

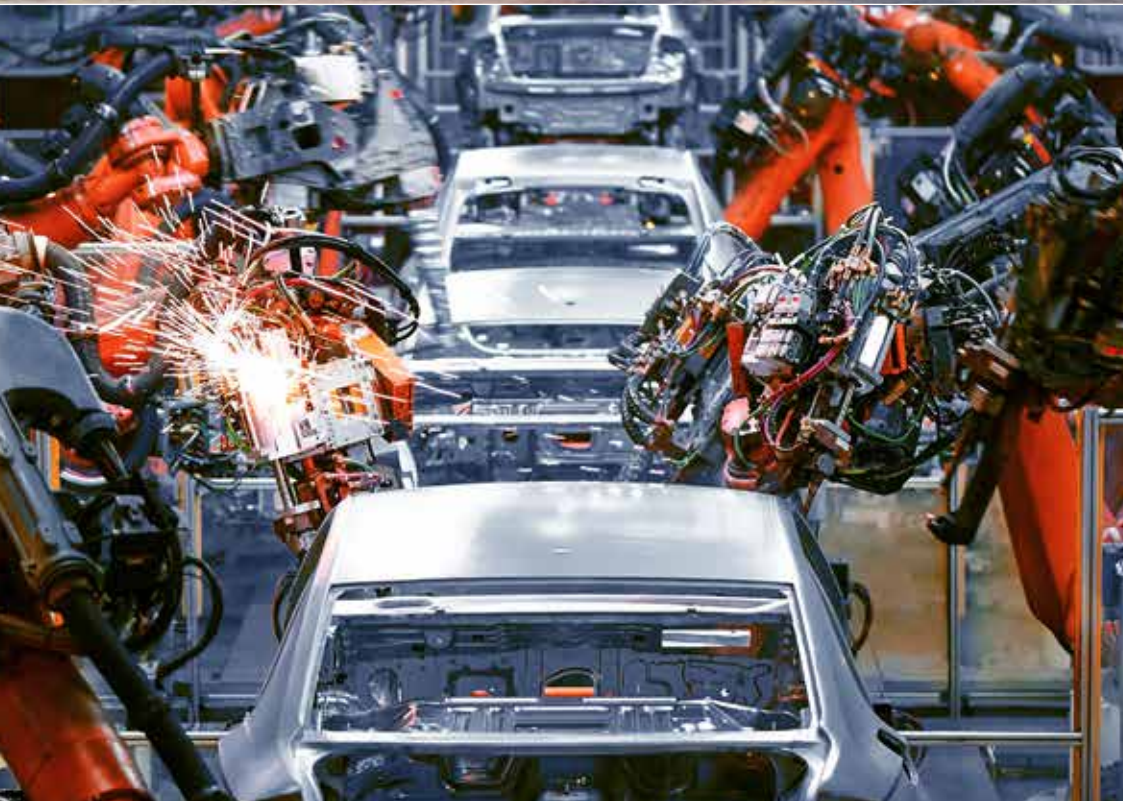
ECHOPLUS

1990

About

For more than 30 years, LLC SPC ECHOPLUS has been engaged in non-destructive testing, development, production and supply of automated ultrasonic control systems that prevent accidents at hazardous production facilities.

The methods and products of ECHOPLUS automated ultrasonic inspection, which have no analogues, make it possible to identify and visualize hidden defects in the most complex welded joints, taking into account the determination of their parameters (types of defects and their sizes).

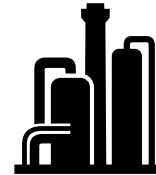


Areas of activity

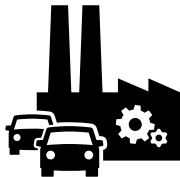
For more than 30 years, the ECHOPLUS Research and Production Center for Non-Destructive Testing has been developing and manufacturing modern systems for the machine-building, energy, shipbuilding, aircraft, oil and gas industries and metalworking.



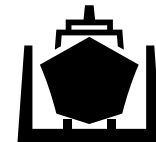
**POWER ENGINEERING
NUCLEAR POWER PLANTS**



OIL AND GAS INDUSTRY



**MECHANICAL ENGINEERING
AND METALWORKING**



SHIPBUILDING AND AVIATION

Advantages

The ECHOPLUS is a full-cycle company with its own scientific and production sectors. The company employs highly qualified specialists, experts, scientists, awarded with doctoral degrees, awards and commendations from the country's top leadership.

