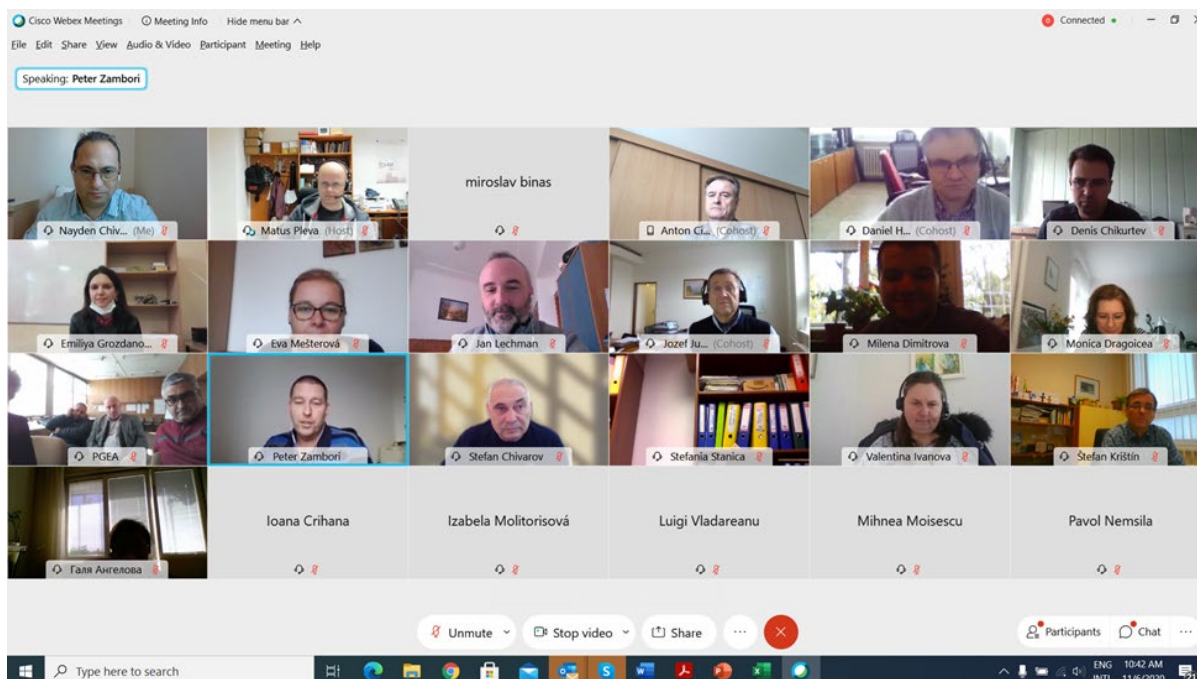Network of IcT Robo Clubs - Erasmus + project №2020-1-BG01-KA202-079200 in the field of robotics, based on a partnership between Bulgaria, Romania and Slovakia

On Friday, 06.11.2020, the official launch of the Network of IcT Robo Clubs (NITRO Clubs EU) project took place. The official opening was given to Prof. Galia Angelova – Director of the Institute of Information and Communication Technologies at BAS and Assoc. Prof. Nayden Chivarov-project coordinator. The Erasmus+ project initiative is in the field of Vocational Education and Training (VET) through which partners from Bulgaria, Romania and Slovakia (universities, institutes of technology, educational institutions and NGOs) will create a network of Robot IcT clubs and provide the infrastructure, knowledge and tools for the sustainable development and further extension of this network beyond the life of the project. The consortium of partners consists of the Institute of Information and Communication Technologies, Bulgaria, as coordinator, and Professional High School of Electrotechnics and electronics "MVLomonosov", Bulgaria, Profesionalna Gimnazia Po Elektrotehnika I Avtomatika, Bulgaria, Hristo Smirnenski Secondary School, Bulgaria, Polytechnic University of Bucharest, Romania, The National Association of Public Librarians and Libraries in Romania (ANBPR), Romania, Technicka Univerzita V Kosiciach, Slovakia, and Stredna Priemyselna Skola Elektrotechnicka, Slovakia, as partners. The NITRO Clubs EU project will take place between 15.10.2020- 14.08.2023.

