# ICT Forum and Exhibition «TIBO-2023»

## Press Release

## April 18

The XXIX International Forum and Exhibition on Information and Communication Technologies «TIBO-2023» will be held in Minsk on April 18-21, 2023, and the Belarusian State University of Informatics and Radioelectronics (BSUIR) takes an active part both in its organization. By the way, Rector of the university Vadim Bogush is a member of the organizing committee for the preparation and holding of the ICT forum.

April 19 within the framework of the thematic session «e-Education: digitalization in education», the V International Scientific and Practical Conference «Smart Learning: Personnel for the digital economy» will take place. The conference will be moderated by Rector Vadim Bogush and Vice-rector for Academic Affairs Evgeny Shneiderov.

Also, during the forum an exhibition will be organized, where BSUIR will present innovative technologies in education, intelligent systems and technologies for Industry 4.0 (developments in the field of electromagnetic protection and ecology).

## At the exhibition BSUIR will present exhibits:

- The system of monitoring the educational process using ICT

The system of monitoring the educational process using ICT is relevant for the automation of distance learning control based on the Moodle LMS platform. The system collects and analyzes real-time data on the learning process, as well as data on user behavior in the system. The results are provided in the form of reports, tables, graphs and charts. This system allows you to reduce personnel labor costs, to ensure the relevance of training results and prevent the emergence of potential anomalous situations during training.

Advantages of the proposed system:

- a single entry point for analyzing the indicators of the training process;
- visualization of educational data;
- The microservice architecture of the system that allows you to dynamically replace or update individual modules without disrupting the overall operation;
- flexible adjustment of the data filtering system;
- Adaptability and extensibility of functionality for specific educational process;
- export of educational data and visualized reports.

- PLD based neural network

The neural network model is implemented on the basis of the ALTERA CYCLONE IV PLD. The combination of digital logic high speed performance and flexibility of neural networks allows to implement a number of universal devices with a significant PLD resource economy. It is used when performing laboratory work at the Department of Information Radiotechnologies of BSUIR.

- **Laboratory layouts of an embedded system based on a microcontrollers STM 32 and ESP32**

The laboratory layout is designed to study the capabilities of a 32-bit microcontroller and its use in building information systems, organization of interaction of several devices, transmission and display of information in computer systems, as well as when teaching independent software development, testing and debugging real devices.

The development is used in laboratory experiments at the Department of Information Radio Technologies, during which the principles of microcontroller operation, their main periphery, data transfer organization while using them, control of other devices for measuring external indicators, and information display received from external sources adjustment are studied.

- **Technologies and hardware-software complexes for ensuring electromagnetic compatibility (EMC) in on-board and local ground groups of radioelectronic means (ADFTS, EMC-Analyzer, DNA EMC, GIS-RF, VTA)**

Designed to analyze and provide EMC in local on-board and ground-based radioelectronic groups, generate specifications for on-board and ground-based radioelectronic systems taking into consideration the EMC requirements, as well as to simulate radio reception in a complex electromagnetic environment.

Distinctive features and advantages:

- products significantly outperform analogues in terms of modeling of non-linear effects in radio receivers when operating in a complex electromagnetic environment;
- the possibility of simultaneous joint analysis of a huge number of parasitic electromagnetic couplings of various nature has been implemented;
- analysis of EMC based on a system criterion that takes into account the combined influence of parasitic electromagnetic couplings of all types in the onboard radioelectronic grouping;
- high speed performance and practical efficiency, a significant increase in quality, and cost reduction for the design of complex objects (aircraft, ships, etc.).

- **«Zhytsen»**

Hardware-software module «Zhytsen» is a system of sensors and actuators to control the growth of plants. The module provides real-time control and adjustment of the artificial environment parameters in accordance with the preset plant growing mode. This approach corresponds to the IoT concept. Depending on the purpose, the module can be integrated into the system of «smart home», modern high-tech agricultural enterprise or developed system of urban infrastructure.

- Targeting, Recognition, and Identification System (T. R. I. S)

It is represented by a software for reception and processing of statistical and actual information at different events, as well as in different facilities to analyze the participants and events. High information report completeness and high precision while operating in real time are ensured. The system is focused on working with customer equipment.

- The Smart Badge

The Smart Badge and mobile application were developed by students and teachers of BSUIR Affiliate «Minsk Radioengineering College». The Badge operation is based on the contactless technology of information recording and transmission. The built-in NFC module allows the Badge to be used as a device for wireless access to personal information, including full name and place of work, electronic prescriptions, medical history, and also provides uninterrupted real-time monitoring of the person's location.

The place of the exhibition:

Minsk, Pobediteley Ave., 111a (Skating Stadium, Minsk-Arena).
BSUIR stand E1-2.

Working hours of the exhibition:

April 18-20, 2023 from 10.00 to 18.00,
April 21, 2023 from 10.00 to 15.00.

Contacts:

Svetlana Belan, leading marketer of the Department of Marketing and Scientific Communications of BSUIR, phone: +37517 293 80 87, +375 29 339 83 98, e-mail: svbelan@bsuir.by