Modern processes in the semiconductor, pharmaceutical, chemical, photovoltaic, automotive, instrumentation and other industries require high-purity industrial gases and liquids. Oxygen, nitrogen, argon and other gases are also required by laboratories and institutes for research, also at the nanoscale level. To supply gases and liquid chemicals to the process machines, special technical systems, which should meet the purity requirements in accordance with the class of premises and security, are developed. The German company INTEGA, a member of Air Liquide Group, world leader in gases, technologies and services for industry and health, is Europe's leading developer and supplier of such systems.
I NTEGA’s competencies cover all stages from design to production, installation and subsequent maintenance of engineering systems and equipment that provide processes with high-purity gases and liquids. For nearly 70 years INTEGA has gained the lead in its market segment and become a key partner for the largest industrial corporations in the field of high technologies.

FROM A MECHANICAL WORKSHOP TO INTEGRATION OF SOLUTIONS FOR CLEAN ENVIRONMENTS

The history of INTEGA began in 1946 in Munich with a small mechanical workshop. In 1962, after a contract with Siemens to create a system for the distribution of ultra-pure gases for the semiconductor plant in Munich was signed, INTEGA was one of the company originators of the modern electronics industry.

By promoting co-operation with Siemens, after the unification of Germany, the company took part in equipping the new plant in Dresden (now Infineon Dresden). To implement the project, in 1991 a production branch was set up in the capital of Saxony. Dresden is associated with the 2005 contract to furnish the plant Fab 36 (now Module 1 of the plant Fab 1) of the GlobalFoundries company (formerly AMD) that is the largest in the history of INTEGA.

In 1999, the company’s third production plant was established in Stuttgart.

From 2003 to 2007, the French company Air Liquide, one of the world’s leaders in the production and supply of high-purity gases, was initially the largest shareholder and later the owner of INTEGA. Joining the large industrial group has opened up new opportunities for INTEGA’s business development in both Germany and internationally. In 2007–2014 representation

и заключенный в 2005 году контракт на оснащение завода Fab 36 (ныне – Module 1 завода Fab 1) компании GlobalFoundries (бывш. AMD), который пока является крупнейшим в истории INTEGA.

В 1999 году в Штутгарте было создано третье производственное подразделение компании.

С 2003 по 2007 годы, вначале крупнейшим акционером, а затем и владельцем INTEGA стала французская корпорация Air Liquide, являющаяся одним из мировых лидеров в области производства и поставки высокочистых газов. Вхождение в крупную промышленную группу открыло новые возможности для развития бизнеса INTEGA как в Германии, так и на международном рынке. В 2007–2014 годах открываются представительства в Берлине, Москве, Арнштадте (Германия) и Дорнахе (Швейцария). В настоящее время в компании работают 170 сотрудников.

В число клиентов INTEGA входят такие корпорации, как ABB, BASF, Bayer, Bosch, GlobalFoundries, Opel, Porsche, Zeiss, а также научно-исследовательские институты Fraunhofer, NamLab, Max Planck и т.д.. INTEGA активно сотрудничает с ведущими инжиниринговыми компаниями, например, с M+W Group, CRC Engineering, Rehatec. О высокой лояльности клиентов свидетельствует тот факт, что Bosch и Infineon признали INTEGA лучшим поставщиком 2010 года.
offices were opened in Berlin, Moscow, Arnstadt (Germany) and Dornach (Switzerland). Currently, the company employs 170 people.

The INTEGA customers are such corporations as ABB, BASF, Bayer, Bosch, GlobalFoundries, Opel, Porsche, Zeiss as well as research institutes of Fraunhofer Society, NamLab, Max Planck etc. INTEGA actively cooperates with leading engineering companies, for example, with M+W Group, CRC Engineering and Rehatec. The high customer loyalty is demonstrated by the fact that Bosch and Infineon have acknowledged INTEGA the best supplier in 2010.

INTEGRATED SOLUTIONS
At present, the total area of the production facilities in Munich, Dresden and Stuttgart is more than 1000 m², of which the clean rooms cover 750 m², including 150 m² of Class 10 (ISO 1). It is possible to implement the biggest projects with the available capacities.

"Our core competence lies in creating integrated systems from the sources of gas to the process equipment, i.e. cost-effective, compact and safe, Matthias Poser, Director of Sales and Marketing says. We carry out all the work from the system design to installation, testing and certification according to the cleanliness and maintenance class. The obtained experience allows you to do with a minimum of information; it is sufficient for customers to indicate only the type and quality of gas, the volume of consumption and the point of connection to the machinery".

In designing up-to-date 64-bit AutoCAD for two-dimensional drawings and SolidWorks for 3D are used. The equipment is
accompanied by the necessary documentation including manuals. For pharmaceutical projects the documentation complies with FDA/GMP requirements. Business process are managed by a single information system deployed at all enterprises of the Air Liquide Group.

INTEGA manufacturing facilities are certified according to the ISO 9001 quality standard. Depending on the goals and wishes of users, the gas and liquid supply systems can be automatically, semi-automatically or manually controlled. In the former case, a maximum level of safety and efficiency is ensured. Control automation is especially important in dealing with dangerous gases.

The main components include the equipment of gas cabinets, distribution systems, blending and cleaning systems, piping components, measuring instruments and sensors as well as vacuum equipment purchased in Europe, the USA and Israel. One of the advantages of the company is the availability of the highest class of clean rooms to allow for all components to ensure that the cleanliness requirements, which are particularly high, for example, in the semiconductor and photovoltaic sectors. The INTEGA production facilities perform assembly, cleaning and testing for leaks, cleanliness, lack of moisture and the ability to withstand process pressure.

The installed equipment can be maintained by the customer both independently and with the INTEGA experts.

RUSSIAN PROJECTS
Since 2010 INTEGA as a member of the project team of the
"Electronics" division of Air Liquide Group was involved in upgrading the Mikron factory in Zelenograd and opened in the same year an office in Moscow. Since 2014, INTEGA successfully cooperates with another flagship of Russian microelectronics, the Angstrem-T company. Although the equipment for Russian customers is produced at the INTEGA production facilities in Dresden, the Moscow office of the company is engaged not only in commerce and logistics. In particular, it is staffed by 10 design engineers. Matthias Poser explained the need to set up an engineering division in Moscow by the specifics of Russian regulations and standards governing the design and construction activities. The Russian representation of INTEGA has SRO certificates for design and construction, including the ability to work as a general designer, general contractor and a sub-contractor, including works in hazardous production facilities.

According to Matthias Poser, INTEGA seeks to expand their activities in Russia. In addition to the electronic industry enterprises, a major project has been implemented at the Hevel plant in Novocheboksarsk, which produces solar modules. The company is actively cooperating with the Russian pharmaceutical factories, the projects portfolio includes installations of high purity water, nitrogen and compressed air distribution systems in the pharmaceutical companies.

Thus, we can conclude that the appearance in the Russian market of such companies as INTEGA and Air Liquide, establishing design and manufacturing facilities and supply the high-tech enterprises, promotes the focus on innovation in the Russian economy.