ARGUSSPECTRUM

STRELETZ-PRO

- **Labor productivity control**
- **Personnel safety**
- **Security of facility**

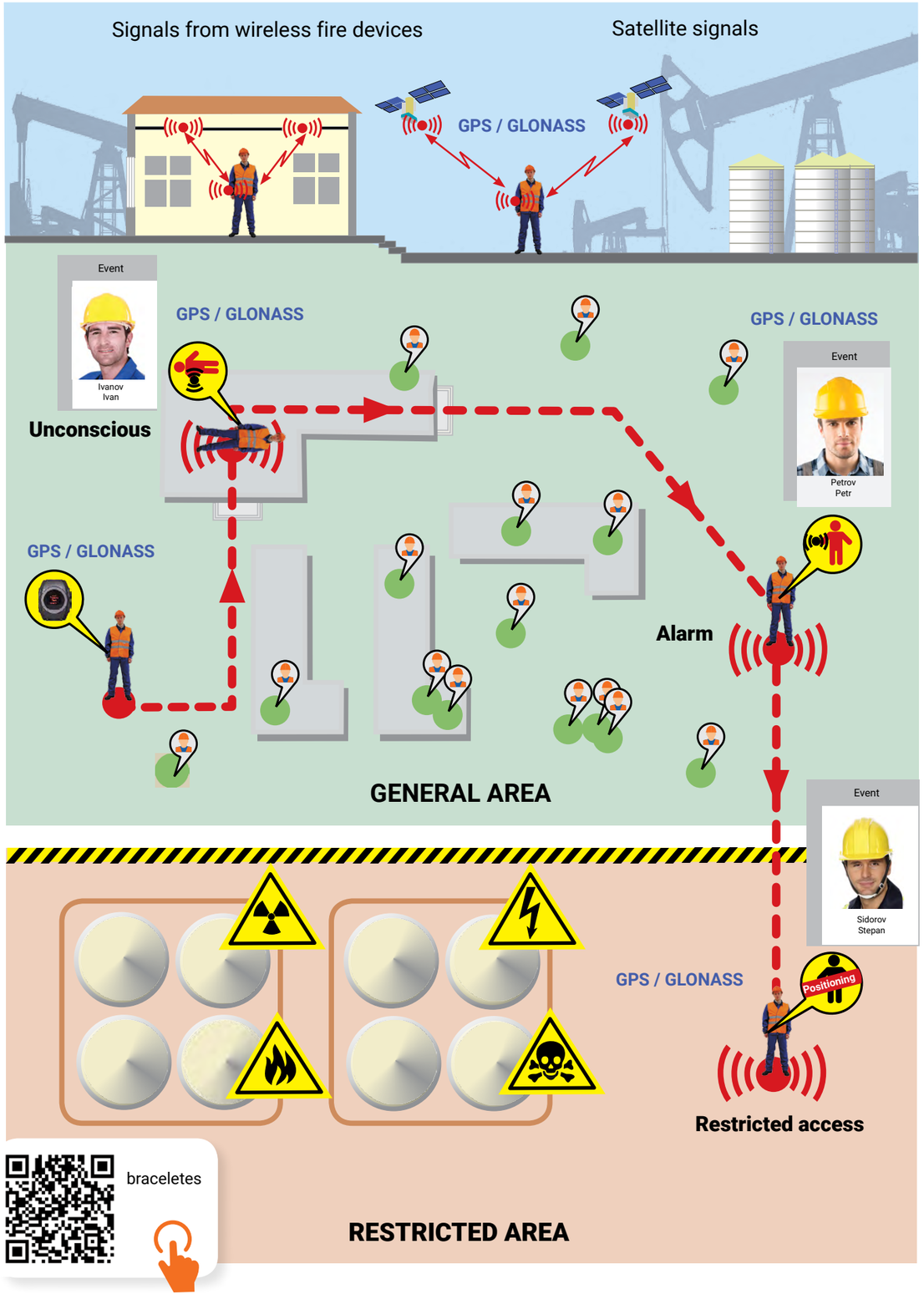
Personal wearable devices significantly enhance security and safety of industrial facilities in the shortest possible time

200 000
installations around the world

9 000 000
wireless devices sold

about the company

WHERE ARE YOUR PERSONNEL?



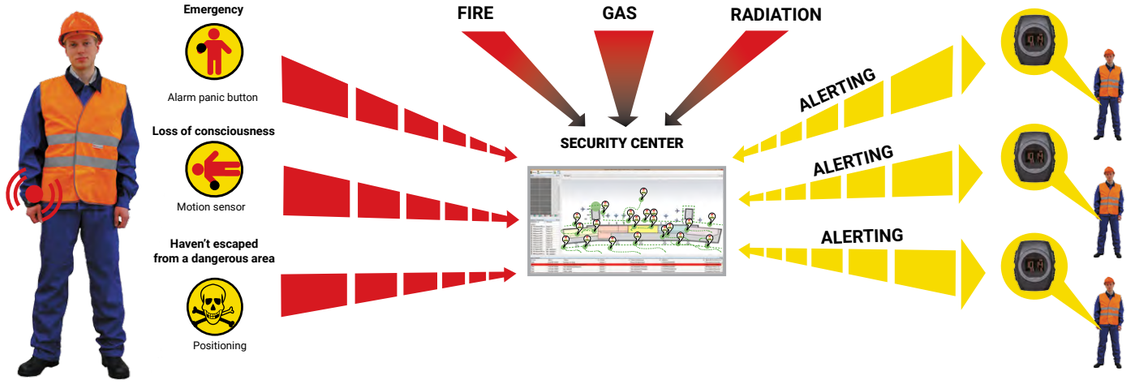
HOW TO ALERT & NOTIFY?

