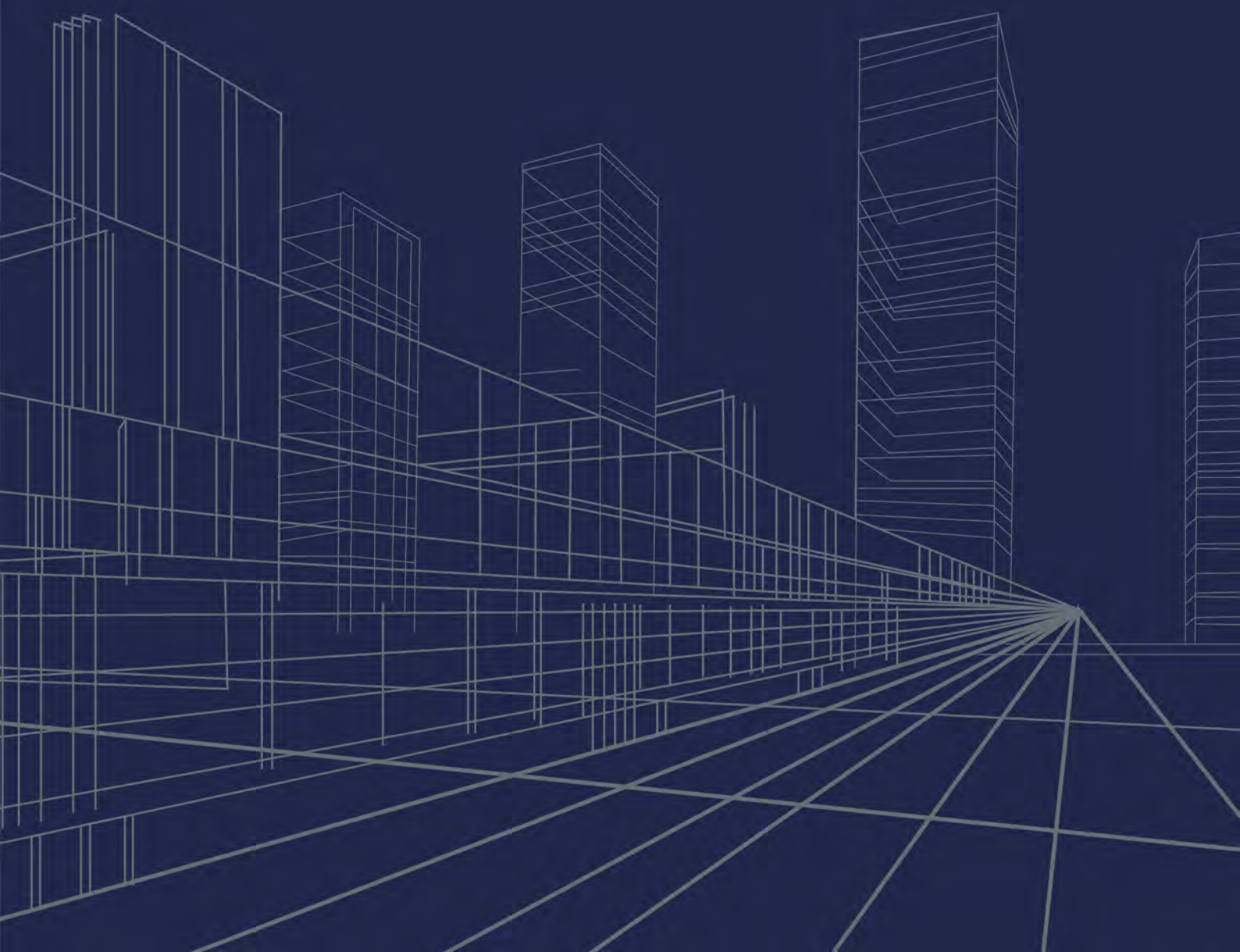# CONCERN
AVTOMATIKA

CONCERN OF
OPPORTUNITIES

General Director
Concern Avtomatika

Andrey Motorko

DEAR COLLEAGUES, PARTNERS!

The Concern Avtomatika is one of the leading enterprises of Russia in the field of information security. The enterprises of the Concern develop IT-solutions for wide range of customers, design, manufacture and retrofit hardware components, secure communication systems and automated control.

The Concern's specialist team has been entrusted with strategic tasks at the state level, such as the production of encryption equipment, the development of information cryptographic protection, the creation of special-purpose management systems, and the development and implementation of modern methods of protection against cyber threats.

The Concern's strategy specifies the priority development fields, including development and manufacture of the domestic equipment 5G mobile communication networks and industrial Internet of Things (IoT), quantum sensors and encryption equipment on the basis of quantum cryptography, systems with elements of artificial intelligence and neural networks, and modern robot system to combat unmanned aerial vehicles.

The results of our professional team work confirm the correctness of the chosen path of strategic development: according to the dynamics of growth and share of civil products in revenue the Concern ranked first among holding companies of the Rostec State Corporation.

In 2019 revenue of the holding company reached 59 bln. RUB, in comparison with 2018 when it was 42.8 bln. RUB. The Concern has also exceeded the strategic goal of the Rostec State Corporation in the field of civil products: its share in the total revenue amount has reached 68%.

Despite of the reached results, we continue to increase our activity in the domestic and foreign markets, create convenient product ordering services for customers.

One of these initiative is work on creation of the print and electronic civilian industry product catalog to be issued at Concerns' enterprises.

We hope, that due to this catalog it will be more convenient for our customers to order products, they will be able to become familiar with the product technical specifications easily and quickly, with products sale terms and operation conditions.

Best regards,
Andrey Motorko.

About

The Avtomatika Concern is a holding company, developing the systems and complexes intended for information protection. The holding designs, manufactures and modernizes facilities and systems of secure communications, develops technologies and methods for cryptographic information protection, automated control systems and hardware and software complexes, develops IT solutions for customers in various sectors of the economy.

The cooperation of research and production companies, formed under the auspices of the Avtomatika Concern, can solve the unique customers tasks and, most importantly, to present competitive and demanded integrated solutions and products to the market.

FIELDS OF ACTIVITY

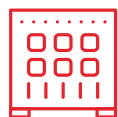|			
Communications and data transmission	Transport	Medicine	Security
Computer Engineering	Trade	Education	Military-industrial complex

BASIC COMPETENCES

Development and implementation of complex projects in the field of information security

Serial production of electronic equipment, including secure communications

Development and implementation of information systems, telecommunication equipment and computing technology

R&D, research and development in promising areas (5G networks, industrial Internet of Things IIoT, quantum cryptography, neural networks and artificial intelligence)

CUSTOMERS

Governments

Russian defence enterprises

Commercial structures

State corporations

Uniformed agencies

Individuals

Foreign customers

Our uniqueness

MORE THAN **70**
YEARS OF EXPERIENCE

CENTRE OF COMPETENCE OF ROSTEC STATE CORPORATION
IN IT AND CYBER SECURITY

36
DOCTORS
OF SCIENCES

147
CANDIDATES
OF SCIENCES

MORE THAN **11000**
AMONG ENTERPRISE
EXPERTS THE HOLDING

FLEXIBLE PRICE POLICY

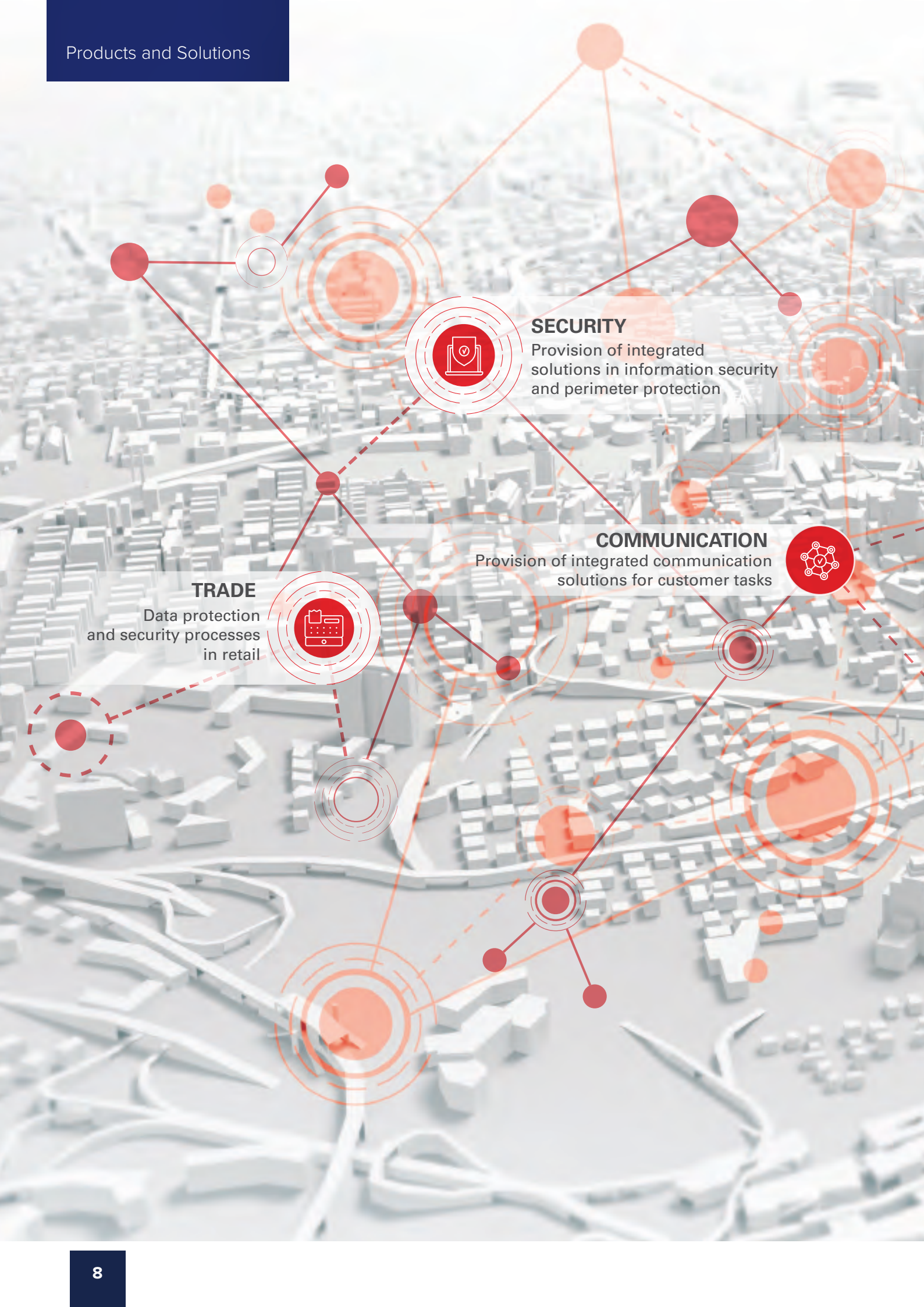PROVISION OF NECESSARY SUPPORTING DOCUMENTATION
FOR PRODUCTS

TRAINING OF THE CUSTOMER'S PERSONNEL PRODUCTS HANDLING

MODERNIZATION AND CUSTOM DEVELOPMENT SERVICES

WARRANTY SERVICE SUPPORT

SECURITY
Provision of integrated solutions in information security and perimeter protection

