PFORT
Your Gateway to Security

RUSSIAN DEVELOPER AND MANUFACTURER
OF AUTOMATED SOFTWARE AND HARDWARE
BIOMETRIC COMPLEXES

BIOMETRICS IS THE FOCUS OF OUR ACTIVITY

OUR ADVANTAGES

OUR MISSION

We take care of your security and comfort, saving you effort and time.

ABOUT THE BRAND

- PFORT is a leading Russian developer and manufacturer of equipment and hard- & software platforms by using various methods of biometric identification. The brand is 100% owned by a private Russian company (25+ years on the market).
- We supply components for security systems, design and manufacture customized products upon customer requests, and provide system integration services.
- High level of expertise of our staff (25+ years on the market) guarantees the best service, support, and assistance.
- We have a solid customer base and a huge portfolio of successful projects. We are trusted by the largest enterprises of the Russian strategic industries.
- We are looking for long-term cooperation, so we care about our reputation.

WHY CHOOSE US

- We have a long track of successful deployment of various biometric systems.
- We offer comprehensive service (from design and pilot projects to commissioning, training, and servicing).
- We are not too focused on a certain technology, so we can offer solutions that meet our customers' needs to the utmost.
- Our own electronics manufacture and industrial sites allow us to implement projects of any complexity within a reasonable time.

CUSTOMIZED SET OF FEATURES

We constantly expand our portfolio and the range of generic solutions. In addition to the manufacture and supply of generic solutions, PFORT develops and manufactures customized products according to the customer's specifications. Within our project activity, we can develop products of special purpose, set of functions, configuration and design, and have it manufactured in any required amount, as well as prepare and supply kits of spare tools and accessories kits, if necessary.

WHY BIOMETRICS

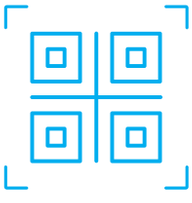
The Russian national standard GOST R 51241-98 defines the term "identification" as a process of recognizing an entity (subject or object) by its inherent or assigned attribute. "Identification" also means assigning an identifier to the access entity and/or comparing the submitted identifier and the list of assigned identifiers. I.e. the identification process is considered as a comparison between the identification attribute (code) entered into the system and the sample codes stored in its memory (search and one-to-many comparison).

Note the term "authentication": it is a procedure of verifying the authenticity of the identity data entered by the subject to the reference (image) stored in the system's memory for this subject (the authentication process is considered as one-to-one comparison). These concepts have close meanings and are frequently used beyond the field of access control.

Main methods of identification and authentication for Access Control Systems (AC systems)

Identification by a memorized code (password/combination, etc.)

This method has some obvious weaknesses: often, the code can be written on a piece of paper stored in a place easily accessible to a potential intruder, errors when entering codes cut the system throughput, and readers have not enough protection against tempering (spying, password mining).



Identification by a physical code (tag/medium/identifier)

The method's obvious weakness is the possibility of an identifier compromise. The identifier (object, RFID tag) can be stolen, copied, lost, or even intentionally transferred to an unauthorized person.

The application of the above identification methods in an AC system gives no protection from the mentioned risks in principle. This significantly lowers the security of the protected object, so it is necessary to provide AC systems with additional methods of identification: biometrics.

Biometric identification: YOU ARE THE ONLY KEY

There are plenty of static methods of biometric identification nowadays, based on a person's static physiological characteristic that keeps unchanged for quite a long time. The best-known methods involve such characteristics as:

- Fingerprint.
- Face shape (geometry).
- Palm veins pattern.
- Retina.
- Iris.
- Hand geometry.
- DNA.

BENEFITS OF BIOMETRICS

Data theft protection.

A biometric scanner works with the digital template of the biometric identifier rather than with its image. It is impossible to decrypt the template to recover the full image of a face, fingerprint, or veins pattern. All data is stored at a failsafe server, while data transfer channels are protected by end-to-end encryption. This completely eliminates the risk of hacking and data theft.

Protection from fraud or human errors.

Each biometric identifier is personal and unique. It cannot be lost, forgotten at home, stolen, or given to a colleague. High identification rate. Readers and terminals identify a person in less than a half-second.

Identification in any conditions.

Our product lineup includes devices adapted to various operation conditions, offering readers and terminals operating in the dark or bright light, heat or frost reaching –40 °C. There is also equipment for contactless identification. The list of typical solutions contains turnkey time & attendance (T&A) systems for companies with any number of personnel, including remote and travelling employees.

Guarantees of a worldwide known partner.

All products have both Russian and international certificates of conformity.

Today, contactless methods of biometric identification are particularly relevant and promising. They do not need physical contact between the person and the biometric scanner. Currently, we offer contactless versions of the systems of biometric identification by face geometry, veins pattern, iris, hand geometry, and even by fingerprints*.

Some cases call for multi-modal systems, i.e., systems that use a combination of two or more methods of biometric identification. This significantly improves the total level of identification reliability. For certain configurations, it also notably shortens the duration of the authentication procedure.

