



Belarusian State University of  
Informatics and Radioelectronics

R&D Department

# Announcement

## XXVII International Specialized Exhibition

"TIBO 2020"

17-20 November 2020

Pobediteley Avenue 111, 111a  
(Stand of the Ministry of Education of  
The Republic of Belarus)  
Minsk, Belarus

TIBO Forum is a unique platform for the exchange of best practices in the field of information technology, analysis of global best practices of digital transformation and discussion of the prospects of effective use of the latest technological trends in the traditional sectors of the economy.

On a large-scale TIBO exhibition the leading domestic and foreign companies showcase the latest achievements of the IT industry, technological innovations and ready-to-use solutions for the manufacturing sectors of the economy in Belarusian and global market.

TIBO forum is an effective dialogue platform for the discussion of topical issues of economic cooperation in the context of global challenges and a joint strategic decision-making at the level of representatives of government, business and professional community, as well as the dissemination of IT knowledge in society and the involvement of young people in the process of digital transformation.

**On the exhibition BSUIR will showcase high-tech developments and technologies:**

«ALS Expert» **mobile application** for the assessment of vocal function in patients with amyotrophic lateral sclerosis.

"Rithor" **PC application** aiding in the treatment of stuttering with a speech signal processing techniques based on acoustic feedback.

### **Hardware and software appliance for the study and verification of the RFID systems of HF and UHF ranges**

**Designation:** experimental studies and numerical modeling of the functional units and radio frequency identification devices of HF and UHF bands.

**Features and benefits:** modular layout circuit allows expanding the possibilities of the appliance by introducing laboratory modules of other frequency bands and modernizing laboratory modules with the improvement of components and software.

### **Hardware appliance for protection of personal computers against unauthorized access to information**

**Designation:** performs physical access control to the information stored on the internal storage and control of external storage connection.

All functions are performed by the hardware resources of the appliance without using the resources of a personal computer.

**Features and benefits:**

- physical access control to fixed media;
- control of USB-device connection;
- monitoring the integrity of the system unit of a personal computer; - each user is assigned a fixed media with the operating system.

### **Locator for detecting unauthorized eavesdropping devices**

**Designation:** detecting unauthorized eavesdropping devices by the resonance effects in their antenna systems and associated filter elements. It can be used during search activities on radio localization devices or other actuators with a radio channel.

**Features and benefits:** possibility of identifying shielded eavesdropping devices in a predetermined frequency range in real time.

## **"Detector" - a complex to verify computing equipment for hidden hardware means of unauthorized opportunities**

**Designation:** verifying computing equipment, personal computers, servers and routers that process confidential information for the presence of hidden hardware means of unauthorized opportunities (hereinafter - UO) and determining their exact placement.

**Features and benefits:** detection methodology and a signal processing algorithm that allows verifying computing equipment for the presence of hidden UO hardware means. The verification is done at the level of individual components and circuit boards included in the computing equipment.

## **Voice data protection device "Priboi"**

**Designation:** protection against leakage of voice information from acoustic and vibration channels from a room outside the protection zone.

### **Features and benefits:**

- the device generates masking signals such as "white noise", "speech-like signals", "white noise" + "speech-like signals", thereby providing closing speech information leakage channels;
- "speech-like signals" are generated by the microprocessor at random, meet all formal speech properties (formant character signals, pitch frequency equal to that of the speech being masked, pauses between words), and may be adapted to the specific individual.

## **"EMC-Analyzer" - specialized expert system for solving problems of electromagnetic compatibility in the airborne and ground local groupings of radio equipment**

EMC analysis and provision in local airborne and ground radio electronic groupings, generation of specifications of airborne and ground electronic systems as per EMC requirements, modeling of radio reception of a complex electromagnetic environment.

### **Features and benefits:**

- EMC-Analyzer substantially overcomes the analogues in the capabilities of modeling nonlinear effects in radio receivers when operating in a complex electromagnetic environment;

- possibility of simultaneous combined analysis of vast numbers of spurious electromagnetic couplings of different nature in the frequency band 0.1 MHz to 40 GHz with a dynamic range up to 300 dB;
- EMC analysis on the basis of the system criterion, taking into account the joint effect of stray electromagnetic couplings of all kinds in the on-board grouping of radio equipment.

### **ADFTS - automatic dual-frequency testing system for measuring and modeling of EMC parameters of radio receivers**

Detection, identification (recognition) and measuring the characteristics of all possible channels and the effects of radio receivers' damage over the antenna input.

#### **Features and benefits:**

- is the most informative, convenient and effective technology of EMC testing and of measuring radio receivers' characteristics;
- has been used successfully to design radio receivers and systems in the HF, VHF, UHF, SHF and EHF bands, as well as components of RF systems for different services (radar, fixed and mobile communications, radio navigation, and so on.), For civil and military aircraft, satellite, naval and radar systems.

### **EMC VTA - technology and hardware-software appliance for EMC analysis in complex regional groupings of different-service radio systems**

An effective and inexpensive EMC analysis for many variants of designation of operating frequencies and positioning of radio systems in the area.

Using augmented reality technology and methods semirealistic simulation.

**Features and benefits:** highly objective simulation of electromagnetic environment by using modern geo-information systems and radio propagation models recommended by the International Telecommunication Union.

## **DNA-EMC - technology and software of digital nonlinear modeling of the behavior of radio receivers in a complex electromagnetic environment**

DNA has the ultra-high computational efficiency, which does not depend on the complexity of the electromagnetic environment.

DNA allows for the main types of non-linear effects (intermodulation, blocking, cross-modulation, converting the heterodyne noise, amplitude-phase conversion, side receiving channels).

**Features and benefits:** DNA supports the modeling in a wide bandwidth and large dynamic range and can automatically identify the sources of nonlinear interference (for example, intermodulation).

## **EMS - methodology of analysis of electromagnetic ecology and electromagnetic security of the population in conditions of massive use of mobiles**

The methods allow evaluating the strength of electromagnetic noise generated by the mobile / fixed telephony radio equipment and other radio services.

**Features and benefits:** the methodology is extremely important in the conditions of intensive development of wireless services, technologies, systems and 4G / 5G mobile networks.

[More about developments](#)

[Organizers' website](#)