SOUND, TEXT, LIGHT, VIBRATION

General and group messages

Personal messages

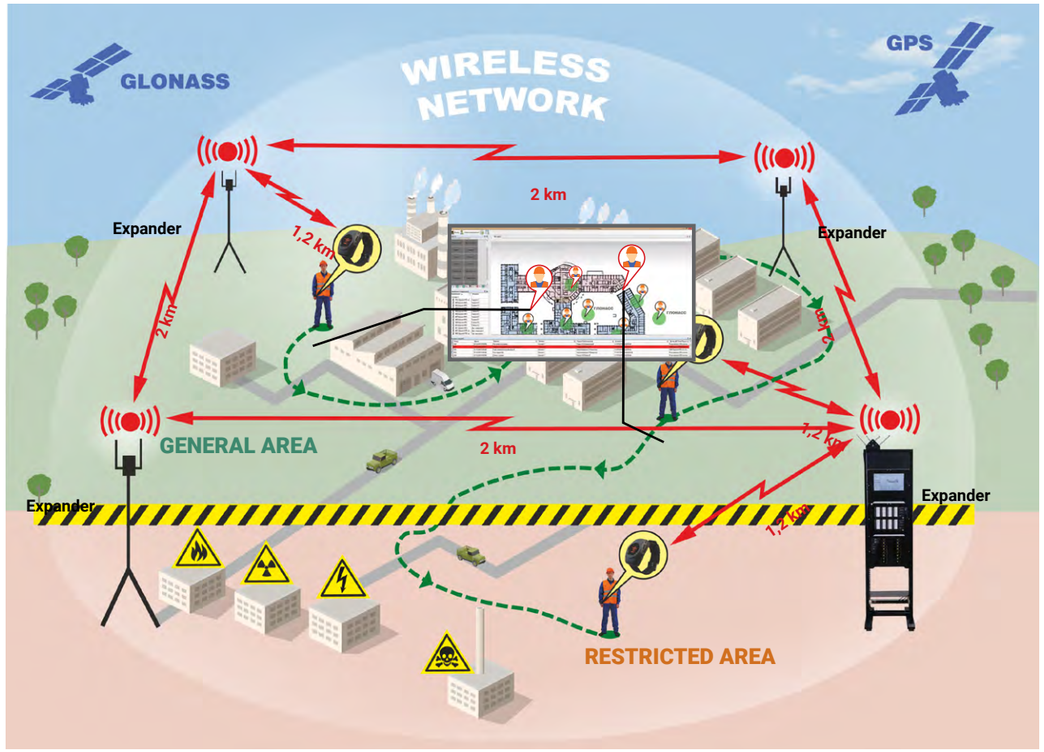
ALARM PANIC BUTTON



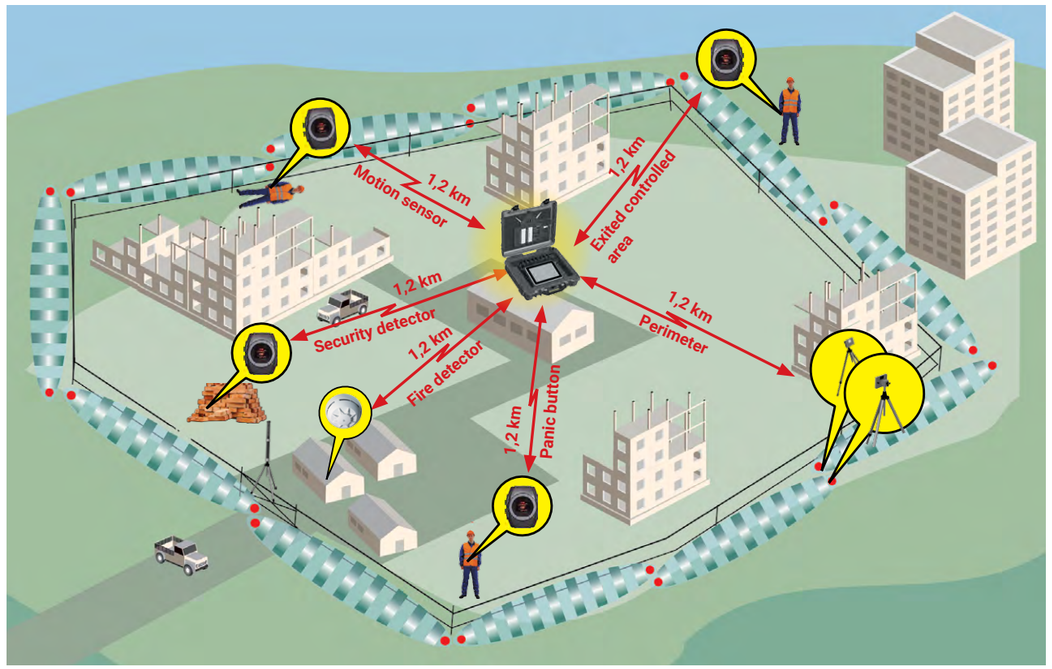
To watch the video, scan the QR-code!

AN INSTALLATION EXAMPLE

of expanders for an industrial facility providing worker's tracking



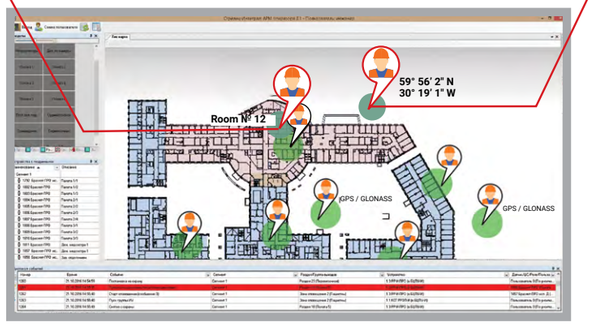
of a portable kit providing alarm and control system for temporary objects



INDOOR AND OUTDOOR POSITIONING

Indoor positioning via STRELETZ-PRO **Outdoor positioning via satellites GPS / GLONASS**

Positioning information displayed on a computer



INDOORS:

the system uses the signals from wireless fire devices to determine the location of a person with the electronic bracelet

OUTDOORS:

the system uses the signals from satellites to determine the location of a person with the electronic bracelet

STRELETZ-PRO ADVANTAGES

- Indoor and outdoor positioning.
- Personal wearable devices are designed in the form of the watch that provides
- comfortable use with waterproof and shockproof housing (IP66).
- Quick, easy and cost-effective installation (wireless communication between all the devices of the system).
- The communication range of wearable devices with the expander is 1200 m.
- The wide range of bracelet's are designed to alert personnel in the event of emergency and evacuation.
- The system can be expanded and upgraded together with fire and security alarm systems, fire
- suppression and perimeter detection systems

To watch the video, scan the QR-code!