COMMUNICATION
Provision of integrated communication solutions for customer tasks

TRADE
Data protection and security processes in retail
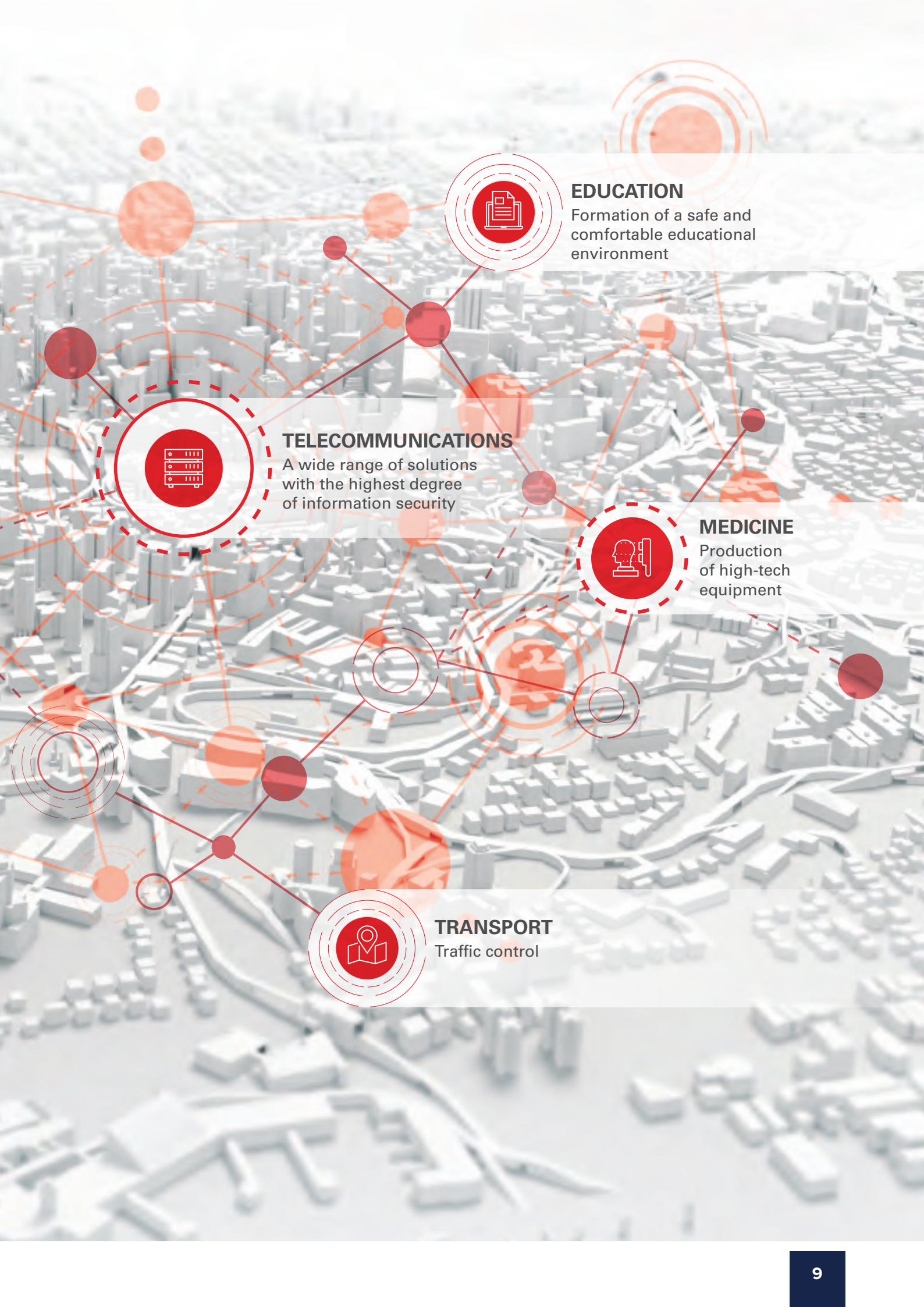
EDUCATION
Formation of a safe and comfortable educational environment

TELECOMMUNICATIONS
A wide range of solutions with the highest degree of information security

MEDICINE
Production of high-tech equipment

TRANSPORT
Traffic control

Computer machines

The Concern's products allow to achieve key indicators of import substitution of computing equipment, as well as to increase the information security of Russia.

Servers based on Elbrus microprocessors

KEY FEATURES

- The highest level of information security.

- Russian own architecture.

- Russian microprocessor.

- No viruses.

- Ability to run x86 code.

- High performance, multiprocessing support.

Infrastructure servers based on Elbrus-8S microprocessors are intended to organize file servers, domain controllers, web servers, database servers, remote desktop servers, high-performance clusters, firewalls to meet the needs of the IT infrastructure. Elbrus microprocessor-based servers are a full-fledged replacement for foreign servers. As a base operating system, Russian OS based on the Linux kernel can be used.

TECHNICAL SPECIFICATIONS

	Elbrus 823/18-01 server	**Elbrus 842/18-01 server**
Chip set	2 central Elbrus-8S processors (8 cores, 1200 MHz) 2 KPI-2 peripheral controllers	4 central Elbrus-8S processors (8 cores, 1200 MHz) 1 KPI-2 peripheral controller
RAM	Up to 64 GB DDR3-1600 ECC Registered (8×8 GB) Up to 128 GB DDR3-1600 ECC Registered (8×16 GB)	Up to 256 GB DDR3-1600 ECC Registered (32×8 GB)
Long-term memory	16 bays 3.5" SAS/SATA in front with hot swapping 2 bays 2.5" SATA at rear with hot swapping 16 SAS/SATA 3.0 ports on RAID-controllers 16 SATA 3.0 ports on motherboard	16 bays 2.5" SAS/SATA in front with hot swapping 2 bays 2.5" SATA inside the case 16 SAS/SATA 3.0 ports on RAID-controllers RAID-controller supports arrays of 0, 1, 5, 6, 10, 50, 60 types RAID-controller is equipped with a power failure protection module 8 SATA 3.0 ports on motherboard only SATA AHCI drives are supported disks with OS must be connected to SATA-ports of motherboard
Video system	1 embedded controller Silicon Motion SM718	1 embedded controller Silicon Motion SM718
External Interfaces	2 Ethernet 10GBase-SR ports with LC connectors 4 Ethernet 1000Base-T ports with RJ45 connectors 1 Ethernet 100Base-TX port with RJ45 connector from server control module 6 USB 2.0 periphery ports with A type connectors 1 RS-232 console port with DE-9 connector from server 1 RS-232 console port with DE-9 connector from server control module	2 Ethernet 10GBase-SR ports with LC connectors 3 Ethernet 1000Base-T ports with RJ45 connectors 2 Ethernet 100Base-TX ports with RJ45 connectors from server control module 2 USB 2.0 periphery ports with A type connectors 1 RS-232 console port with DE-9 connector from server 1 RS-232 console port with DE-9 connector from server control module (option) 1 video port with VGA connector
Internal Interfaces	1 USB 2.0 port with A type connector 1 USB 2.0 socket with 10-pin connector for 2 front ports 2 RS-232 sockets with 10-pin connectors from server and server control module 2 GPIO sockets with 10-pin connectors for direct input-output 2 SPI sockets with 8-pin connectors for ROM updating	2 USB 2.0 sockets with 10-pin connectors for 4 ports 1 RS-232 socket with 10-pin connector from server control module 1 GPIO socket with 10-pin connector (7 lines) 1 PC Speaker socket with 4-pin connector for sound output 2 SPI sockets with 8-pin connectors for ROM updating
Expansion slots	7 bays for full height cards (FH), 3 are occupied 6 PCI Express 2.0 slots of x16 format (4×8 + 2×4 or 2×16 + 2×4) 1 PCI 2.3 slot of 32-bit format, 5 V, frequency 33/66 MHz 1 slot of SO-DIMM format for server control module (SCM), only SCM-A is supported (ЛЯЮИ.469535.149)	5 bays for low profile (LP) cards, 3 are occupied 3 PCI Express 2.0 slots of x16 format (2×8 + 1×4 or 1×16 + 1×4) 2 PCI 2.3 slots of 32-bit format, 5 V, frequency 33/66 MHz there is a bay for 1 PCI-32 slot in the standard case 1 slot of SO-DIMM format for server control module (SCM), only SCM-A is supported (ЛЯЮИ.469535.149)
Operational parameters		
System unit	case format 19"/3U, motherboard format EATX overall dimensions 483×132×700 mm, weight 29 kg	case format 19"/2U, motherboard format SWTX overall dimensions 483×88.5×740 mm, weight 25 kg

Computer complexes and workstations based on Elbrus microprocessors

(Elbrus 101-RS, Elbrus 801-RS)

KEY FEATURES

■ The highest level of information security.

■ No viruses.

■ Own Russian architecture.

■ Ability to run x86 code.

Elbrus computer complexes are intended for the equipment of automated workplaces (AWP) of operators, thin clients, the organization of microservers and information terminals, applications in industrial automation and in systems with increased requirements to information security. It is possible to execute all workstations in a Tower type case or in a Monoblock type case. As a base operating system, it is possible to use Russian operating systems on the Linux kernel, or to use the Windows operating system in x86 codes for a PC based on the Elbrus-8S microprocessor.

SPECIFICATIONS

	Elbrus 101-RS	**Elbrus 801-RS**
Microprocessor	Elbrus-1 S+ (1 Elbrus core, up to 1,000 MHz)	Elbrus-8S (8 Elbrus cores, up to 1,300 MHz)
RAM	16 GB ECC DDR3-1600	32 GB DDR3-1600 ECC
Video subsystem	Built-in (2 HDMI ports)	Radeon R5 (HDMI, VGA, DVI)
External Interfaces	3 1000Base-T Ethernet ports 6 USB 2.0 ports 1 RS-232 port 6 Audio 5.1 ports	3 1000Base-T Ethernet ports 6 USB 2.0 ports RS-232 port 6 Audio 5.1 ports
Internal Interfaces	1 mini PCI Express 2.0 x4 slot PCI Express 2.0 x16 slot 2 LVDS ports 1 HD Audio port 1 USB 2.0 socket 7 SATA 3.0 connectors 1 mSATA slot	2 PCI Express 2.0 x16 slots 1 PCI Express 2.0 x4 slot 1 PCI 2.0 slot 33/66 MHz 1 HSTLM (USB) slot 8 SATA 3.0 ports
System unit	nettop format case	mini-tower format case

Petaflops-level supercomputer based on Elbrus-8SV microprocessors

Elbrus supercomputers are used to perform complex computational tasks in various areas that require the highest possible level of information security, including the processing of Big Data and deep analytics, creation and support of the cloud platforms operation.

Four-processor blade servers are based on Elbrus-8SV eight-core microprocessor and a motherboard of our own design. All servers have unique functionality for remote diagnostics and control. Built-in monitoring system and proprietary power management algorithms increase fault tolerance. The developed platform already has in its composition a power subsystem at the level of a separate server, taking into account the possibility of operation in difficult conditions with an extended voltage range and an increased level of interference. The use of direct liquid cooling made it possible to reduce the size of a single blade server and to place up to 153 compute nodes in one standard rack with a height of 42U.

At the same time, the average annual PUE of such a system, reflecting the level of energy efficiency, is less than 1.06. That is, cooling consumes less than 6% of the total electricity consumed, which is a very high result for the HPC industry.

The total performance of one computing rack based on the Elbrus-8SV microprocessor is about 150 TFlops (in double precision). It is possible to use various switching technologies, including the domestic machine-to-machine network to combine these racks into a single powerful computing cluster. The cabinet construction allows you to replace computing nodes, power supplies and hydro-regulation modules in the "hot-swapping" mode without interrupting the operation of the complex.

KEY FEATURES

- Domestic solution based on Russian microprocessors and self-developed motherboard.
- The highest level of information security.
- High performance for various complex calculating operations.
- High installation density and compact solution.
- Application of domestic direct liquid cooling technology.
- Noiseless operation, no special requirements for the room.
- Increased fault tolerance.
- «Hot Swapping» mode without interrupting the of complex operation.
- Easy initial deployment, easy system maintenance and upgrade.
- Significant reduction in operating costs (saving of energy costs, footprint and maintenance).

Kupol data storage system

KEY FEATURES

- Best value for unit of data storage volume.

- Modular architecture for flexible scaling of data volume to be stored.

- All key elements are backed-up in order to ensure reliable data storage.

