Embed4Auto - Upskilling to model-based software development in the automotive and embedded software sector

DE/08/LLP-LdV/TOI/147109

http://www.adam-europe.eu/adam/project/view.htm?prj=3735
Project Information

Title: Embed4Auto - Upskilling to model-based software development in the automotive and embedded software sector

Project Number: DE/08/LLP-LdV/TOI/147109

Year: 2008

Project Type: Transfer of Innovation

Status: completed

Country: DE-Germany

Marketing Text: The project Embed4auto intends to provide European industry (especially from the automotive sector, including suppliers) with innovative training for model-based development technologies and help to promote the use of model-based technologies in the area of embedded systems development.

Summary: Embed4Auto has transferred the results and training offers from a previous project (UP2UML) on UML2.0
- to other industrial sectors (automotive + suppliers)
- into new European countries, addressing
- new target groups: engineers with different technical backgrounds; individual learners.

Description: Software is more and more responsible for most of the innovations of products. Particularly in the automotive sector, the share of embedded software has been dramatically increasing in the past years. 80-90% of innovations there are related to electronics, and companies need to undertake considerable qualification efforts in order to cope with the growing demand for embedded software developments.

Themes: *** Labor market
*** ICT
** Higher education
** Continuous training

Sectors: *** Professional, Scientific and Technical Activities
*** Information and Communication

Product Types: teaching material
website
material for open learning
others

Product information: The following products have been developed in the course of the project:
- Learning material for the model-driven development of embedded systems.
- A learning portal with integrated collaboration platform.
- A methodology handbook.
- A modeling tool.

Project homepage: http://www.embed4auto.org
Project Contractor

Name: Fraunhofer IESE
City: Kaiserslautern
Country/Region: Rheinhessen-Pfalz
Country: DE-Germany
Organization Type: research institution
Homepage: http://www.iese.fraunhofer.de

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Partner 1

Name: Inter Online Cooperación 2001, A.I.E.
City: Avilés
Country/Region: Principado de Asturias
Country: ES-Spain
Organization Type: continuing training institution
Homepage: http://www.interpros.net

Partner 2

Name: South East European Research Center
City: Thessaloniki
Country/Region: Kentriki Makedonia
Country: EL-Greece
Organization Type: research institution
Homepage: http://www.seerc.org

Partner 3

Name: Umeå universitet
City: Umeå
Country/Region: Övre Norrland
Country: SE-Sweden
Organization Type: university/Fachhochschule/academy
Homepage: http://www.umu.se/umu/index_eng.html

Partner 4

Name: Gazi Üniversitesi
City: Ankara
Country/Region: Ankara
Country: TR-Turkey
Organization Type: university/Fachhochschule/academy
Homepage: http://www.gazi.edu.tr/english.php
Project Files

1663-5914-1-PB.pdf
http://www.adam-europe.eu/prj/3735/prj/1663-5914-1-PB.pdf

D2.7-Methodology Handbook.pdf
The Methodology Handbook describes how the developed toolkit (PENCIL/StudentUML) can be used to support model-based development training.

Demo presentation.pdf
"embed4Auto—Collaborative Learning of Software Modelling" - Demo presentation at the 15th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE 2010) in Ankara, Turkey, on June 26.

eLBa-presentation.pdf
http://www.adam-europe.eu/prj/3735/prj/eLBa-presentation.pdf
Using social software for collaborative problem solving: Slides presented at the E-Learning Baltics (eLBa 2010) in Rostock, Germany on July 1.

IADAT-presentation.ppt
http://www.adam-europe.eu/prj/3735/prj/IADAT-presentation.ppt
METHODS AND TOOLS FOR ACTIVE LEARNING WITH WEB 2.0 TECHNOLOGIES - Presentation shown at the International Conference on Education (IADAT-e2009) in Bilbao, Spain on June 25.

IETC-presentation.pdf

poster_A3.pdf
Embed4Auto Project Poster
Products

1. Learning material
2. Learning portal
3. Methodology Handbook
4. Modeling tool
Product 'Learning material'

Title: Learning material

Product Type: website

Marketing Text: Software plays an increasingly important role in the engineering of embedded systems. With a rising level of abstraction necessary to handle such complex systems of hardware and software, model-based development is indispensable for reducing complexity and making the development of such systems more efficient and more failure resistant. The latest generation of model-based development languages provides a way to manage complexity issues of this type. The standards-based UML 2.0 and SysML languages allow companies to apply the principles of Model-Driven Development to focus development efforts while expanding overall vision and creativity.

Description: The learning material is focused on the Unified Modeling Language (UML2) and the Systems Modeling Language (SysML). Learners gain an overview of these modeling languages and the models and diagrams used. Assisted by an exercise tool, they can create their own diagrams, and they can share and discuss their solutions with the help of a collaboration tool.

Target group: Employees in the embedded systems industries

Result:

Area of application: Training; self-paced learning

Homepage: www.embed4auto.org

Product Languages: German
English
Turkish
Spanish
Product 'Learning portal'

Title: Learning portal

Product Type: website

Marketing Text: Learning is an active, self-organized, constructive and emotive process based on social interaction. Recent research has shown that the Web 2.0 has a set of resources and technologies that are capable of promoting online learning activities, thus enhancing the construction of significant knowledge.