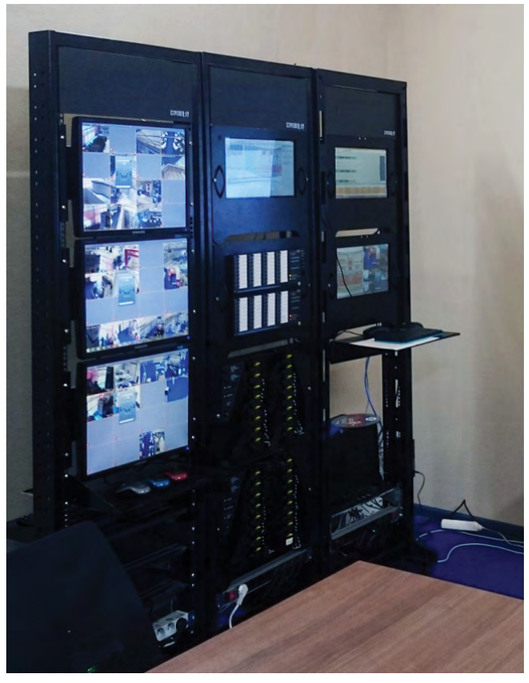
braceletes

agriculture

disabled

senior citizens

EXAMPLES OF INSTALLATIONS



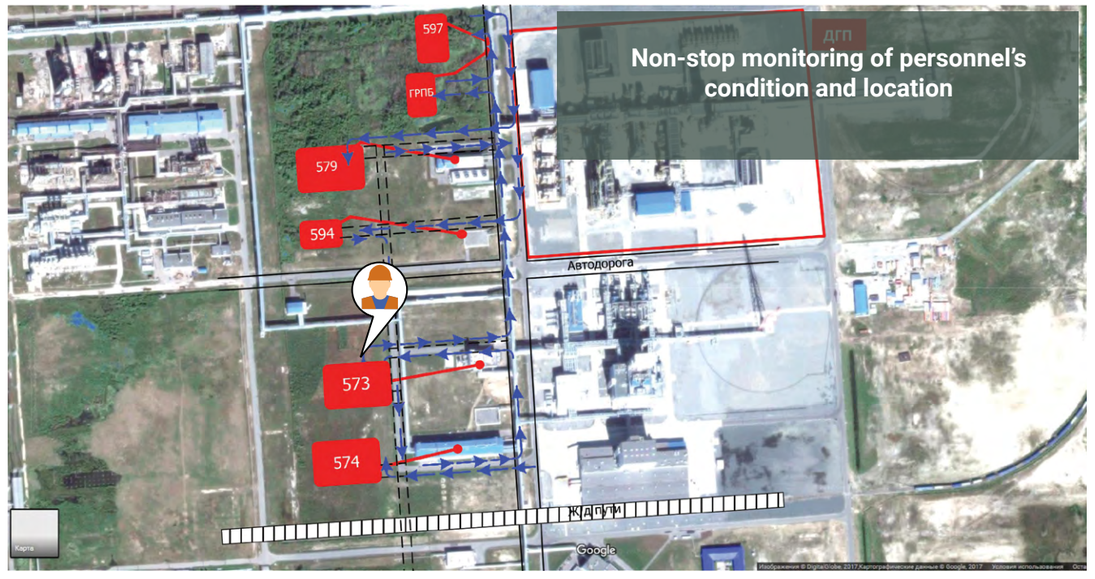
1. Operator’s desk

2. Installation of the expander on a roof

3. Installation of the expander on a wall

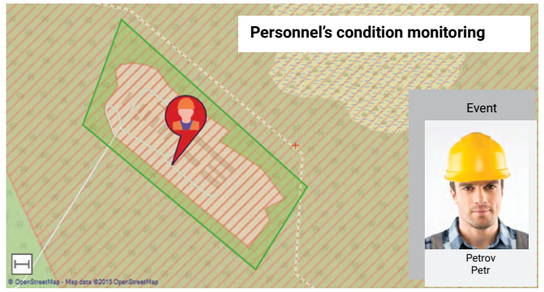
4. Installation of the expander on a lampost

AN EXAMPLE OF WORKER’S TRACKING DISPLAYED ON OPERATOR’S COMPUTER



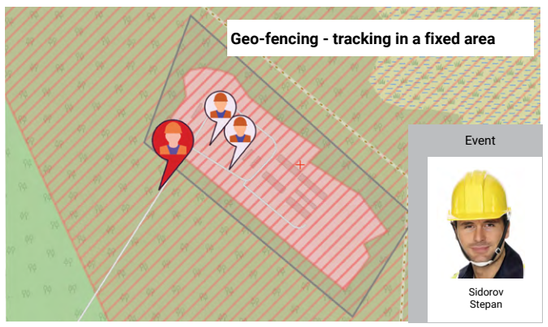
OPERATOR’S DESK FUNCTIONS

Real-time monitoring of personnel’s location and recording the tracking information. All the routes and locations of personnel are saved to database.



Wearable devices automatically transmit alert to security center in case of worker’s loss of consciousness (built-in motion sensor).

A press of the panic button by the user enables them to send SOS-signal to security center.



If personnel cross the defined area the operator in the security center receives alarm notification.

STATIONARY KIT

CENTRAL CONTROLLING EQUIPMENT

BEV1-I

Monitoring and controlling devices of the system. Touchscreen.

BCPU

- Receiving and controlling unit
- 64 indicators and 64 buttons for security zone management.
- External antenna.

ZU-16

- Charging 16 Braslet-PRO /
- Braslet-PRO v. D at the same time.
- Magnetic bases for mounting the bracelets.
- 220V AC adapter included.

ARG-WL8-EXP

Wireless expander module

The wireless expander module provides a convenient method to increase radiocommunication range.

FEATURES:

- Dynamic routing for all expanders and field devices
- Bi-directional wireless communication
- Supports full device intelligence
- 2 built-in inputs/outputs
- Operating temperature range: –30 °C to +55 °C

BRASLET-PRO v. D

Wireless personal notification and monitoring device

BRASLET-PRO

Personal notification and monitoring devices

The wireless personal notification and monitoring device provides monitoring the condition and location of personnel, visitors, and equipment on protected premises. Personal notification text messaging (Braselet-PRO v.D)

FEATURES:

- Indoor and outdoor positioning
- Staff performance monitoring
- Occupational safety
- LED display
- Operating temperature range: –30 °C to +55 °C
- Explosion proof rating - 0ExIIT6

braceletes

Other Streletz-PRO devices. See the pages 14-17!

POTABLE KIT

BEV2-I

Electronic computing unit

- Touchscreen
- Displaying positioning information on a map (GPS/GLONASS).
- Easy management for 16 security zones
- Built-in battery charger for 8 bracelets.
- Battery life up to 8 hours.
- Operating temperature range: -10 ... +55°C.

RR-PRO v.UMT

Portable weatherproof wireless repeater

- 2 communication range modes.
- 2 weeks of battery life.
- Operating temperature range: -35 ... +70°C.
- Ingress protection rating IP65.

BRASLET-PRO v. D

Wireless personal notification and monitoring device

BRASLET-PRO

Personal notification and monitoring devices

LINAR-PRO

Wireless microwave detector for perimeter

- Bistatic detector.
- The width of the detection zone – 3 m.
- Operating range up to 100 m.
- Processor algorithms separate target from interference in the signal.
- Up to 6 months of battery life.
- Operating temperature range -30..+55 °C.

