Projects and Products Portal for Leonardo da Vinci

AUTOSTUDY - Modularization of the automotive study process by e-environment

2008-0012-LdV-001

http://www.adam-europe.eu/adam/project/view.htm?prj=4514

Project Information

Title: AUTOSTUDY - Modularization of the automotive study process by e-environment

Project Number: 2008-0012-LdV-001

Year: 2008

Project Type: Transfer of Innovation

Status: granted

Country: EE-Estonia

Marketing Text: New innovations for automotive industry oriented schools and studies. Mobile hands-on lab kits supported by the web environment and distance lab solution opens true e-learning perspective on the engineering studies.

Summary:

Description: With project AUTOSTUDY we are focusing on the automotive sector by the fact that the European industry is faced with Asian manufacturers' competition. Therefore concentrating on product development and improving is needed rather to large volume subcontracting to keep their worldwide esteem. The engineering studies have to be made more attractive for young people and feasible for practicing engineers. Serious problems exist on the continuous and vocational education with the practical study process. In continuous education the main problem is the lack of time of practicing engineers to participate in lectures or labs and the common problem is to exploit new Internet technology for practical studies in engineering field. We see great potential in contributing to solve these issues.

The aim of the project is contribution to raising the level of students and continuous education of engineers in broad field of engineering domains by transferring the innovative study modules and hands-on tools supported by e-platform from consortium of European universities to automotive oriented schools. The adoption and unification of the Study Kit are aimed to apply it on the automotive industry directly and in addition to system engineering related domains, i.e. integrated product development, industrial ICT, machine-building and apparatus industry.

The aim is planned to archive by carrying out following activities
1.Transfer the Study Kit (modular e-curriculum, Home-Lab, E-platform and methodology) to target groups
2.Adapt the Study Kit for automotive sector needs
3.Build the add-on modules for Home-Lab
4.Expand the e-platform
5.Build the interfaces for the automotive modules and devices
6.Localization and translation of materials
7.Test the transferred and customized Study Kit in real educational process.

The partnership has strong competence in the main project fields. Theoretical and practical aspects of system design and product development are main strength of the Estonian and Finnish universities. The ICT automotive experience and tight connections with industry are the focus of German and France partner. German partner is also providing vocational education (KIA) associated to “normal” studies. The consortium has long and approved collaboration history with several successful results. Most partners are members of European wide networks like REM, BALTECH, and many others.

The main outcomes of the project are new study modules and practical aids for automotive vocational and continuous education supported by the universal e-platform and direct links to industrial needs. The long term outcomes are the rise of competence of new and practising engineers and technician and the contemporary learning tools. To come along with significant better vocational education in the end there will be a better position of European companies (including SME-s) in global competition.

Themes: *** Lifelong learning

Project Information

*** Open and distance learning
*** Enterprise, SME
*** Continuous training
** Quality
** ICT
** Higher education

Sectors: ** Transportation and Storage
** Manufacturing
** Professional, Scientific and Technical Activities
** Education
* Information and Communication

Product Types: program or curricula
DVD
modules
material for open learning
teaching material
website
open and distance learning
others

Product information: R1 Modular curriculum consisting of study modules from System Engineering and Automotive Engineering section. According to the target group the curriculum is published in French language as paper version and French and English language as an electronic version. The curriculum supplements the Interstudy project curriculum.
R2 Add-On modules for the HomeLab kit. Instead of just add-on modules, two new kits were developed and produced to meet best the target group needs. The product is based on HomeLab concept but consists of new solution for automotive industry oriented studies. The example solutions and exercises were produced for the kits.
R3 Adapted e-platform. The existing distance lab e-platform was expanded in a way that new e-labs can be very easily integrated into a system. New LabView interface was created for the new equipment. New existing labs in France, Germany and Estonia were added into the system. New administration interface and back-end configuration tool was created and new front-end design concept introduced.

Projecthomepage: http://autostudy.eu

Project Contractor

Name:	Tallinn University of Technology
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Country:	EE-Estonia
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Partner

Partner 1

Name:	ITT Group
City:	Tallinn
Country/Region:	Eesti
Country:	EE-Estonia
Organization Type:	SME - small and medium-sized enterprise (up to 250 employees)
Homepage:	http://www.ittgroup.ee

Partner 2

Name:	University Of Applied Sciences Bochum
City:	Bochum
Country/Region:	Düsseldorf
Country:	DE-Germany
Organization Type:	university/Fachhochschule/academy
Homepage:	http://www.hs-bochum.de/

Partner 3

Name:	Belfort-Montbeliard University of Technology
City:	Belfort Cedex
Country/Region:	Rhône-Alpes
Country:	FR-France
Organization Type:	university/Fachhochschule/academy
Homepage:	http://www.utbm.fr/

Partner 4

Name:	Helsinki University of Technology
City:	Helsinki
Country/Region:	Etelä-Suomi
Country:	FI-Finland
Organization Type:	university/Fachhochschule/academy
Homepage:	http://www.tkk.fi

Project Files

D_ Booklet.pdf

http://www.adam-europe.eu/prj/4514/prj/D_%20Booklet.pdf

HomeLab and DistanceLab booklet

D_Daaam09.pdf

http://www.adam-europe.eu/prj/4514/prj/D_Daaam09.pdf

The 20th International DAAAM Symposium "Intelligent Manufacturing & Automation: Theory, Practice & Education" 25-28th November 2009, Vienna, Austria,
Online Engineering For Future Factory

D_Daaam10.pdf

http://www.adam-europe.eu/prj/4514/prj/D_Daaam10.pdf

7th International DAAAM Baltic Conference "Industrial Engineering" 22-24 April 2010, Tallinn, Estonia,
Virtual Academy Platform Supported By A Semantic Knowledge Base

