

**Promoting Accessible Social Dialogue and Innovative
Training Practices:
Towards an Information Society for All**

**SDV-NETJOB
Grant Agreement ref. VS/2001/0402**

PROJECT FINAL REPORT

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ANNEX 5

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**WP5
ANNEX 5**

**e-LEARNING
REQUIREMENTS &
SPECIFICATIONS**

This report is also available online at
http://www.socialdialogue.net/en/en_results.htm

Abstract:

This report describes the method for development of an accessible, user-friendly web environment to support the e-Learning course "Disability for Managers", which is offered to Company Executives and Human Resource Managers on the Web site of the SDV-NetJob project at:

<http://www.socialdialogue.net/clearn/login.htm>

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1 Objectives

The objective of this work package is to develop an accessible, user-friendly web environment to support e-Learning (electronic distribution of courseware) which is used as a training tool. The tool is used for the delivery of the course "Disability for Managers", which is part of the Work Package 5 of the SDV-NetJob project.

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2 Description of Work

The environment to promote the e-Learning course “Disability for Managers” is accessible through the Vortal and is developed as follows:

User group selection - Identification of Requirements: It is anticipated that customisation of the environment will be required to meet the needs of specific user groups. The main intended target groups will be:

- Company Chief Executive Officers (CEOs)
- Human Resource Managers

Specific Requirements are derived to refine the features of the EWORX e-Learning system, a web-based asynchronous learning environment. The new requirements will also lead to the development of moderated electronic communities, which, in addition to learning goals, will enable participants to maintain communication channels with peers and the course tutor/moderator.

Software Customisation: Based on the identified requirements, the software is customised to accommodate the needs of the specific user groups, including compliance with the Web Accessibility Initiative (WAI) Guidelines.

Courseware Development: The courseware which is delivered in the verification phase will be partly based on existing content which will be contributed by INTERFACE and will be expanded and customised to meet the specific target group needs.

Verification Activities - Pilot Course Deployment: Two pilot courses are implemented during the verification phase of the system. Announcements of the courses are posted on the Social Dialogue Vortal e-learning area and interested users are able to enrol (by providing an email address and a self-selected password) and take the courses.

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3 Target Groups and Beneficiaries

The main target groups of the eLearning are company CEOs and Human Resource Managers. For ease of use, the courseware shall be delivered in two courses, whereby the longer and more detailed course is offered to HR managers and the shorter, more focused course is offered to CEOs. This division of the full courseware into two “streams” is intended to take into account both the very limited time, which CEOs can dedicate to the subject, and the more detailed information, which HR managers require to enable them to tackle the issues they are exposed to in a practical way.

Completion of the course is achieved when all modules have been studied and the CEO or HR manager fills in the course feedback questionnaire and returns it to the course moderator.

The indirect beneficiaries of this course will primarily be those disabled people who the company already employs, or disabled people who the company may seek to hire. The course will also help companies create strategies and actions for keeping workers in employment if they should acquire a disability during their working life.

A secondary target group of the course will be those persons who are not CEOs or HR managers, who nevertheless study the materials as a means of gathering information about the issues concerning disability at the workplace. These persons may include the staff of Employers Organisations and Trade Unions, public administrations, including employment agencies, IT-training centres, Non-Governmental Organizations and so on.