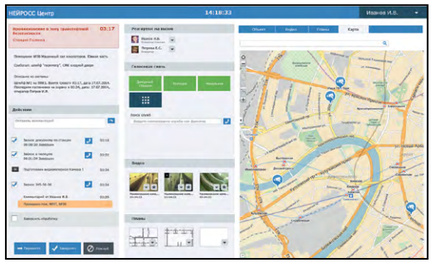
PHOTO AND VIDEO RECORDING OF THE EVENTS WITH BRACELETS

Integration with access control and video surveillance systems

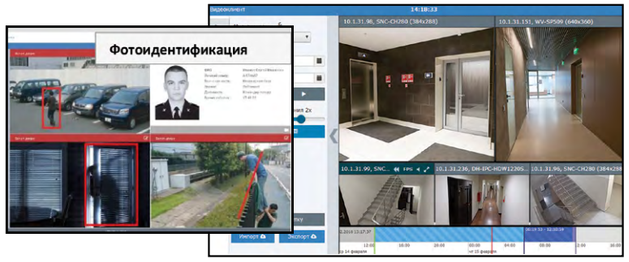
ACCESS CONTROL SYSTEM SOLUTION:

- A bracelet can be used as an access card;
- Bracelets enable the operator in the security center to receive automated alerts, confirm the incidents and record the information to database;
- Bracelets allow the management of the company to work with the reports of incidents and use photos and video records of incidents.

Visual display of the events and security system elements on the maps



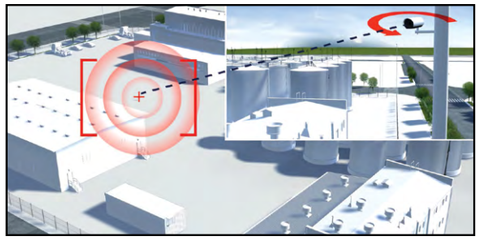
Verification of the detected security events and cardholder's data



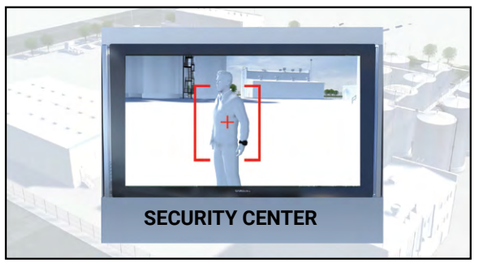
- Events from the access points, bracelets, controllers, security zones and other elements of the integrated security systems are recorded in a database.
- The events and security system elements are visually displayed on the maps.
- The location of bracelets on the maps automatically updates.
- Control and management of the executive modules from the maps.
- Automated switching to the video feed from the cameras near the incident.
- Automated playback of the recorded video of the detected security event.
- Generating reports on the events and users' actions.

VIDEO SURVEILLANCE SYSTEM SOLUTION:

- If one of the bracelets sends an alarm signal, the security center will receive live feed from the nearest cameras and PTZ cameras (pan–tilt–zoom cameras) will turn to the alarm zone to track the object.
- If a person enters the restricted area, the operator in the security center will receive an alarm notification and video footage of the event.
- Control and monitoring of the personnel with bracelets using cameras and maps.



BRASLET-PRO



INTEGRATION: STRELETZ-PRO + THE NEYROSS PLATFORM

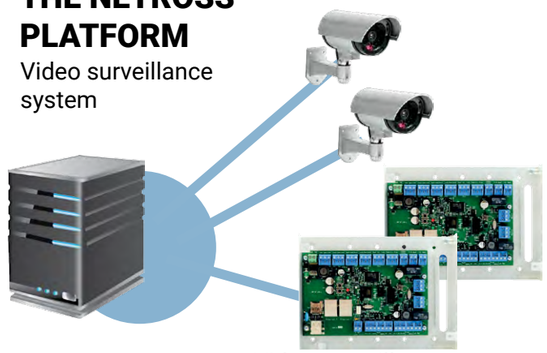
AUTOMATIC DATA SYSTEM FOR OCCUPATIONAL SAFETY

STRELETZ-PRO

Positioning and paging system

THE NEYROSS PLATFORM

Video surveillance system



Video surveillance system

1. ELECTRONIC DOCUMENTS WITH INCIDENT INFORMATION
the documents provide evidence and assist decision-making

A report on the incident No. 1186

Registered: Dec. 3rd 2018 14:21:28
Event source: Bracelet PRO 3664

Personal information

Petrov Ivan Sergeevich

Organization: "Integrator tool" Ltd.
Position: Head of warehouse
Document No.: 4031 225614
Access level: 6-71
Personal No.: 54857

Response actions

Dec. 3rd 2018 14:21:57	Incident processing started by operator Ivanov I.I.
Dec. 3rd 2018 14:22:01	The "Perform video verification of the alarm incident" task is completed
Dec. 3rd 2018 14:22:03	The "Security service call (257-12-12)" task is completed
Dec. 3rd 2018 14:22:03	The "Follow the violator via CCTV" task is completed
Dec. 3rd 2018 14:25:44	Video recording is attached to the incident card
Dec. 3rd 2018 14:26:12	Operator comment: "Alarm confirmed. Violator detained"
Dec. 3rd 2018 14:26:35	Incident processing completed

Photo verification

Dec. 3rd 2018 14:21:59 Camera: left side, Corridor

All information on the occurred incident is automatically composed into a document and sent to a selected e-mail. This information can include the time and place of the incident, photos confirming the incident and employee data.

Benefits of this technology:

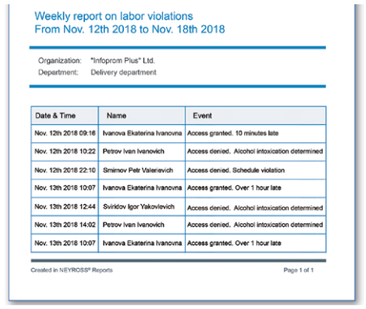
- reducing the emergency response time
- reducing accident risk and damages, increasing occupational discipline and safety

Streletz-PRO provides the Neyross Platform with information on:

- location of people with bracelets
- violations of restricted areas
- instances of leaving designated areas emergency signals from panic buttons, motion sensors, etc.

The information in Streletz-PRO is compiled – CCTV, access control system. In case of an accident, all necessary data from different systems is complied into one electronic document and sent to managers and supervisors via e-mail.

2. AUTOMATIC REPORTS ON OCCUPATIONAL SAFETY
electronic reports in a simple format



Weekly report on labor violations
From Nov. 12th 2018 to Nov. 18th 2018

Organization: "Infoprom Plus" Ltd.
Department: Delivery department

Date & Time	Name	Event
Nov. 12th 2018 09:16	Ivanova Ekaterina Ivanovna	Access granted. 10 minutes late
Nov. 12th 2018 10:22	Petrov Ivan Ivanovich	Access denied. Alcohol intoxication determined
Nov. 12th 2018 22:10	Smirnov Petr Valerievich	Access denied. Schedule violation
Nov. 13th 2018 10:07	Ivanova Ekaterina Ivanovna	Access granted. Over 1 hour late
Nov. 13th 2018 12:44	Sviridov Igor Yakovlevich	Access denied. Alcohol intoxication determined
Nov. 13th 2018 14:02	Petrov Ivan Ivanovich	Access denied. Alcohol intoxication determined
Nov. 13th 2018 10:07	Ivanova Ekaterina Ivanovna	Access granted. Over 1 hour late

Created in NEYROSS® Reports Page 1 of 1

Reports are automatically composed and sent via e-mail:
- reports on violating restricted areas
- reports on working overtime and coming in late
- reports on coming to work intoxicated
- transferring data to organization management systems.

