



Technology presentation
at the SPIEF'21



Technology presentation
at the TECNOPROM'21



Patent
for "U.M." technology



Newest technology
Grand from FSI – START'21



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Innovative technology that solves the
problem of using micro earbuds



RUBLEFF
Rubleff technologies

We are for pure knowledge!



Problem



School
23% of school-students use in the final exam



University
72% of students in the Russian Federation and 42% in the world use



Driver's license
Passing the driving license test



Chess

FIDE acknowledged the problem of use in tournaments



Casino
The first attempts to use micro earbuds in a gambling house were registered in 1970-80



eSport
Yes, even here they use we ourselves are surprised where we can find users

Parts of a micro earbud

One or two unsafe earbuds
2x3mm

Aerial

Accumulator battery

Phone / radio set

Derived microphone or camera

Micro earbuds are a system that allows users to freely receive information without the possibility of being detected

They first appeared in 2003 and steadily taking over the whole world.

Solution



«U.M. – Hive»



«U.M. – MotherBox»

U.M. - MotherBox includes a tablet, it shows on which «Boid» the operation occurred, from which side and where the user of the micro earbuds is sitting, and also records the received signal, with the possibility of playback.



«U.M. – Boid»

U.M. - Boid is installed on the table of the testee. "Boid" captures the signal of the micro earbuds, conducting two-factor identification and transmits it to the "MotherBox" tablet

Why not a..



CCTV monitoring

- it is impossible to see magnetic waves
- determination of use by indirect indications
- it takes a lot of time to look through all the materials



Noise generators

- no ability to reject LTE, 5g, WI-FI and Bluetooth signals of new phone

- permit to use is necessary

- school and university - sensitive object



Metal detectors

- it is impossible to detect an earbud due to its aerial's tiny size (<1 mm)

- a phone and a connected earbud can be located up to 50 meters away

«U.M.» technology officially tested and used in a dozen universities of the Russian Federation, and negotiations are underway to introduce the

Technology into the educational environment (schools + universities) of the CIS countries.

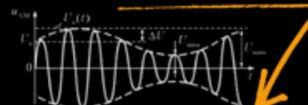
The problem is recognized at a high international level by OFQUAL и BMBF

We are residents of the Skolkovo Technopark and work in compliance with public procurement laws.

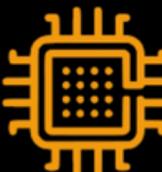
Determination of the noisy electromagnetic low-frequency signal of the micro-earpiece loop, in the range of 300-1800 Hz.



two-factor system for determining the signal of micro-earphones.



amplitude modulation by searching for unique patterns of the earpiece antenna signal.



trained voice activity detection (neural network) based on the first modulations of vowels.

obtaining the fact of use; signal triangulation indoors.



output of information and sound to the special tablet.

We can develop solutions based on «U.M.» technology - the optimal solution to your problem of using micro-earphones to improve the quality of education in your country.

We offer to equip with "U.M." universities and schools to improve the quality and safety of your education system