* Contactless fingerprint identification generates images differing from traditional ones. Hence, it is not certified for application on par with the traditional method and is incompatible with it.

BIOMETRIC SOLUTIONS

Today, the most active driver segments of the biometrics market are fintech, transport, retail, and industry. The maximum interest is drawn by the contactless methods for reading the biometric characteristics, which include face geometry (2D/3D), veins pattern, iris, behavioral biometrics, and emotion recognition. Technology trends in biometrics are a consolidation of biometric data, multi-modality, transfer from in-house to client service, and Access Control as a Service (ACaaS).

"We live in a society where technology is a very important force in business, in our daily lives. And all technology starts as a spark in someone's brain. An idea of something that didn't exist before, that once they have invented it – brought it into existence – could change everything"

Nathan Myhrvold,
CEO, Intellectual Ventures

Your needs

Are you planning to use biometric technologies in your corporate security system? Do you want to provide your customers with a brand new level of service? Then you should think about what biometric technology will be the most effective and smart and how it will be integrated with the adjacent corporate systems in your company.

Where would biometric technologies be useful?

- **AC systems.**
  Physical access control. Implementation of biometrics at checkpoints for people and vehicles increases the general perimeter/site security. It eliminates the effect of "the human factor" and lowers the risks of employees' unintentional or intentional acts that can cause adverse financial or legal consequences for the company.
- **Time & attendance systems.**
  Use of biometrics allows for complete elimination of any attempts at cheating. The experience of operating similar systems has shown their fast payback due to their capability to identify "ghost employees" and other practices used by junior (and sometimes middle) managers for tampering with work time. These systems are convenient both for fixed offices and mobile structures (project offices, construction teams, and other service groups moving from site to site).
- **Biometric pass offices.**
  The main result of the implementation is a whole new level of service. They accelerate issuing of permanent and guest passes and make this procedure more convenient, improving both visitors' and personnel experience.
- **Biometric office.**
  Biometric technologies used at doors, in elevators and passages instead of the traditional RFID cards improve the general security and user experience.
- **Information security and process safety.**
  The use of biometric identification in information or automation systems dramatically improves the infrastructure's safety, taking it to a whole new level.
- **In-house services.**
  Biometric kiosks as points of access to corporate services demonstrate high efficiency. When some employees have no fixed or mobile PC workstations, this solution is applied to manage the internal document flow. By means of biometrics, the kiosk identifies employees and provides them with all the personal services available in the company, including the traditional communication with the HR and accounting departments.
- **External services.**
  In some cases, the use of biometrics is reasonable in devices providing customer services. For example, ATMs in the financial sector, public service devices (e.g., at multifunctional public services centers), and payment and video content analysis systems in retail.
- **FastTrack.**
  A new look at traditional services in many sectors. It is a faster way of providing traditional service, most widespread at transport hubs (e.g., airports) and in the public sector: in entertainment, various loyalty programs, etc. The use of biometrics in the executive part of the FastTrack system significantly saves costs, eliminates the human factor, and improves user experience.

- **Biometrics in healthcare.**
  A remote medical examination is a rapidly developing service nowadays. Here, one of the most important requirements is safety and reliability of the obtained data. The application of biometrics for primary identification and further presence tracking of the examined person throughout the entire procedure reduces the risks of substitution and compromise of diagnosis results to the minimum.
- **Payment systems.**
  The use of biometric ATMs is rapidly spreading. However, their value shows only through the interaction with a united trusted base of reference biometric data, e.g., with the Unified Biometric System (UBS). Few ATMs can do this. Local solutions can be implemented within a perimeter of large enterprises or holdings.

Our solution

The leader in deploying biometric technologies in security systems, PFORT proposes a wide range of customized solutions including hardware, software, and system integration services.

Partnership with us gives you the technologies of tomorrow. Owing to our unique technologies, experience, and individual approach to projects, our solutions cut costs and financial losses and reduce technological risks. We have been manufacturing original products and rendering technical assistance of the implemented projects, providing warranty and post-warranty service for many years.

PFORT is a one-stop-shop manufacturer and vendor of package solutions. The company solves a wide variety of problems in biometric technologies from the design and deployment of new products to the support of heterogeneous infrastructures, from the maintenance of separate products to the creation of customized system architecture and support of the whole solution.

Technology of cooperation with the customer

As a rule, each project includes three main steps:

- Data investigation, identification of objectives and needs for development of the project specification.
- Engineering design and solution development.
- Manufacture, implementation of the developed solution, preparation of the necessary documentation, training (if necessary), operational testing, and final acceptance and commissioning.

Results

A wide deployment of convenient and useful services, development of financial technologies, and digitalization are changing our life, our vision of the future, and the roles of market players. There is no universal way to solve the problems of personal biometric identification yet. Fast identification and deep client analysis call for local customized solutions. PFORT's experts use advanced biometric techniques and vast practical implementation experience to create a large biometric identification knowledge base and help our customers choose the most effective and optimum solution.

