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# SURPASS

INSIDE:

**Project Progress Report - September 2012**

**A report on the BTEC submission on SURPASS**

**TUDEV Institute of Maritime studies (TUDEV) has been running two full-time HND programmes for several years. Over the years, several Edexcel/BTEC units have been submitted and approved by BTEC for running both HND programmes viz., HND in Navigation Engineering and HND in Marine Engineering programmes.**

Recently, due to amendments in the IMO's (International Maritime Organisation's) changes in STCW (Standards of Training Certification and Watch-keeping) that entered into force on 1st January 2012, several changes had to be incorporated in the syllabi of the existing HND programmes. These changes required the review of processes, the training practice and the strategies for teaching and learning of both programmes. All aspects relating to ship OOW (Officer of Watch) certification had to be examined diligently to ensure all changes are introduced correctly.

In parallel, TUDEV, with support from its European partners, responded to a major deficiency of STCW with regard to ever-increasing use of

automation systems and practices on board vessels. It has been reported that while accidents and incidents are generally on the decrease, accident and incidents due to automation system application, and failure are on the increase (Ziarati, et al papers, 2010 and 2011 – Bridge Conference paper Finland, 2010 and UniMET Conference paper in London, 2011).

To overcome the identified deficiency and to incorporate the recent changes to IMO STCW in 2010, TUDEV, in collaboration with C4FF (Centre for the Factories of the Future) and its other EU partner countries developed and launched successfully an on-line SURPASS course which is available free of charge, so that, all seafarers can have access to the website and learn from it. The SURPASS e-learning platform is available at [www.surpass.pro](http://www.surpass.pro). The SURPASS online platform bring all aspects of automation under one roof. A lecturer or a company has access to all that is needed to teach or learn about automation and automation failures and how

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Lifelong Learning Programme

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## Further Developments & Valorisation

to avoid automated system failures at sea; and if failure does happen how it can be remedied.

Initially the SURPASS Course was to be a online training course on 'Instrumentation and Control of Automated Systems on board commercial ships' and to be designed to fill the gap created as a result of emergence and application of the automated systems in Engine rooms. But later, as results of a number surveys carried out by SURPASS partnership, a decision was made to include Bridge automation. In addition to the online scenarios, a series of ship simulator exercises were added to make all MET institutions have access to a comprehensive set of scenarios for application in their ship simulators.

TUDEV's new University, Piri Reis Maritime University, would wish to continue with BTEC HND programmes though the new EU funded UniMET(Unification of Maritime Education and Training) project ([www.unimet.pro](http://www.unimet.pro)) hence we are interested in keeping the BTEC/Edexcel HNDs as the core of TUDEV's SOS programmes (SOS programmes were introduced in 2007, as the outcome of the successful EU Leonardo funded Safety On Sea project) which are now being transformed into UniMET programmes. The intension is to promote UniMET in many MET institutions in Europe and worldwide.

The UniMET project is directed at the cadet officers and at MET institutions responsible for their education and training and is expected to increase young people's employability within the shipping industry across Europe and worldwide.

In addition, SURPASS ([www.surpass.pro](http://www.surpass.pro)), is also incorporated into UniMET project as one of the major components of UniMET.

SURPASS, was approved to be included in the BTEC Common Skills and later as one of the HND Units. Currently TUDEV is applying to seek approval to run SURPASS as short course leading to an internationally recognised qualification.

Matt Clarke, Senior International Business Manager of Turkey, Middle East, & North Africa and Prof. Geoff Roberts, Senior Consultant of Edexcel were very helpful to make the unit acceptable into the new BTEC format. The SURPASS unit submitted to BTEC in two parts namely:

*Part 1 as: Principles of Instrumentation and Control Systems on board Commercial Ships and Part 2 as: Applications of Instrumentation and Automatic Control Systems on board Commercial Ships.*

*Part 1 of the SURPASS Unit will give learners an understanding of the techniques used in industrial process control and enable learners to predict controller settings and make adjustments to achieve stability in such a control system commonly found on commercial ship applications. The first outcome enables the learner to investigate instrumentation systems terminology and the components that make up a system. This is developed in the second outcome where instrumentation systems and controllers are applied in process control schemes. Finally, the last outcome examines the components and uses of regulating units.*

*The part 2 SURPASS unit is a Multimedia Training Unit (MMTU) on 'Instrumentation and Control of Automated Systems on board commercial ships' is designed to fill the gap created as a result of emergence and application of the automated systems.*

*This unit (MMTU) addresses the earlier pneumatic and hydraulic automation devices as well as more modern programmable logic control systems used in ships. It provides an easy access to required knowledge and skills for the desired effect of improved safety at sea. It also provides a forum for theory, laboratory, workshop and computer simulation exercises as well as hands-on training to monitor various automated equipments including alarm system, log calibrations, display data and control equipments. Both these units incorporated the latest requirements of STCW amendments. The next phase of development of SURPASS*

*At the moment MET institutions can use the SURPASS course as part of their MET programmes. The SURPASS data-structure and its online platform provides all there is to know about automation and pre-cautions needed to be taken into consideration in the event of automation failures at sea. However, the partners have agreed that once the SURPASS Short Course Units, leading to an Internationally recognised Professional Award, are ready then, Edexcel/BTEC comments, suggestions and recommendations will be taken into consideration and at the same time the prepared choreographies (see videos for instance for hydraulics and Pneumatics) will be re-produced and transformed into professional award. The platform will also be amended to speed up the process of going through the whole course faster.*

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