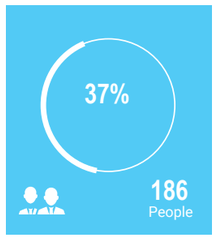
By using the report system, you can automatically compile and send out reports with essential data in a simple form. The reports can be sent out periodically to chosen accountable personnel.

3. INFOGRAPHICS ON PRIMARY INDICATORS OF OCCUPATIONALSAFETY AND DISCIPLINE
user-friendly visualization of information for fast analysis

All data collected by the system is presented with user-friendly graphs and diagrams.

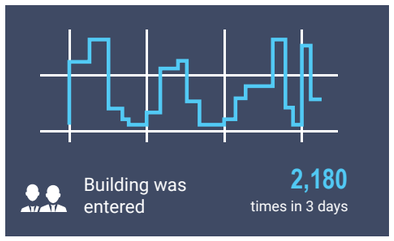
An illustrative analysis of all essential indicators of occupational safety and discipline.

Users can choose how the information will be visualized for data analysis. A well-organized infographic makes it easier to come up with solutions that will increase work efficiency and reduce the expenses and risks.

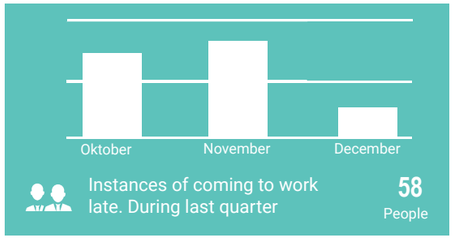


37%

186 People



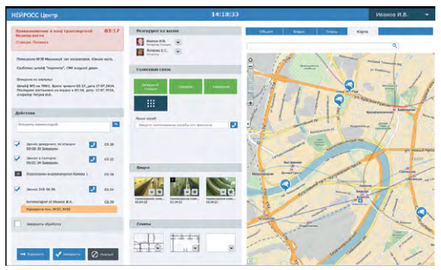
Building was entered 2,180 times in 3 days

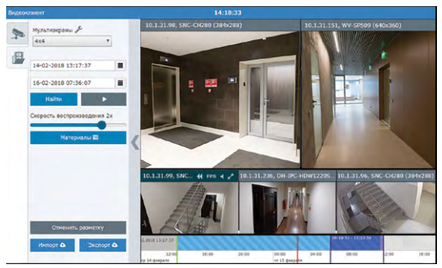


Oktober November December

Instances of coming to work late. During last quarter 58 People

4. WORKFLOW OPTIMIZATION FOR THE SECURITY MANAGER
ensuring quick and correct response actions





Full information on events and incidents, including photographs and videos from the site.

Pre-defined response procedures for security managers in case of an emergency.

Monitoring the work of security managers and the incident response times.

Tracking the location of personnel in real time and receive the data where exactly did the incident happen on a floor plan or a map.

Special response procedures for security managers in different situations. Individual work instructions in case of an emergency will indicate which actions need to be taken, who needs to be notified. This will significantly reduce the response time of security personnel.

By monitoring the work of security guards, the system can detect when no action is taken in response to an incident and appropriate personnel will be notified.

THE VERDICT:

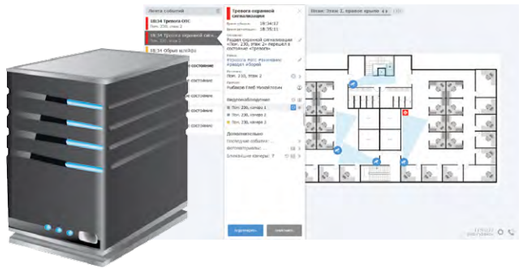
a combination of solutions and organizational measures, such as informing the employees that the building is under video surveillance and that all emergencies are registered and analyzed automatically, **allows to significantly increase the level of discipline and occupational safety, and reduce the risk of emergencies that are caused by the human factor.**

SYSTEM COMPOSITION:

STRELETZ-PRO – positioning and paging system, fire alarm and security system

- The system includes a wired to wireless translator, expanders and field devices.
- The wireless system operates on the principle of a self-organizing mesh network.
- The translator receives signals from wireless devices and transmits them to a control panel and can be integrated to other systems via API.

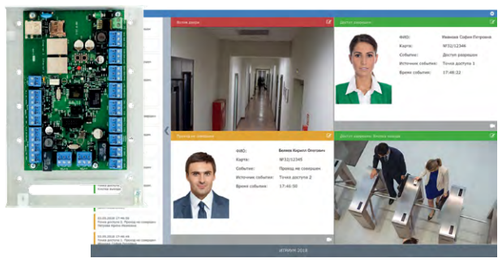
Server of the NEYROSS Platform



- Receiving and analyzing information from the Streletz-PRO system and other systems in the building: CCTV, access control, security alarm, fire alarm and others.
- Information can be transferred to organization management systems.
- Used as a web-server for user applications:

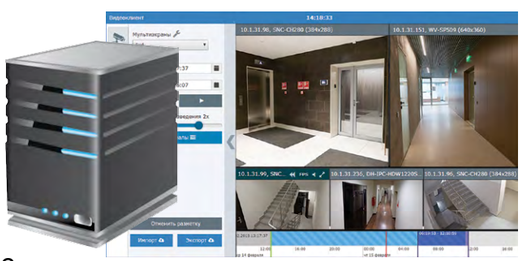
- dispatcher monitoring;
- emergency response;
- ID database;
- reports, etc.

The Borey controllers



- Access control as a part of the occupational safety system.
- Using the Streletz-PRO bracelets as identification tags.
- Can be controlled by the NEYROSS platform, work independently or in conjunction with other Borey controllers on the hardware level.
- Database with 100 000 IDs and 300 000 events.
- Full integration with biometric identification devices and equipment for testing alcohol intoxication.
- Flexible customization of access control algorithms.

DEVISOR video recorders



- Video surveillance, video recording and video verification as a part of the occupational safety system.
- Support for all types of cameras that meet the standards of ONVIF Profile S.
- Media recording with flexible settings.
- Attaching a camera feed to other data sources in the occupational safety system: access control points, authorized and restricted areas of the positioning system, security and fire detectors, etc.

WHERE IS THE SOURCE OF AN ALARM SIGNAL, FIRE OR BURGLARY?

PRO STRELETZ

AN INNOVATIVE WIRELESS PLATFORM, SEAMLESSLY INTEGRATED WITH THE OVERALL SYSTEM

SOLUTIONS FOR:

1. Security and fire safety.
2. Positioning system for employees, visitors, cargo, and equipment both indoors (using fire detectors) and outdoors (using GPS and GLONASS).
3. Paging (personal and group notifications).