BIOMETRIC PASS OFFICE

Is your pass office far from the checkpoint? Do you have many checkpoints and just one pass office? Is issuing a pass for a new employee or guest taking a long time? Are you facing routine work when issuing papers to let someone pass through the checkpoint? Maybe you are a property owner in an office building looking to automate some security services, to eliminate the human factor, improve general site security and the level of service for tenants and their visitors?

> *"I've learned that people will forget what you said, people will forget what you did, but people will never forget how you made them feel."*
>
> *Maya Angelou*

Such issues are common both in large industrial companies with staff numbers reaching thousands or even tens of thousands and at classified facilities requiring approvals from different authorities to get passes. Even small companies' personnel lose time for signing applications in several departments of their landlord. Hence, enterprises of all sizes face issues when getting passes. First, losing time getting passes is inconvenient for guests. It is even more annoying in case of regular group visits, e.g., for training.

For these tasks, PFORT has developed the Biometric Pass Office hard- & software package with an electronic application system.

The purpose of the Biometric Pass Office is to ease and automate the existing checkpoints. The Biometric Pass Office gives visitors several options such as automated informing of the host party about their arrival, unassisted guest pass receipt, self-registering in the pass system at the checkpoint and entering their biometric profile. All these significantly simplify and accelerate passing the checkpoint during further visits.

Main functions

The electronic pass request system provides creation of electronic applications, their approval according to the set procedure and transfer into the executive part of the system (for registration and issue of appropriate passes).

Each user has their own dashboard letting them create new applications, view the history and status of the current applications.

There are different types of passes including one-time guest pass, one-time group pass, take-away pass, and more. In addition to the standard pass system based on RFID tag passes, the Biometric Pass Office allows registration of the biometric modality (fingerprints, face, veins, iris, etc.) chosen by the customer and its further use for identification.

The executive part of the system consists of a sensor kiosk within the Biometric Pass Office. It provides:

- Primary input and registration of pass applications for people and vehicles.
- Primary visitor registration with the functions of scanning their identity document (ID) and automatic filling of the basic info fields.
- Visitor authentication (verification of the fact that the ID belongs to the presenting person).
- Registration of the required biometric modality for the visitor's simplified identification and passing during further visits.
- Printing and issuing of the appropriate pass, including marking it with determined image and text (if necessary).

DIGITAL BIOMETRIC CHECKPOINT

The Digital Biometric Checkpoint is a hard- & software package fully developed in Russia. It is an automated system consisting of a Biometric Pass Office and Biometric Gates. Biometric Mantrap Gates can be used for higher security. If necessary, the package can include an electronic application system and a biometric AC system. The package implements any biometric identification scenarios (including combined ones) requested by the customer. It may use subdermal palm vein patterns, fingerprints, face geometry (face recognition), iris, etc., as identification means. The general view of the solution is shown below.

The Digital Biometric Checkpoint is a set of interconnected hard- & software components ready for integration with a checkpoint infrastructure. The system is a new step in optimizing algorithms of identification and allowing people into restricted perimeters. The fully-automated system ensures primary registration, identification and authentication of visitors, issues guest or permanent passes for them, and directly lets them into a restricted perimeter.

Deployment of the Digital Biometric Checkpoint allows:

- Entirely eliminating the human factor, thus improving the general site security.
- Shifting personnel from access control to other tasks of higher importance.
- Accelerating the passing procedure for visitors/employees.
- Improving the overall experience of visitors/employees.
- Increasing the hygienic safety of the passing procedure (due to contactless technologies of biometric identification and fewer social contacts).

Package algorithm

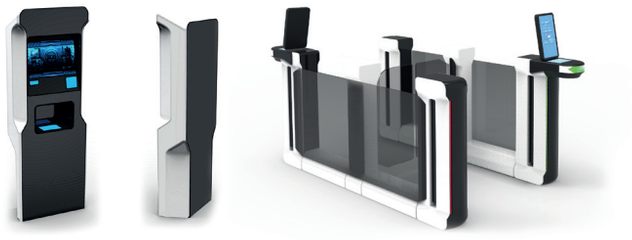
First, the new visitor registers in the AC system. The system has different visitor registration scenarios depending on the required functionality and settings. In addition to registering typical data (passport details, full name, etc.), the system can offer the user to input a biometric modality (to simplify and accelerate further passing through the AC system).

After registering at the Biometric Pass Office desk and obtaining a pass, the visitor can go to the gates (turnstiles) and through them according to the checkpoint procedure.

They will not need to register again during their further visits. Their actions are fully determined by the effective passing procedure, which may include immediate passing through the biometric gates if the visitor has entered the required biometric characteristics during the registration.

Individual passing scenarios can be implemented and any combination of identification mechanisms can be applied depending on the actual needs. They may use:

- Issued pass (RFID tag).
- Face recognition.
- Media with biometric information.
- Fingerprints.
- Palm veins pattern.
- Iris image and other methods of biometric identification.