> 30

YEARS IN THE MARKET
OF NON-DESTRUCTIVE
TESTING

12

PATENTS FOR OWN
METHODS AND DEVELOPMENTS

49

ORIGINAL DIAGNOSTIC
TECHNIQUES

> 400

PUBLICATIONS
AND SCIENTIFIC WORKS

> 150

SUPPLY SYSTEMS
ULTRASONIC
INSPECTION

> 250 000

LINEAR METERS
OF WELDED JOINTS
HAVE BEEN DIAGNOSED

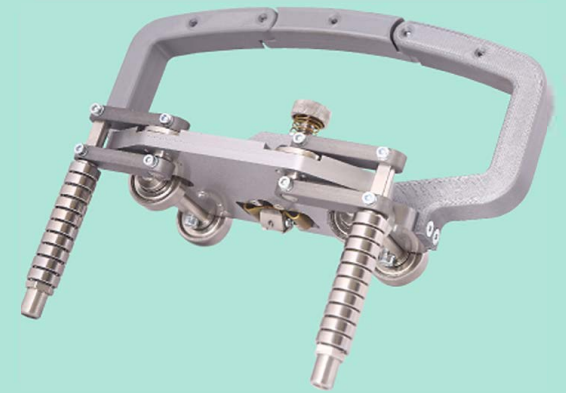
Services

- **Comprehensive** automated ultrasonic inspection of welded joints based on the use of phased arrays and TOFD technologies, with measurement of defect sizes
- **Monitoring** the development of defects during the operation of facilities
- **Ultrasonic** inspection of welds during construction in accordance with the assessment methods and standards used for this facility
- **Thickness measurement** of vessels and pipelines, mapping of corrosion wear
- **Examination of industrial safety** of objects with the issuance of a conclusion on the possibility of further operation
- **Other types of non-destructive testing**
- **Training and consulting**
- **Aftersales** service

