



PJSC "Gazprom avtomatizatsiya"

HISTORY OF PJSC "GAZPROM AVTOMATIZATSIYA"



and modular automation devices.



Construction of a pilot plant in Kaliningrad and production facilities in Moscow.

1960



Establishment of All-Union Research and Manufacturing Association for facilities control automation of gas industry -"Soyuzgazavtomatika" in Moscow.

2011

1972

OJSC "Gazavtomatika" OJSC "Gazprom" renamed to OJSC "Gazprom avtomatizatsiya"



2017-2018

Involvement in major EPC projects of PJSC "Gazprom":

PJSC "Gazprom Neft" (construction of the CDU/VDU crude oil distillation unit for the Omsk Refinery)

LLC "Gazprom Pererabotka Blagoveshchensk" (construction of the Amur Gas Processing Plant)

LLC "Gazprom Dobycha Yamburg" (construction of a booster compressor station at the UKPG-3C of Zapolyarnoye oil, gas & condensate field).





Packaged supply of systems and equipment to PJSC "Gazprom" strategic facilities:

- Chayandinskoye oil, gas & condensate field
- Power of Siberia Gas Pipeline
- Nord Stream 2 Gas Pipeline
- Construction of facilities at the Kovyktinskoye gas & condensate field during pilot development.

2019



Packaged supply of systems and equipment to PJSC "Gazprom" strategic facilities:

- Kovyktinskoye gas & condensate field
- Power of Siberia Gas Pipeline
- Amur Gas Processing Plant
- Kirinskoye gas & condensate field
- Ukhta-Torzhok-2 Gas Pipeline
- Creation of the dispatch control center for the process facilities of PJSC "Gazprom" in the complex of PJSC "Gazprom" buildings and structures in St. Petersburg

2021

2020

PJSC "Gazprom avtomatizatsiya" joined JSC "Gazstroyprom" 60 years since the foundation of PJSC "Gazprom avtomatizatsiya"



PJSC "GAZPROM AVTOMATIZATSIYA" TODAY

COMPLETE CYCLE OF WORKS:

R&D, design, manufacturing and supply, construction, installation, commissioning, after-sales service, and overhaul.



PJSC "Gazprom avtomatizatsiya" has been a member of the Working Group on the Use of Natural Gas as a Motor Fuel of the Government Commission on Fuel and Energy Sector Development since 2014 and is a member of the Association of gas motor fuel organizations (Association of National Gas Vehicles) and of the Russian Gas Society.

PJSC "Gazprom avtomatizatsiya" is a General Systems Integrator for automation, metrological support, and communication facilities.

STRUCTURE PJSC "GAZPROM AVTOMATIZATSIYA"



LLC "GA dispetcherskiye sistemy"



LLC Plant "Kaliningradgazavtomatika" LLC Firm "KGPA" LLC Plant "Saratovgazavtomatika"

LLC Firm "Gazpriboravtomatika"

LLC "SovTlGaz"



LLC Firm "Servisgazavtomatika"



LLC "SGA"
LLC "Gazavtomatika IT"



LLC "GA engineering"



PJSC "Gazprom avtomatizatsiya"

MAIN OBJECTIVES OF PJSC "GAZPROM AVTOMATIZATSIYA"



To ensure 100% safety of staff, ecological and environmental safety, safety of equipment and plants, vehicles and machinery.



To improve business sustainability by diversifying and expanding business activities.



To develop stable structures to control the implementation of EPC projects in the fuel and energy complex.



To develop competencies of a general systems integrator.

CORE COMPETENCIES OF PJSC "GAZPROM AVTOMATIZATSIYA"

LINES OF BUSINESS:

AUTOMATION, DISPATCH CONTROL AND TELEMECHANICS METROLOGICAL SUPPORT

ELECTRICAL EQUIPMENT

INFORMATION SUPPORT

COMMUNICATIONS

GAS DISTRIBUTION **GAS MOTOR FUEL**

TYPES OF WORK:



R&D



DESIGN



MANUFACTURING



CONSTRUCTION, INSTALLATION AND COMMISSIONING



SERVICE MAINTENANCE AND OVERHAUL

PERMITS AND APPROVALS:

PJSC "Gazprom avtomatizatsiya" has the necessary permits and approvals to conduct business as per current legislation of the Russian Federation and the industry standards.

