

DTU Students and the Champions of CDIO Academy Innovation Competition 2016 in Finland

The 12th CDIO Annual International Conference took place in the ancient city of Turku, Finland, from June 12th to 16th. It is a forum where educators from leading technical education institutions worldwide meet to exchange their latest ideas on how to improve Technology and Engineering education today.

This year, 283 delegates from 31 countries participated in the conference. In addition, 30 students from technical institutions that are CDIO associate members attended the CDIO Academy Contest. Their objective was to identify innovative and sustainable solutions in cruise ship engineering, anticipating the needs of passengers in the future, in 2025, for example. In contrast to previous years, students were not allowed to prepare their projects beforehand and could not work with their home support team. Instead they were divided into groups with students from other institutions and had to complete five tasks in five weeks before the competition began. Each of these tasks were made known once a week, on a Friday.

The goal of the contest was to identify innovative and sustainable solutions in cruise ship engineering, anticipating and meeting the needs of passengers in this type of tourism in the future.



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At the get-together, all students were to gather in one place and the organizers divided them into teams of four or five people from different schools. Joining people from different schools around the globe into joint teams was aimed at testing the adaptability to working in an international environment and the teamwork skills of today's engineers. There are the most important skills the CDIO educational model focuses on. In only three days, the teams had to solve the problems they were set, including:

- Creating a line-up, formulate ideas (at least 20 ideas), and use the NABC model to identify user requirements and to evaluate the proposed ideas
- Determine the value of each solution and use the Lean Principles when creating solutions
- Develop a presentation with product demonstration (prototype) and present to the jury.

The jury of this year's CDIO Academy included managers of leading Finnish businesses and educators from CDIO, such as Jaana Hanninen, Environmental Manager at Meyer, Turku; Marjo Keiramo, Business Administration Manager at Royal Caribbean Cruises Ltd.; Konsta Weber, Chairman of Boost, Turku; Matt Murphy, University of Liverpool; and Kenneth Ekman, CEO of CrisolteQ.



Ton That Binh of DTU gives a presentation and receives the prize with the winning team of CDIO Academy 2016

DTU took part with three members: Nguyen Cong Duc of class K18 Pharmacy, Ton That Binh of class K19 Information Technology CMU standard, and Dao Hai Viet of class K21 Hospitality PSU standard.

In the end, the SHIPBOTS project by students Ton That Binh (Information Technology CMU standard at DTU, Vietnam), Yvonne Chia (Business Information Technology at Singapore Polytechnic), Aarynjeet

Singh Travis (Mechatronics & Robotics at Singapore Polytechnic), Igor Zagorodny (Thermal Power Plants at Siberian Federal University, Russia) and Tanvi Torane (Chemical Engineering at the University of Calgary, Canada) outstandingly obtained the CDIO Academy 2016 Winners' Cup.

The SHIPBOTS projects contain the following ideas:

- An application of integrated hardware and software for all passengers on the ship, satisfying all passenger needs;
- An automatic transport system for on-board services;
- A 3D screen (for information and entertainment purposes);
- Unmanned aircraft taking pictures of memorable moments on board;
- Establishing an alliance of several shipping companies to create optimal conditions for passengers when using the above-mentioned services.

With his skills and deep understanding of software engineering, Ton That Binh needed only one day to successfully create a demo software version of the integrated application that is to satisfy cruise ship passenger needs.

The very fact of Ton That Binh succeeding in creating the prototype is what launched the entire group towards the highest prize of this year's contest. It was also Binh who took the lion's share of the presentation in front of the jury on himself, thanks to his fluent English presentation skills.

Added to DTU students' recent successes in international contests, such as the CDIO Academy Cup 2013 at Harvard and MIT, winning the IDEERS 2014 contest of making earthquake-resistant buildings in Taiwan, the 2016 Microsoft Imagine Cup in Vietnam, being runners-up of "Go Green" East Asia, this victory in Finland once more asserts the competitiveness and the international integration skills of the students at DTU. This result affirms the university's success and correctness in creating a technical curriculum following the orientation of CDIO and in applying international standards from international collaboration programs with prestigious American universities.

(Media Center)