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ON PERSONALISED LEARNING IN THE VIRTUAL UNIVERSITY

The Virtual University (VU) offers a new learning environment for distance education, implementing all the functionality of a conventional university to students using computers.

Learning appears flexible, individual and need oriented. Students can work independently from time and space at their own learning speed.

Communication networks are the basis for message exchange, tutoring, and the distribution of learning material. To make access to these materials more comfortable and individual, the VU offers several tools to the students.

Biographies

Professor Dr. Dr.-Ing. Firoz Kaderali, studied communications technology at the TH Darmstadt, professor for Communication Systems at the FernUniversität Hagen, director of the FTK – Forschungsinstitut für Telekommunikation (Research Institute for Telecommunications) in Dortmund, Germany.

Dipl.-Inform. Thomas Demuth is a member of the scientific staff at the Department of Communication Systems since 1996. After studying computer science and attaining his Dipl.-Inform. degree in 1993 he worked for EDS, managing information technology projects. His fields of research are security and privacy in open networks, especially the World Wide Web.

Dipl.-Ing. Thomas Paleschke studied electrical engineering at the University of Dortmund and received his Dipl.-Ing. degree in 1996. Since then he is a member of the scientific staff at the Department of Communication Systems and is involved in the fields of internetworking and multicasting in datagram networks, particularly today's Internet.

The Offline Navigator

The "**Offline Navigator**" is a tool which minimises costs and reduces the time necessary for navigation and selection of materials for the students. The **Offline Navigator** works in several online (Figure 2 red background) and offline (green background) phases. The first online step in which students get an individual course and information list is followed by an offline phase in which