- The system has passed tests within the scope of experimental zones of the leading Russian telecommunication service providers.

Kupol DSS is the domestic secured large and extra-large data volume storage systems with the possibility of certification for operation with data of any security category. The system has successfully passed test within the scope of experimental zones of several federal telecommunication service providers and is currently used to store data traffic with the scope of implementation Yarovaya-Ozerov Law No. 374-FZ. It has the conclusion of the Ministry of Industry and Trade of the Russian Federation «On confirmation of industrial products manufacture in the territory of the Russian Federation». The product is created by the Russian engineers. All rights for software, working design documentation and system overall design are owned by residents of the Russian Federation.

Kupol DSS is supplied as a turnkey software and hardware complex.

SPECIFICATIONS

Power consumption	from 0.6 kW/1 PB of data
Capacity of one system	up to 18 PB
Number of input/output operations	8 000 000 (IOPS) per s
Media (maximum capacity)	14 TB
Volume (maximum capacity)	8 TB

NatsTech data storage system

NatsTech data storage system is the new generation of data storage system for enterprise systems. Rethinking of the existing approaches, application of the latest technologies in combination with unique own developments – all this enabled to create the data storage system for wide range of tasks of business customers with exceptive ownership density and cost.

It supports the conventional modular access to the system. In the short run it is planned to support file protocol along with object access.

It can simultaneously operate both with solid state NVMe/SAS drives and mechanical SAS/NL-SAS disks.

It is built on the modular hardware platform.

CONFIGURATION

- Storage controllers operating in Active-Active mode.

- Special controller mounting rack.

- Disk mounting rack.

KEY FEATURES

- Fail-safe general-purpose data storage system.

- Architecture at the level of international standards for storage equipment of mid-range/high-end class.

- Superior performance, simultaneous operation with solid state NVMe/SAS and conventional SAS/NL-SAS drives.

- Application of innovative methods of data integrity protection on the basis of the Reed-Solomon code.

- Optimum price/performance ratio among domestic and similar foreign products.

- Availability of the own service department, that enables to perform any types of presale and warranty/extended technical support.

- High degree of localization, it is planned to obtain Statement of compliance with the requirements of the Government Decree 719/878 from the Ministry of Industry and Trade of the Russian Federation on September, 2020.

NatsTech.Kh2, NatsTech.Kh3 Servers

Scalable servers for the enterprise content are designed for:
– big data processing,
– media streaming,
– software-defined DSSs,
– distributed data storage,
– hierarchic data storage,
– data archiving.

KEY FEATURES

- **SCALABILITY AND STORAGE DENSITY**
  Two-socket servers are able to scale the storage subsystem within wide ranges:
  – model Kh2 is expanded to 256 TB of disk space,
  – model Kh3 is expanded to 512 TB of disk space.

- **TIERED STORAGE**
  Spacious disk space on HDD for main data, SSD for hot data with accelerated access, M.2 drives with separate RAID for OS.

- **INTENSIVE DATA EXCHANGE**
  Servers have 4 1/10GbE SFP+ interfaces. Integration to the modern network infrastructure will not require extension port occupation with adapters.
  If necessary, it is very easy to order configuration with high-speed Ethernet, Fibre Channel and InfiniBand adapters.

- **CONFIGURATION BALANCE**
  Scalable disk subsytem and optimum configuration of expansion adapters can
  be easily supplemented with GPU or FPGA accelerators for efficient local processing of large data flows using modern intelligent tools.

- **HIGH EFFICIENCY**
  Power supply units of 80PLUS Platinum level ensure reliable power supply for servers and save your DPC power supply and cooling costs.

TECHNICAL SPECIFICATIONS

	NatsTech.Kh2	**NatsTech.Kh3**
Form-factor	2U, standard 19-inch cabinet	3U, standard 19-inch cabinet
Computation capacity	Intel Xeon Scalable v2, TDP up to 205 W	
Memory	12×DDR4-2933/2666/2400/2133 RDIMM ECC/ LRDIMM ECC 1 memory module per channel	12×DDR4-2933/2666/2400/2133 RDIMM ECC/ LRDIMM ECC 1 memory module per channel
Local data storage	16 bays for LFF SAS/SATA drives with hot swapping, maximum capacity 256 TB 4 bays for SFF SATA/NVMe drives with hot swapping	32 bays for LFF SAS/SATA drives with hot swapping, maximum capacity 512 TB 4 bays for SFF SATA/NVMe drives with hot swapping
RAID support	memory cache up to 4 GB RAID 0/1/5/6/10/50/60 levels optionally: supercapacitor for protection memory cache in case of power failure	memory cache up to 4 GB, RAID 0/1/5/6/10/50/60 levels optionally: supercapacitor for protection memory cache in case of power failure
Drives for OS booting	2×M.2 SATA SSD (optionally in RAID 1)	2×M.2 SATA SSD (optionally in RAID 1)
Support of accelerators	1×GPU with double width or 2 accelerators with standard width	2×GPU with double width or 2 accelerators with standard width
Embedded interface	4 × 1/10Gbe SFP+ at rear 3 × 1Gbe RJ-45 (1 mgmt / 1 host / 1 shared) 2 × host USB 3.0 at rear 2 × BMC USB 2.0 inside 1 × Host serial (USB) port 1 × VGA 1 × MicroSD inside	
Control	SW on the basis of OpenBMC with enterprise functionality of YADRO, Call Home support of access via IPMI 2.0, REST, WebUI, CLI, SNMP	Canonical® Ubuntu® LTS, Red Hat® Enterprise Linux, SUSE® Linux Enterprise Server, VMware® ESXi, Citrix® XenServer®, Microsoft Windows Server®
Warranty and support	3 years, 9×5 extended support options are available	3 years, 9×5 extended support options are available
Power supply	1+1 CRPS Platinum up to 1200 W	1+1 CRPS Platinum up to 2000 W
Cooling	(4+1)×80 mm with hot swapping	(2+1)×120 mm with hot swapping
Climatic regime	+10...+35 °C at relative humidity from 20% to 80% (ASHRAE A2)	+10...+35 °C at relative humidity from 20% to 80% (ASHRAE A2)
Overall dimensions	815×448×88 mm	815×448×132.5 mm
Installation kit	rails, optional guideway for cable laying	rails, optional guideway for cable laying

Bulat B-DSS series
Data Storage Systems

Convergent middle-class storage systems for large OLTP/OLAP databases, file sharing and cloud computing in government, financial, telecommunications, energy and multimedia industries.

KEY FEATURES

- Provide convergence in five areas: SAN and NAS, heterogeneous devices, storage from entry level to top class, HDD and SSD, as well as data storage and backup.

- The simplest management platform, supports several product models with a graphical interface and is available for Windows, iOS and Android versions.

- Provides industry-leading features: solutions scale up to eight controllers, 1 TB cache, 15 PB storage capacity, with various types of interfaces, including 16 Gbp/s FC, 56 Gbp/s InfiniBand, PCIe 3.0, 12 Gbp/s SAS, and intelligent I/O cards.

- Protect customers' initial investments and reduce TCO for multiple applications, different product models and fast business growth.

SPECIFICATIONS

	B-DSS-100-K	B-DSS-200	B-DSS-300	B-DSS-400VD	B-DSS-500VD
Number of controllers	1	1	1	2	2
Controller height	1U	2U	2U	2U	4U
Cache size per control module	up to 768 GB	up to 1,024 GB	up to 1,024 GB	up to 1,024 GB	up to 1,024 GB
Number of ports (per control module)	10	24	24	10	22
Supported host ports	8/16 Gbit/s Fibre Channel, 10 Gbit/s FCoE, 1/10 Gbit/s Ethernet, 56 Gbit/s InfiniBand, SAS 12 Gbit/s				
Number of discs max	980				

HELIOS
Platform for development of converged IT infrastructure

Helios is a set of integrated devices controlled by ECP Veil corporate cloud platform for creating a converged IT infrastructure of an enterprise.

Allows you to virtually combine the resources of the entire IT infrastructure in a single computing centre.

With a converged infrastructure, the IT service of any institution can centrally manage software-defined resources: computing, network, and storage resources.

KEY FEATURES

- Quick deployment.
- Easy configuration and management.
- Resource Efficiency.
- Fault tolerance.
- Business continuity.
- Scalability.
- Technical support.
- Ability to choose a hardware platform.
- Reliability and safety management.
- Original software designed for specific tasks.

SPECIFICATIONS

HELIOS EXPRESS®	Helios Express® is offered in configurations of three full-size 2U servers or a complex with 4 full-fledged servers in a 2U package, providing significant savings in space and power consumption. Servers are clustered by a 1.2-switch, which is already included in the complex
HELIOS BUSINESS®	The delivery of Helios Business® is possible in the form of six full-size 2U servers clustered by 1.2-switches, or in the form of a high-density 7U power-saving blade platform with six or ten blade servers and integrated 10G Ethernet switch. Additionally, you can order a 19» cabinet to create a turnkey computer system, in which servers with an uninterruptible power supply will already be installed and connected
HELIOS DATA-CENTRE®	The Helios Data Centre® line represents a ready-to-use complex in the configuration of two high-density energy-saving 7U blade platforms for ten blade servers clustered by a 10G Ethernet 1.2-switch housed in a 19" cabinet with an uninterruptible power supply

Each Helios® can include a high-performance data storage system to enable the large numbers of virtual machines to run with disk data allocation on shared storage

ECP VEIL enterprise cloud platform

ECP Veil is designed to create and manage the IT infrastructure of distributed data centres of an enterprise.

The platform includes all the basic functions for the effective provision of computing resources to employees of the enterprise according to the IaaS model, and also provides opportunities for scaling and automating of administration combined with fault tolerance and energy efficiency of the system.

ECP Veil is a profitable investment in development for companies that require the rapid deployment of IT infrastructure and simple management of it.

KEY FEATURES

- Domestic development included in the unified register of Russian programs for electronic computers and databases (ERPP).

- Virtual IT infrastructure managed by ESR Veil can be installed, configured and ready to launch the necessary services within an hour.

- Provides the possibility of the equipment service and hot-swapping without interrupting the work of services due to the possibility of their flexible placement on any servers.

- Built-in mechanisms for fault tolerance of the platform minimize the downtime of business services deployed based on it.

SPECIFICATIONS

Infrastructure Management	administration of a local cluster of servers from a single web interface, administration of geographically distributed locations from a single web interface, automated configuration of physical servers when added to virtual infrastructure
Virtual Machine Management	creating a virtual machine from a disk image, creating a virtual machine from an optical disk image, cloning, "live migration", support for snapshots, forwarding PCI and USB devices, dynamic addition and removal of resources
Virtual Network Management	distributed virtual switch, support for network interface aggregation, creating overlay L2-networks for the interaction of virtual machines in a geographically distributed infrastructure
Storage Management	support for virtual machine data storage on file or block devices on a virtualization server; support for virtual machine data storage on external storage systems connected via file and block access protocols
Built-in network services	DHCP-server, firewall, NAT
Support for access to storage systems	NFS, iSCSI, shared iSCSI, FC
Monitoring	sogging of all system events, collecting metrics via SNMP, uploading logs to monitoring systems
Access Control	support for Active Directory services, LDAP, support for single SSO sign-on, role-based access control system
Fault tolerance	support for automatic recovery of virtual machines, support for VM disaster-resistant copies at independent geographically distributed locations, support for redundancy of the server controller

Telecommunication equipment and communication

Development of technologies in the field of telecommunication equipment and communication is a key focus of the Concern since its inception.

Concern's enterprises are ready to offer solutions that surpass foreign and domestic compatibles due to the high degree of information security.

Network, telecommunication and electric cabinets

Cabinets are designed for installation of network and telecommunication 19" equipment of the Evromekhanika standard or electrical products.

KEY FEATURES

- Russian production, optimal production and service time.

- Possible cabinet construction and filling according to customer requirements.