Description: The Embed4Auto learning portal is an integrated learning environment consisting of online learning resources (on UML2 and SysML) presented on learning management systems (like, e.g., Moodle), an exercise tool allowing interactive creation of diagrams, and a collaboration platform for sharing and discussing models (PENCIL).

Target group: Employees in the embedded systems industries; Trainers, Tutors, University teachers; Training providers

Result:

Area of application: Training in embedded systems development

Homepage: www.embed4auto.org

Product Languages: English, Spanish
Product 'Methodology Handbook'

Title: Methodology Handbook

Product Type: teaching material

Marketing Text: In the Methodology Handbook, teachers and trainers can find recommendations for
- how to organise course management and user management in the Embed4Auto integrated
  learning environment;
- how to plan training units;
- how to handle exercises;
- how to work with the tools;
- how to manage participant collaboration.

Description: The Methodology Handbook describes how the developed toolkit (PENCIL/StudentUML) can
be used to support model-based development training. It also gives a brief introduction to
possible extensions and the integration of further tools.

Target group: Teachers, Trainers

Result:

Area of application: Trainers; University Teachers; Training providers

Homepage:

Product Languages: English
  German
Product 'Modeling tool'

Title: Modeling tool  
Product Type: website  

Marketing Text: StudentUML is an educational software modelling tool which aims to provide students with a simple yet effective tool that meets their learning needs. It consists of an intuitive graphical user interface and supports an essential subset of the UML notation. StudentUML works in collaboration with the PENCIL collaboration and solution-sharing platform.

Description: With StudentUML one can provide solutions to UML exercises or, alternatively, draw diagrams without referring to any particular exercise (sandbox mode). StudentUML diagrams may be either shared in PENCIL or saved in your private space in the Web server.

Features:  
* Web-based and accessible through a Web browser.  
* Support for UML 2.0 Sequence Diagrams and Design Class Diagrams.  
* Support for multi-diagram projects.  
* User-friendly interface for drawing UML diagrams.  
* Run-time checking of consistency problems.

Target group: Learners; Employees from the embedded systems industries, Trainers; Course providers

Result:  
Area of application: Training; self-paced, explorative learning  
Homepage: www.embed4auto.org

Product Languages: German
Events

Final project meeting

Date  23.09.2010

Description

Target audience  Members of the project consortium
Public  Closed event

Contact Information

Time and place  23rd & 24th September
Kaiserslautern, Germany

eLBa 2010 - Paper presentation

Date  01.07.2010

Description  E-Learning Baltics Conference:
S1.2: Social Networks in Learning and Training.
Presentation of the paper "Using social software for collaborative problem solving".

Target audience

Public  Event is open to the public

Contact Information

Time and place  July 1st;
Rostock, Germany.
Events

ITiCSE 2010 - Demo & poster presentation

Date 29.06.2010

Description At the 15th Annual Conference on Innovation and Technology in Computer Science Education, members of the project team were present for
1. a poster session, and
2. a demo presentation (see files for download).

Target audience

Public Event is open to the public

Contact Information

Time and place June 29: Demo session;
June 30: Poster session;
Ankara, Turkey.

Project Consortium Meeting

Date 07.06.2010

Description

Target audience Members of the project team

Public Closed event

Contact Information

Time and place 7th & 8th June
Umea University
Umea, Sweden

IETC - Paper presentation

Date 27.04.2010

Description THE PENCIL PLATFORMCONNECTING LEARNERS, TUTORS, AND TOOLS - Paper presented on April 27 at the IETC 2010 in Istanbul.

Target audience

Public Event is open to the public

Contact Information

Time and place April 27 - Istanbul, Turkey.
Events

Project Consortium Meeting

Date 25.02.2010

Description

Target audience Members of the project team
Public Closed event

Contact Information

Time and place 25th & 26th February
Ilci Residence Hotel
Ankara, Turkey

Project Consortium Meeting

Date 20.09.2009

Description

Target audience Project partners
Public Closed event

Contact Information

Time and place Monday & Tuesday 9:00-17:00
Thessaloniki, Greece

IADAT-e2009 - Paper presentation

Date 24.06.2009

Description Presentation of a scientific paper at the 5th International Conference on Education: METHODS AND TOOLS FOR ACTIVE LEARNING WITH WEB 2.0 TECHNOLOGIES (Sonja Trapp, Matthias Heintz, Sebastian Weber)

Target audience

Public Event is open to the public

Contact Information

Time and place June 24 to 26, 2009
Bilbao, Spain
Events

**Project Consortium Meeting**

- Date: 19.02.2009
- Description: Second project consortium meeting
- Target audience: Project members, Public: Closed event

**Kickoff Meeting**

- Date: 30.10.2008
- Description: 
- Target audience: Public: Closed event

**Contact Information**

**Time and place**
- Project Consortium Meeting: Avilés, Asturias, Spain, February 19 & 20, 2009
- Kickoff Meeting: October 30 + 31, 2008, Kaiserslautern