D_MSM09.pdf

http://www.adam-europe.eu/prj/4514/prj/D_MSM09.pdf

The 5th International Conference Mechatronic Systems and Materials,
Distance Engineering System for Robotic Applications

D_poster_v.png

http://www.adam-europe.eu/prj/4514/prj/D_poster_v.png

Poster of results, transfers and partners

D_REM09.pdf

http://www.adam-europe.eu/prj/4514/prj/D_REM09.pdf

10th International Workshop on Research and Education in Mechatronics
September 10th -11st 2009, Glasgow, UK, New Concept And ICT Based Tools For Raising The Qualification Level In Mechatronics And Related Fields

Products

1 Modules for automotive study

2 Automotive study HomeLab

3 E-learning interface & DistanceLab

Product 'Modules for automotive study'

Title:	Modules for automotive study
Product Type:	modules
Marketing Text:	Combined international curriculum modules for automotive engineering and system engineering studies.
Description:	The curriculum consisting of new study modules is a teaching frame for the developed equipment and material. The study modules are set of courses from different European universities offering the unformed possibilities for international studies on the System engineering and/or Automotive engineering field. The curriculum enables to take the courses outside of home university in case of students or take a continuous education courses in case of practicing engineers. The trans-national curriculum helps to archive the general objective: to raise the qualification of the engineering students and practicing engineers through the courses. The curriculum is based on international co-operation and reinforces the mobility and co-operation between the European countries.
Target group:	Students, continuous education learners
Result:	Printed and electronic curriculum in French and English language
Area of application:	
Homepage:	autostudy.eu
Product Languages:	French

product files

Products

R1_Curriculum_Eng.pdf

http://www.adam-europe.eu/prj/4514/prd/1/2/R1_Curriculum_Eng.pdf
Curriculum English language

R1_Curriculum_Fr.pdf

http://www.adam-europe.eu/prj/4514/prd/1/2/R1_Curriculum_Fr.pdf
Curriculum French language

Product 'Automotive study HomeLab'

Title: Automotive study HomeLab

Product Type: others

Marketing Text: HomeLab hardware and teaching concept

Description: The HomeLab toolkit is a set of interconnected modules and arrangements. Main module is a microcontroller with motherboard supplemented with voltage measurement devices and handy box. Toolkit has in addition modules for different subject training purpose. All together the HomeLab toolkit is a mobile ready for use a small test stand, which could be connected to PC and operated in home or working place. HomeLab has a modular structure, meaning that the content can be combined according the needs and given task. The result is divided into two different kits, both dealing with networking of automotive or robotic domain.

The first kit is ARM-CAN kit which is intended for the high level algorithm and car network teaching. The kit is based on the state-of-art ARM Cortex M3 controller and supports lots of peripheral. The kit included two controller board, one user interface and programmer. The user interface is equipped with color LCD, two dimensional joystick, push-buttons and polyphonic speaker. The kit is packed into standard Technobag case and has all necessary accessories, like power supply and cables included. The CD is included with software and user guides.
The second kit is a AVR-CAN kit based on the same mobility concept but has different purpose. The kit can be used to start teaching the basic electronics in terms of providing the board and components separately where the first job for the learner is to assembly the board. The CAN module is using the AVR series microcontroller (same range as Interstudy HomeLab kit) and is partly compatible with Interstudy modules.

Both kits have study material, including the start-up guide, examples and exercises.

Target group: Students, home learners, continuous education learners

Result: Hardware with combination of teaching material and methodology

Area of application: Engineering

Homepage: home.roboticlab.eu

Product Languages: English

product files

R2_HomeLab_ARM.pdf

http://www.adam-europe.eu/prj/4514/prd/2/1/R2_HomeLab_ARM.pdf
HomeLab hardware description ARM-CAN

R2_HomeLab_AVR.pdf

http://www.adam-europe.eu/prj/4514/prd/2/1/R2_HomeLab_AVR.pdf
HomeLab hardware description AVR-CAN

Product 'E-learning interface & DistanceLab'

Title:	E-learning interface & DistanceLab
Product Type:	open and distance learning
Marketing Text:	Real hardware control and monitor over the internet
Description:	The e-platform is a combination of distance lab, home lab support center and curriculum management (i.e. learning path creation). The distance lab (denoted as DistanceLab) is an interface to access different equipment or lab machines. The site is fitted with web camera and server which communicates with the equipment nodes. Server has a master communication unit which can be contact with any unit on the field and reprogram it at any time when needed. The site server is connected with the portal server passing and validating the communication between the unit and user input. New interfaces developed on during the project incorporates the universal LabView interface which enables to integrate very wide range of laboratory equipment into the system, giving so the access to the particular machine over the web. New functionality, enabling to define new distance labs and equipment in the labs. The complete new administration and back-end system is developed for distributed administration purpose. In addition to user right management also the administration right management is now included. The e-platform enables to access to the remote labs by giving the possibility to control the real equipment over the web. The result is addressing to fulfill the objective of providing the e-content and remote access.
Target group:	students, distant learners
Result:	Website
Area of application:	Engineering
Homepage:	http://distance.roboticlab.eu
Product Languages:	English

product files

R3_Didalab_Distancelab.pdf

http://www.adam-europe.eu/prj/4514/prd/3/1/R3_Didalab_Distancelab.pdf
Distance lab in France, description

R3_eenvironment_overview.pdf

http://www.adam-europe.eu/prj/4514/prd/3/1/R3_eenvironment_overview.pdf
E-environment overview

Project Tags

The project belongs to the following group(s):

Best Projects (http://www.adam-europe.eu/adam/thematicgroup/MMVII)