AUTOMATION

Developing Highly Automated Processing Facilities

KEY PROJECTS: Field production:



Zapolyarnoye oil, gas & condensate field. Comprehensive automation of UKPG-1C, 2C, 3C, UKPG-1B, 2B BCS-1C, 2C, 3C



Urengoyskoye oil, gas & condensate field. Comprehensive automation of GP 16, UKPG-22, UKPG-21, BCS-1, 1AB, 2B, 5B, 8B, 11B



Medvezhye oil, gas & condensate field. Comprehensive automation of GP-1, GP-3, GP-4, GP-6, GP-8, GP-9, UKPG-N



Bovanenkovskoye oil, gas & condensate field. Comprehensive automation of GP-1, GP-2, GP-3



Kovyktinskoye gas & condensate field. Comprehensive automation

Processing:

GAZPROM

Chayandinskoye oil, gas & condensate field. UKPG-3, Central Booster CS, PGPT-2, PGPT-4, Helium Concentrate Membrane Separation Plant. Comprehensive automation. Development of the minimal manning technology concept.



Kharasaveyskoye gas field. Development of the Cenomanian-Aptian deposits of Kharasaveyskoye gas field. Comprehensive automation



Kamennomysskoyesea gas field. IRP-A, OIFP, GTP, BCS Comprehensive automation

Transportation:

GAZPROM

Bovanenkovo-Ukhta - 2 Gas Pipeline System Compressor Stations



Ukhta-Torzhok-2 Gas Pipeline System Compressor Stations



Development of the Unified Gas Supply System pipelines in the Northwest (onshore section of Nord Stream gas trunkline and Nord Stream-2 gas trunkline)



Compressor stations of Power of Siberia gas trunkline

GAZPRON

Punginskoye
Underground Gas
Storage Facility.
Comprehensive

GAZPRO

Stepnovskoye
Underground Gas
Storage Facility.
Comprehensive
automation



Peschano-Umetskoye Underground Gas Storage Facility. Comprehensive automation



Volgogradskoye Underground Gas Storage Facility. Comprehensive automation

Gas storage:



Condensate Pre-transport Conditioning Plant. Comprehensive automation



Orenburg Helium Plant. Comprehensive automation



Surgut Condensate Stabilization Plant. Comprehensive automation



Astrakhan Gas Processing Plant. Comprehensive automation



Amur Gas
Processing Plant.
Systems integration
and automation for
subprojects NonLicensed Units and
Site Utilities Objects



DISPATCH CONTROL

Development of dispatch control systems for strategic facilities of federal importance, including gas export pipelines of the Russian Federation

FACILITIES WHERE IMPLEMENTED:

More than 15 years' experience.
Dispatch control systems for the largest companies within PJSC "Gazprom" have been rolled out and expanded:

Gas transportation:

LLC "Gazprom transgaz Saint-Petersburg"

LLC "Gazprom transgaz Ukhta"

LLC "Gazprom transgaz Krasnodar"

LLC "Gazprom transgaz Ufa"

LLC "Gazprom transgaz Tomsk"

Gas extraction:

LLC "Gazprom dobycha Yamburg"

LLC "Gazprom dobycha Urengoy"

LLC "Gazprom dobycha Nadym"

LLC "Gazprom dobycha Noyabrsk"

LLC "Gazprom dobycha Shelf Yuzhno-Sakhalinsk"

LLC "Gazprom dobycha Irkutsk"

TYPES OF WORK:

Design

Manufacturing and supply

Construction, installation and commissioning

Maintenance



KEY PROJECTS:



Reconstruction of dispatch control systems for LLC "Gazprom transgaz Ufa"



North European Gas Pipeline North European Gas Pipeline-2



Main Gas Pipeline South Stream (West Corridor)



Main Gas Pipeline Sakhalin-Khabarovsk -Vladivostok



Main Gas Pipeline Bovanenkovo-Ukhta, Ukhta-Torzhok



System for operational dispatch management for LLC "Gazprom dobycha Irkutsk"



Reconstruction of dispatch control systems for LLC "Gazprom transgaz Ukhta"



Reconstruction of dispatch control systems for LLC "Gazprom transgaz Saint-Petersburg"



