Projects and Products Portal for Leonardo da Vinci

IMPLEMENTATION OF VIRTUAL TECHNOLOGY IN EDUCATION OF WELDERS AND WELDING SPECIALISTS

2009-1-SK1-LEO05-00781

http://www.adam-europe.eu/adam/project/view.htm?prj=7419

Project Information

Title: IMPLEMENTATION OF VIRTUAL TECHNOLOGY IN EDUCATION OF WELDERS AND WELDING SPECIALISTS

Project Number: 2009-1-SK1-LEO05-00781

Year: 2009

Project Type: Transfer of Innovation

Status: granted

Country: SK-Slovakia

Marketing Text: Virtual weld training systems have appeared on the market and their use can bring important change in education of welders and also welding specialists.New virtually based tool for education in welding was tested and presented to wide welding community.

Summary: The education and also training of welders and welding specialists play an important role in quality assurance in all areas of industry where welding technology is applied. Recently new very modern tool for the training of welders skill using virtual training environment (simulator) have appeared on the market. This sophisticated tool precisely simulate welding conditions at either MMAW (manual metal arc welding using covered electrodes) or MIG/MAG (metal inert/active gas) welding and provide an excellent condition for training of welders. The simulator provide clean and attractive environment which can mainly reduce the costs for education due to savings in energy, consumable and base materials. Of course special advantage is to provide clean rooms for training. The virtual welding simulator consists of welding workplace offering large screen display which offer to simulate welding exercises for trainee. Each workplace is multi-purpose and may be used to teach welding in variety of different positions (PA,PB,PC etc.). The work place also enables to save the record of individual welding parameters such as current and voltage which provide to the trainee the control off the welding process quality during or after training session. The application of this new tool for education of welders is completely new. EWF has already decided to implement this approach into harmonized guidelines as a possible option mainly for training of welders. Four institutes from Slovakia (VUZ-PI SR), Czech republic (CWS ANB), Slovenia (IzV) and Portugal (EWF) have joined in this activity in order to present this tool to the welding schools available in each individual country. Three Institutes were responsible for the implementation of the harmonized education system in each country and have the high level specialist available for teaching and also for presentation of new tool on the market.
The objectives of this project was to present this new recently developed tool to the welding school in order to recognize the advantages and also possible savings by using virtual welding simulator. This tool can be very attractive mainly for young generation who are very familiar with new IT technologies. The simulator CS WAVE developed by French and APOLO Spanish company was rented in order to present this new tool to specialists from all four countries. Training sessions were organized for trainees who subsequently presented the equipment on welders courses and also seminars and workshops.
The presentations, seminars and workshops were the opportunity to present new very progressive tool for education to the welding community, to teachers and students of vocational schools.

Description: The objectives of the project was to bring new tool for education and training of welders into Central Europe and present its possibilities and advantages to the teachers, welders and also to students. The aim of this activity was to present new IT technology (virtual environment) to welding communities which can remarkably improve the teaching environment, safe energy a materials for education. It is expected that the welding schools found the opportunity to test the tool and take important decision for the future to buy it. The virtual environment will improve the quality of the training process not only for welders but also give opportunity to higher level welding specialists understand the details of the welding process. The use of virtual environment will give new opportunities not only to welding schools but also the secondary technical or VET schools and increase the attractiveness of the practical training. The existing training environment requires to fulfil specific