- Can be supplied complete with various accessories, passive components of the structured cabling and uninterruptible power supplies of various capacities.

- Cabinets can be adapted to the requirements of a specific customer and can be made according to his terms of reference.

SPECIFICATIONS

Version	floor and wall
Wide range of sizes	width: 600-1,000 mm depth: 400 -1,200 mm height: 3U - 48U
Additional equipment	
Shelves	console, extendable, full-size made of 1.5 mm sheet steel and perforated
Free unit stubs	made of 1.2 mm sheet steel
Ventilation panels	installed in the cabinet roof, there are also panels for air drawing through the cabinet with installation on 19" profiles
Front and rear glazed and metal doors	83% perforated (rear hinged doors), handles with lock
Support angles for equipment installation	made of 1.2 mm sheet steel
Cable Organizers	horizontal, vertical, with rings, combs, etc.
Other	lighting panels, socket blocks, power cables, grounding bus in 19» version, grounding cords, fasteners, cable ties for fastening cords and cables

BULAT BS7510
High Performance
Routing Switch

KEY FEATURES

■ Non-blocking switching matrix with powerful caching capabilities.

■ High port density at 1U:48x10Gbase + 6x40Gbase.

■ Wide range of supported features and protocols.

■ Power redundancy by 1+1 scheme.

■ Redundancy of cooling modules by 3+1 scheme.

The BULAT switch BS7510 series is a powerful device for building modern data centres and deploying the latest cloud services. The product has a single non-blocking architecture and provides high speed packet switching. The BS7510 series is a secure foundation for building of enterprise-class cloud networking solutions.

SPECIFICATIONS

Ports	48x10GBase (SFP+), 6x40Gbase (QSFP+)
Switching matrix performance	1.28 Tbyte/s
Memory buffer	12 Mbyte
Table capacity, MAC addresses	32K/288K
Maximum Ethernet frame size, Byte	9 K
Number of ACL entries	4 K
Routing table capacity, number of routes	IPv4: 16K/112K IPv6: 8K/56K

Chronos firewall with intrusion detection functions

KEY FEATURES

- Functions in convergent networks: data, voice, video.

- Continuous monitoring and intrusion detection in near real-time mode.

- The possibility of selecting a hardware platform for customer requirements.

Chronos is a family of firewall complexes designed for reliable protection of departmental and corporate communication networks from external network threats and intrusions. This model range includes complexes made on hardware platforms of both foreign and Russian production using domestic circuit solutions. The complexes can be used to perform packet filtering of traffic, network address translation and setting of demilitarized zones (DMZ), as well as creating a secure communication channel based on a public network (VPN).

SPECIFICATIONS

Routing capacity	1.3 to 25 Gb/s depending on the model
Firewall capacity	0.09 to 3 Gb/s depending on the model
IPS capacity	10 to 2,048 Mbyte/s depending on the model
Number of simultaneous connections	1.8 to 8.9 mln depending on the model
Embedded interfaces	(1-2)x1 GbE, RJ45 1 x1 GbE, SFP depending on the model
Expansion modules	2.4,6x1 GbE (RJ45, SFP) 2.4x1 OGbE (RJ45, SFP+) depending on the model
Housing	desktop - for the younger model. for other models - 1 U, 3U
Input power	100-240 V, 50-60 Gz

Proton-KA Enterprise-Production Automatic Telephone Station

Universal hardware and software complex for the organization and development of multi-service switching and access nodes. Combines channel switching technologies (TDM) and information packet switching technologies (IP). Due to the implementation of a similar system of on-screen menus and algorithms for the operation of digital telephones, it completely replaces imported Siemens PBXs (Unify) Hicom300 / HiPath4000 / OpenScape4000.

KEY FEATURES

- Fully Russian development and manufacturing are confirmed by the status of telecommunications equipment of the Russian origin (TERO).

- Certification in the certification system of the Federal Security Service of Russia for compliance with the temporary requirements for the protection of equipment (including the communication server in the part of IP telephony) and control systems from computer ttacks and information leakage through technical communication channels for A2 security level.

- No need to purchase licenses, unlike foreign manufacturers.

- Possibility of delivery of Siemens/Unify digital telephone sets modified by the protection device, intended for installation in dedicated premises up to category 1 inclusive.

SPECIFICATIONS

Capacity	up to 5,760 ports (full accessible non-blocking switching field)
Reservation	hot backup of the power system and control system. backup of software in full to external media.
Inter-station interfaces	Ethernet, E1 (OKC7, EDSS1, Q.SIG, ECMAv2, including with the support of the functions of the CorNet-N, R2, R1.5, 2BCK, 1 VSY, physical lines (FXO, E&M, 1 BCK, 2 BCK, ADASE, ADASZHD, 600+750, TDNIADNV, etc.)
Subscriber interfaces	FXS (60 V/1,800 Ohm, BORCHST; MB), UpO (LG), UpOE (Siemens), Ethernet
Connection of subscriber terminals	Support for all types of subscriber devices: SIP-phones (including telephones with subscriber encryption), digital phone sets from Siemens/Unify, lines Optiset E, OptiPoint 500, OpenStage T, lines LDP, LDK of LG.

BS-430 Station

The BS-430 Station is a base station for operation as part of TETRA digital trunked mobile radio systems, providing communication between subscriber radio stations located in the service area and the TETRA network. The modular design of the elements layout allows to fully meet the requirements of consumers, both in terms of the number of subscribers being serviced and in integration with existing fixed and wireless communication systems.

KEY FEATURES

- The station meets modern requirements to the equipment of professional radio communication systems.

- Possibility of full operation offline, including subscriber control and authentication.

SPECIFICATIONS

Frequency range	410-430 (450-470) MHz
Number of carrier frequencies	up to 4
Power	up to 25 W
Sensitivity	-115/-106 dB/mW
Spaced reception	double
Duplex separation	10 MHz
Bandwidth	25 kHz
Frequency Shift	-12.5; 0; +12.5 kHz
Modulation type	p/4 DQPSK
Frequency instability	0.2x10-6
Power supply	-48 V DC, 220 V AC
Power consumption	not more than 700 W
Resistance to external influences	GOST 16019-2001, version C1

IVA AVES S secured videoconferencing server

The product allows users (including those geographically distant from each other) to access unified communications services using local (LAN) and global (WAN) data networks, the Internet. At the same time, users are able to see and hear their interlocutors in real time, demonstrate various contents to other participants of the event, exchange other information depending on the type of event. IVA AVES S operates on the basis of the special purpose operating system Astra Linux Special Edition.

KEY FEATURES

- Protection of processed information (Certificates of conformity of the Ministry of Defence of the Russian Federation and Federal Service for Technical and Export Control).

- Reliable communication of a large number of conference participants.

- Scaling as needs increase.

- Wide range of end devices.

- Exchange of audio information, video information in real time both between individual users and between a group of users.

- Personal and group text messaging.

- Connection to video conferencing of subscribers working only in audio mode.

- Demonstration of various contents to participants of the event.

- The maximum number of conference participants is determined by the number of licenses purchased.

SPECIFICATIONS

Simultaneous operation of user terminals in high-definition video conferencing	40 subscriber terminals (with the possibility of increasing the number of participants, due to scaling)
Standards and protocols support	RTSP cctv cameras SMPP to send SMS through a plug-in gateway HTTP, FTP, UDP, ULPFEC
Video codecs	H.261, H.263, H.263+, H.263++, H.264, H.265 (HEVC) for SIP, VP8
Real-time content translation protocols	H.239, BFCP
Audio codecs	Opus; Speex; AAC (only for reading from file); G.711 u-Law; G.711 a-Law; G.722; G.729; G.722.1 Annex C.(G.722.1C/Siren 14) 48 kb/s, 32 kb/s, 24 kb/s; G.722.1 (Siren 7) 32 kb/s, 24 kb/s; G.723.1; G.728; G.726
Video standards	4K; 1920x1080px 60fps; 1280x720px, 30fps; 960x540px 30fps; 640x360px 30fps; 4SIF (704 x 480px) / 4CIF (704 x 576px); SIF (352 x 240px) / CIF (352 x 288px); qVGA (320x240px); QSIF (176 x 120px) / QCIF (176 x 144px); VGA; SVGA; XGA
Signalling protocols	H.323, SIP, WebRTC technology

IVA LARGO secured videoconferencing terminal

IVA LARGO is intended for user participation in individual and group video conferences. The product provides customer participation in videoconferencing sessions, and the ability to hear and see other interlocutors in real time. During video conferencing, the product has the ability to receive and display various contents, as well as transfer it to the video conference, and show it to other participants of the event. The product implements information protection tools that comply with the requirements of Federal Service for Technical and Export Control and Ministry of Defence of the Russian Federation and ensure the security of the information being processed.

KEY FEATURES

- Control via remote control panel or remote control via WEB interface.
- Ability to automatically change the bandwidth and video quality.
- Control of the layout and type of visible information from the video terminal.
- Support of SIP, H.323, WebRTC; Ability to show content (media files, documents).
- Built-in MCU for 4 simultaneous connections.
- High resolution support, up to 4K.
- Automatic noise reduction.
- Full duplex echo cancellation.
- Dynamic synchronization of sound and image.

- LDAP integration. Ability to update software.
- Interface language is Russian, English.
- Supports oncoming work with servers of multipoint domestic and foreign manufacturers.
- Compatible with audio and video conference room systems.
- Russian development.
- Russian-language documentation and technical support.
- Infrastructure development and service support localized in Russia.
- Certificates of conformity of the Federal Service for Technical and Export Control and Ministry of Defence of the Russian Federation.
- Declaration of TRCU, Ministry of Communications.

SPECIFICATIONS

Supports the following video formats	4K 30/60 frames/sec; 1,080p 30/60fps; 720p 30/60fps; 4SIF/4CIF 30/60fps; SIF (352 x 240); CIF (352 x 288); QSIF (176 x 120); QCIF (176 x 144); w288p; w448p; w576p
Camera	PTZ camera, (included up to 1,080p30) or webcam, depending on the supply contract
Audio codecs	G.711 A/M, G.722, G.722.1 & Annex C, .723.1, G.728.G.729A
Video codecs	VP8, F4.265 (PIEVC) (for SIP protocol), H.264 Baseline/Fligh profile, H.264 AVC, H.263,
Connection protocols	SIP, H.323, WebRTC technology
Content transfer protocols	H.239 and BFCP
Network protocols and Technologies	DNS, DHCP, LAN/Ethernet (RJ-45) 10/100/1,000 MByte
Built-in MCU (additional functionality, opening by license)	the maximum number of video conference participants is 4 in 1,080p30 format.
LDAP Integration	Microsoft Active Directory; Novell Directory; Astra Linux Directory

Veil VDI desktop virtualization platform

Specialists of the Concern Avtomatika have all required competences to implement secured cloud platforms for virtual desktop arrangement, that provide remote users' connection to the enterprise network via personal virtual desktop, located in the dedicated server (Veil VDI solution). Connection to virtual desktops is carried out using cheap and low-end thin clients. Due to this solution the IT-department of the organization is able to administer, monitor, provide information protection of desktop resources, used by end-users with speed and flexibility required for usiness.

KEY FEATURES

- Elaborated unified product ecosystem provides high-speed performance, scalability and fail safety.

- The unified software stack, that includes ECP Veil virtualization platform, desktop connection manager and thin client SW for hardware platforms on the basis of home-made processors ensures high security and integrity level.

- Full ownership of the source codes for all software that are not based on open source software, will enable to promptly perform complete product adaptation individual requirements of users and consumers.