ODCS segment of LLC "Gazprom dobycha Noyabrsk" for control of engineering and manufacturing complexes at the Chayandinskoye oil, gas & condensate field

TELEMECHANICS

More than 60 years of experience in developing complexes for measuring, collecting, pre-processing, and uploading to the top level management system production control parameters for the telemechanics of different process facilities with a variable set of teleoperations

APPLICATION:

Block valve station sites

Pipeline infrastructure

Gas metering units

Pipeline crossings of railroads and highways

Gas pressure reducing stations

Gas metering stations

Gas distribution stations

Remote and distributed process facilities

Control and safety valves

KEY PROJECTS:



Gas Pipeline Yamal-Europe II



Gas Pipeline Blue Stream



Main Gas Pipeline North European Gas Pipeline



Gas Pipeline South Stream



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Main Gas Pipeline Ukhta-Torzhok I, II



Upgrade of LTS for OJSC "Gazprom transgaz Belarus"



We have been developing

telemechanics systems

for more than

Main Gas Pipeline Serpukhov-Leningrad



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Main Gas Pipeline Power of Siberia



Main Gas Pipeline Kovykta-Chayand



Main Gas Pipeline Kohtla-Jarve-Leningrad



Main Gas Pipeline Power of Siberia



Industry ODCS for LLC "Yugtransgas"



LNG delivery, storage, and regasification terminal, Kaliningrad Region



Main Gas Pipeline Urengoy-Novopskov

METROLOGICAL SUPPORT

PJSC "Gazprom avtomatizatsiya" is a leader in the design, system integration and implementation of modern technical solutions for metrological support of fuel and energy complex facilities aimed at unconditional compliance with federal legislation requirements for the uniformity of measurements and creation of metrological safety systems for industrial facilities that ensure continuous assessment of the impact of metrological risks on the balance of energy resources including any losses thereof, reducing these risks through preventive management measures and tackling urgent scientific and technical tasks.

SERVICES AND PRODUCTS:

Metrological support — R&D, development of concepts, measurement schemes and setting of the optimal measurement instruments range, assessment and accounting of investment and operating costs for compliance with federal legislation on measurement assurance. Organization and support of metrological evaluation of technical documentation, instrument verification and calibration, provision of advisory services for the preparation of enterprises (services) for accreditation for the performance of works (services) for verification and calibration of measuring instruments at the Federal Service for Accreditation.

Integrated design, 3D installation, manufacturing, construction, implementation and operation support of metrology facilities (ready-to-operate delivery):

- modular-packaged gas metering units and systems, metering flow units and systems, quantity and quality indicators of liquids and gases (raw materials, semi and finished products), trunk single-line GMS arranged pursuant to the project needs;
- packaged metrological and chemical-analytical laboratories;
- information and measuring systems for controlling and accounting of raw materials base and products of gas and oil processing industries and gas chemical complexes using a single software and hardware integration platform based on Raskhod-1 flow corrector unit with DPU functionality (BOI/SOI). **Production of measuring instruments:** ultrasonic gas flow meters, flow correctors, analytical equipment, etc.

Production of measuring instruments: ultrasonic gas flow transducers, gas flow computers, analytical equipment, automatic calibration units at the flow transducers worksite, etc.

Merging of functional chains of the scientific and design organization, equipment manufacturer, construction and commissioning organization

KEY PROJECTS:



Nord Stream 2. Slavyanskaya GMS



Power of Siberia GMS at the PR China border, metrological laboratories



Russkaya GMS



Amur Gas Processing Plant. Feed and commercial gases, ethane metering units



Chayandinskoye field. Gas, stabilized condensate and helium concentrate metering units



Design of metrological support systems and laboratories for Ust-Luga GTP



Alternative system for transporting liquid hydrocarbons from Nadym-Pur-Taz region

MANUFACTURING OF ELECTRICAL EQUIPMENT

PJSC "Gazprom avtomatizatsiya" is at the forefront of manufacturing power equipment for PJSC "Gazprom" facilities

MANUFACTURED EQUIPMENT AND SYSTEMS:

Packaged and block-modular distribution units 6(10) kV

Packaged and modular-packaged transformer substations

Low-voltage packaged devices 0.4 kV

Electrical switchboard equipment

Uninterruptible power supply systems

Direct-current systems

Standalone power supplies

Modular packaged power supply units

Block-box for distribution units 0.4 kV

Utility lines electric heating control cabinets

More than

13800

switchgear cubicles produced



KEY PROJECTS:



Reconstruction
of gas field facilities
of PeschanoUmetskoye
underground storage
station



Construction of facilities at Kovyktinskoe gas condensate field



Development of the Cenomanian-Aptian deposits at the Kharasaveyskoye gas condensate field



Reconstruction and expansion of the Urengoy oil, gas & condensate field



Power of Siberia Gas Trunkline Section Kovykta-Chayanda



Developing of new pipeline capacities of the Unified Gas Supply System in the North West region, Gryazovets-Slavyanskaya CS



Development of Chayandinskoye oil, gas & condensate field

INFORMATION SUPPORT

PJSC "Gazprom avtomatizatsiya" provides the full range of services associated with developing vertically integrated solutions, ERP-level data management and control systems, dispatch control centers and systems, data processing centers and engineering infrastructure.

Development and replication of IMS across the gas business lines powered by 1C, SAP, SAP HANA

18 IMS and IEMS projects were implemented within the period from 2010 through 2020 (more than 57 enterprises and branch offices, 450 subdivisions, 150,000 users)

Performing a full cycle of services from the design stage to commissioning of the system-technical and engineering infrastructure, local area networks, and data

transmission networks

Information security

<u>Hardware/software maintenance at gas sector enterprises Procurement for Gazprom Group's facilities where systems are implemented</u>

SUPPLIED SYSTEMS AND SOLUTIONS:

Technical systems infrastructure:

<u>Distributed computing systems integrated into IMS for PJSC "Gazprom" (500–7,500 users)</u>

Data processing centers for PJSC "Gazprom"

Multimedia and presentation systems

Integrated solutions for equipping of dispatching and emergency control centers

The implemented projects were built using solutions from such vendors as Huawei, Lenovo, Cisco, ABBYY, 1C, SAP, Oracle, Schneider Electric, RKSS, etc.

KEY PROJECTS:



Dispatch Control Center for production facilities of PJSC "Gazprom" at complex of buildings and structures PJSC "Gazprom", St.Petersburg



PJSC "Gazprom" central control room in the building "Tower", the "Lakhta Center" multifunctional complex



Development of the Modernized automated dispatch management system within the Unified Gas Supply System PJSC "Gazprom"



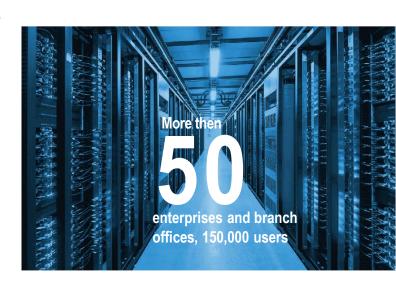
Enterprise's information
management system for activity
"Gas and Gas Condensate
Extraction" (stage 1) at
PJSC "Gazprom" gas extracting
subsidiaries,
second start-up facility



Building and upgrading of "Moscow" Data Processing Center (DPC) sites of PJSC "Gazprom". Migration of information management systems of PJSC "Gazprom"



Reconstruction of the Complex of Buildings and Structures and its networks and systems for use by LLC "Gazprom transgaz Moscow" to organize proper functioning of the dispatching control of LLC "Gazprom transgaz Moscow" while maintaining the management function of UGS of PJSC "Gazprom"



COMMUNICATIONS

PJSC "Gazprom avtomatizatsiya" performs the full range of services at communications facilities

LINES OF BUSINESS:

Broadband access radio networks

Industrial television (TV) and closed circuit television (CCTV)

Fiber-optic communication lines

Radio relay communications

Telecommunication, dispatch and public address networks

Data transmission networks (DTN) and ocal area networks (LAN)

Conference and video-conference communication networks

Trunking and conventional ultra-short wave (USW) radio communications

KEY PROJECTS:



Construction, installation and commissioning for the project "Power of Siberia Gas Pipeline Process Communications"



Construction of communication system under EPC terms for the project "Amur Gas Processing Plant"



Design, construction and installation for the project "Yamal-Europe" Gas Pipeline Fiber-Optic Communication Link Offset at the Torzhok-Saint Petersburg section"

TYPES OF WORK:

<u>Design</u>

Packaged supply

Construction, installation and commissioning

Maintenance





Construction and installation for the Technology upgrade of the operational process communications system. Radio Relay Communication Link at the site of the CS Urengoiskaya-Nadym-Ugorsk-border TTG. 5.6 (1.2.3 PC)



Construction and installation for the Digital Radio Relay Communication Link at the site CS UGS – Ufa – CS Polyanskaya



FEED for the Moscow-Sochi Fiber-Optic



FEED, construction, installation, commissioning, and equipment delivery for the Regional Data Transmission Networks object at 20 subsidiaries of PJSC "Gazprom"



Construction, installation, commissioning for modernization of the Cable Communication Line of the gas pipeline Mozdok-Kazimagomed



FEED for the Gas Processing Complex as part of the Complex for processing ethanecontaining gas near the settlement of Ust-Luga

GAS DISTRIBUTION

PJSC "Gazprom avtomatizatsiya" performs the full range of operations at gas distribution facilities



MANUFACTURED EQUIPMENT AND SYSTEMS:

Automated gas distribution stations

Gas reducing units

Hydrate suppression units

Displacement units

RP-10 automatic gas pressure reduction stations

Switching units

Purification units

BO-M odorizing units

Pressure control valves

KEY PROJECTS:



Automated Gas
Distribution Station in
Adler District of
Sochi, capacity of
211,500 Nm³/h



Automated Gas Distribution Station-2 in Pyatigorsk, capacity of 185,000 Nm³/h



Automated Gas Distribution Station in Kalininsk, capacity of 80,000 Nm³/h



Automated Gas Distribution Station in Kamyshin, capacity of 120,000 Nm³/h



Automated Gas Distribution Station Shosseynaya-2, capacity of 682,100 Nm³/h



Automated Gas Distribution Station-2 in Pechora, capacity of 285,000 Nm³/h



Automated Gas Distribution Station In Plastunovskaya, capacity of 65,000 Nm³/h



Automated Gas Distribution Station in Yasashnaya Tashla, capacity of 67,000 Nm³/h



Automated Gas Distribution Station in Shaksha, capacity of 70.000 Nm³/h



Automated Gas Distribution Station in Verkhnee Dzhemete, capacity of 160,000 Nm³/h



Automated Gas Distribution Station "Lagolovo" (construction phase I), capacity of 268,000 Nm³/h



SHAKHTY-2 Automated Gas Distribution Station, Rostovskoye Gas Pipeline Directorate, capacity of 151,700 Nm³/h



Automated Gas Distribution Station in Krestovo-Gorodishche, capacity of 125,000 Nm³/h



Automated Gas Distribution Station-1 in Perm, capacity of 545,000 Nm³/h

GAS MOTOR FUEL

PJSC "Gazprom avtomatizatsiya" performs the full range of operations at gas motor infrastructure facilities



MANUFACTURED EQUIPMENT AND SYSTEMS:

Modular packaged Automobile CNG Filling Stations

Reducing units

Inlet valve units with commercial gas metering stations

Natural gas dehydration units

Gas filling pumps

CNG Filling Stations APCS

KEY PROJECTS:



Development of unified engineering concepts to build a gas metering system at Automobile CNG Filling Stations



CNG Filling Station-2, Orsk, supply of the inlet valve unit, APCS of Automobile CNG Filling Station, Packaged Transformer Substation (PTS), construction and installation operations, startup and set-up operations.



CNG Filling Station-1,Luzino, supply of APCS of CNG Filling Station, PTS, construction and installation operations, start-up and set-up operations.



CNG Filling Station-3, Magnitogorsk, supply of the inlet valve unit, APCS of CNG Filling Station



CNG Filling Station-1, Yuzhno-Sakhalinsk, supply of APCS of CNG Filling Station, PTS



CNG Filling Station-4, Tomsk, supply of APCS of CNG Filling Station, PTS



CNG Filling Station-1, Naberezhnye Chelny (reconstruction), supply of APCS of CNG Filling Station, PTS

PACKAGED SUPPLY OF MATERIALS AND EQUIPMENT

PJSC "Gazprom avtomatizatsiya" provides packaged supplies of materials and equipment for new facilities and facilities under construction



SUPPLIED EQUIPMENT AND SYSTEMS:

Instrumentation and automation

Fire and gas detection systems, security and fire alarm systems

Communications equipment

<u>Automated information management systems</u>

Electrical equipment

Cabling and wiring products

Facility security systems

Gas distribution equipment

CONSTRUCTION AND OVERHAUL

LLC Firm "Servisgazavtomatika" is an integrated contractor of PJSC "Gazprom avtomatizatsiya"

27 separate business units



More than 2, 100 employees involved in repairs and maintenance.