The digital biometric checkpoint package is a flexible, versatile, and scalable system. It allows implementing any individual functional requirements from users, even up to the development of a custom design and configuration of the applied equipment.

Application examples

- Automated checkpoints at entrances to corporate offices, business centers and government facilities.
- Automated accreditation desks for the organizers of various marketing activities (business models with temporary equipment operation may be discussed).
- Special perimeters inside public buildings and facilities, e.g., airports, passenger seaports, sports and entertainment facilities. In this case, the traditional turnstiles are replaced with special versions (full-height mantrap gates and others).

BIOMETRIC AC SYSTEM

Biometric AC systems are Access Control Systems including a comprehensive hard- & software package intended to provide security. They use the selected biometric characteristics for identification register people or vehicles entering or exiting from a certain area through its checkpoints or prevent them from doing so. These can be equipped with doors, gates, turnstiles, mantrap gates, etc. Today, biometric guard packages are a common trend in security.

The main task of such systems is to provide access into the protected perimeter to a restricted number of authorized persons. This helps prevent illegal intrusion. These systems effectively control the personnel's location on the premises and periods of attendance.

Our offer

The biometric office is a comprehensive solution providing the widest use of biometric identification systems. They are deployed in various functional modules from AC systems, time & attendance systems (T&A systems), pass offices, and entry device groups with biometric gates to electronically-lockable internal office doors equipped with biometric identification systems and the application of biometrics for access to the corporate information system.

The proposed solutions help in arranging an effective system of access to business resources, namely:

- Implementing restricted access control at an office/plant/territory.
- Providing access for employees and visitors with different access rights and in various conditions.
- Protecting confidential data.
- Tracking the locations and movement of people inside the building.

PFORT has off-the-shelf generic solutions with biometric AC systems for companies with any number of personnel and various work conditions, from a small office to a huge plant or a federal branch network. For example, one of the large biometric systems (AC and T&A) our experts deployed identifies 70,000 employees on a daily basis.

Frequently used functions

- Registration of users, input of personal data, registration of card codes, fingerprints, palm veins, images of face, and even iris.
- Setting of access scenarios, temporary access mode for users.
- Real-time viewing of user identification events and the mimic diagram of the premises.
- Work with archived events: search, viewing, report generation.
- Generating reports on time & attendance (report builder).
- Development of custom pass templates for RFID cards.
- System configuration, equipment setup.
- Task management: sending text messages, notifications, work with operation scenarios of the AC system's devices, automatic report generation and sending via email.
- Integration with CCTV systems.
- Export of logs and reports as Excel, PDF, HTML files.
- Integration with the Active directory.

Benefits of PFORT's Biometric Office

- Protection from fraud or human errors. Each biometric identifier is personal and unique. It cannot be lost, forgotten at home, stolen, or given to a colleague.
- Protection from data theft. A biometric scanner works with the digital template of the biometric identifier rather than with its image. It is impossible to decrypt the template to recover a full image of a face, fingerprint, iris, or veins pattern.
- High identification rate. Readers and terminals identify a person in less than a half-second.
- Identification in any conditions. Our device lineup includes models adapted to various operation conditions, offering readers and terminals operating in the dark or bright light, heat or frost reaching –40 °C. We have also tried and tested a wide range of equipment for contactless identification. PFORT has generic solutions developed for deployment of biometric AC systems at companies of various sizes.
- Guarantees of worldwide known partners. We cooperate with the market leaders whose solutions are successfully implemented in various countries. All applied products have both Russian and international certificates of conformity.

Basic system components

Scanners of biometric attributes (characteristics):

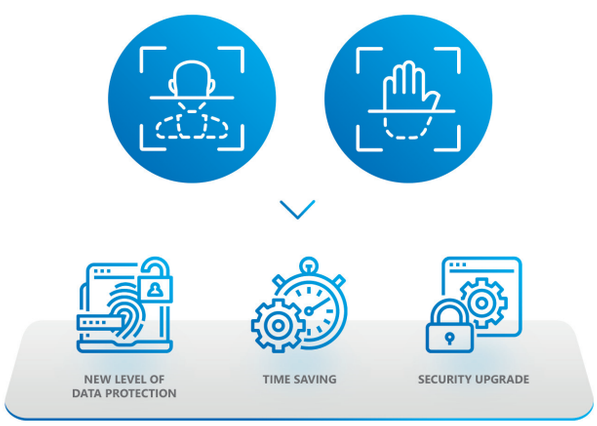
- Iris or retina pattern.
- Hand- or fingerprint.
- Face shape (geometry), etc.

Mechanical blocking devices, including:

- Doors with electromechanical locking systems.
- Turnstiles.
- Latches.
- Electric boom barriers.
- Gates.
- Wickets.

System software:

- Central server.
- Administrators and controller workstations



Integration with other equipment

Biometric access control systems can be integrated with accounting software and security systems. The capabilities of AC systems are not limited to this. Such packages are used together with equipment accepting payment for services or site entrance fees, which uses cards with cash equivalent. This method is frequently deployed at ski resorts.

