through a virtual experience. The project has many applications for the textile industry, but the main impact will be the significant advancement of multimodal interaction tools, techniques and know-how.

Partners

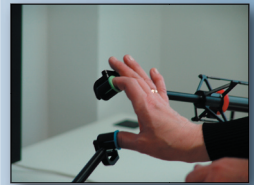
Organization	Contact	Country
MIRALab University of Geneva	Prof. Dr. Nadia Magenat-Thalmann	Switzerland
UHAN - WelfenLab University of Hanover	Prof. Dr. Franz-Erich Wolter	Germany
SWL - SmartWearLab Tampere University of Technology	Dr. Harriet Meinander	Finland
PERCRO Laboratory Scuola Superiore Sant'Anna	P.Eng Fabio Salsedo	Italy
UNEXE - Biomedical Physics Group University of Exeter	Dr. Ian Summers	United Kingdom

Work Package Distribution

ID	Task description	Leader	Website
WP1	<i>Requirements analysis, architectural design and physical based models</i>	MIRALab	www.miralab.ch
WP2	<i>Research and development of the haptic renderer</i>	UHAN	www.gdv.uni-hannover.de
WP3	<i>Measurement of the textile properties and protocol definition</i>	SWL	www.swl.tut.fi
WP4	<i>Development of the complete haptic interface hardware</i>	PERCRO	www.percro.org
WP5	<i>Multimodal integration and validation</i>	UNEXE	newton.ex.ac.uk/research
WP6	<i>Management and dissemination</i>	MIRALab	www.miralab.ch

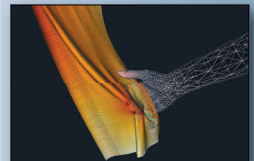
Goals

- Fundamental research in the haptics domain
- Integration of force feedback & tactile perception
- Physical simulation of textiles in real time
- Synchronization of visual and haptic rendering



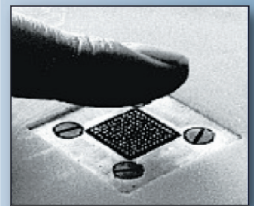
Research

- Mechanical models for physical-based simulation in real-time
- From physical parameters to realistic visualization and haptic perception of textiles
- Haptic rendering algorithms
- Novel haptic interfaces for multi-point interaction



Applications

- Online-purchase of clothes
- Entertainment - and textile industry
- Simulations with integrated haptic feedback



<http://haptex.miralab.unige.ch/>