Among which:

87% are line operations employees,13% are management employees



More than 380 units of passenger, cargo and cargopassenger equipment, including 87 special-purpose vehicles (drilling machinery, excavating machinery, tipper trucks, earthmovers, etc.)

Repairs organized and performed at over

46 of PJSC "Gazprom" facilities.



Skovorodino



Zapolyarnoye Nadym Novy Urengoy

Surgut



Construction of a process communication system for Power of Siberia Gas Pipeline project



Construction of facilities at the Kovyktinskoe gas & condensate field for the duration of pilot development



Development of Chayandinskoye oil, gas & condensate field



Expansion of the condensate pretransportation preparation plant Phase 2



COM at the Booster Compressor Station at the Cenomanian deposit in the Pestsovaya Area within the Urengoy oil, gas & condensate field



Booster Compressor Station, phase 1—Complex Gas Treatment Plant - 9 in Kharvutinskaya Area within the Yamburgskoye oil, gas & condensate field



Construction of a Booster Compressor Station at the Complex Gas Treatment Plant-3C of Zapolyarnoe oil, gas & condensate field



Creation of fire alarm networks at the Vankor Field

EPC PROJECTS

EPC projects of PJSC "Gazprom avtomatizatsiya"

TYPES OF WORK:



KEY PROJECTS:



General Contractor for the construction of the CDU/VDU crude oil distillation unit for the operating Omsk Refinery. The project is implemented within Stage 2 of the large-scale upgrade of PJSC "Gazprom Neft" oil-refining assets



Construction of the Amur GPP. General EPC Contractor of the NIPIGAS project, EPC contractors—Tecnimont and CPECC. (PJSC "Gazprom avtomatizatsiya" is a system integrator, developer and supplier of automation systems, communication systems, metering units and metrological support facilities for Non-Licensed Units and Utilities, Infrastructure and Off-sites sub-projects.)



Construction of a Booster Compressor Station at the UKPG-3C of Zapolyarnoye oil, gas & condensate field. General EPC Contractor of JSC "STNG" project. (PJSC "Gazprom avtomatizatsiya" is the EPC Contractor for automation, power engineering and communication works)

STRATEGIC DEVELOPMENT AND PARTNERSHIP

Agreements on strategic partnership and scientific and technical cooperation have been signed















































IMPORT SUBSTITUTION EQUIPMENT MADE BY PJSC "GAZPROM AVTOMATIZATSIYA"

As part of the Import Substitution Program, PJSC "Gazprom avtomatizatsiya" has set up the production of the following equipment:



NEMAN-R gas compressor unit automatic control system (GCU ACS)

Manufacturer:

LLC Firm "Kaliningradgazpriboravtomatika"

APCS of Automobile CNG Filling Stations, powered by Neman-R software and hardware suite

Manufacturer:

LLC Firm "Kaliningradgazpriboravtomatika"



NORD axial control valves

Manufacturer:

LLC Firm "Gazpriboravtomatika"



LLC Plant "Kaliningradgazavtomatika"



Magistral-21 line telemechanic system

Manufacturer:

LLC Firm "Gazpriboravtomatika"



NEMAN-R-100 automatic control system for electromagnetic suspension

Manufacturer:

LLC Plant "Kaliningradgazpriboravtomatika"



Manufacturer:

LLC Firm "Gazpriboravtomatika"



NEW EQUIPMENT MADE BY PJSC "GAZPROM AVTOMATIZATSIYA"

In 2020 PJSC "Gazprom avtomatizatsiya" will complete equipment cross-sectoral tests





Potok-DU software complex Potok-PB software complex

Manufacturer:

PJSC "Gazprom avtomatizatsiya"



UPS system (SPB) Molniya, capacity up to 250 kVA

Manufacturer:

LLC Plant "Kaliningradgazavtomatika"