TECHNICAL SPECIFICATIONS

Veil VDI connection broker installation options	on x86_64 standalone server in the virtual machine
Virtualization platform	ECP Veil
Support of desktop access protocols	Spice RDP
Authentication in the control panel via Active Directory/LDAP	yes
Authentication in the thin client via Active Directory/LDAP	yes
Support of operation systems for virtual desktops	MS Windows XP/7/8/10, Astra Linux, Ubuntu, Debian CentOS, SUSE, Fedora, ALT Linux
Support of dynamic and static pools of desktops	yes
Virtual desktops creation on the basis of thin clones	yes
Access isolation	for desktop pools for individual desktops
Support of GRID technology for graphic accelerator core passthrough to virtual desktops	yes
Support of Virgil technology for graphic acceleration in virtual desktops	yes
Hardware-software complex supply	yes
Device passthrough from thin client	USB storage media, head set, microphone, USB-set, USB-web-camera
Possible connection of client devices via tunnels (including secured ones)	yes
Hardware thin client supply	yes

Foton-PK

Foton-MSh

Foton-A trusted telecommunication system

Foton-A trusted telecommunication system is deigned to build integrated information and communication networks on the basis of packet switching technology with integration of real-time services.

The main parts of Foton-A trusted telecommunication system is a Foton-PK soft switch and Foton-MSh multiprotocol media gateway.

KEY FEATURES

- Centralization of control and monitoring of the entire communication network, configuration of subscriber terminals due to complete integration of all components.

- Unified subscriber book for the entire system.

- Simple scaling due to flexible modular adjustable architecture.

- Implementation of survival server functions in case of loss of communication channel between one of peripheral nodes and the center in geographically-distributed systems.

- Implementation of unified communications for terminal devices of both conventional TDM and IP-telephony with management of call set up between the system subscribers in any combinations taking into account current subscriber connection.

- Control of service provision for Foton-A trusted telecommunication system subscribers depending on connection type, access settings and subscriber service category.

TECHNICAL SPECIFICATIONS

Subscriber support, min.	10 000
Connection to communication network using data exchange protocols:	OKS7, EDSS1, 2 dedicated signal channels over group terminating links of G.703 E12 standard
Connection to the communication network over analog terminating lines:	2-wire over subscriber's line to partner ATS; 3-wire with battery alarm and automatic number identification, including pulse shuttle (R1,5); 4-wire with alarms: analog transmission system without dedicated signal channel, 1 tone frequency 2600 Hz, 1 tone frequency 2100 Hz, 2 tone frequencies 1200/1600 Hz, 2 tone frequencies 600/750 Hz (Electric energy system long-distance automatic communication equipment, long-distance outgoing dialing repeater/long-distance incoming dialing repeater, etc.); 4-, 6- and 8-wire with E&M alarm, 1 dedicated signal channel with simplified rural code
Connection to the communication network over protocols	SIP/SIP-T
Connection of 2-, 4-wire analog telephone sets	yes
Connection of 2-wire digital telephone sets with UpO and UkO interfaces	yes
IP-telephone set connection	over SIP v2.0 protocols
Voice information transmission with re-coding when using codecs	G.711a-law, G.711u-law, G.729, G.723.1, G.722.1
Transmission of voice and video information generated by a random codec including non-standard, without re-coding	yes
Fax transmission	T.30, T.38
COPM support	yes

IVA IP-telephone

IVA IP-telephone is functional SIP-telephone with monochrome LCD. Telephone provides all conventional services: call redirection and holding, call forwarding to the selected client, last number redial, direct IP-call, phone book (500 records), call history (100 numbers). Ensures compatibility with ATS of any manufacturer. Used in communication networks which have access to Internet or LAN with lots of equally spaced subscribers. Ensures connection security due to implementation of loudspeaker circuit breaking functionality.

Enables to conduct duplex phone conversation in 2 modes:
– closed: with cryptographic protection when interacting with the similar equipment,
– open: when communicating with standard IP-telephone.

KEY FEATURES

- Conference call for 4 participants.
- Sound channel mechanical breaking.
- Compatibility with third party manufacturers' SIP ATS.
- Monochrome LCD, intuitive interface..
- Remote setting and upgrade installation..
- PoE technology support.

- Softkey back light.
- Possibility of charging from mobile devices via USB-port.
- Ergonomic stand.
- Operation mode light indication.
- Display brightness and contrast adjustment.
- Cyrillic alphabet support.

TECHNICAL SPECIFICATIONS

LCD	128x64 pixels, 5.3"
Output parameters	12V, 500mA DC
Possibility of installation at angle of 45˚ and 60˚ and vertical wall mounting	yes
Audio	G.711A/U, G722, G.729 codecs broadband sounds playback speaker mode function echo suppression function DTMF-signal sending
Power supply	external power adapter 5V DC, PoE
Keys	3 line keys with LED-backlight, 5 navigation keys (joystick), 10 softkeys: call redirecting, holding, re-dial, speaker mode, call forwarding, conference call, mute mode, volume control, phone book, missed calls
Interface	LAN: 2xRJ45 handset: 1xRJ11 sound channel breaking circuit operation mode selector, dual-port switch 10/10 mBlt/s with integrated PoE
Network functions	possible PC connection via IP-telephone networking mode: static /DHCP VLAN support time and date synchronization via NTP TLS support
Control	firmware updating and SW configuration via TFTP phone setting updating via TFTP SysLog support, SNMP support apparatus setting using MAC-address reset to default setting, reboot

Radio equipment for interference-resistant control of robot complexes

It ensures interference-resistant channel for control command and acknowledgement exchange between the control post and robot complexes of various purposes, including UAV, under condition of intended and unintended interference and under multipath effect conditions.

Radio equipment for interference-resistant control can be applied: on robot complexes, that are used for service of controlled access zones and reactors on NPPs, radioactive material leakage elimination, accident damage control in mines, areas with hindered access. Due to the possibility of signal re-translation, radio equipment can be used under conditions of urban area and terrain topographic inequalities. Also, it is possible to use it to control mining electric locomotives and other equipment including loading/unloading machinery.

KEY FEATURES

- Possibility of combining of up to 10 radiomodems in MESH-network.

- Cascaded coding for error correction.

- Noise environment assessment (signal/noise ratio) at receiver input.

- Automatic power adjustment.

- Diversity reception to spaced antennas.

TECHNICAL SPECIFICATIONS

Distance of communication	up to 5 km
Frequency range	900-3500 MHz (upon customer request)
Data Rate	up to 200 kbit/s
Maximum delay in channel	max. 10 ms
Output signal power	max. 1 W
Connection to the terminal device via interface	Ethernet
DC mains voltage	18 V-36 V (range change by agreement with the customer)
SIgnal/noise ratio at receiving device input	-15 dB at error probability of 10^{-3}
Robot antenna gain power	min. +1 dBi
Directive diagram	omnidirectional
Control post antenna gain power	min. +5 dBi
Directive diagram in horizontal plane	min. 90°
Directive diagram in vertical plane	min. 30°

Security

Avtomatika Concern is the centre of competences in the field of cybersecurity of Rostec State Corporation. Ensuring of the security, not only informational, but physical also is one of the main activities of the company.

MTD-KA metal detecting archway

MTD-KA is designed to ensure public safety in places of mass gathering. Metal detector can detect prohibited metal objects. At the request of the customer it can be equipped with a video camera with a facial recognition system based on one of the fastest and most accurate algorithms in the world from the NtechLab company, and integrated thermal-imaging records, manufactured by Schvabe Holding. When a match is found with a person from the monitoring list, notifications are instantly received by security officers. NtechLab software allows to process online video stream from an unlimited number of cameras simultaneously.

KEY FEATURES

- Simultaneous detection of several metal objects.

- Two LED strips on both panels.

- Definition of ferrous and non-ferrous metals.

- Automatic adjustment of operating frequencies ensures the elimination of effects from various sources of electrical interferences.

- Protection against false positives.

- Sound and light alarm.

- Smart counters for passenger traffic and the number of alarms triggered.

- Sensitivity adjustment.

- 12 detection zones.

SPECIFICATIONS

Protection against unauthorized access	password protected software
Distance between detectors	0.3 m with low sensitivity 0.5 m with high sensitivity
Mains voltage	AC 187 V ~ 242 V, 50/60 Hz
Signal frequency	7,000-8,999 Gz (adjustable)
Power consumption	12 W
Total gross weight	70 kg
External dimensions (HxWxD)	2,220x820x500 mm
Internal dimensions (HxWxD)	2,000x700x500 mm
Working temperature	from -20 °C to + 50 °C

Kupol-PRO UAV countering system

The system is designed to act on navigation, control and data transmission channels of UAVs in order to prevent their operation within the facility air area.

KEY FEATURES

- Upon activation, it immediately creates a semisphere «impenetrable» to UAVs with a radius of at least 2 km in 10 frequency ranges at the same time, thus ensuring effective resistance to the intruder, regardless of the number and direction of the UAV attacks.

- The operator can use a controller to select the optimal frequency countermeasure program.

TECHNICAL SPECIFICATIONS

Tactical and technical advantages	simultaneous action on frequency communication, control and navigational support channels of UAVs adapted for use with UAV detection equipment
Effective radiating power, W	80
Kupol-PRO UAV countering system comprises of	antenna-feeder system – 1 set voise generator blocks – 1 set supporting tripod
Environmental operating conditions	within temperature range from -40°C to +50°C when exposed to atmospheric precipitation (rain) with an intensity of 5 mm/min

Luch portable UAV countering complex

The complex is intended for affecting the channels of navigation, control and transmission of information in order to prevent completion of the flight mission of an unmanned aerial vehicle (UAV) in the airspace of the protected facility.

KEY FEATURES

- Interference parameters are remotely selected by the operator when the UAV countering mode is activated.

- Interference generated by the complex is radiated simultaneously in 11 bands.

- Transmitting antennas provide for directional interference with linear vertical polarization.

- The range of counteraction is at least 4 km assuming direct radio visibility.

- It has a simultaneous impact on the frequency channels of communication, control and navigation support of unmanned aerial vehicles.

SPECIFICATIONS

Tactical and technical advantages	simultaneous impact on the channels of communication, control and navigation support of unmanned aerial vehicles
	the accuracy of combining the frequency-targeted interference is at least 10 % of the widthof the high-frequency spectrum of the suppressed signals
	adapted for use with UAV detection equipment
	the counteraction distance is at least 4 km
The complex includes	antenna-feeder system – 1 set noise generator blocks – 1 set radio jamming subsystem positioning mount – 1 set AWP on the basis of the controlling laptop-type PC –1 set
Outdoor equipment of the complex ensures operation	in the temperature range from -40 °C to +50 °C when exposed to atmospheric precipitation (rain) with an intensity of 5 mm/min when exposed to sand and dust

Pishchal-PRO portable UAV countering system

Pishchal-PRO system is intended for suppressing the channels of communication, control and navigation of unmanned aerial vehicles. It does not require special training and is ready for combat use in near-real time. The system can be used to neutralize UAV based means of tactical intelligence.

KEY FEATURES

- Provides counteraction within 5 ranges simultaneously.

- The lightest system available in the market.

- Replaceable battery included.

TECHNICAL SPECIFICATIONS

Jamming frequency bands	simultaneous action on communication, control and navigational support channels of UAVs
Power supply, V	16
Battery capacity, Ah	10
Type of noise generated	noise-like, aiming in direction
Continuous operation time (per 1 BAT), min., h	1
Working temperature range, °C	from -30 to +50
Overall dimensions (W × H × L), cm	200x240x700
Weight, max., kg	4,5
Suppression range, min., km	2 (direct radio line of sight conditions)

Sapsan-Convoy mobile multifunctional UAV countering system

Purpose: counteraction to UAV by detection and jamming of control channels and airborne receivers of GNSS signals.

CONFIGURATION

■ Radar detection subsystem.

■ Subsystem for UAV radio detection, identification and targeted jamming of its control channels and GNSS receivers.

■ Optical electronic surveillance (OES) subsystem.

■ Supporting subsystems (geo-referencing, navigation, remote data control and communication, power supply).