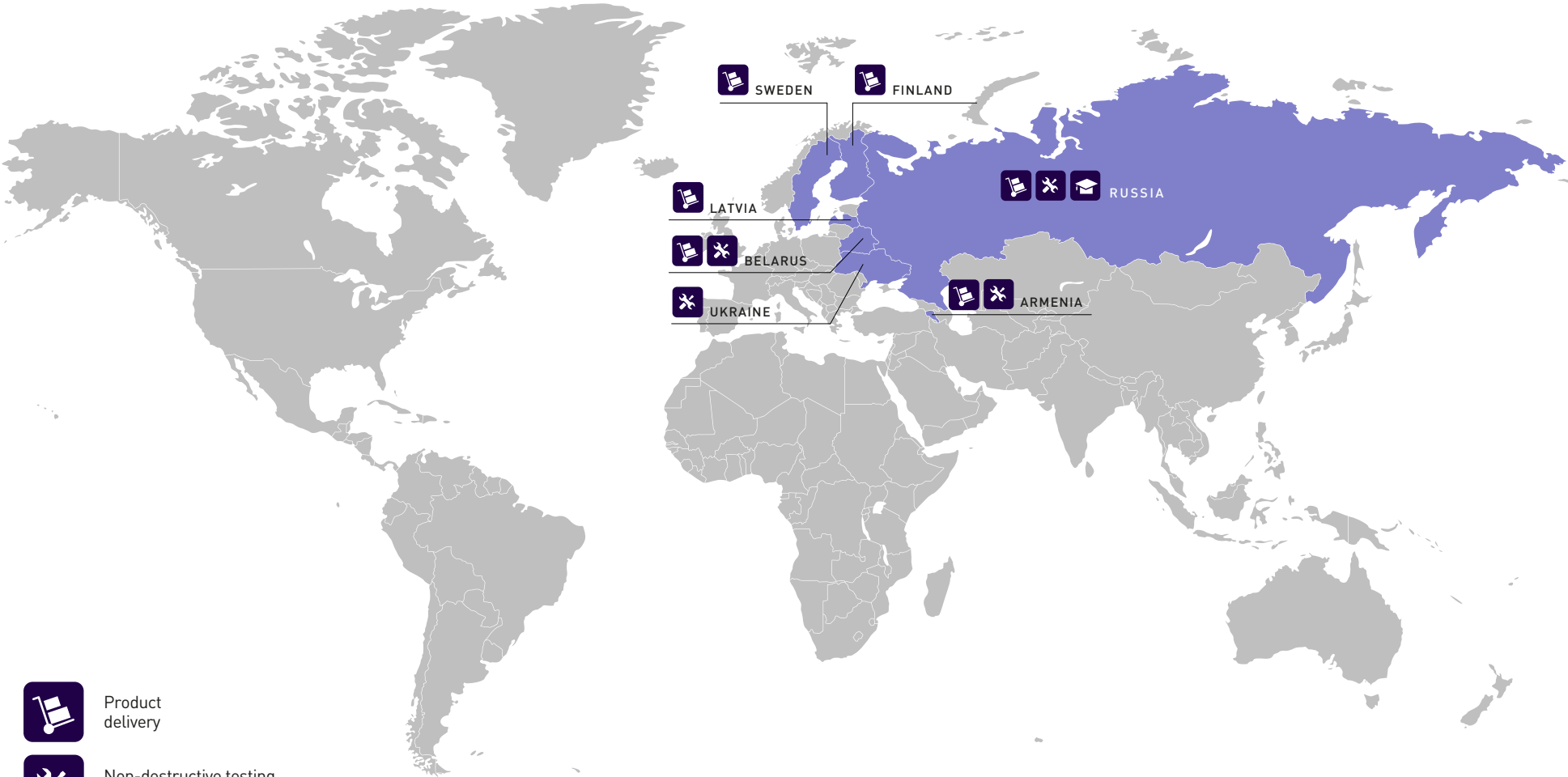
Products and solutions

Each device of the SPC ECHOPLUS is born through the joint efforts of scientists, engineers and specialists. The list of products manufactured by the ECHOPLUS includes automated ultrasonic inspection systems, scanners, flaw detectors, phased array prisms, software.

The flagship of the Company's product line is the AUGUR ART flaw detector, the uniqueness of which lies in the use of scanning antenna array technology that allows monitoring of complex welded joints (pearlite, austenitic and composite) with a thickness of more than 300 mm, and replacing radiation monitoring with ultrasound. The new AUGUR ART supports three encoders, which allows it to be used with the connection of different types of scanners.



Countries



Product delivery



Non-destructive testing services



Training of specialists

Thanks from customers

Kolskaya NPP

Modernization and implementation of automatic ultrasonic inspection systems for welded joints

Kalininskaya NPP

Delivery of a set of equipment and services for automatic ultrasonic inspection of welded joints

Kvaerner LLC

Mechanized ultrasonic inspection of welded joints during the construction of the ground section of the Nord Stream 2 pipeline

Leningradskaya NPP

Delivery of a set of equipment for automatic ultrasonic inspection of welded joints, diagnostics and control

Kurskaya NPP

Delivery of a set of equipment for non-destructive testing of welded joints

Rusatom Service

Repair and modernization of automated ultrasonic inspection equipment, inspection of welded joints

Smolenskaya NPP

Delivery, commissioning and control of non-destructive testing systems of welded joints

TKZ Krasny Kotelshchik

Manufacture supply and commissioning of equipment for automatic ultrasonic inspection of welded joints

FBU Tyumen CSM

Delivery of a calibration system for ultrasonic piezoelectric converters

Uralhimmash

Modernization and commissioning of the equipment system for automatic ultrasonic inspection of welded joints

Armyanskaya NPP

Comprehensive automated non-destructive testing of welded joints, data processing and analysis, execution of conclusions on non-destructive testing

PROMFINSTROY

Services for automatic ultrasonic inspection of composite welded joints

Balakovskaya NPP

Services for automatic ultrasonic inspection of composite welded joints

GAZPROM TRANSGAZ

Services for automatic ultrasonic inspection of composite welded joints

OKB GIDROPRESS

Services for automatic ultrasonic inspection of composite welded joints

KAVKAZTRANSGAZ

Services for automatic ultrasonic inspection of composite welded joints

GAZPROM

Diagnostics of pipeline welds using ultrasonic inspection systems

ИКЦ СЭКТ

Supply of automated ultrasonic inspection systems for control of welds of surface and underwater vessels

PermTransGaz

Flaw detection of welded joints

Clients



History

1990–1993

The formation of the SPC ECHOPLUS Ltd. The first tests of the AUGUR 2.2 system at the Leningrad NPP. Support of the State Committee for Science and Technology for the development of automated control systems with coherent AUGUR data processing.