Features

- Client-server architecture.
- Convenient user interface.
- Cross-platform capability: Windows, Linux.
- License options depending on the number of users.

BIOMETRIC TRACKING OF TIME & ATTENDANCE

How can you improve your staff discipline and efficiency?
How can you centralize and automate the time & attendance tracking of your workforce?
How can you reduce the workload of your HR and accounting departments?

Biometric T&A systems are used to optimize personnel management and to solve the following problems:

- Automation of time & attendance monitoring and cutting workload of the HR department.
- Improvement of staff discipline and efficiency, including remote employees.
- Arrangement of time & attendance tracking and compliance with regulations.
- Implementation of effective time planning/workload balance.
- Prevention of non-attendance, fraud, or cheating attempts.
- Identification of ghost employees at a large plant or in shifting teams.
- Verification of outstaffers' reliability.

PFORT is ready to develop a project, supply, install, and support the operation of biometric T&A systems on favorable terms. We offer various solutions for biometric identification, selecting the optimum option for particular facilities and operating conditions. All technologies that we offer are market leaders in their segments. These can be solutions based on identification by fingerprints, face geometry, subdermal palm vein patterns, or irises. For example, fingerprint readers will be an excellent fit for a small office, but they are not going to be functional at a plant with a great number of staff where sensor fouling and reading errors are possible and the identification rate is critical. Identification by face or by palm vein patterns is preferable for checkpoints intended for a high number of passing personnel.

PFORT has off-the-shelf generic biometric solutions for automated tracking of time & attendance intended for companies of any size and with any number of personnel. Real deployment examples include 8,000 biometric terminals and over 200,000 of employees.

Functioning of a T&A system based on biometrics

There are standalone and network-based biometric T&A systems. The standalone ones are fully complete and autonomous devices with external access. The network-based devices function within a controller net.

A standalone T&A system is a low-cost solution for simple tasks. Standalone controllers are biometric terminals registering employees' arrival and departure. As a rule, they come with a screen for easy visualization of data reading. When identification is complete, it shows the employee's photo, full name, and the time of the procedure.

All information is stored in the terminal and transferred to a remote computer in real time or as requested. In addition, a standalone terminal allows controlling and correcting some configuration data. However, the basic configuration is performed from a remote workstation.

Network-based biometric controllers are intended for large systems and geographically distributed facilities. They allow joining the required number of terminals into a system registering employees' arrivals and departures. Such terminals can also store a registration protocol (log) and transfer data to a server in real time or as requested.

Solutions with a biometric T&A system obtaining information from a distributed network-based biometric AC system, which identifies a person by their unique biometric characteristics are quite common.

Biometric readers or terminals are installed in key points, e.g., at workspace entrances. The employees' biometric characteristics and information on the terms of their work are entered into the system database. As a result, the system tracks multiple parameters, including the time when a person started to work, how often they make breaks, and the time they spend on certain tasks.

A biometric T&A system is easily scalable and is easy to integrate with other automated systems, while its payback time varies from 2 to 15 months.

Biometric T&A tracking terminal options

Desktop biometric terminals

Desktop biometric terminals are a convenient and stylish solution for tracking workforce time & attendance in small companies. Depending on the configuration, a terminal includes either a system for face recognition or a scanner of palm vein patterns or fingerprints. By means of identification, an employee registers the time of their arrival/departure.

Once they are identified, their photo, name, and type of the registered event (arrival/departure) is displayed on the screen. It is also possible to add sound notifications.

Wall biometric terminals

Wall biometric terminals are a convenient, practical and stylish solution for tracking workforce time & attendance. Depending on the configuration, a terminal includes either a system for face recognition or a scanner of palm vein patterns, or iris, or fingerprints. By means of identification, an employee registers the time of their arrival/departure.

Once they are identified, their photo, name, and type of the registered event (arrival/departure) is displayed on the screen. It is also possible to add sound notifications.

Floor biometric kiosks

Sensor kiosks are a convenient solution for tracking workforce time & attendance. Our biometric kiosks can include either a scanner of fingerprints, iris, palm vein patterns or a face recognition system. The software supplied with the package allows for easy equipment integration with the existing infrastructure.

At the kiosk, an employee undergoes identification, thus registering the time of their arrival/departure. Once they are identified, their photo, name, and type of the registered event (arrival/departure) is displayed on the screen. It is also possible to add sound notifications.

Kiosks have an anti-vandal version to protect them from accidental or intentional damage. Additionally, they may be equipped with a UPS, LTE modem, and various types of printers or card dispensers.

Results

- Fast and easy time tracking of employees' arrival/departure.
- Automated report generation.
- Prompt notification on employees' presence at their workplaces, late arrivals, early departures, non-compliance with internal work regulations.
- Automated accounting of the staff wages in full correspondence with their worktime.