UAV radar detection subsystem

Specifications

Operating range: in azimuth, deg. in elevation, deg. in height, m by aerial target speed, m/s	360 5-90 0-5 1-300
Detection range, km:	
RCS =0.003 m² (micro UAVs such as Mavic)	6
Power consumption, W	600
Overall dimensions (H x D), m	0,6*0,8

Subsystem capabilities

– Control via Ethernet interface at 1000 Mbit/s.
– Displaying operator-selected tracked target parameters on the workstation screen.
– Radar and radio field of view customizable operator.
– Uploadable map of facility protected by PC.
– Simultaneous display of up to 1000 target tracks on the protected facility map.

Radio surveillance and jamming subsystem

Subsystem purpose

Subsystem is intended for continuous radio surveillance, detection of UAV signals, identification and generation of counteraction signals in the protected area, including:
– detection, direction finding and identification of UAV signals;
– detection and identification of UAV signals controlled via Wi-Fi (IEEE 802.11) protocol;
– generation and emission of signals for counteraction to UAV satellite navigation channels;
– generation and emission of signals for counteraction to UAV control channels.

Depending on the operating conditions the subsystem provides the following:
– installation on an off-road chassis for missions;
– quick deployment of the subsystem due to the modular structure and a limited number of connecting cables;
– possibility to use in urban and field environment.

Specifications

Operating frequency band, MHz	400-6000 (20 to 12000 optional)
Operating limit in azimuth, deg.	2
Instrument standard deviation of direction finding with probability of 0.85, deg., maximum	360
Maximum bandwidth of the generated signal within the frequency range: 400 to 6000 MHz, up to MHz	300
Operating temperature range for radio surveillance system (RSS) SRN-0.4/6 and MKS-0.4/6	from -30 to +50 °C
Range of detection and identification of UAV signals	
Quadcopter type UAVs, power of emitted signal not less than 0.1 W, minimum, km	5
Airplane type UAVs, power of emitted signal not less than 1 W, minimum, km	25
Range of control channel suppression (with ground control center equidistant from UAV):	
Quadcopter type UAVs, minimum, km	4
Range of control channel suppression (with ground control center equidistant from UAV):	
Airplane type UAVs, minimum, km	25
GNSS channel suppression range, km	5

Subsystem capabilities

– Operation via 1000 Mbit/s Ethernet interface.
– Recording of all detected signals of targets from radio surveillance and jamming system to workstation PC disk, as well as the possibility to reproduce recorded data from the file.
– Displaying operator-selected tracked target parameters on the workstation screen.
– Possibility for the operator to customize frequency bands of radio surveillance and jamming system.
– Displaying information on the uploaded operations area map.

Optical electronic surveillance subsystem

Subsystem purpose

– Panoramic and sectional view of the area (360°) providing detection and identification of aerial, ground and surface targets at any time of the day.
– Target ranging with a laser rangefinder.
– Defining the line-of-sight guidance angles and transferring the measured angle data to the SapsanConvoy control subsystem.
– Receiving and processing external target designation signals.

Optical channels

– Wide and narrow field-of-view TV channel.
– Surveillance TV channel.
– IR channel.

Specifications

TV channel	Surveillance	Narrow field of view
Detection range in standard conditions, with probability of at least 0.8:		
Phantom UAV, km	1,7	4,9

IR channel		
Detection range for 2.3 m x 2.3 m target in standard conditions, with a probability of at least 0.8, km	10	

NKM-2.11 navigation encryption protection module of tachograph

Software-hardware cryptographic means, a block of CIPF tachograph Navigation cryptographic module NKM-2.11, is a component of the tachograph, designed to implement the cryptographic algorithms necessary to calculate a qualified electronic signature, conduct authentication procedures and ensure the protection of information processed and stored in the tachograph and subject to protection in accordance with the legislation of the Russian Federation.

KEY FEATURES

- Mutual authentication of tachograph cards and NKM-2.11.

- Formation and transfer to the tachograph processor of data on coordinates, vehicle speed and current time.

- Archiving of data on vehicle motion parameters and current time.

- Archiving of data about the NKM-2.11 and tachograph events .

- Archiving of data on request from the tachograph.

- Long-term storage of recorded data (for the last 365 days) in uncorrectable form in the archive of NKM-2.11.

- Ensuring of the confidentiality, integrity and authentication of data downloaded from the NKM-2.11 archive to external media.

- Management of control over access to the data of the archive NKM-2.11.

- Ensuring of confidentiality, integrity and authentication of data transmitted between the tachograph and tachograph cards.

- Key information storage.

Cryptoserver software-hardware complex

KEY FEATURES

- Cryptoserver SHC is designed as a separate hardware module that is connected to the user's LAN and AWP.

Cryptoserver SHC provides cryptographic protection of confidential information and protection against unauthorized access.

The complex includes:
– Cryptographic system;
– Means of protection against network attacks;
– Means of protection against unauthorized access;
– Audit system;
– Access control system;
– Interaction interface system with user: CORBAinterface and XML RPC-interface;
– Digital certificate services.

The software of the complex creates a closed software environment formed by these components.

Atlix-VPN and Module-HSM software-hardware complexes (SHCs)

Atlix-VPN and Module-HSM are intended for the creation and interaction of highly secure virtual networks (VPN) based on IPSec protocol and X.509 standard using Russian cryptographic algorithms.
The Atlix-VPN and Module-HSM SHCs allow encryption, integrity and reliability of the transmitted information within the available IP networks (including the Internet).

KEY FEATURES

- The SHC hardware part is developed on the basis of a specialized platform.

- The SHC software part is made on the basis of a specially modified Linux operating system in order to increase its security against unauthorized impacts via communication channels.

- The software provides for the implementation of the parties authentication, generation of communication session keys when building secure tunnels according to the IPSec protocol group using public key certificates and certificate revocation lists in the format X.509.V.3; implementation of data encryption (decryption) algorithms within the IPSec protocol group during transmission of protected IP packets and checking the integrity of the transmitted data blocks.

- In terms of protection against unauthorized access, the SHC provides local and secure network (remote) administration procedure and administrator authentication; checking the integrity of the security-critical software of the complex during the initialization of work; the inability to get confidential information in an open network; audit of user actions.

- In terms of protection against network attacks, the SHC provides filtering of incoming and outgoing IP-packets.

- The SHC provides for the possibility of unified centralized management of configurations, and also contains a Web-interface for diagnosing and managing.

SPECIFICATIONS

	Atlix-VPN SHC	Module-HSM SHC
Key information entering	Russian Intellectual Card (RIC)	
The number of encryption keys	more than 10^{77}	
The number of subscribers in the network	5000	1000
The speed of the crypto tunnel	85 MB/s	10 MB/s
External interfaces	2xEthernet10/100TX Ethernet 100FX	2xEthernet 10/100TX Ethernet 10/100TX Ethernet 100FX
Dimensions	For 19" rack (EIA RS-310-C standard)	260x164x45 mm
Power supply	220/110 V	220/110 V
Power consumption	up to 300 W	up to 5 W

Subscriber modification

Server modification

Shweitsar-M cryptographic information protection set

Shweitsar-M is a product of cryptographic protection of information in data transmission networks. Designed to ensure the security of confidential information in IP-based networks IEEE 802.3/802.3u.

KEY FEATURES

- Encryption and prevention of false data entry for IP-packets.

- Merging of each-every-one network segments.

- Routing within network segment and between segments.

- Hardware implementation of cryptographic algorithms.

- Remote key management.

- Network implementation for 5,000 subscribers:
  – simultaneous work – 50 subscribers
  – connect/disconnect of new ones – 10 subscribers per second.

SPECIFICATIONS

Security class	KA1/KB2
Cryptographic algorithm	GOST 28147-89
Full packets encapsulation	yes
Encryption speed	server's CIPF - 94 MByte; subscriber's CIPF - 34 MByte
Support of traffic prioritization and marking	QoS

P220 noise signal generator

The P220 complex is a universal noise signal generator designed for the active protection of information objects by masking of transient electromagnetic pulse emanation (TEMPEST) with noise signals. Thermal noise is used as a noise source. The basic unit of the complex is the apparatus TAF07 (TAF07-1), in which the power supply and control unit TEI13 (TEI13-1) and from 2 to 10 GSH modules in various combinations are installed.

KEY FEATURES

- Using thermal noise as a source of noise.

- Frequency of maintenance work – once a year.

- Offline control mode.

- Mode of interaction with FAO06 remote control.

- Automatic change of control modes.

- Continuous round-the-clock work.

SPECIFICATIONS

Noise output power	– at the load (3.9 ± 0.2) ohms at the output of each channel of the TEI14, TEI 14-1 blocks not less than 1 W; – at the load (10 ± 0.1) ohms at the output of TEI14-2 blocks not less than 0.5 W;
The possibility of replacing the Noise signal generator individual modules without turning off the general power supply of the device	yes
Separate smooth adjustment of the output noise signal level of each channel	yes
Power consumption of complexes (with ten single-channel NG modules, without remote control FAO 06)	- P220, P220-2 with power supply from the AC network from 187 to 242 V with a frequency of (50 ± 1) Hz not more than 90 W - P220, P220-2 with power from an external DC source from 18 to 30 V, not more than 80 W - P220-1, P220-3 with power from an external source of direct current voltage (60 ± 6) V, not more than 80 W
Overall dimensions	– apparatus TAF07 (TAF07-1) not more than 210x380x700 mm – FAO06 panel (in the frame) not more than 131x370x236 mm
Weight	– apparatus TAF07 (TAF07-1) with 10 GN modules not more than 30 kg – FAO06 console (with frame) not more than 8.5 kg

Trade

Data protection in the trade is a new direction in the Concern's work. Among Russian retailers, products such as cash registers, fiscal memory device and other products that ensure the security of trading processes are already in demand.

Medicinal drug labeling equipment

KEY FEATURES

- Mobile station, easily and quickly moved to any point of production.

- The quality of applied codes meets international standards.

- Conducts control of printing errors, automatic rejects the invalid codes.

- Upper pressure conveyor that allows you to precisely position and fix the pack.

- Ability to label packages of different width and height.

- Automatic scanner that does not require additional configuration when changing the size of the package.

Medicinal drug labeling equipment – serialization station, provides a comprehensive solution for applying labelling on the secondary packaging, manages and controls the quality of printing. With this equipment you can apply barcodes, DataMatrix GS1 codes and the necessary human-readable information. The station provides digital marking of the secondary packaging by direct printing, rejects invalid packets in case the marking is incorrect or not readable.

SPECIFICATIONS

Two belts conveyor	speed from 10 to 50 m/min. the length of the lower tape 1 m
Thermal Inkjet printer with single cartridge	resolution 300 dpi, print height 12.7 or 25.4 mm
Automatic print control scanner	resolution 1,280x1,024 pixels, external illumination
Pneumatic reject with receiving box	6 bar
Rejection confirmation system	optical
Manual radio scanner for sampling	resolution 752x480 pixels
Light and sound alarm	3 sections at the marking complex
Complex control panel	sealed cabinet
Complex software	one license for the serialization complex

Oblako-1F
fiscal data recorder

Oblako-1F CRE can be used in any trade organization, the service sector and work in premises, in open areas, under a canopy, when powered from an AC network with a voltage of 220 V and a frequency of 50 Hz through an adapter with output parameters 24.0V/2.0A.

CRE fulfils the requirements of 54-FZ, including the nature of the traveling trade without installing CRE directly on trains, reduces the number of serviced CRE at the places of stationary sale of tickets, goods and services, conducts online monitoring of products sold and sales management.

KEY FEATURES

■ The open protocol of control over TCP/IP networks without the need to install drivers allows you to design the cashier's AWP for any operating system.

■ Work in automation systems, USAIS.

■ Work with the 1C: Enterprise software system is supported.

■ Ensuring the possibility of encrypting fiscal documents in order to ensure the confidentiality of information transmitted to the operator of fiscal data.

■ Contains the keys of the fiscal sign, which provides the possibility of the formation of fiscal signs, the keys of recording fiscal data in unchangeable form and their non-volatile long-term storage, keys for checking fiscal signs, keys for decrypting and authenticating fiscal documents confirming the fact that the operator has received fiscal data of fiscal documents transmitted by CRE sent in CRE by the operator of fiscal data.