The main objective of the project is to improve open and innovative education on Key Enabling Technologies (KETs) in partner countries and the region. In addition, it aims to encourage social inclusion and provide learning opportunities for VET students in schools with insufficient equipment, thus providing equal access to quality educational content for trainees in partner countries.


The project will also focus on creating a suite of intellectual products, extremely useful for the functional functioning of this network. A first intellectual product of the project will be the creation of a NITRO Edutainment Platform, consisting of a set of software tools for remote programming and control of educational robots. Based on the educational robot, equipped with Arduino compatible microcontroller and various sensors, the platform to be developed within the project will have a multitude of technical functionalities, which will allow performing various edutainment tasks (education through entertainment).

The partners will also collaborate for the construction of Virtual Robo Lab, a robotics laboratory that will offer students (after completing the tasks related to building and programming the educational mobile robot) the opportunity to gain a superior understanding and practical experience in more advanced fields. in the field of robotics, without the need for expensive equipment (advanced mobile robot, laser scanners and RGB-D cameras, etc.).

The project team will use its expertise to create a series of Robo Clubs IT courses. The purpose of the courses is to introduce students and teachers to the use of the basics of robotics, mechanics and kinematics, controllers, hardware, sensors and the basics of robotic programming. The knowledge gained will allow students to design, control and program educational mobile robots capable of performing at least the following tasks: tracking the line, solving the maze, avoiding obstacles and remote control.


During the project, the partners will develop a package of educational tools for teachers, namely a set of training video tutorials and guides on edutainment content, containing practical exercises, pedagogical guidelines and a
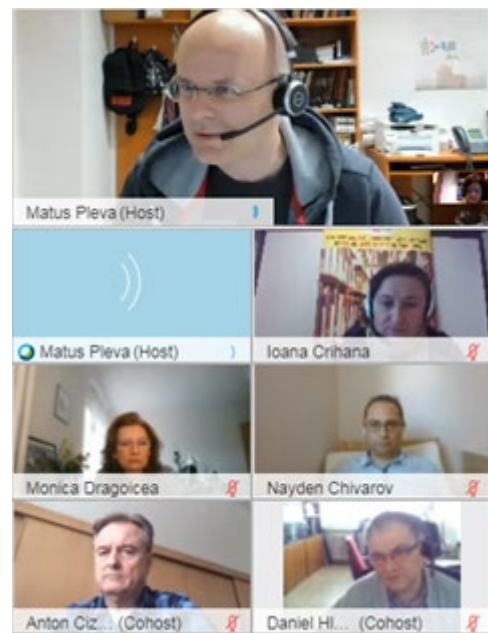
database with frequently asked questions for teacher training and support.

Last but not least, within the NITRO Clubs EU project, the partners will create and launch the Robo Games IT Platform, a software platform for managing the gamified competitions of VET students from the three countries. This platform will become the virtual meeting space for robotics enthusiasts, which will allow the exchange of ideas and materials between community members, including open educational resources and the competition management team.
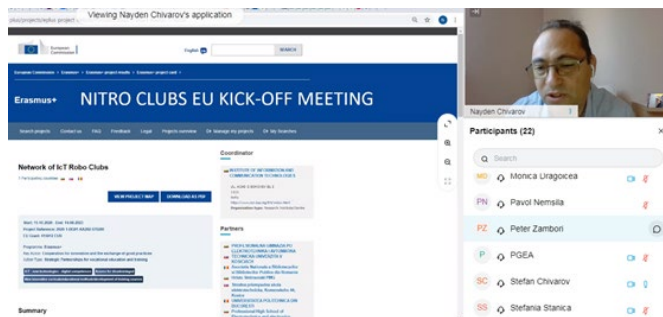
Another intellectual product that adds value to the initiative is the Robo IT Olympics. Within the consortium, the partners will create a methodology, rules and conditions for conducting robotics competitions in the following disciplines: following the line, solving the maze and avoiding obstacles introduced in real time and remote control of the educational robot. The competitions between the participants in the Robo Games Olympics will lead to the education of students in a multidisciplinary scientific field, represented by Robotics, which includes mechanics, hardware, software, sensors and sensor systems.

The network of Robot IcT clubs creation will significantly contribute to increasing the interest of young people in the study of ICT and the notions of robotics, proposing a smooth transition from the study of robotics in secondary schools to university. This transition involves practical activities that will be carried out in the clubs initiated in the context of the NITRO Clubs EU project.