Project Information

safety conditions which do not allow to present the welding process in friendly room.
The project was dealing with transfer of information concerning new educational and training tool. The tool is a technical device/screen which visualize the welding process and allows also to check the quality of the process and skill using numerical simulation developed in IT sector. The project concentrated on transfer IT technology into industrial sector dealing with practical training and to welding schools.
The transfer of information was organized via real presentation on seminars and workshops and also via practical use in welding schools during welding courses. The results and experiences collected via questionnaires filled by welders and teachers were summarized and analyzed. The results were published in order to motivate the welding schools in using new teaching environment. The events such as training of teachers, presentations on seminars and the subsequent use during welding courses by welders were organized in all partner countries in order to collect the argument for wider use of friendly and clean tool for education. We are convinced that the project helped to bring this tool not only to welders schools but also to secondary technical or VET schools in order to increase the interest of young generation into this widely used technology. The application of welding technology has horizontal dimension throughout the industry and services. It means that the wide publicity of new tools in all areas of industrial development including part concentrated in education can help to increase the level skill and knowledge and users of this technology. It is clear that skilled teachers and trainees including proper and attractive environment can increase both interest and skill of students and participants of training courses necessary for industry.
The project was based on dissemination and testing of a new very effective tool for education and training for practical welders and also for higher welding personnel (instructors, practitioners, specialists, technologists and engineers). This activity helped to transfer the developed product from IT sector to education and training of industrial and VET organizations. The organization of seminars/workshops and short practical experiences can motive welding schools to change their habits and improve their environment for teaching and training. We expect that the presentation of new tool can directly influence the decision to implement this toll in order to improve the skill of personnel who is certified after the education course. The new tool can certainly improve the environment for the training which directly increase the attractiveness of welding profession. The project should help to mainly welding and technical secondary schools to increase the attractiveness of their education process using modern, clean tool which allow to present the details of very widely used technology. In this way we can increase the interest mainly of young generation in technical areas which are not very attractive today.

Themes:	*** Labor market *** Initial training
Sectors:	*** Education ** Manufacturing
Product Types:	evaluation methods website program or curricula
Product information:	Flyer, leaflet, roller-up, website, publications,questionnairs, articles,presentations, virtual equipment manual Methodology for weld trainer/simulator testing (selection criteria for trainers and trainees, duration of testing, forms and methods used, etc.) Methodology of weld trainer/simulator implementation into training of welders Recommendations for the weld trainer/simulator implementation into training process on European level Identification of European training standards for welders in accordance with the European qualification framework and their comparison with national documents/standards in welding sector/
Projecthomepage:	www.virtweld.com

Project Contractor

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Country/Region:	Bratislavsky Kraj
Country:	SK-Slovakia
Organization Type:	research institution
Homepage:	http://www.vuz.sk

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Partner

Partner 1

Name:	EUROPEAN FEDERATION FOR WELDING, JOINING AND CUTTING
City:	Lisbon
Country/Region:	Centro (P)
Country:	PT-Portugal
Organization Type:	association/non-governmental organisation
Homepage:	http://www.ewf.be

Partner 2

Name:	CZECH WELDING SOCIETY - ANB
City:	Prague
Country/Region:	Praha
Country:	CZ-Czech Republic
Organization Type:	association/non-governmental organisation
Homepage:	http://www.cws-anb.cz

Partner 3

Name:	INSTITUT ZA VARILSTVO
City:	Ljubljana
Country/Region:	Extra Regio
Country:	SI-Slovenia
Organization Type:	others
Homepage:	http://www.i-var.si

Project Files

APOLO CZ user manual.pdf

http://www.adam-europe.eu/prj/7419/prj/APOLO%20CZ%20user%20manual.pdf

APOLO SI user manual.pdf

http://www.adam-europe.eu/prj/7419/prj/APOLO%20SI%20user%20manual.pdf

APOLO USER MANUAL SK.PDF

http://www.adam-europe.eu/prj/7419/prj/APOLO%20USER%20MANUAL%20SK.PDF

CS WAVE CZ user manual.pdf

http://www.adam-europe.eu/prj/7419/prj/CS%20WAVE%20CZ%20user%20manual.pdf

CS WAVE USER MANUAL - SK.pdf

http://www.adam-europe.eu/prj/7419/prj/CS%20WAVE%20USER%20MANUAL%20-%20SK.pdf

Flyer VIRTWELD CZ.pdf

http://www.adam-europe.eu/prj/7419/prj/Flyer%20VIRTWELD%20CZ.pdf

Flyer VIRTWELD EN.pdf

http://www.adam-europe.eu/prj/7419/prj/Flyer%20VIRTWELD%20EN.pdf

Flyer VIRTWELD SI.pdf

http://www.adam-europe.eu/prj/7419/prj/Flyer%20VIRTWELD%20SI.pdf

Flyer VIRTWELD SK.pdf

http://www.adam-europe.eu/prj/7419/prj/Flyer%20VIRTWELD%20SK.pdf

Identification of European training standards according EQF CZ.docx

http://www.adam-europe.eu/prj/7419/prj/Identification%20of%20European%20training%20standards%20according%20EQF%20CZ.docx