Do not hesitate to contact us if you need a biometric T&A system convenient in operation, fast at identification, and efficient in your conditions. We will find a solution especially for you, design the system, install it, and support its operation.

BIOMETRIC ATMS

Research companies keep noting frequent ATM cash withdrawal, which shows this channel's significance for the bank sector in years to come.

Natural disasters, epidemics, and other factors have revealed new needs and influenced the technological progress in the segment of bank self-service. This resulted in the development of biometric ATMs, self-service machines supporting user identification/authentication by biometric attributes (characteristics), which allows using bank services without a passport or a bank card.

Benefits of biometric ATMs

Biometric terminals reduce transaction time and improve the security and user experience.

To perform bank transactions, you just have to come to an ATM, choose biometric identification and wait for your identity recognition.

Biometric ATMs also have a lower risk of fraud involving traditional plastic cards due to automatic card locking in the case of an attempt to use it without its owner.

Our offer

With a vast experience of development and application of various biometric identification systems, PFORT uses the resources of our own design engineering department and manufacturing sites, which allows us to offer financial companies our help in equipping their ATMs with the means of biometric identification. They may be based on face geometry (face recognition), palm vein patterns, iris, or other biometric methods.

Our solutions are contactless to minimize the number of physical contacts with devices, which is especially important today.

FAST TRACK BIOMETRIC SERVICE

A modern view on traditional services

Today, people face many various services for the general public. These are transportation, entertainment, state, telecommunication, and other IT services. The providers of these services keep optimizing the interaction with such highly loaded systems. This gave birth to Fast Track. Today, it is one of faster ways of mass service provision, when one can receive a service out of turn (via an accelerated procedure), for fee, or as a loyalty program member.

The most vivid example of Fast Track application is express passenger check-in and passage to a flight widely used in airports. Most large and medium airports all over the world already provide this service. It is very popular among those who travel frequently and families going on trips with small children, and it is also successfully used under the loyalty programs. The deployment of Fast Track packages improves comfort and customer experience and ensures extra safety of the service as a whole.

Our offer

PFORT offers hard- & software packages providing a fully automated Fast Track service for virtually any sector. Biometric (turnstiles and mantrap) gates, self-check-in kiosks, and other special devices with biometric identification allow providing this service with the minimum number of personnel involved. Biometric identification will ensure that the service is provided to authorized persons only.

Benefits of PFORT solutions

PFORT's advanced Fast Track packages come with the latest sensors and detectors, meet all requirements for security systems, and comply with all regulations. Equipment is designed and manufactured in Russia and has all the necessary certificates and approvals, including transportation safety certificates.

BIOMETRICS IN REMOTE MEDICAL MONITORING SYSTEMS

Today, telemedicine is a rapidly developing sector. More and more devices for remote medical examination come to the market. These systems are based on telemedicine technologies allowing remote interaction with doctors, patient identification, and recording actions during remote medical examination, consultations, diagnosis, and health monitoring. Such systems can be applied for remote pre-trip (pre-shift) medical examinations. They are also useful for any remote patient examination and consultations outside a healthcare facility, for outpatient treatment, or in a remote inpatient clinic.

One of the main requirements for telemedicine systems is accurate patient identification to avoid the risk of potential result compromising, e.g., due to patient substitution during the medical procedure.

These problems are successfully solved via the application of biometric identification systems. The type of a biometric modality is selected for each telemedicine monitoring module separately. The selection should consider the device ergonomics, the patient's location and position, and the required actions or movements.

Our offer

Owing to our experience and range of successful projects in this field, PFORT can offer a full cycle of device development from the development of the project specification, engineering and design of an electronics architecture, selection of components and packaging to industrial design, development of dedicated software (including system interfaces), preparation of engineering documentation and arrangement of contractual series manufacture.

In total, application of advanced contactless biometric solutions in such devices allows:

- Improving service quality.
- Protecting personal data.
- Controlling the access of doctors and other medical staff to healthcare resources.
- Arranging patient monitoring.
- Providing comfort and ease for users.

BIOMETRIC PAYMENT SYSTEMS

In 2020, BIOSMART and Rostelecom (a UBS operator) with the support of the Russian Standard Bank launched a pilot payment service based on face identification at a Coffee Bean cafe.

Visitors who provided their biometric data to the UBS and linked their bank cards to their digital account can now confirm their card payment using their face. Technically, the identification is performed through a biometric terminal integrated with the UBS.

Biometric payment expands the number of services available for citizens. This payment method is significantly easier, safer and faster. Purchasers spend just one or two second instead of ten seconds usually needed to input a PIN code.

Our offer

We have developed and manufacture special visual recognition terminals which implement bio acquiring functions. These terminals have 5 to 10" screens and anti-spoofing algorithms that make fraud impossible since they do not respond to a photo or video image.

BIOMETRIC EQUIPMENT

This section describes equipment and ready hard- & software packages intended for various systems that employ biometric identification. Our experts have tried and tested all the presented solutions, which are successfully used in comprehensive projects of all sizes. This equipment is designed and manufactured in Russia. All devices have the necessary certificates and approvals, and some special products have transportation safety certificates.

