NORDEK Final Report

Riga Technical University, professor Nadezda Kunicina

I used the grant NORDTEK Travel Grants for Teachers for period for the exchanging :  17 days (17.11.2021-03.12.2021).

The aim of this academic mobility was sharing of expertise and knowledge as well as achievements in information and communication technologies, and security of cyber-physical systems in order to improve quality of teaching, abilities of students and improve content of lectures in Industrial safety in field of Cyber-physical systems.

Modern manufacturing transformations, along with related industries and value creation processes, are shaping a new approach to the role of digitization in the manufacturing industry. Current trend of electrical technologies, automation and data exchange in manufacturing leads to more automation in autonomous decision-making processes, monitor assets and processes in real-time. Moreover, the bridging of the physical and digital world through cyber-physical systems, including Internet of Things, cloud computing and cognitive computing, allows to create a shift from a central control system to one computer-based control.

The new master level study programs was Cybersecurity engineering and Adaptronics was recently developed and approved in RTU, both programs requires an significant input and experience exchange in Computer-based control of electrical technologies.

In frame of approved study program Cybersecurity engineering the three new curricula’s has been developed, and will be teached to students in spring semester of 2022: EEI705 Design of adaptive systems 6ECTS; EEI706 Basics of critical infrastructure control 6ECTS; EEI707 Industrial safety 6ECTS the idea is to be prepared for high quality academic work, the experience exchange, as well as developing of study content was done together with associated professor Rasa Bruzgiene from Faculty of Informatics from Kaunas University of Technology. KTU already has academic experience and laboratory where they model hacker attacks and use all kinds of interesting technologies, so we will fellow the lectures of student groups, and develop of our own methodological approach, and academic materials for international students, the new content regarding DC/DC network from RTU and robots programming from KTU was started.

The main achievements of this academic mobility was sharing of expertise and knowledge as well as new methods in information and communication technologies, informatics engineering, digitization, control and security of cyber-physical systems in order to improve quality of teaching, abilities of students *and new lectures in field of Cyber-physical systems*. RTU and KTU have agreed to apply for NordPlus academic mobility project, to increase academic cooperation.

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