Identification of European training standards according EQF EN.docx

http://www.adam-europe.eu/prj/7419/prj/Identification%20of%20European%20training%20standards%20according%20EQF%20EN.docx

Project Files

Identification of European training standards according EQF SI.doc

http://www.adam-europe.eu/prj/7419/prj/Identification%20of%20European%20training%20standards%20according%20EQF%20SI.doc

Identification of European training standards according EQF SK.docx

http://www.adam-europe.eu/prj/7419/prj/Identification%20of%20European%20training%20standards%20according%20EQF%20SK.docx

Methodology for virtual weld simulator implementation WELDERS CZ.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20for%20virtual%20weld%20simulator%20implementation%20WELDERS%20CZ.docx

Methodology for virtual weld simulator implementation WELDERS EN.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20for%20virtual%20weld%20simulator%20implementation%20WELDERS%20EN.docx

Methodology for virtual weld simulator implementation WELDERS SI.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20for%20virtual%20weld%20simulator%20implementation%20WELDERS%20SI.docx

Methodology for virtual weld simulator implementation WELDERS SK.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20for%20virtual%20weld%20simulator%20implementation%20WELDERS%20SK.docx

Methodology of virtual weld simualtor testing CZ.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20of%20virtual%20weld%20simualtor%20testing%20CZ.docx

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http://www.adam-europe.eu/prj/7419/prj/Methodology%20of%20virtual%20weld%20simualtor%20testing.docx

Methodology of virtual weld simualtor testing SI.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20of%20virtual%20weld%20simualtor%20testing%20SI.docx

Methodology of virtual weld simualtor testing SK.docx

http://www.adam-europe.eu/prj/7419/prj/Methodology%20of%20virtual%20weld%20simualtor%20testing%20SK.docx

Poster VIRTWELD CZ.pdf

http://www.adam-europe.eu/prj/7419/prj/Poster%20VIRTWELD%20CZ.pdf

Project Files

Poster VIRTWELD EN.pdf

http://www.adam-europe.eu/prj/7419/prj/Poster%20VIRTWELD%20EN.pdf

Poster VIRTWELD SI.pdf

http://www.adam-europe.eu/prj/7419/prj/Poster%20VIRTWELD%20SI.pdf

Poster VIRTWELD SK.pdf

http://www.adam-europe.eu/prj/7419/prj/Poster%20VIRTWELD%20SK.pdf

Recomendation for implementation of virtual weld training CZ.docx

http://www.adam-europe.eu/prj/7419/prj/Recomendation%20for%20implementation%20of%20virtual%20weld%20training%20CZ.docx

Recomendation for implementation of virtual weld training EN.docx

http://www.adam-europe.eu/prj/7419/prj/Recomendation%20for%20implementation%20of%20virtual%20weld%20training%20EN.docx

Recomendation for implementation of virtual weld training SI.docx

http://www.adam-europe.eu/prj/7419/prj/Recomendation%20for%20implementation%20of%20virtual%20weld%20training%20SI.docx

Recomendation for implementation of virtual weld training SK.docx

http://www.adam-europe.eu/prj/7419/prj/Recomendation%20for%20implementation%20of%20virtual%20weld%20training%20SK.docx

