

Interactive Reflex Biometrics

Konyavsky, V.A. – Doctor of Technical Sciences, Head of the Department of Information Security, MIPT;

Kuznetsov N.A. – Academician of RAS, Doctor of Technical Sciences, Professor, Head of the Department of Infocommunication systems and networks, MIPT;

Raigorodskii A.M. – Doctor of Physical and Mathematical Sciences, Head of the MIPT-Sberbank laboratory, MIPT;

Trenin S.A. – MIPT-Sberbank laboratory, MIPT;

Abdullaeva I.A. – MIPT-Sberbank laboratory, MIPT.

Biometric identification methods have historically been developed for forensic purposes, and for these purposes, their use has yielded acceptable results.

However, attempts to use forensic methods for digital economy systems have been much less successful. The reason is that forensic equipment is developed as trusted, in compliance with the requirements of information protection, and smartphones of users of digital economy systems can not be trusted under any conditions, which creates the possibility of interference in the process of third parties.

Thus, there is a contradiction associated with the need for trusted identification on untrusted devices, and the lack of scientific knowledge in this area.

To resolve this contradiction, a hypothesis was formulated about the possibility of using eye movement characteristics for identification, which are biometric characteristics and contain reflex elements. To ensure the security of information interaction and protection from malicious influences, an interactive procedure was proposed that allows the process to be divided into trusted and uncontrolled parts while maintaining security as a whole.

The performed research confirms the possibility of using modern identification methods based on interactive reflex biometrics in the information systems of the digital economy.