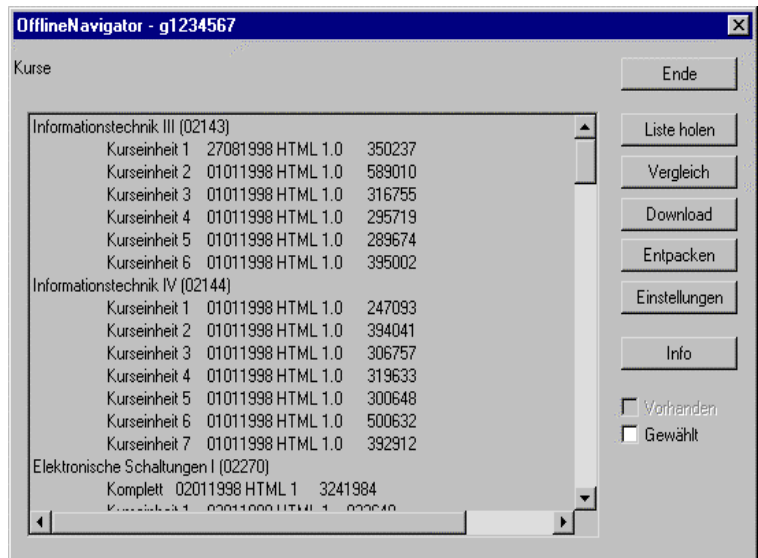


Figure 1: Screenshot

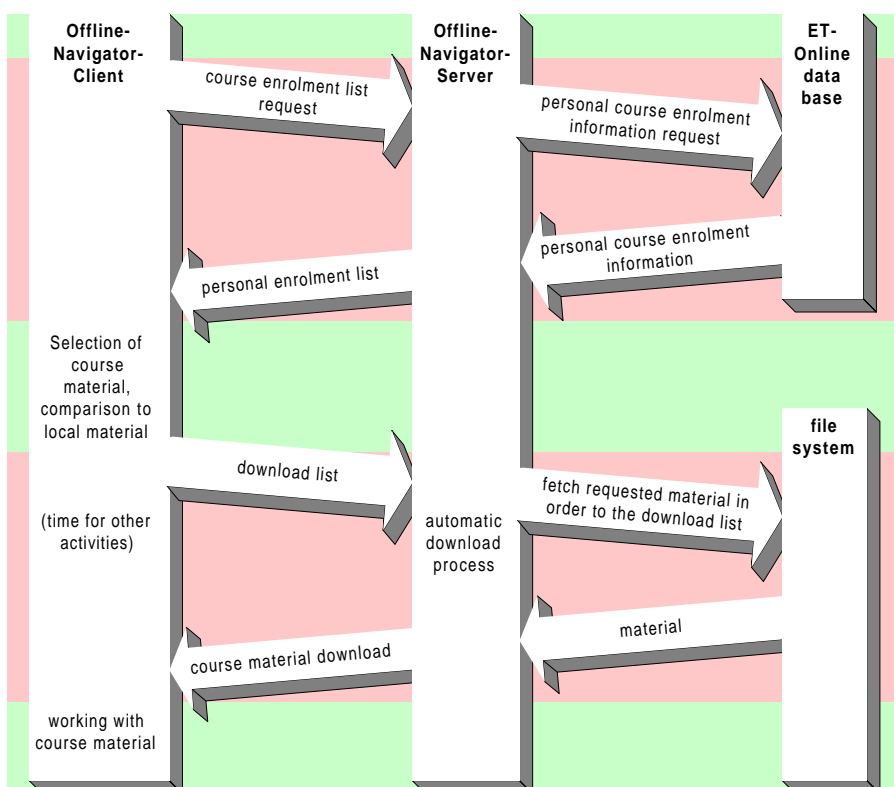


Figure 2: On- and Offline Phases

they can select in arbitrary time the learning material to be downloaded there after. Then the **Offline Navigator** starts an automatic download process storing the learning units on the students' computer. Finally it installs the units and required software offline. As a result of this mode of operation transmission costs are reduced and the distribution of learning units is facilitated.

Another advantage of the **Offline Navigator** is the simple maintenance because it is programmed in the Java programming language which is platform and system independent.

ET-Online-Assistant

The **ET-Online-Assistant** provides personal information to the students and allows editing and storing of individual data. An authentication mechanism protects the sensible data from unauthorised access.

In detail the **ET-Online-Assistant** provides the following services:

Personal data: Each student can edit information like name, address, register number, etc.

Exercise results: A mouse-click shows the actual results of exercises, which each course lecturer writes to the **ET-Online Data Base** using a WWW interface.

Intelligent Bookmarks: Improved managing of bookmarks.

Personal dates: The ET-Online data base contains a lot of dates, which are naturally not all relevant to each user. So the personal dates function filters all the dates with regard to the authorised individual and offers them

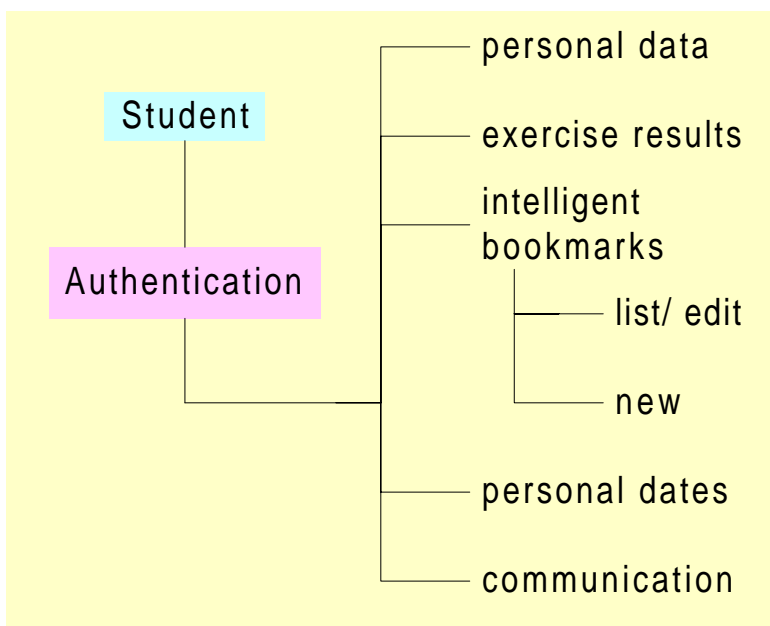


Figure 3: ET-Online-Assistant Overview

in a structured way for convenient use. Such individual dates could be course dependent events, seminar dates, dates of practical training and examinations. The whole number of dates are listed on demand only.

Communication: This function provides facilities for communication with the teaching

staff relevant to enrolled courses only. All other information is sorted out allowing a clear representation. These kinds of communication facilities are email addresses, chat channels, telephone numbers, video conference addresses or numbers, course or topic related WWW or newsgroup addresses.