1994–1996

Creation of the first sample of the AUGUR 4.2 system and demonstration of the system at international exhibitions – in Germany, South Africa, Australia, Norway, Iran, Japan. The beginning of practical control of welded joints DN 300 and DN 800 at the Leningrad NPP, Smolensk NPP and Kursk NPP.

1997

Formation of an independent company "ECHO-impulse", consisting of a group of specialists in the manufacture of piezoelectric converters.

1999–2001

The beginning of work on the international project Research Thermonuclear Power Reactor (ITER). Testing of the AUGUR system and methodology as part of an American robot at the Tokai Nuclear Center in Japan. Participation in the launch of the first power unit of the Rostov NPP. Creation of an intrauterine ultrasonic flaw detector for monitoring oil trunk pipelines for the company "Transneft".

2003–2008

Certification of the AUGUR 5.2 system together with the methodology for monitoring welded joints of the DN 1200 reactor unit VVER-1000. The breakthrough of technology to the VVER reactors, where work is still underway. Certification of 15 methods of control of welded joints of VVER-440 and VVER-1000 reactor installations. Delivery of 45 sets of AUGUR automated ultrasonic inspection AUGUR 5.2 systems to objectives in Russia.

2007

Award of the RF Government Prize "For the development and industrial implementation of technologies for complex diagnostics, methods and import-substituting devices in order to reduce emergencies at potentially hazardous facilities."

2008–2011

Issue of the monograph "Ultrasonic metal flaw detection using holographic techniques" (368 p). Development and certification of the automated ultrasonic inspection system in Gazprom. Awarding ECHOPLUS with the diploma of the European Federation of Non-Destructive Testing (EFNDT). Development and approval in the Rosenergoatom concern of a comprehensive program of measures for the development and implementation of technologies and means of operation of a nuclear power plant for the equipment and pipelines of the Russian NPP, based on the use of phased arrays, which predetermined the vector of development for many years to come. Development and certification of 12 Non-Destructive techniques based on the use of antenna arrays.

2012–2014

Certification of the AUGUR-ART AUZK system based on the use of antenna arrays and CFA algorithms. Delivery of 8 sets of AUGUR-ART systems to Russian nuclear power plants. Certification of the AUGUR-ART automated ultrasonic inspection system with a full automation cycle.

2016–2017

Delivery of AUGUR 5.2 systems to the Armenian NPP, carrying out operational control.

2018–2020

Awarding of the General Director of the SPC ECHOPLUS Ltd. Aleksey Kh. Vopilkin with the Gratitude of the President of the Russian Federation V.V. Putin "For the achieved labor successes and many years of good work". Certification of the AUGUR-TF system in Gazprom PJSC with inclusion in the register of supplied equipment. Carrying out the automated ultrasonic inspection at the 6-th block of the Novovoronezh NPP by systems developed by the Croatian company "Hrid". The release of the third, anniversary, collection of scientific papers of the SPC ECHOPLUS Ltd.

Training and service

Work using the methods and products of the ECHOPLUS company, as well as the products of partner companies - Olympus and Sonatest, can be carried out by specialists working on the customer's side after completing the recommended training course, which is included in the consulting services of the ECHOPLUS company.

There are 4 doctors and 4 candidates of sciences working at the SPC ECHOPLUS. Using the knowledge and experience of their employees, the teachers of the ECHOPLUS Training Center train and certify specialists in the following areas:

- **ultrasonic inspection** with AUGUR system;
- **ultrasonic inspection** methods FR on nuclear power plant reactors;
- **FR-methods** automated ultrasonic inspection with AUGUR ART, Omniscan, Harfang flaw detectors.

Licenses and certificates

- **The License** for the right to construct blocks of nuclear power plants, in terms of performing works and rendering services to the operating organization for conducting ultrasonic inspection of equipment and pipelines
- **The License** for the right to operate nuclear power plant units, in terms of performing works and rendering services to the operating organization for conducting ultrasonic inspection of equipment and pipelines
- **The License** to carry out work using information constituting a state secret
- **Certificate** of conformity of the quality management system ISO 9001:2008
- **Certificate** of conformity of the quality management system GOST ISO 9001-2011
- **Certificate** of certification in accordance with the requirements of the Non-destructive Testing System of NPO TSNIITMASH, distributed to boiler inspection facilities, gas supply (gas distribution) systems by types (methods) of non-destructive testing and diagnostics - visual and measuring

Thanks for your attention

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