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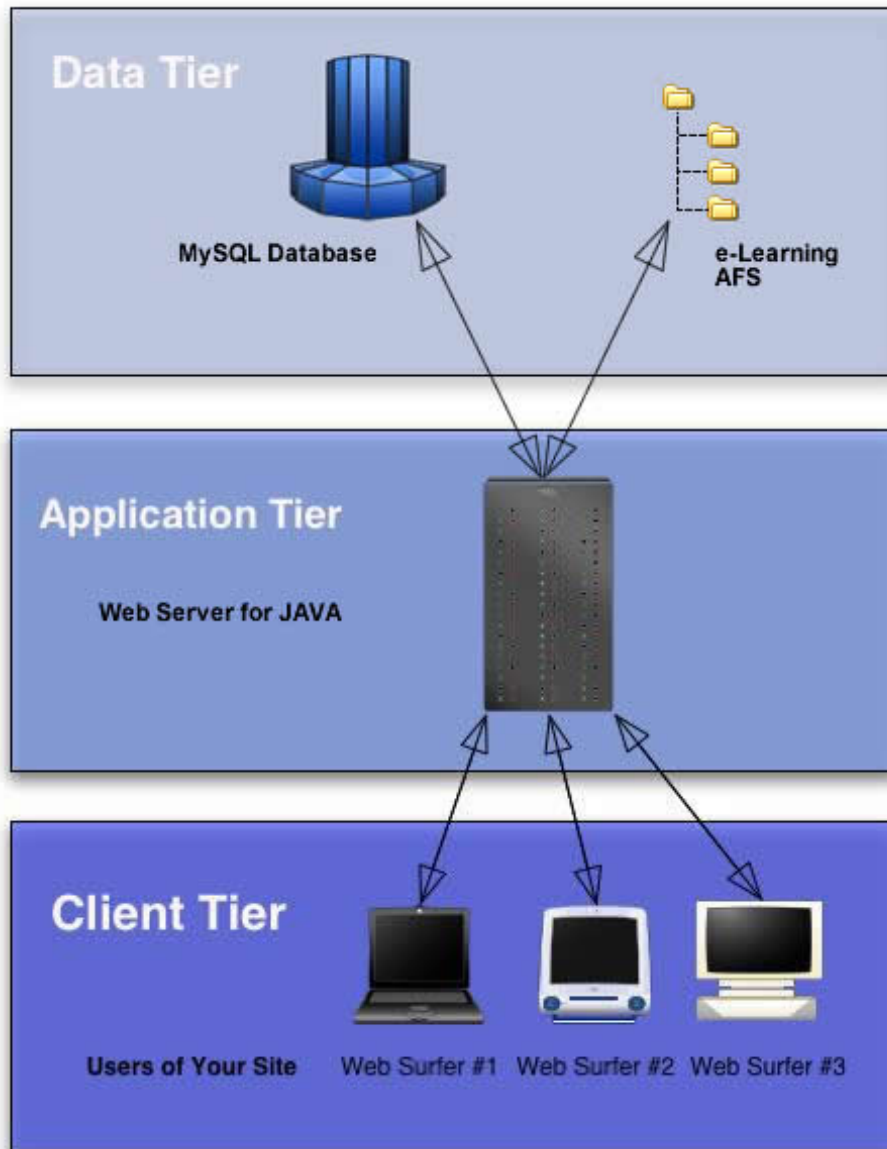
4 SDV e-Learning Technical Documentation

One of the most successful modern software methodologies is the N-Tier approach. It is the “weapon of choice” for the vast majority of modern cutting-edge software applications and has proved its value in many fields, varying from minimizing the development time to fast and reliable maintenance of thousand or millions of code lines, written even in legacy systems.

The SDV e-Learning platform is based on the 3-Tier version. This methodology defines 3 discrete layers of abstraction, which are optimised for web-based application development, the Data Tier, the Application Tier and the Client Tier.

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**Figure 1:** The 3 - Tier Development Approach

4.1 Technologies

Technologies used for the e-Learning implementation in each Tier are:

- **Client Tier:** Thin client technologies including mainly Internet Browsers that support Java (Java applets), JavaScript (and other ECMA compliant technologies).
- **Application Tier:** Middle Tier technologies including Application Servers (Apache Tomcat) that support well-established open source standards like JavaBeans (JB), JavaEnterpriseBeans (EJB) and JavaServerPages (JSP) technologies.
- **Data Tier:** Relational Databases that support well-established interfaces like SQL query language and tabular data modelling. SDV e-Learning comes with the open source MySql relational database.

4.2 Implementation Details & Examples

- **Client Tier**
At the Client Layer, the thin client (mainly an Internet Browser) accesses the SDV e-Learning application through standard protocols.
- **Application Tier**
At the Application Tier, the logic is being implemented in JavaBeans, which run in the context of the Apache Tomcat application server. The JavaBeans communicate with the Data Tier through the open standard technology of the JDBC Driver for the MySql Database server, that allows them to execute full SQL queries against the SDV e-Learning database schema (which includes the database objects like tables, functions, triggers etc.)
- **Data Tier**
At the Data Tier, the SDV e-Learning uses 2 technologies for data storage and manipulation.

