1
2010
SURPASS: INTRODUCTION

C4FF Newsletter

1st Edition

SURPASS

Created by Centre for Factories of the Future

An Introduction to the Surpass Project

A paper (Ziarati, 2006) and report to IMO (MCA, 2006) clearly identify a major source of accidents particularly in the future to be the problems with application of automated systems and failures in any aspect of automation.

STCW training standards for Engineers have not been updated to account for working with such new engines. Instrumentation and control systems including hydraulics and pneumatics need to be included in the syllabuses of the programmes for the Engineer and Deck officers.

Under STCW there is no specific training requirement for electrical engineering officers on board vessels, and therefore no internationally or European agreed standard by which shipping companies can effectively assess their knowledge.

The SURPASS project's main aim is to fill this gap created as the result of emergence and application of the automated systems in the education and training of seafarers by provision of a training course enabling them to have a full understanding of automated systems, and these systems' weaknesses and limitations.

PROJECT OWNERS

TUDEV – Türk Deniz Eğitim Vakfı Deniz Eğitim Merkezi
An education and training enterprise primarily concerned with cadet officer and officers education and training programmes and provision of short courses to maritime industries. The centre is supported by an employers association with direct links to shipping and maritime companies, professional and academic institutions.

TÜDEV
Tuzla İstaston Mahallesi
Hacıoğlu Sokak –Tuzla
Istanbul 34940

Tel: 90 530 645 44 96
Emails: talbayrak@tudevedu.com
ldilli@tudevedu.com

TÜDEV
Deniz Eğitim Merkezi

INSIDE:

Education and Culture DG

'This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.'

SURPASS: THE PROJECT

SURPASS: More About the Project

Surpass Aims

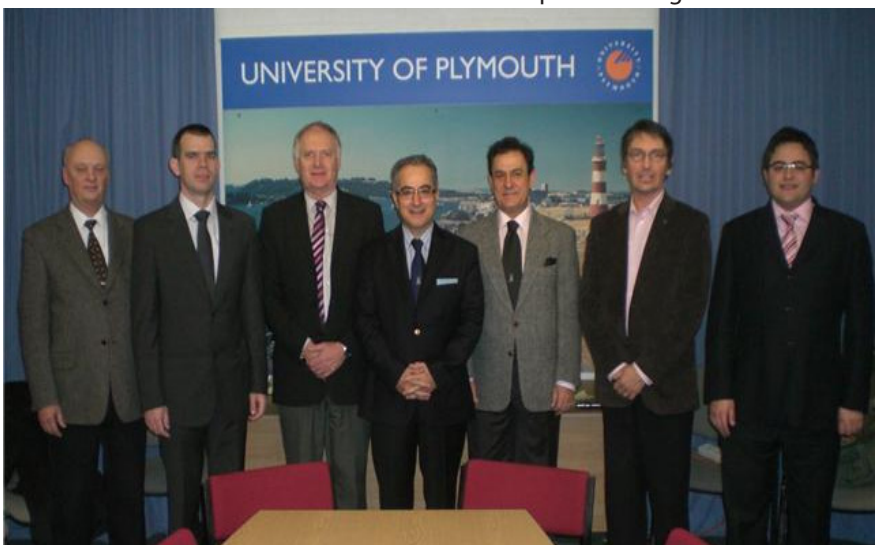
The main aim is to transfer the innovation already developed in the design, delivery and assessment of short courses in order to fill the gap created as the result of emergence and application of the automated systems in the education and training of seafarers by the provision of a training course enabling them to have a full understanding of automated systems and these systems' weaknesses and limitations and receive International/European-wide recognition for it.

The Partnership

The partnership is composed of two small progressive high technology SMEs and several major merchant navy education and training (MET) institutions supported by their awarding, accrediting and/or certificating authorities. Some of the partners have recently been involved in harmonising and complementing the existing MET programmes in the EU (Safety On Sea, SOS 2005-07) and some have developed an innovative e-learning and assessment platform as part of current Leonardo Pilot project (E-GDMSS, 2006-2008). The partners have collectively almost a complete range of bridge and engine simulators including fully integrated bridge-propulsion-power transmission, two with full mission capability incorporating high level of physical fidelity and different levels of severity. Two major simulator system manufacturers (one largest in Europe) have agreed to support the project.

Tangible Outcome

The main tangible outcome is a new course in automation with 8 modules, each concerning a particular level of depth in knowledge, skills and understating, for a given level of seniority and concerning a given job function. The second outcome is expected to be the intended adaptation of an e-learning platform with assessment facilities currently under development in E-GMDSS (2006) or use of an earlier platform developed in a previous EU funded project by one of the partners (Ziarati, 2002). The team building module may replace the existing non-standard, but on high demand courses such as Bridge Resource Management and Ship Handling. Since the intention is to adapt e-learning and e-assessment both in the training and learning methods, viz., self-learning and self-assessment tools, the project products, as stated earlier, will target a wider audience including active seafarers working on board automated vessels.



