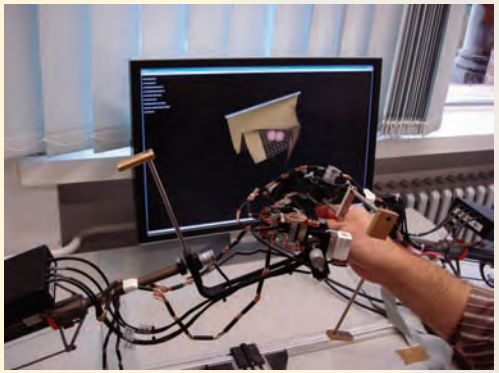
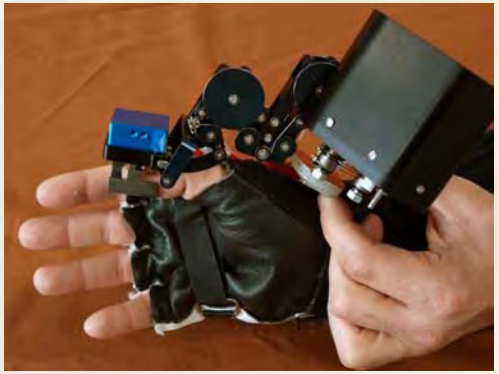
HAPTEX Newsletter (2007/02)

About HAPTEX

The project “HAPtic sensing of virtual TEXtiles” (HAPTEX) is a European Research Project on multimodal perception of textiles in virtual environments. Its main goal was to develop a complete virtual reality system for visuo-haptic interaction with virtual textiles. The project ended in November 2007 and was coordinated by MIRALab, University of Geneva, under the direction of Prof. Dr. Nadia Magnenat-Thalmann (thalmann@miralab.unige.ch).

The HAPTEX project has produced a workable system for the presentation of virtual textiles, with successful integration of a wide range of hardware and software components. Experimental results show a good correspondence between assessments of the virtual textiles from the HAPTEX system and assessments of the corresponding real textiles, providing evidence that the virtual system is delivering appropriate cues to the user. The HAPTEX System has been implemented in two versions (DL4 and DL5), depicted by the picture below (left and right, respectively).





Building on the success of the HAPTEX project, the members of the HAPTEX consortium have plans for further projects to continue the development of virtual systems for textiles and other deformable objects, with the aid of national or international funding.