SPECIFICATIONS

Continuous operating time	24 h/day
CRE readiness time for operating mode with self-testing	10 s
Maximum number of characters per check line	48
Print speed	50 mm/s
Life time	7 years
Passwords reserved modes	cashier, administrator 1, administrator 2, administrator 3, technical administrator
Availability of discounts/surcharges	rate not more than 99% / not more than 20%, integer
Formation of fiscal documents	check (strict security form) with the signs «Inflow», «Return of inflow», «Outflow», «Return of outflow» correction check (strict security form) with the signs «Inflow», «Outflow»
Check tape	thermochemical paper (ISO 9002 quality standard)
Average power consumption	20 W
Weight with adapter	1.5 kg
Overall dimensions	185x150x125 mm

AMS-300F, AMS-300.1F, AMS-700F
cash register equipment

AMS-300F, AMS-300.1F, AMS-700F CRE is intended for application in the sphere of trade, and for usage in the sphere of services. The main CRE function is to account for the sales of goods and services.

KEY FEATURES

- Full functionality for the enterprises' settlement registration where the use of CRE is necessary.

- Scanner, scales, teller terminal can be connected.

- CRE comes with an electromechanical cash drawer.

- Built-in battery (model AMS-700F).

- Full-fledged cashier's workplace, which does not require additional devices and a computer.

SPECIFICATIONS

CRE interfaces:	Ethernet 10/100 Mbit. Communication with a computer, Internet, FDO, USAIS. WiFi module (optional). Communication with a computer, tablets, smartphones, Internet, FDO, USAIS. USB 2.0. Communication with a computer, connecting a barcode scanner. RS-232C. Connecting a barcode scanner, scales. Thermal printer for ribbon width of 57 mm.

Fiscal memory device (FMD)

FMD is a cryptographic module (element board), whose main function is to protect and encrypt all fiscal data, as well as accumulate the same in electronic form. The FMD is equipped with the key of the fiscal sign, has the ability to accumulate information in electronic form for its further transfer to the FDO and the FTS, which is due to changes in Federal Law No. 54 "On the use of cash register equipment", that are reduced to the necessity of replacing the electronic control tape with FMD. This allows organizing work with both online cash registers and other types of cash registers.

KEY FEATURES

- Encryption of fiscal data.

- Accumulation of information about transactions in electronic form.

- Creation and assignment of a fiscal characteristic.

- Ability to work and record transactions offline with the subsequent transfer of all recorded information when a connection appears.

- Supporting of the device owner electronic signature.

SPECIFICATIONS

Non-volatile timer	yes
Interfaces of interaction with CRE	RS-232, I2C, UART
Operating temperature	from -30 °C to + 40 °C
Shell protection	IP30 (GOST 14254-96)
Overall dimensions	30.2x30.2x9.4 mm
Net weight	no more than 15 g
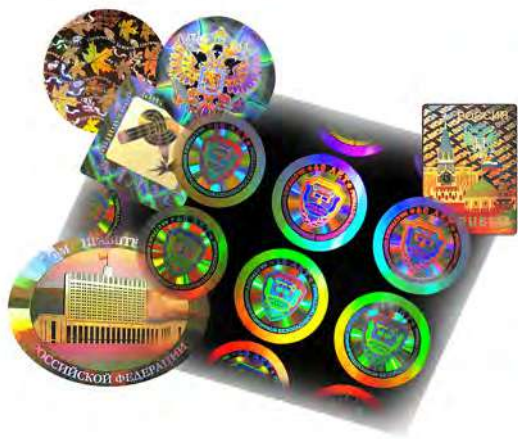
Protected holographic products

Protected holographic products are computersynthesized holograms of ultra-high degree of security. This product is used to protect goods and documents from counterfeiting and copying, to control the authenticity of various types of products, as well as image and decorative items with a holographic picture.

KEY FEATURES

■ Products are made of high-quality materials that ensure high-quality transfer of the original's protective features and long-term use, possess various own protective features, copy-protection, self-destruction or partial destruction of information layers when attempting to separate the protective hologram from the surface of the protected product.

■ The multilevel protection system of the hologram contains:
– own unique hologram design,
– graphic elements (guilloche nets, microtexts, etc.) that cannot be repeated using traditional copying methods,
– hidden images visible when using special control devices,
– security features of the highest level of complexity with maximum recording density, distinguishable by professional diagnostic equipment,
– combination of various high-tech protective methods.

SPECIFICATIONS

Product resolution	50 nm
Micro font height	less than 1 micron

Electric products

The Holding offers a wide range of electrical products. Concern's solutions are distinguished by high reliability degree and correspond to the latest level for the products of this category.

LED lamps

LED lamps KEMZ-PN-05-040-D120 and KEMZ-PN-05-060-D120 are designed to change conventional luminescent lamps with respect to lighting of industrial and warehouse premises and other interior spaces and adjacent territories with suspension height of 3-7 m.

KEY FEATURES

- High degree of protection against dust and moisture that enables to use it also for street lighting.

- Power factor: min. 0.95.

- Operating temperatures range: from -45 °C to +45 °C.

- Service life - at least 50 000 h.

- Warranty period - up to 5 years.

- CRI 70+.

TECHNICAL SPECIFICATIONS

	KEMZ-PN-05-040-D120	KEMZ-PN-05-040-D120
Power consumption	40 W	60 W
Luminous flux	4480 lm	6720 lm
Color temperature	4000-5000 K	
Protection degree	65 IP	
Overall dimensions	1200x83.5x68.2 mm	
Weight	2.3 kg	

Emergency illumination unit

Emergency illumination unit with standalone light source is suited for application in various light fixtures both LED and conventional luminescent ones.

KEY FEATURES

- Standalone light source in included in the set.

- Availability of the light-emitting-diode linear in the set with possible length adjustmet upon the customer's request enables to use the unit with wide range of light fixture nomenclature, from small domestic to powerful industrial light fixtures with high suspension height.

- Unit operation time in standalone mode: 1-3 hours depending on power used, that completely complies with the regulatory documentation requirements.

- Possibility of quick replacement of the internal battery which is equipped with charge controller, that prevent its fulldischarge and degradation.

- Wide range of options: battery charge indicator and charged condition indicator, remote operability monitoring.

TECHNICAL SPECIFICATIONS

Operating voltage	200-240 V
Rated operating frequency	50-60 Hz
Rated power	3-9 W
Rated luminous flux	310-630 lm
Operation time in emergency mode	1-3 hours
Emergency mode switch time	< 1 s
Battery	3.6 V, 3000 mA-h
Protection degree	IP ДСМ40
Overall dimensions:	
– **power supply unit**	145x46x30 mm
– **light source**	100x5x1,5 mm

Switching and wiring accessories

Article types:
– lever and key toggle switches,
– switch buttons and switches including those with light and color signaling
– non-contact push button switches,
– microswitches,
– rotary switches and miniature connectors,
– switching and wiring accessories.

Product consumers are aviation, automobile and electronic industry enterprises,
plants manufacturing radio and TV equipment, consumer electronics and industrial equipment.

KEY FEATURES

■ Articles have parameters that meet the current state for the given class of domestic and foreign analogues.

■ They have improved reliability.

Fans, pumps

Compressors

Elevator door drives

Multi-pole synchronous motor

Multi-pole synchronous motors are the latest motors of general purpose industrial grade.
They exceed standard asynchronous motors in terms of power, adjustment capabilities, energy efficiency.

Applications:
— shut-off and control valves for gas and oil production industry, NPPs, HPSs, housing and public utilities, etc.,
— fans, pumps, compressors,
— automatic doors and gates, lifting gates,
— conveyors,
— elevators,
— pointwork,
— contact network breakers,
— machine-tool building,
— automobile production.

Application will enable to satisfy market needs for domestic high-quality electric motors, eliminate dependence of Russian manufacturers of robotic equipment, machine tools, electric vehicles on foreign competitors, increase product energy efficiency and create consumers demand for domestic manufacturers' products.

KEY FEATURES

- High power factor $\cos\varphi = 0.9$.

- High energy efficiency. Efficiency is higher than that of asynchronous motor by an average of 10%.

- High overload capability. Mmax/Mrate reaches 5 and over.

- Constant speed regardless of mechanical load on the shaft.

- High starting torque.

- Wide range of speed adjustment.

- High operation reliability.

- Improved mass and dimensions parameters in comparison with asynchronous motors.

TECHNICAL SPECIFICATIONS

Power of motors	from 0.18 to 3.7 kW
Speed	from 300 to 3000 rpm
Linear voltage effective value	any from standard row

Smart TP solution (automated power supply control system + telemetry control)

Smart TP solution (automated power supply control system + telemetry control) is designed for automated metering, dispatching, energy monitoring and access control.

It enables to diagnose equipment failures, receive information from metering devices, sensors, safetyalarm devices and to monitor presence of voltage on outgoing feeders. It is built on the basis of controller, due to which continuous monitoring of process equipment, electric grid parameter monitoring,

information transmission to dispatch centers over wire and wireless communication channel are provided. Data acquisition and equipment control can be carried out via Ethernet, GPRS, 3G.

Application: energy monitoring and dispatching, calculation electricity metering with information transmission to billing systems, electric energy quality control, diagnostics and emergency monitoring, CCTV monitoring and photofixation.

KEY FEATURES

- Secure communication protected against external interferences.

- Minimization of costs for implementation and operation of electric equipment and automation elements.

- Fast growth of facility number and network evolution.

- Switching equipment condition monitoring, system malfunction diagnostics.

- Accuracy improvement of financial payments for energy consumption between consumers and utility company.

- Automated remote data acquisition with information transmission to dispatching and processing centers.

- Updating of business-processes of utility company operation in order to improve the profitability..

- Transparent access to digital devices using SW of manufacturers.

- Energy monitoring with the possibility to analyze energy consumption, draw up the balances, detect loss sources.

- The system is built on software and hardware SCADA ENTEC modules and designed for connection of up to 100 000 facilities.

- Displaying of full information on the facility, including CCTV monitoring, abnormal and emergency situations, on dispatcher AWS.

Medical equipment

The Holding improves its competence in the field of manufacturing of hi-tech medical equipment. Key solutions include a series of ultrasonic scanners that ensure superior quality of medical examinations.

RuScan50
Ultrasonic diagnostic scanner

RuScan50 is a high-end ultrasonic scanner with colour, energy, tissue, pulse and continuous wave doppler. The scanner conducts ultrasonic diagnostics and examinations of the human body. It is used in obstetrics, gynecology, abdominal examinations, mammology, urology, echocardiography, muscleskeletal examinations, as well as pediatrics, neonatology, and transcranial examinations.
LCD monitor.

KEY FEATURES

- Russian production, optimum production and service time.

- Accelerated guarantee and post-warranty service procedure.

- Cheaper than imported counterparts.

- Ability to use the latest advances in the field of three-dimensional echography.

- Simple and compact system with innovative features.

SPECIFICATIONS

LCD monitor	19" (40,8 см)
Cardiopacket	optional
ECG module	optional
Scan modes	B, 2B, M, B + M, 4B CFM - colour Doppler mapping PD - power doppler (including 3D) Focused power doppler PW - pulse doppler HPRF - high-frequency impulse doppler CW - continuous wave doppler tissue harmonic (registration of the 2nd harmonic of the echo signal, including using inverse technology) colour M-mode tissue doppler - tissue colour doppler for assessment of myocardial contractility (optional)
Scanning technologies and features	automatic analysis of doppler curves scanning depth up to 32 cm Steering - the ability to change the Doppler angle in CFM and PD modes duplex and triplex modes

RuScan60
Ultrasonic diagnostic scanner

The RuScan 60 is a universal high/expert-class ultrasonic scanner that provides excellent quality of ultrasonic researches: LED monitor with a wide viewing angle, a touch-sensitive control panel, and the latest imaging technology and post-processing of the image. The compact design allows you to place the RuScan 60 near the patient's bed for maximum convenience.