Intelligent Bookmarks (IB)

Improvements compared with common Bookmarks:

- complete frame structure with actual content is stored
- **IBs** can be set, edited and deleted independently from terminal location and kind of browser (just requires JavaScript)
- personal comments can be added to every **IB**

The **Intelligent Bookmark** system comprises of two primary functional components, marked by strong colours in the Figure besides:

The first one is a JavaScript script being executed on students' browser

client for setting an **IB**. It analyses possible frame structures with its actual content pages, compresses the information in a single **IB** string and sends it to the ET-Online server.

The second functional component is a PHP/FI Script running on server side. It creates several temporary frame set definition files from the **IB** string by making copies of the original frame set definition files and replacing the included content page URLs with the appropriate ones taken from the **IB** string.

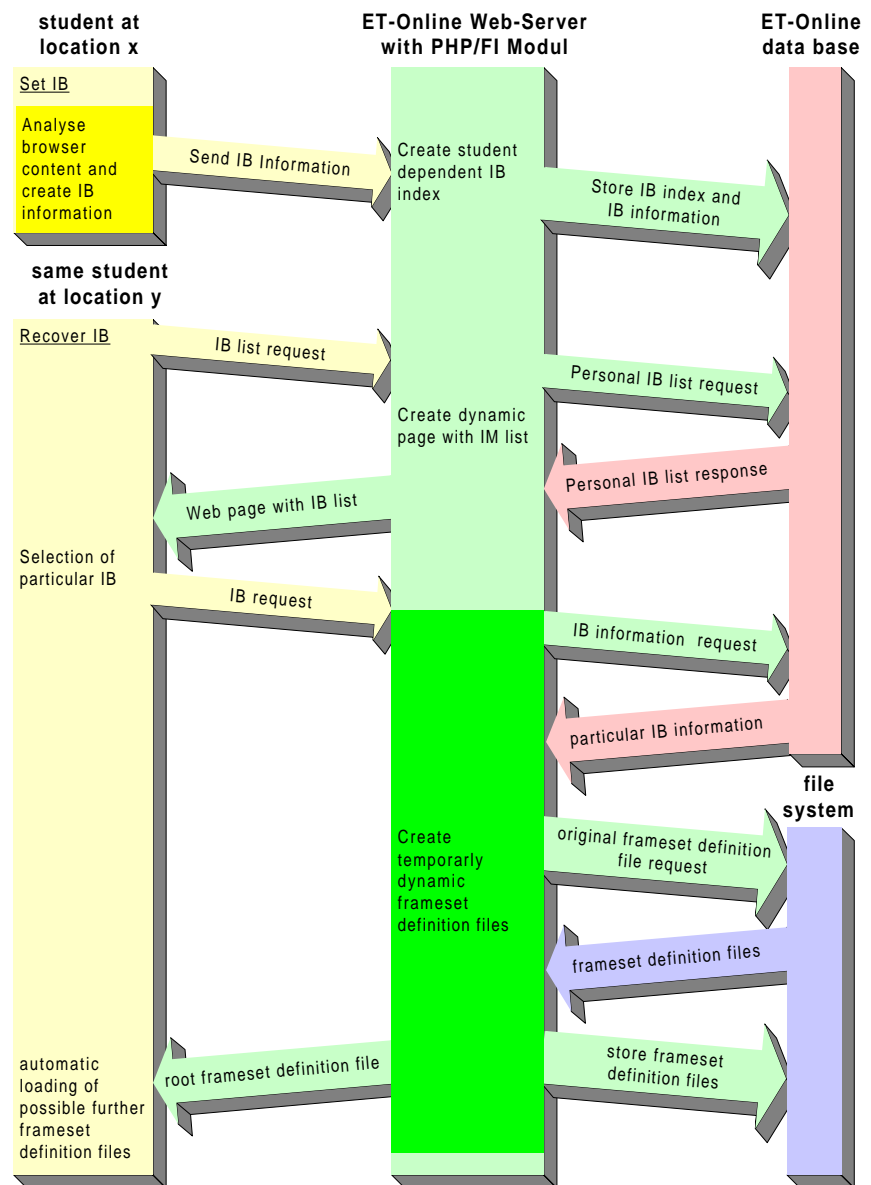


Figure 4: Intelligent Bookmarks