Intangible Outcome

The main intangible outcome is that the course would provide an opportunity for many rating and officers with no or little knowledge of automation to acquire the necessary expertise and seek employment on board vessels with automated systems. The knowledge needed for example by Engineers and Deck officer on board a vessel has to match the complexity of the automated system and other related equipment they operate. To ensure this will be the case the course is designed to be a bolt-on programme and capable of being up-dated. There has been a shift from component based training to system-based training and the focus is on team operation viz., bringing the bridge team to work effectively as a team and in turn making sure that the Engine personnel and Deck crew work in harmony particularly in emergency situations. The latter consideration is as important today and it has been in the past. The e-learning and e-assessment tools and internet software interfaces already available will be adapted for application in delivery of the intended course/modules would be able to be applied in the delivery of other units of training and as self-learning/assessment tool.

Surpass's Impact

Impact will be substantial as this project responds to an internationally acknowledged problem which the partnership is confident of resolving.

ORIGINS AND TRANSFER OF INNOVATION

Transfer of Innovation

The main aim is to transfer the innovation already developed in the design, delivery and assessment of short courses in the Maritime Sector in order to fill the gap created as the result of emergence and application of the automated systems in the education and training of seafarers.

Surpass will do this by the provision of a training course enabling them to have a full understanding of automated systems and these systems' weaknesses and limitations. The automation knowledge is also known but applying to ships provides an excellent opportunity for transfer of innovation. Therefore the transfer of innovation is from the novel internet based design as well as from the existing automated system in industry.

European members of the IMO MSC committee and partners in this project are aware automation is a topical issue throughout the shipping industry in Europe. They all agree automation failures to be a problem that requires urgent attention and a partnership that is presented in this proposal would be able to make significant contribution in resolving it at source.

This project intends to use benchmarking and promote good practice throughout the partnership and beyond. In recent years the number of accidents and incidents relating to automation systems and their failure has been sharply increasing and this trend is expected to increase.

By the end of this project there will be a novel training programme as a standalone short course training for industrial updating. The Course will receive acceptance due to its importance at international and European levels and will be included in the existing MET programmes.

Surpass Origins

Surpass found that there are two related issues/needs which need to be addressed when considering accidents at sea which are based on automated systems. One can be highlighted by a lack of adequate training in how to operate and trouble-shoot an automated engine, which has led to many major accidents.

Under STCW there is no specific training requirement for electrical engineering officers on board vessels, and therefore no internationally or European agreed standard by which shipping companies can effectively assess their knowledge. Training on automation and inserting faults and learning how to rectify them cannot be done on a sea going vessel. The most appropriate method is to use simulators as is the case in the aviation industry. The proposed course, with the help of the partners, will include real life scenarios using a range of simulators.

It would also be beneficial to include a short course format that can be easily introduced for existing seafarers enabling them to develop the competence to handle and respond to automation failures.

C4FF Newsletter

SURPASS: PROJECT PARTNERS

Centre For Factories of the Future (C4FF)

A small education, training and research company with many years of experience in EU/European funded educational and training as well as research and development projects including EUREKA. The Centre become one of the nine UK EUROTECNET projects soon after the UK joined the EU in 1983. In 2003 the instigator of the Factory of the Future programme formed a company know as C4FF (Centre for Factories of the Future) with astounding success (www.C4FF.co.uk and www.maredu.co.uk). In 2005, the Centre helped its Turkish partner, TUDEV, to formulate a successful Leonardo project called Safety On Sea (SOS). The centre has been since and is presently involved in a number of Leonardo projects, including being the contracting organisation for the present Leonardo transfer of innovation project known as MarTEL.

Spinaker d.o.o. (SPIN)

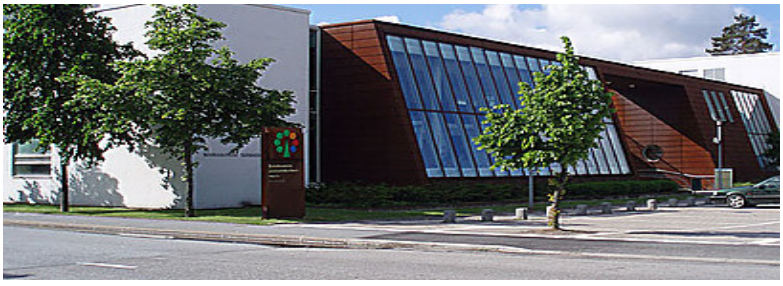
Spinaker is the largest Slovenian maritime VET and adult education provider. The company develops its own maritime training programmes for all courses it provides in the Slovenian market. All courses are available on e-platforms for distance learning purposes and self examination. Some courses are used by other smaller maritime education providers in Slovenia. All courses are recognised by Slovenian Maritime Administration and attended by over 1100 Slovenians every year.

Maritime University of Szczecin (MUS)

The Maritime University of Szczecin is one of the major nautical centres in Poland for training of seafaring personnel, with experience in many national and international projects. Szczecin University works with other national and international nautical centres as well as with associated awarding and professional and licensing bodies.

Plymouth University (PU)

Plymouth University is a higher education institute in the south west region of England and has a reputation in maritime studies. The University has experience in many national and international projects. Plymouth University works with other national and international nautical centres as well as with associated awarding and professional licensing bodies.



Satakunta University of Applied Sciences (SUAS)

This is one of the major institutions of higher education in Finland and has a reputation in maritime studies. The university has experience in many national and international projects. Satakunta University works with other national and international nautical centres as well as with associated awarding and professional and licensing bodies.