The use of the RuScan 60 scanner in modern diagnostic centres and medical research institutes is recommended. The research area on the RuScan 60 scanner is obstetrics and gynecology, abdominal examinations and mammology, urology and echocardiography, superficial organs and vascular examinations, musculo-skeletal examinations, and nephrology, oncology and transcranial dopplerography.

KEY FEATURES

- Russian production, optimal production and maintenance time

- Accelerated guarantee and post-warranty service procedure.

- Cheaper than imported counterparts.

- Ability to use the latest advances in the field of three-dimensional echography.

- Simple and compact system with innovative features.

SPECIFICATIONS

Widescreen LED monitor	high-resolution diode backlit monitor with wide viewing angle
Touch control panel	touch-screen
Cine memory	automatic video recording of a study fragment with the capabilities of «rewinding», editing, performing calculations and then recording video to a file
Connectors	for simultaneous connection of up to 5 sensors (4 + 1 CW)
Built-in drive	DVD-RW
USB ports	for connecting of the peripheral devices and external disk drives
SonoView system	archiving and further viewing of static and dynamic images (image database), it is possible to copy images to DVD and USB flash drives, to take measurements in the archive

Public projects

The long-term experience of the Avtomatika Concern in the field of information technologies allows us to offer customers comprehensive high-tech solutions designed to improve the quality of citizens' life.

Hardware package for digital polling district

Hardware package for digital polling district is designed for electronic voting of citizens at the place of permanent register and at the place of actual stay on the polling day, including outside the electoral precinct, where they have voting right, for automated accounting of votes cast and vote counting.

The package can comprise of min. 5 stationary terminals for voting and min. 2 portable terminals for voting with the possibility of package composition scaling up to 8 stationary terminals for voting and up to 8 portable terminals for voting. Terminal platform is built on the basis of quad-core processors with x86 architecture. Terminals apply certified Astra Linux OS, which has built-in protection against access to OS and special software. Special software, which does not have any non-declared capabilities, runs in the environment of the certified Astra Linux OS. Software is updated via secured network and make subsequent intervention in software impossible, in particularly, under condition of the polling district.

KEY FEATURES

- Application of a single-use depersonalized bar-code as access key to e-bulletin enables to make voting of each voter unique and anonymous.

- A bar-code can be confirmation of participation in voting, and its uniqueness guarantees impossibility of re-voting.

- Multilingual, intuitive interface is relevant for multinational entities and various agegroup populations.

- Possibility of displaying of candidates' photos and the colors of the parties, output of information on each candidate or party upon voter's request.

- Possibility of voting of voters with restricted mobility including weak sighted (blind) ones.

- There is a correction function for a voter during voting process.

- Throughput capacity of one terminal is up to 600 voters per 12 hours of voting.

TECHNICAL SPECIFICATIONS

Composition:	from 2 to 8 voting terminals (VT) from 2 to 8 portable voting terminals (VT-P)
Software loading	initially at the manufacturing plant, then via secured network channels
Voting terminal hardware components	on the basis of Intel x86 microprocessor
Software	certified Astra Linux OS
Storage battery	lithium-ion, enables to operate up to 2 hours in case of external power supply source failure
Dimensions / weight	VT 400x400x150 mm / 5-6 kg VT-P 350x400x140 mm / 4-5 kg

System for acquisition and analysis of the information on distributed infrastructural facilities technical condition

SATS VL is a software complex that accomplishes the tasks of monitoring of distributed infrastructure facilities (power lines, roads, railways, pipelines, etc.) using UAVs, sensors and mobile devices.

The complex automates the work of units involved in the direct maintenance of facilities, receiving information from monitoring systems with reference to facilities and equipment. It integrates with existing corporate information systems (MRO, GIS, storage and others), maintains reference data guides for the monitoring of objects, displays information on violations related to objects and equipment on an electronic map (GIS), generates analytical reports with statistical data about identifies defects and provides summary information to management.

KEY FEATURES

- The most modern technologies were applied during the SATS VL development: IoT, BIG DATA, neural networks.

- Aggregates data from various sources: UAVs, various telemetry sensors, mobile devices, etc.

Cryptobiocabina software and hardware complex

Cryptobiocabina software and hardware complex is a self-service device for citizens and is designed to provide the possibility of providing public services in the following parts:
– reception of the applicant's biometric parameters necessary for processing foreign passports of a new generation;
– issuance of new generation foreign passports, including two-factor biometric verification of the applicant's identity using the face image and finger papillary patterns recorded on the new generation foreign passport chip, as well as the activation of the new generation foreign passport chip.

CBC is a device in a single protected package with pre-installed system-wide and application software, including information security tools.

The transmission of data obtained using Cryptobiocabine HSC to the State system of passport and visa documents of a new generation is carried out through the Interdepartmental Electronic Interaction System (IEIS) in encrypted form.

The design features of Criptobiocabina HSC make it possible to expand its use, including for processing and issuing passports of a citizen of the Russian Federation and documents equivalent to it, Russian driving licenses, as well as any other documents of a new generation. In addition, it may be possible to collect additional biometric parameters of citizens for use in other informational biometric systems, including in the interests of credit and financial institutions.

KEY FEATURES

- Elimination of the possibility of registering biometric parameters that do not correspond to the person, whose data are given in the application form, for issuing a foreign passport (automatic photo recording of the fingerprinting moment using additional photographic equipment and transferring the received information to the State system of passport and visa documents of a new generation for control by State Department of Internal Affairs of Russia employees is provided).

- Prevention of substitution of biometric parameters when processing components of the registration of biometric parameters (methods of information introduction are limited by design features.

- Prevention of the possibility of issuing a foreign passport without verifying the identity of the holder (the passport chip is activated automatically after successful mandatory twofactor verification).

- Prevention of substitution, theft, reconfiguration of biometric components registration.

- Prevention of the private key compromise, the leakage of biometric parameters during their transmission through communication channels, the possibility of replacing the protected information.

Safe City hardware and software complex

Safe City is a comprehensive information system that provides forecasting, monitoring and warning of possible threats, as well as controls the elimination of the emergency consequences and offenses with integration under the management of actions of the information and control subsystems of various organizations (duty, dispatch, municipal services) ensuring their operational interaction in interests of the municipality.

The complex uses a unified systemic approach to ensuring of the integrated security of the public environment in the conditions of maintaining a high level of risks of man-made and natural character and the continuing trend of urbanization. Increases public safety.

COMPLEX COMPONENTS

■ Intelligent transport system:
– traffic management,
– monitoring systems,
– passenger traffic management,
– smart parking.

■ Utilities:
– bright City,
– smart counters / consumption analytics,
– intelligent distribution systems,
– ecomonitoring.

■ City services:
– e-government,
– informatization of education,
– health informatization,
– smart security.

■ Smart buildings:
– consumption optimization systems,
– integrated communication systems,
– smart lighting, AHP1,
– automated internal parking.

Digital School hardware and software complex

The complex includes a "smart" security system, electronic services and promotes digitalization of school infrastructure at all levels.

Digital School complex project can be implemented both for a separate educational institution and for the entire educational system of the region.

KEY FEATURES

The implementation of the Digital School project will allow educational institutions, including afterschool ones, to get the following benefits:

- Modern system of automated calculations and information and software complex for managing the school feeding system, which will increase the speed and quality of group meals organization.

- Comprehensive security system, including access control and video identification control system at the entrance, audio monitoring, video monitoring integrated with the automated calculation system, fire monitoring with automatic signal video content transmission to the regional Emergency Directorate of the Ministry of Emergency Situations, as well as a wireless fire alarm system.

- Daily informational reports in electronic form (web, E-mail, SMS, Mobile application) about the composition of the students' meals, the time they stay on the school's territory, and the overall performance.

- Unified accounting and settlement system for additional school services (provision of access to internal information resources, such as a school portal, the Electronic Diary, school project management, and the centralization of payments collection by directions).

- Extended list of services for ID cards holders (recording of the transport application on the card, implementation of bonus or discount programs, etc.).

- Enhancing of the information security and technological independence from foreign server equipment when implementing a project based on the Russian platform Elbrus, the complex of information protection tools (CIPT) from unauthorized access is built into the core of the operating system.

One of the unique features of this project is the system for settlements automating: mutual settlements, receipt of funds and payment for services is implemented in compliance with the requirements of Law 161 FZ.

PREMIS
software platform

Property & Real Estate Management Information System (PREMIS) is a software platform for customized business solutions that are compatible with all major software. The platform is designed to consolidate accounting and management information in electronic form and to organize business processes related to real estate, land and intellectual property on its basis.

Thanks to the wide range of possibilities, PREMIS provides:
— Low costs of training for employees and customers
— Ability to quickly adapt existing design developments to the PREMIS platform
— Low cost of integration with used accounting and financial management systems

KEY FEATURES

- The ability to get a ready business solution without long-term programming – from 3 working days.

- Flexible architecture for building a solution that includes both platform built-in capabilities and customized solutions reflecting specific business requirements of the customer.

- Data protection. The option of providing of access of different levels to any database objects. For data storage, MS SQL Server 2008–2016 R2 is used with the maximum degree of protection against failures and unauthorized access. All actions with the system database are recorded in special logs.

- Integration with other software products.

- Usage of free software.

- High accuracy of data in the system.

- Increase of the manager productivity.

- Low cost of implementation and use of the platform.

- The Ministry of Communications of the Russian Federation included PREMIS in the Unified Registry of Russian Software. The platform is recommended as an analogue of import software, mandatory for use in procurement for state and municipal needs

FUNCTIONAL OPPORTUNITIES OF THE PLATFORM

Management of reference information

Management reporting

CRM system

Regulated accounting

Centralized procurement and asset management

Contract management

Business analysis

ON THE BASIS OF THE PREMIS PLATFORM A LINE OF BUSINESS DECISIONS DEVELOPED, SUCCESSFULLY DECIDING THE MAIN TASKS OF THE ACCOUNTING AND MANAGEMENT ACTIVITIES OF THE HOLDING

PREMIS: Commodity Flow Management

PREMIS: Assets Management

PREMIS: Product Quality Management

PREMIS: Orders Management

PREMIS: Development Program Management

PREMIS: Automation of the Work of Collective Organs

Automated monitoring and diagnostics system

A software package that implements the tasks of online monitoring of electrical equipment (transformers, electric motors) and maintenance as it is.

System functions:
– generation of warning and alarm signals according to controlled parameters,
– self-diagnosis of own software and hardware,
– formation of archives for long-term storage of diagnostic information,
– an indicative reflection of the assessment of object's technical condition based on an analysis of the dynamics of changes in controlled parameters.

KEY FEATURES

- The most modern technologies were applied in the development of AMDS: IoT, machine learning.

- Supports the broadest list of industrial protocols that allows you to connect almost any equipment.

Services

Information Security Service

Certification subject to information security requirements (GIS, MIS, ISPD)

Penetration testing

Delivery, installation and configuration of information security tools

Technical support of information protection systems and tools

Special inspections of technical equipment / special inspections of premises

Special studies of technical equipment

Service in the secret unit

Categorization and formation of requirements to the protection of CII RF objects

Safety of significant objects

Construction of computer attack monitoring centres

Building of the information security management centres

Organization of secure communication channels

Participation in the development of information systems and tools, source code analysis of applications

Development of unique and porting of existing speech compression algorithms

Comprehensive cybersecurity audit

Certification of information objects processing information classified as a state secret for compliance with information security requirements

Services on contractual development and manufacture

Software contractual development

Development of automated control systems and information systems

Test and special study execution

Development of equipment quality control test environment

Development of computer hardware and software and hardware complex

Development of documentation and equipment engineering

Part machining according to customer's requirements

Circuit boards manufacture and installation

Part painting

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SERVICES

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