FEATURES:

1. Electronic bracelet (positioning and paging):

- indoor positioning (using wireless fire devices) and outdoor positioning (using GPS and GLONASS satellites);
- staff performance monitoring;
- occupational safety, monitoring an employee's condition and location during an emergency;
- automatic personal warnings during a fire or when entering an unsafe area;
- paging: dispatch of informational messages with delivery confirmation.

2. Self-healing mesh technology for all devices in the system provides reliability and durability.
3. 10-year battery life.
4. 2 000 devices in one wireless system.
5. 3 sec. alarm activation delay.
6. 1 200 m communication range.
7. High level of radio noise immunity.
8. Cryptographic protection of information.
9. «Hidden» operation mode (broadband signals).
10. Wireless reconfiguration of all system settings.

about the system

STRELETZ PRO

Wireless and wired fire alarm system

Wireless and wired notification system

Wireless and wired security system

Personnel monitoring and alert system

SYSTEM ARCHITECTURE

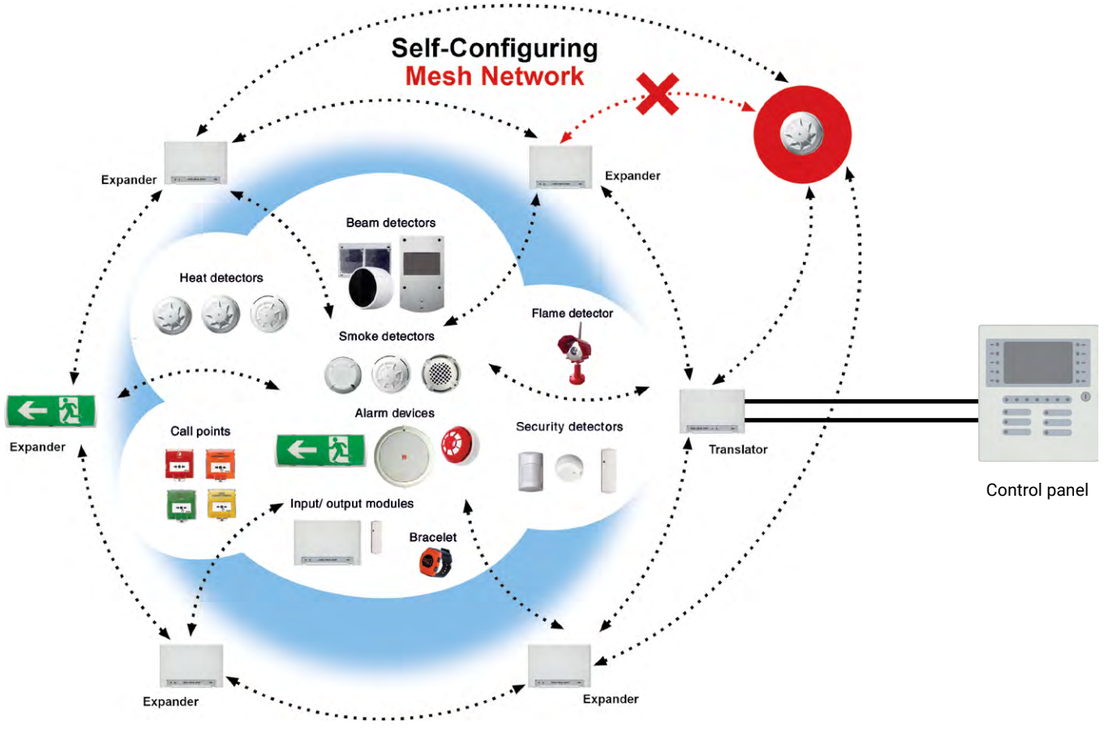
2 orthogonal antennas

6 frequency channels

127 expanders

1920 devices

about the system

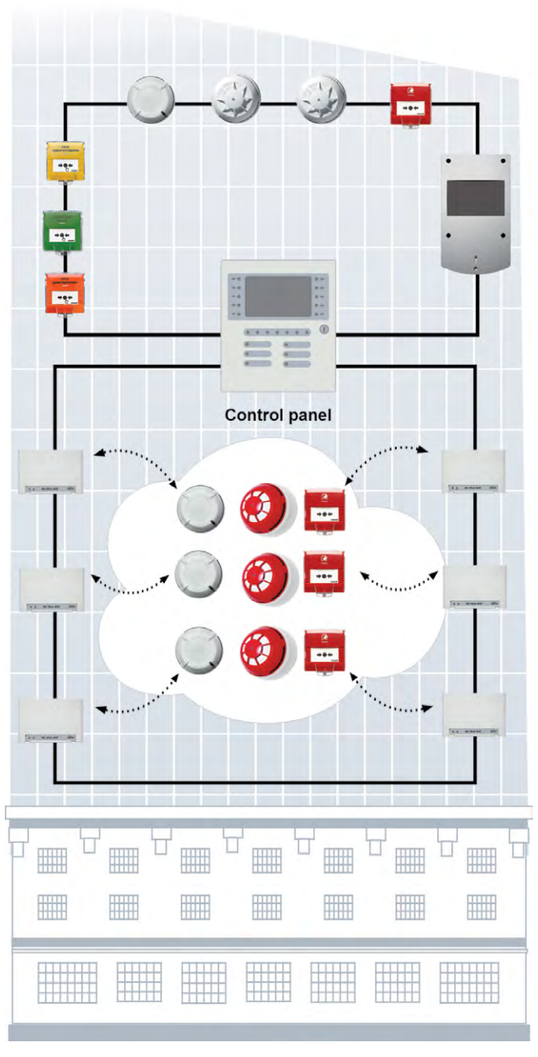


TRANSLATORS AND EXPANDERS

The translator module connects to the loop of a fire control panel, receives signals from wireless devices, and translates them to the panel. In order to expand the range of the network, expander modules are placed throughout the building. Signals from wireless devices can be received by the expanders, then travel through multiple expanders, eventually reaching the translator module.

MESH NETWORK

Streletz-PRO supports the self-configuring mesh network technology, which means that detectors are not assigned to individual expanders, they choose their own parent expander, and all communication paths in the system are established automatically. The advantage of the mesh network is that you don't have to manually specify the network topology, you only need to position the expanders throughout the building based on their connection radius, and the network will automatically arrange itself in the most optimal way. This technology significantly speeds up the installation procedures.



Wireless Intelligent

- **Self-configuring mesh network**
- **1920 wireless devices**
- **10-year battery life**
- **3 sec. alarm activation delay**

STRELETZ-PRO ADVANCED FEATURES

- **Mesh network**
- **10 - year battery life**
- **1 200 m - communication range**
- **1 920 devices system capacity**
- **3 - second activation delay**
- **Wide operating temperature range**
- **Cryptographic protection**
- **Changing settings wirelessly**
- **High level of noise immunity**
- **Cloud service**

MESH NETWORK

Self-configuring mesh network technology in Streletz-PRO is a new and unique level of reliability:

- each device automatically chooses its parent expander;
- expanders automatically form a network for delivering information to the main control panel.