The equipment we offer is designed for integration with the customer's existing infrastructure, therefore it is supplied with API and/or SDK and uses standard interfaces (RS-485, Ethernet, RS-232, dry contact) at outputs.

ID-BASED BIOMETRIC ACCESS CONTROL

A unique Russian design. Mantrap-type four-leaf swinging speed gate (turnstile) with multi-factor biometric identification. Ready for integration with any checkpoint infrastructure. This fully-automated system provides personal identification/authentication and decides on granting access to a restricted perimeter.

All system components are designed for a convenient passing procedure with information screens, LED lights, and devices for sound notification and intercom. A modular design allows scalability and does not limit the number of installed parallel gates. Exterior components have anti-vandal protection.

Pass width	600–900 mm (as requested)
Length	2,500–3,500 mm (as requested)
Total width	1,100–1,400 mm (as requested)
Height	1,800–2,500 mm (as requested)
Weight	200–300 kg
Power supply	AC 220 V, 50 Hz
Consumption	700 W max.
Material	AISI 304 stainless steel (brushed or polished)
Coating	Without coating / with RAL powder coating
Communication with the AC system	Dry contact, RS-485, RS-232, Ethernet
Operating conditions	From +5 to +40 (special versions possible)

Individual passing scenarios can be implemented and any combination of identification mechanisms can be applied at both controlled boundaries (at the entrance and inside the mantrap) depending on the actual needs:

- By various passes and IDs (including RFID/NFC tag reading).
- By special documents (including reading of 1D and 2D bar codes).
- By face geometry (face recognition).
- By palm veins pattern.
- By iris.
- By fingerprints.
- If necessary, voice recognition and other methods are also possible.

All products are designed for operation 24/7. You can order an outdoor version (for an open-air operation in various climates) or special versions for aggressive (industrial) environments. The system can be equipped with a smart video surveillance of a person's activity (monitoring of forgotten/suspicious items, unusual behavior, attempts of leaving a mantrap in an unintended way or throwing any items over it, etc.).

Application examples

- As part of the digital biometric checkpoint solution.
- In the financial sector (entrances of depositories and other vaults/archives, special perimeters).
- Buildings of various authorities and sites (facilities) with higher access control requirements.
- Areas of passport control in airports (arrival and departure terminals), passenger seaports (special versions).

BIOMETRIC INFORMATION KIOSKS

Russian design. Biometric information kiosks are sensor kiosks with enhanced functionality. The focus of this product lineup is the applicability of any method of biometric identification (fingerprints, palm vein pattern, face recognition, iris, voice, etc.).

Due to biometric identification mechanisms, these kiosks give users new capabilities of a personalized service since they are equipped with the means of user authentication. It allows using these products for absolutely any task from a corporate information system access point intended to connect employees without a fixed workplace to corporate services, to applications at My Documents public services centers and in AC systems. These products feature a flexible architecture. A convenient design and the application of industrial-grade components in these products allow embedding virtually any type of electronic functional modules for certain tasks. These can be various printing systems (including those for plastic pass cards), scanners of IDs and various bar codes, payment systems, fiscal data recorders, tag reading modules (RFID/NFC), various biometric scanners, ticket/card/slip dispensers, and much more.

All products are designed for operation 24/7. Various outdoor versions (for different climates) or special versions for aggressive (industrial) environments are possible.

Width	300–700 mm (depends on the configuration)
Depth	300–700 mm (depends on the configuration)
Height	1,400–2,100 mm (depends on the configuration)
Weight	Up to 100 kg
Power supply	AC 220 V, 50 Hz
Consumption	500 W max.
Material	AISI 304 stainless steel (brushed or polished)
Coating	Without coating / with RAL powder coating
Communication with the AC system	Dry contact, RS-485, RS-232, Ethernet
Operating conditions	From +5 to +40 (special versions possible)

Application examples

- As part of the Digital Biometric Checkpoint solution.
- Offices of banks or insurance companies, public areas (access to bank or insurance services, provision of other personalized bank services).
- Automated pass offices at the entrances of large companies or business centers.
- Automated accreditation desks for organizers of marketing activities.
- Information kiosks for commercial and industrial companies (various services for clients, including commercial services or internal service/instructions for companies' personnel).
- My Documents public services centers.
- Service/transport companies.
- Healthcare facilities.
- Other government institutions

BIOMETRIC GATES

Biometric gates are advanced executive devices for AC systems designed in Russia. Advantages over traditional gates (turnstiles):

- Reliability. These products use only industrial-grade components from the market leaders and are designed for long periods of trouble-free 24/7 operation.
- Functional versatility. The gates' configuration, architecture, and design are developed to implement any methods of biometric identification.
- Design versatility. There are waist-high, full-height and combined designs, one- and two-barrier (mantrap) versions.