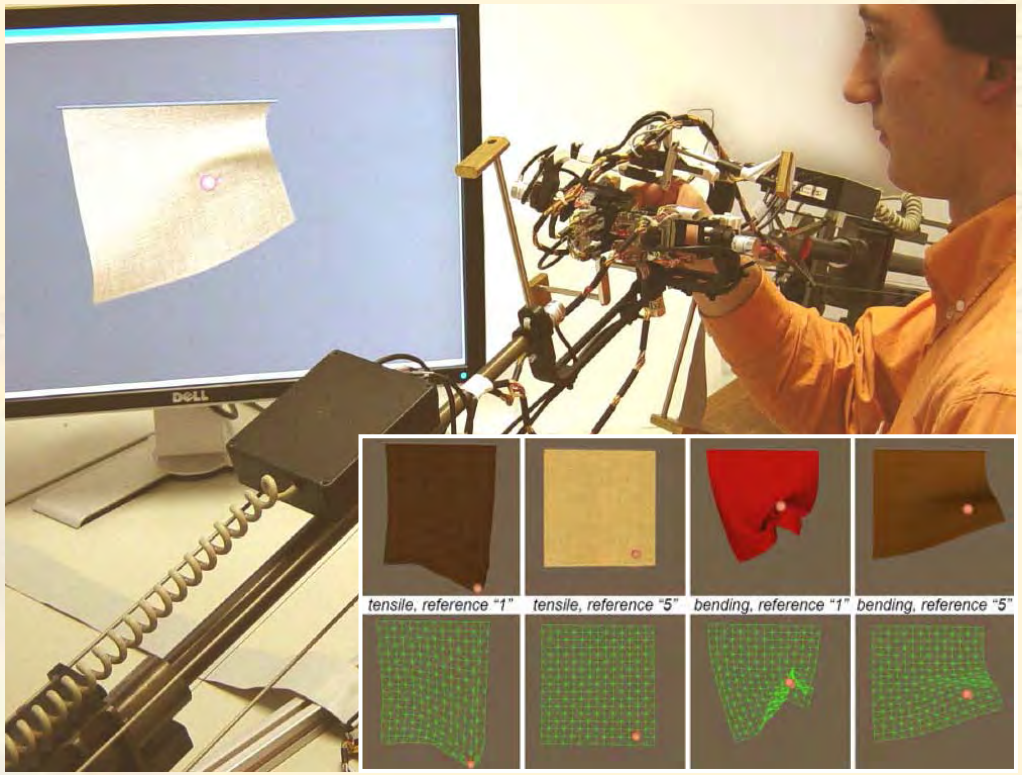
Final Review

The achievements of the HAPTEX Project will be evaluated by its funding agency and external experts through a final project review taking place in Hanover, Germany, in January 2008. For more information, please contact the project coordinator, Prof. Nadia Magnenat-Thalmann (thalmann@miralab.unige.ch) or visit the project website:

http://haptex.miralab.unige.ch

Progress Overview

The evaluation of the HAPTEX System consisted in manipulating virtual textiles using different development levels (e.g. DL4b). Various properties of virtual textiles such as tensile stiffness, surface roughness/friction, and bending stiffness/weight/drapeability were rated. The figure below shows screen shots for some of the manipulations.



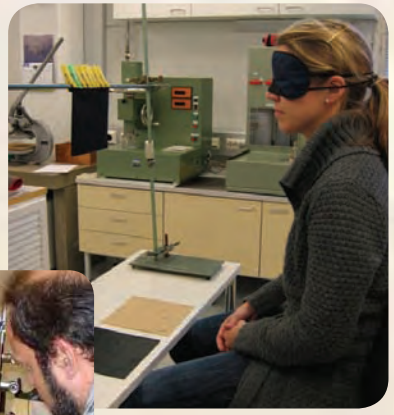
The HAPTEX System can deliver appropriate cues to is human operator. The DL4 interface, however, has various non-ideal aspects, some of which result in significant limitations to the user. For example, the system is not always easy to navigate and some manipulatory movements are difficult. However, there is every reason to believe that such problems will be solved by future work (based on the DL5 system, for example). For more information see deliverable D5.2.

All deliverables submitted so far with a “public” dissemination level can be downloaded from: http://haptex.miralab.unige.ch/Documents_All.html#Deliverables

HAPTEX'07 Workshop at CyberWorlds 2007

Hanover, Germany (October 24, 2007)

Subjective Evaluation of Textiles



Recent Publications

- M. Fontana, S. Marcheschi, F. Tarri, F. Salsedo, M. Bergamasco, D. Allerkamp, G. Böttcher, F.-E. Wolter, A. C. Brady, J. Qu, I. R. Summers, "**Integrating Force and Tactile Rendering Into a Single VR System**", Proc. 2007 Int. Conference on Cyberworlds, HAPTEX'07 Workshop, IEEE Computer Society, pp. 277-284, October 2007.
- C. Luible, M. Varheenmaa, N. Magnenat-Thalmann, H. Meinander, "**Subjective fabric evaluation**", Proc. 2007 Int. Conference on Cyberworlds, HAPTEX'07 Workshop, IEEE Computer Society, pp. 285-291, October 2007.
- G. Böttcher, D. Allerkamp, F.-E. Wolter, "**Virtual reality systems modelling haptic two-finger contact with deformable physical surfaces**", Proc. 2007 Int. Conference on Cyberworlds, HAPTEX'07 Workshop, IEEE Computer Society, pp. 292-299, October 2007.
- P. Volino, N. Magnenat-Thalmann, "**Accurate Anisotropic Bending Stiffness on Particle Grids**", Proc. 2007 Int. Conference on Cyberworlds, HAPTEX'07 Workshop, IEEE Computer Society, pp. 300-307, October 2007.
- N. Peinecke, D. Allerkamp, F.-E. Wolter, "**Generating Tactile Textures using Periodicity Analysis**", Proc. 2007 Int. Conference on Cyberworlds, HAPTEX'07 Workshop, IEEE Computer Society, pp. 308-313, October 2007.

HAPTEX Project Details

"HAPtic sensing of virtual TEXtiles"

Project Nr.:
IST-6549 (EU-FP6-IST)
Project Duration:
01.12.2004-30.11.2007 (36 months)
Funding agency:
Future and Emerging Technologies (FET)
Project Website:
http://haptex.miralab.unige.ch

Coordinator Contact Details

For publishable results, images or any information concerning HAPTEX, please contact the coordinator of the project:

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Information Society Technologies