Self-configuring mesh network technology provides:

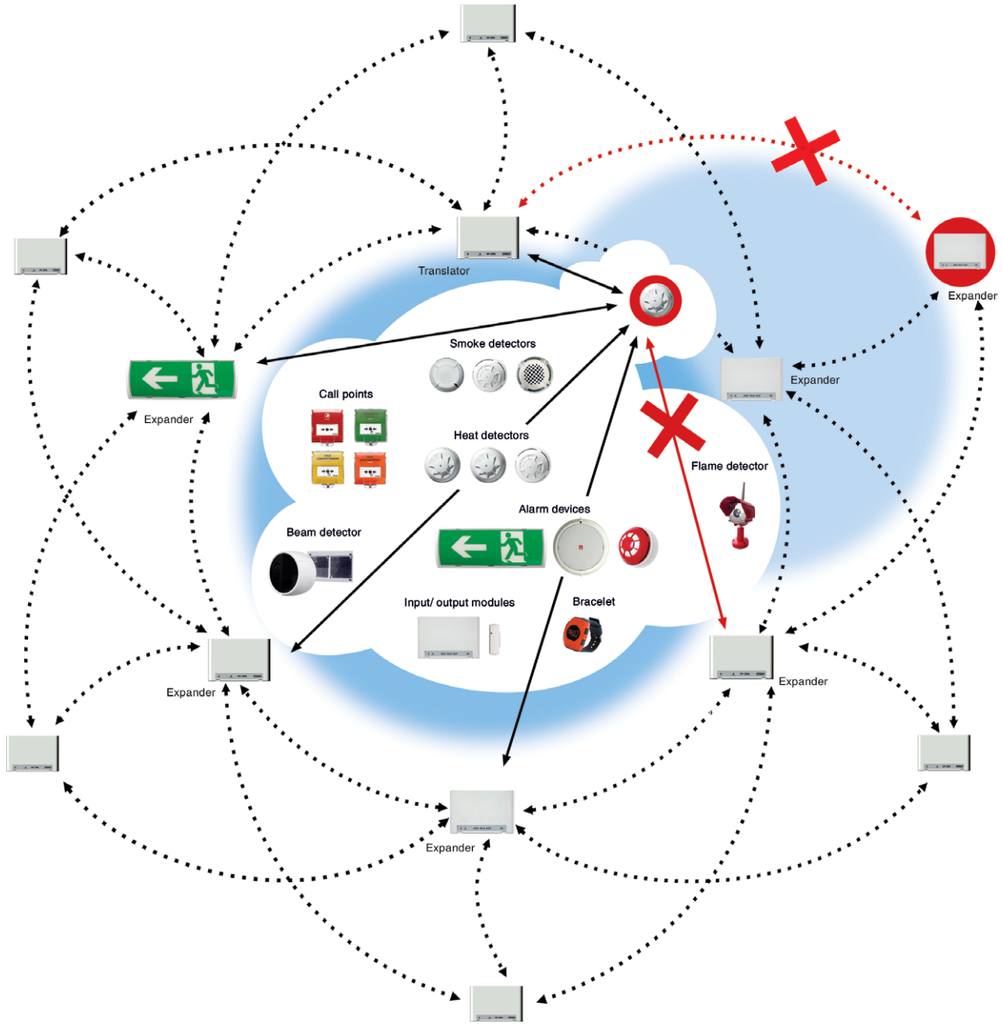
- high level of reliability;
- automatically adapting to changing operating conditions: all devices automatically choose a parent expander
depending on the quality of connection;
- extended information system capacity allowing complex issues to be managed and solved;
- a simple design and commissioning process;

The system will automatically decide which device connects to which expander and build a wireless network.

Advantages for installers:

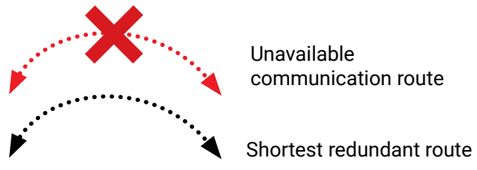
- simplified design and planning process;
- faster commissioning process;
- solutions to complicated problems and challenges.

AUTOMATIC RECONFIGURATION OF COMMUNICATION ROUTES



designing the Streletz-PRO network

Automatic reconfiguration of communication routes



WIRELESS INTELLIGENT ADDRESSABLE

TRANSLATOR / EXPANDER MODULES	
	ARG-WL8-TRV - wireless translator module
	ARG-WL8-EXP - wireless expander module
	ARG-WL8-EXPN - wireless fire exit sign with built-in expander

FIRE DETECTORS	
	ARG-WL8-O - wireless optical smoke detector
	ARG-WL8-H - wireless heat detector
	ARG-WL8-OH - wireless combined sensor detector
	ARG-WL8-B - wireless optical beam detector
	ARG-WL8-B1 - wireless optical beam detector
	ARG-WL8-FL - wireless flame detector ARG-WL8Ex-FL - wireless intrinsically safe flame detector

SECURITY DETECTORS	
	Arfa-PRO - wireless acoustic glass break detector
	Ikar-PRO - wireless passive infrared detector
	ARG-WL8-IN - wireless input module and magnetic detector
	Metka-PRO - wireless inertial sensor
	Gradus-PRO - wireless temperature sensor Voda-PRO - wireless water leak sensor
	Brelok - PRO - wireless key fob

ALARM DEVICES	
	ARG-WL8-OS - wireless optical smoke detector with built-in sounder
	ARG-WL8-HS - wireless heat detector with built-in sounder
	ARG-WL8-OV - wireless optical smoke detector with built-in voice alarm speaker and visual alarm device
	ARG-WL8-SND - wireless sounder
	ARG-WL8-V - wireless voice alarm speaker
	ARG-WL8-N - wireless exit sign
	ARG-WL8-PNBD - wireless personal notification bracelet (with display/without charger and GPS)

MANUAL CALL POINTS	
	ARG-WL8-CP - wireless manual call point (red)
	ARG-WL8-CP - wireless manual call point (green)
	ARG-WL8-CP - wireless manual call point (orange)
	ARG-WL8-CP - wireless manual call point (yellow)

INPUT / OUTPUT MODULES	
	ARG-WL8-IN - wireless single input module
	ARG-WL8-OUT - wireless single output module

WIRED INTELLIGENT ADDRESSABLE

FIRE DETECTORS	
	Aurora-DI v.2 - intelligent optical smoke detector with short-circuit isolator
	Aurora-TI v.2 - intelligent heat detector with short-circuit isolator
	Aurora-DTI v.2 - intelligent multi-sensor detector with short-circuit isolator
	Strengthened base - intelligent detectors base
	Amur-I - intelligent optical beam detector