VIRTWELD Questionnaire ENCZ.doc

http://www.adam-europe.eu/prj/7419/prj/VIRTWELD%20Questionnaire%20ENCZ.doc

VIRTWELD Questionnaire ENSI.doc

http://www.adam-europe.eu/prj/7419/prj/VIRTWELD%20Questionnaire%20ENSI.doc

VIRTWELD Questionnaire PT.doc

http://www.adam-europe.eu/prj/7419/prj/VIRTWELD%20Questionnaire%20PT.doc

VIRTWELD Questionnaire SK.doc

http://www.adam-europe.eu/prj/7419/prj/VIRTWELD%20Questionnaire%20SK.doc

Products

1 Website

2 Questionnairs

3 VIRTWELD project posters

4 Methodology of virtual weld simualtor testing

5 Methodology for weld simulator implementation into training of welders

6 Recomendation for implementation of virtual weld training into training process of welding

7 Identification of European training standards according to the European Qualification Framework

Product 'Website'

Title:	Website
Product Type:	website
Marketing Text:	New virtual based tol for education in welding is tested and presented to wide welding community. Virtual weld training systems have appeared on the market and their use can broing important change in education of welders and also welding specialists
Description:	Objectives of the project
Target group:	Welding community
Result:	www.virtweld.com
Area of application:	publicity
Homepage:	www.virtweld.com
Product Languages:	English

Product 'Questionnairs'

Title:	Questionnairs
Product Type:	evaluation methods
Marketing Text:	Questionnair´s for the identification of interst in virtual weld trainig systems
Description:	Questionnair´s contains basic questions in order to identify the knowledge concerning new tool for training and education of welding personnel
Target group:	welding schools, VET schools, university teachers
Result:	document
Area of application:	Marketing
Homepage:	
Product Languages:	English

product files

Questionair´s

VIRTWELD Questionnaire ENCZ.doc
http://www.adam-europe.eu/prj/7419/prd/2/2/VIRTWELD%20Questionnaire%20ENCZ.doc

VIRTWELD Questionnaire ENSI.doc
http://www.adam-europe.eu/prj/7419/prd/2/2/VIRTWELD%20Questionnaire%20ENSI.doc

VIRTWELD Questionnaire PT.doc
http://www.adam-europe.eu/prj/7419/prd/2/2/VIRTWELD%20Questionnaire%20PT.doc

VIRTWELD Questionnaire SK.doc
http://www.adam-europe.eu/prj/7419/prd/2/2/VIRTWELD%20Questionnaire%20SK.doc

Product 'VIRTWELD project posters'

Title:	VIRTWELD project posters
Product Type:	others
Marketing Text:	VIRTWELD project objectives
Description:	Promotion of the implementation of virtual technology in education of welders and welding personnel
Target group:	welding schools managers and teachers, VET schools teachers, institutes, universities
Result:	Poster
Area of application:	general publicity
Homepage:	
Product Languages:	English

Product 'Methodology of virtual weld simualtor testing'

Title:	Methodology of virtual weld simualtor testing
Product Type:	teaching material
Marketing Text:	The document summarizes important factors which are recommended for testing of the virtual weld training systmes
Description:	The document represents a proposal which defines factors important for choice of VWTS and describes method used for testing of two VWTS produced by CS WAVE and APOLO. The presented analysis provides an opportunity to recognize factors important for implementation of VWTS into education process.
Target group:	Potential users in VET schools, welding schools, universities,
Result:	document
Area of application:	As the recommendation for the potential users
Homepage:	
Product Languages:	German

Product 'Methodology for weld simulator implementation into training of welders'

Title:	Methodology for weld simulator implementation into training of welders
Product Type:	teaching material
Marketing Text:	The objective of this document is to define the implementation of virtual weld training (VWT) systems into training and education of welding personnel.
Description:	The document is a draft which proposes the steps, duration and method of training on VWTS for implementation into training and education process.
Target group:	VET schools teachers, welding schools teachers, university lecturers
Result:	Document
Area of application:	The product is used for getting recommendation when virtual weld training system is going to be appled.
Homepage:	
Product Languages:	

Product 'Recomendation for implementation of virtual weld training into training process of welding personnel on European level'

