

Innovative Tools for Interactive Learning

Oliver Kraus, Harald Neuffer, Thomas Gentner, Herbert Braisz, Martin Padeffke, Alexander Graßmann
University of Erlangen-Nuremberg
Institute for Computer-Aided Circuit Design
Prof. Dr. W. H. Glauert
Cauerstrasse 6, 91058 Erlangen
Phone: x49 9131 85286-90 Fax: x49 9131 85286-99
vhdl@lrs.e-technik.uni-erlangen.de
<http://www.e-technik.uni-erlangen.de/LRS.html>
GERMANY

Poster Description

The activities of our institute cover the fields of digital, analogue design and test. For these fields we developed an interactive learning system.

- The VHDL tutorial presents a course with an implemented online help system and a VHDL glossary.
- An editor for moderated teleworking was developed. The editor allows a user to invite other users to an open document. Several user authorizations can be set by the owner of the document to restrict access.
- There is a hardware interface for a field programmable gate array. We use these FPGAs as hardware resource for the designs from our VHDL tutorial.
- For students in the first year of electrical engineering, we developed tools for learning analysis of electrical circuits. This module uses links to get detailed information for students with little experience. The tool is divided into three parts: graphical input of an electrical netlist, symbolic analysis of the originating linear equations and displaying the results.

References

1. Heinkel, U.; Ein interaktives Lernsystem für den Entwurf integrierter Schaltungen mit VHDL. 2. Statusseminar "MIMOSYS", Siemens-Nixdorf A.G., Paderborn, Dezember 1997.
2. Heinkel, U.; Wahl, M.; Interaktiv Lehren - Interaktiv Lernen. 8. E.I.S. Workshop Hamburg, 1997
3. Heinkel, U.; Padeffke, M.; Kraus, O.; Frickel, J.: Virtual Classroom - An interactive teaching system for the design of integrated circuits. Australasian Journal of Engineering Education Vol.7, No.2, 1997
4. Frickel, J.; Heinkel, U.; Padeffke, M.; Glauert, W.H.: A Hypertext Based Interactive Teaching System for Designing Integrated Circuits with VHDL. 3rd East-West Congress on Engineering Education, Gdynia, Polen, September 1996
5. Heinkel, U.; Padeffke, M.; Glauert, W. H.: VHDL-Online - A Hypertext Based Interactive Teaching System. VHDL-Forum for CAD in Europe, Dresden, May 1996
6. Heinkel, U.; Padeffke, M.; Neuffer, H.: World-Wide-Web Tutorial. VHDL-Forum for CAD in Europe, Dresden, May 1996
7. Antchev, K.; Luhtalati, M.; Multisilta, J.; Pohjolainen, S.; Suomela, K.: A WWW Learning Environment for Mathematics. 4th International WWW Conference, Boston 1995
8. Ashenden, Peter J.: The Designers Guide to VHDL. Morgan Kaufman Publishers, San Francisco, CA, 1995
9. Hubler, A.W.; Assad, A.M.: CyberProf: an Intelligent Human-Computer Interface for Asynchronous Wide-area Training and Teaching. 4th International WWW Conference, Boston 1995
10. www.vhdl-online.de