ALARM DEVICE	
	Sirena-I - sounder

MANUAL CALL POINTS	
	IPR-I - intelligent manual call point (red)
	IPR-I - intelligent manual call point (green)
	IPR-I - intelligent manual call point (orange)
	IPR-I - intelligent manual call point (yellow)

INPUT / OUTPUT MODULES	
	MV1-I - intelligent single input module
	IB1-I - intelligent single output module

ANCILLARY	
	ARG-FWR - firmware programming tool
	Aurora-3P - handheld programming unit
	ZU-1 - individual charging device for ARG-WL8-PNBD
	Puller Aurora - puller for the point detectors
	Reflector unit - reflector unit for ARG-WL8-B, Amur-I
	Bracket unit - bracket unit for ARG-WL8-B, Amur-I
	BP-12/2A - power supply unit

about the system

CASE STUDIES

Medical Academy in Saint Petersburg

Project size:
summary square – 140,000 m²
20,000 detectors

Market sector:
medical, educational and scientific institution

System type:
hybrid wireless and wired

Project description

The multidisciplinary clinic of the Medical Academy represents a modern complex and consists of 7 buildings forming a single whole. The object includes clinical and diagnostic blocks, radionuclide Diagnostic block, educational and scientific blocks. The clinic required a fire detection and security alarm system.

Reasons for wireless use

The specificity of the hospital complex implies difficult access to individual rooms (surgery, resuscitation, etc.) and the need to maintain clean rooms.

Due to wireless technology the system was installed in a short time. Some parts of the system were pre-programmed and configured before they were installed in place for final testing and commissioning. In addition, the wireless system allowed to use wearable bracelets in the system for patients. The bracelets provide personal notification in case of fire alarms and perform the functions of a panic button. Wearable devices also automatically transmit alert to nurse's post in case of person's loss of consciousness.

Schools and kindergartens in Moscow

Project size:
- 150 schools and kindergartens in Moscow
- 40,000 wireless devices

Market sector:
educational institution

System type:
wireless

Project description

Educational institutions operating in the city of Moscow

Reasons for wireless use

The fire alarm systems of a large number of facilities had to be modernized in a short period of time without affecting the teaching process.

In 2019, a project was implemented in schools and kindergartens in Moscow to upgrade fire protection systems without decommissioning facilities. In 6 months, 150 children's educational institutions were equipped with new fire protection and remote monitoring systems.

Vnukovo air traffic control center in Moscow

Project size:
building area – 30,000 m²

Market sector:
transport

System type:
hybrid wireless and wired

Project description

The construction of new Vnukovo air traffic control center in Moscow started in 2009 and its handover for commissioning was in 2014. It is a three-storeyed building. The center is the largest air traffic control center in Europe. It controls the flights from 14 civil and 21 military aerodromes.

Reasons for wireless use

The challenge was to provide a flexible system that can be installed in a short time across the building, preventing disturbance to the occupants. Only wireless technology provides quick, easy and cost-effective installation (wireless communication between all the devices of the system). Wireless technology is now widely accepted as being as reliable and robust as traditional wired alternatives, yet offering much more in terms of flexibility, making Streletz-PRO an ideal choice.

Since the new system was planned beforehand, installation and handover went smoothly within the planned timescale. Finally, there were installed more than 1,000 wireless smoke and heat detectors, 50 wireless translators, 50 wireless output modules and 60 wireless manual call points.

Russian research station «Vostok», the Antarctic

Project size:
100 + devices

Market sector:
science

System type:
wireless

Project description

Vostok Station is a Russian research station in the Antarctic. The station lies at the southern Pole of Cold. The station consists of several buildings including a power station, a meteorology building and living quarters. The station typically contains 25 scientists and engineers.

Reasons for wireless use

Vostok is the coldest place on Earth. In addition to the extremely cold temperatures, other factors make Vostok one of the most difficult places on Earth for human habitation:

- An almost complete lack of moisture in the air.
- A windspeed rising up to 27 metres per second.
- The lack of oxygen
- A higher ionization of the air.

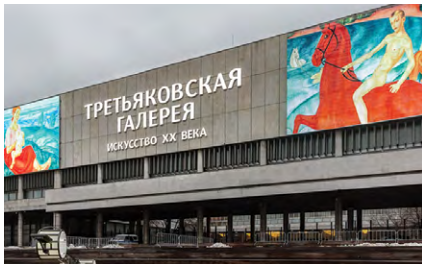
Due to long acclimatization and very short time of installation a wireless system was the obvious solution. At the same time the system should also be very reliable because Vostok station is one of the most isolated established research stations.

Wireless fire system Streletz-PRO is very reliable and an ideal variant for facilities with a number of buildings spread over the site where cables cannot be accommodated.

200 000
installations around the world

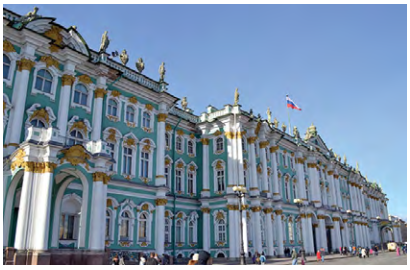
9 000 000
wireless devices sold

PROJECTS IN RUSSIA:



Tretyakov Art Gallery, Moscow


Peter the Great Hospital, St.Petersburg


Hermitage, St.Petersburg


Arkhangelskoye Estate Museum, Moscow region


Kursky Railway Station, Moscow


Clinical Hospital of S. S. Yudin, Moscow

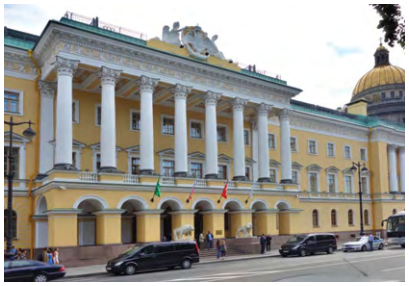

Mikhailovsky Theatre, St.Petersburg

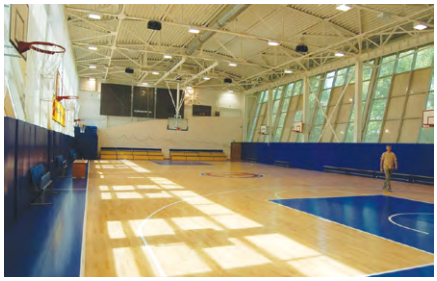

Naval Cathedral in Kronstadt


Vnukovo Airport, Moscow


Moscow Clinical Center for Infectious Diseases «Voronovskoye»


Residential complex «Academic», Yekaterinburg


«Four Seasons» Hotel, St.Petersburg


Sports schools, Moscow


Schools and kindergartens, Moscow


Residential complex «Lyuberetskiy», Moscow

www.argusspectrum.com