Title:	Recomendation for implementation of virtual weld training into training process of welding personnel on European level
Product Type:	teaching material
Marketing Text:	The documents characterizes the peculiarities of implementation of a completely new tool/equipment – Virtual Weld Training Systems (VWTS)- which have been developed in the period of the last ten years are presented. The recommendation for the VWTS implementation into training and education process of welding personnel.
Description:	Description of virtual weld training systems factors recommended to be taken into account when VWTS is implemented into education according to European guidelines developed by European Wwelding Federation
Target group:	Authorised National Bodies (ANB) and Approved training Bodies (ATB) of European Welding Federation (EWF) network, bodies implementing education and qualifications in welding
Result:	Document
Area of application:	Education and training for all qualifications in welding (welding engineers, technologists, practitioners, specialists and welders)
Homepage:	
Product Languages:	English

Product 'Identification of European training standards according to the European Qualification Framework and their comparison with national documents in welding sector'

Title:	Identification of European training standards according to the European Qualification Framework and their comparison with national documents in welding sector
Product Type:	others
Marketing Text:	Description of the actual situation in implementation of European qualification framework in Czech Republic, Slovenia and Slovak Republic and analysis identified situation in actual training standards and procedures for education of welders personnel.
Description:	The document summarizes the actual education and qualification system in welding developed and implemented by European Welding Federation. First draft of EWF qualification system and European Qualification Framework comparison according prepared according to system in Slovenia, Czech Republic and Slovakia
Target group:	welding companies, VET schools, universities, welding schools
Result:	Document
Area of application:	Document prepared for the discussion on EWF technical committee for discussion and further development
Homepage:	
Product Languages:	English

Events

VIRTWELD workshop, Bratislava 18.-19.October 2011

Date	26.10.2011
Description	Workshop concern virtual weld training systems and European Qualification framework
Target audience	Welding specialists form companies, welding schools, universities
Public	Event is open to the public
Contact Information	
Time and place	18.-19.October 2011

Meeting, Lisbon 22.. September 2011

Date	27.09.2011
Description	Project meeting
Target audience	project partners
Public	Closed event
Contact Information	
Time and place	22.September 2011

VIRTWELD workshop, Lisbon, 23. septmeber 2011

Date	27.09.2011
Description	Workshop organized by EWF
Target audience	members of Portuguese industry companies, welding schools
Public	Event is open to the public
Contact Information	
Time and place	23. September 2011, Lisbon

Events

Intermediate meeting, Prague 22. August 2011

Date	30.08.2011
Description	Implementation of European Qualification Framework in Czech republic
Target audience	Specialists from UNO Prague and CWS-ANB (project member organisation)
Public	Closed event
Contact Information	
Time and place	22. August 2011, Prague

Meeting, Ljubljana-Bovec, 27.-29. June 2011

Date	05.07.2011
Description	Project meeting
Target audience	Project partners
Public	Closed event
Contact Information	
Time and place	27.-29. June 2011

Meeting, Prague, 13.-14. June 2011

Date	20.06.2011
Description	Project meeting
Target audience	Project partners
Public	Closed event
Contact Information	
Time and place	13.-14. June 2011

Events

EWF Projects Workshop, 09. December 2010

Date	20.12.2010
Description	Event organized by EWF partner. Presentation of the project results in which EWF member organizations are involved
Target audience	EWF experts and delagate, welding experts from Portugal,
Public	Event is open to the public
Contact Information	
Time and place	09.12.2010

Meeting, Lisbon 08.Decemeber 2010

Date	15.12.2010
Description	3nd partners meeting
Target audience	Project partners
Public	Closed event
Contact Information	
Time and place	08.12.2010

Meeting, Ljubljana, 14.-15.June 2010

Date	20.06.2010
Description	2nd meeting
Target audience	Partners
Public	Closed event
Contact Information	
Time and place	14.-15.06.2010

Events

Meeting, Bratislava 09-10 02 2010

Date	11.02.2010
Description	Kick of meeting
Target audience	Project partners
Public	Closed event
Contact Information	
Time and place	09-10-02-2010