The biometric gate implements the following control mechanisms:

- Monitoring of a person's presence and walking direction as they approach the gate and during biometric scanning.
- Use of various identification methods, including palm vein patterns, face geometry (visual recognition), iris, fingerprints, etc.
- Optional: smart video surveillance of a person's activity (monitoring of forgotten/suspicious items, unusual behavior, attempts of leaving a mantrap in an unintended way or throwing any items over it, etc.).

PFORT manufactures a wide model range of biometric gates. For example, we can supply mantrap gates (with two boundaries) of any configuration: waist-high, full-height, and combined. There are outdoor versions (for different climates) or special versions for aggressive (industrial) environments. The gates are supplied ready for integration with the existing infrastructure. In addition, PFORT offers comprehensive projects, including the supply and overall integration with a biometric checkpoint, biometric AC system, T&A system, etc.

Pass width	600–900 mm (as requested)
Length	1,500–2,500 mm (as requested)
Width of 1 element	250 mm
Height	1,100–2,000 mm (as requested)
Weight	100–120 kg (depends on functionality)
Power supply	AC 220 V, 50 Hz
Service life	5,000,000–20,000,000 cycles (depends on the model range)
Consumption	500 W max.
Material	AISI 304 stainless steel (brushed or polished)
Coating	Without coating / with RAL powder coating
Communication with the AC system	Dry contact, RS-485, RS-232, Ethernet
Operating conditions	From +5 to +40 (special versions possible, incl. outdoor)

Application examples

The scope of the gates' application is quite wide. The gates can be one- and two-barrier (mantrap), have a waist-high or full-height design.

Nevertheless, they all have the same operation principle: these are speed gates, i.e., they have swinging leaves and are developed to implement various systems of biometric identification.

CONTACTLESS BIOMETRIC IDENTIFICATION MODULES

This section describes various contactless biometric scanners from market segment leaders. They read the respective biometric characteristic from a subject and authenticate the person (i.e., compare the obtained biometric attribute (characteristic) with the reference samples). The modules are designed and manufactured in Russia and have a set of certificates and approvals, including transportation safety certificates.

Face recognition (2D/3D) modules

These modules are intended for AC systems, T&A systems, bio-acquiring, and other tasks.

The supplied devices support an anti-spoofing algorithm that prevents the attempts of identification by means of photo or video images from mobile devices. The model range includes several devices with a screen size from 5 to 10 inches.

Main characteristics

- Identification of up to 50,000 users (1:N), verification of up to 100,000 users (1:1).
- Modes of identification: standalone, remote server.
- Time of identification in local mode: 1:10,000 face templates in less than 1 sec.
- Offline event log: up to 10 million entries.
- Maximum number of users: 100,000; a card or QR code can be assigned to each user.
- Built-in multi-format reader of RFID cards.
- Built-in integration interfaces: Wiegand, RS-485, USB, and relay.
- Powerful 6-core ARM-processor, 16 GB flash, RAM: 2 GB.
- Stereo vision camera: RGB + IR.
- Touchscreen: 8 inches.
- Built-in interfaces: Ethernet, Wi-Fi, Bluetooth.
- Power supply: 12 V, 1 A
- Temperature range: from 0 °C to +50 °C.

Palm vein pattern recognition modules

Modules with contactless recognition of palm vein patterns are intended to organize the access control and tracking of staff time & attendance.

Specifications

- Identification up to 20,000 palm patterns (1:N).
- Modes of identification: standalone, remote server.
- Time of identification in local mode: 1:1,000, less than 2 sec.
- Maximum number of events: up to 10 million.
- Power supply: 12 V, 1 A / PoE.
- Temperature range: from 0 °C to +50 °C.

Iris recognition modules

These modules implement iris identification, the latest biometric technology. The identification is carried out remotely and automatically: the user simply has to look at the scanner.

The module is equipped with built-in cameras working in several specters, which solves two problems at once: there are no issues due to the effect of visible light on a pupil, and the scanner does not respond to photos, models, or other fakes but works with the eye only. The quality of the obtained images is determined automatically.

Key benefits

- Contactless identification: convenient and hygienic.
- Range of infrared scanning from a distance: 70–80 cm (comfortable and safe).
- Ease of use.
- High recognition rate (a few seconds).
- Full automation: the scanner independently finds the iris, generates its image and estimates the image quality.
- Powerful image processing algorithms: the scanner processes images itself and does not use computer resources.
- Minimum environmental requirements: the scanner can be used both indoors and outdoors.

Specifications

- Applied identifier: iris.
- Recommended distance from the identifier to the scanner: 70–80 cm.
- Identifier search: manual or automatic.
- Emission safety standard: IEC 62471:2006-07.
- Image standard: ISO 19794-6 (2005 / 2011).
- Operation temperature: from 0 °C to +50 °C.
- Humidity (w/o condensation): from 0% to 90%.
- Operation conditions: indoors. When using the device outdoors, avoid direct sunlight and glare on the scanner.
- Design: enclosed device.

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