4.3 MySql Relational Database

The Lesson Entity is being represented in the database Relational Model by the "lessons" table. Its unique identifier is the "lesson_id", implemented as the first column of the table with a data type of integer (int)

Name	Type
lesson_id	int
title	text
description	text
purpose	text
date_start	date
date_end	date
les_cat_id	int
max_student	int

Figure 2: "lesson" Table Design

The Student entity is being represented in the Relational Model by the "member" table. Its unique identifier is the "id", implemented as the first column of the table with a data type of integer (int).

Name	Type
id	int
login	varchar
passwd	varchar
lastname	text
firstname	text
email	text
phone	text
member_type	int
address	text
specialty	int
specialty_p	text
age	int

Figure 3: "student" Table Design

The relation between the 2 entities (lesson & student) is being represented by the table "login_times" where the column lesson_id is a foreign key to the lesson_id column of the "lesson" table and the student_id is a foreign key to the id column of the "student" table.

Name	Type
student_id	int
lesson_id	int
times	int

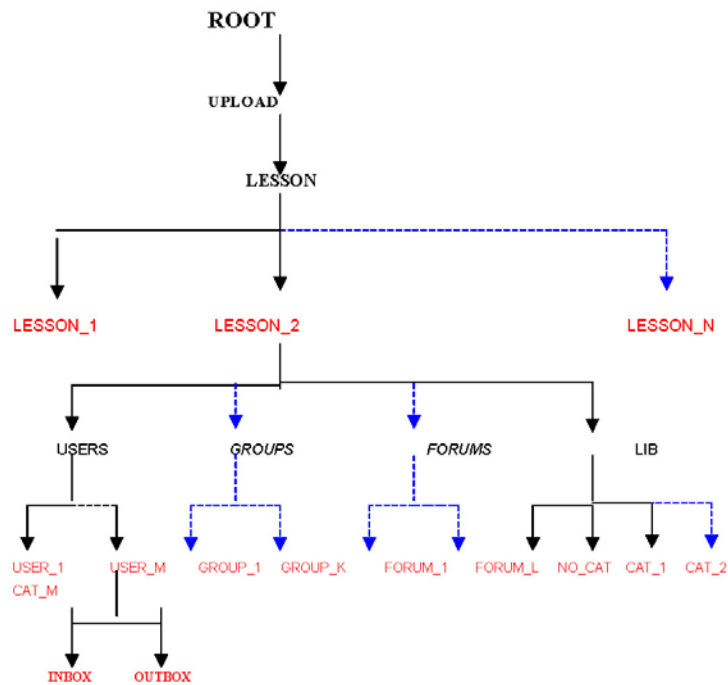
Figure 4: "login_times" Table Design

4.4 SDV e-Learning Application File System (AFS)

The SDV e-Learning is the module that provides the platform with a "virtual" File System. That means that it exposes all the necessary functions for storing, retrieving, copying, moving, deleting and versioning of every binary material that is being uploaded into the application in a "tree-like" structure. Physically, all the binary materials are stored in the underlying file system of the application server.

4.5 Application File System (AFS)

Structure Diagram



Conventions:

- The tutor is treated as a simple user
- AFS doesn't have to be aware of the ownership of the materials inside a forum

Not provided for the SDV e-Learning version

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5 Certificate of Participation

On completing the e-Learning course, executives and managers are asked to fill in an on-line "Feedback Questionnaire", which is the final module of the course. When this questionnaire is filled in and sent to SDnet, the results are automatically inserted into a database. The participant then sees a screen notifying him/her that the questionnaire has been successfully returned. The participant is invited to request a *Certificate of Participation* if they wish. The participant's name is added by the course manager and the Certificate is forwarded as a password-protected file in PDF format – ready for printing.



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CERTIFICATE OF PARTICIPATION

.....
.....
*has participated in the
e-Learning Course*

*Introduction to
Disability for Managers
Offered by SDV-NetJob, 2004*

The e-learning course is designed to inspire CEOs and Human Resource Managers to assess and adapt their workforce policies and practices to be more open to disabled people. The course aims to help enterprises realise the European Union objective of a more spacious and diverse labour market - and at the same time make better use of the whole spectrum of talents in the labour market by hiring, training and retaining workers in the best possible way.

This course was produced within the framework of the Project "SDV-NetJob: Promoting Accessible Social Dialogue and Innovative Training Practices. Towards an Information Society for All", Grant no. VS/2001/0402 from the European Social Funds Innovative Measures Programme 2001 - 2003, Article 6 "Adaptation to the New Economy within the Framework of Social Dialogue".

Signed:

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