

National contact point “AERONAUTICS”

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Factsheet¹

Opportunities for the Development of EU-Russia Science and Technology Cooperation in Aeronautics

Russian National Research Center “Institute named after N.E. Zhukovsky”

In order to maintain and develop the scientific and technological EU-Russia cooperation in the field of aeronautics, the **Russian National Contact Point for aeronautical research – NCP “Aeronautics”** informs you about Russian organizations performing their activities in the field of aeronautics and being potential partners for international cooperative activities in this field.

At the present time the Russian **National Research Center “Institute named after N.E. Zhukovsky” (NRC “Zhukovsky Institute”)** is the single control center which was founded to lead and coordinate domestic applied research in the aviation sector in order to form advanced scientific and technical basis relying on the principles of interdisciplinary convergence of sciences and intersectoral integration of technologies.

About the Center

NRC is a federal state budgetary institution, established by the Russian Federation in accordance with Federal Law No. 326 on 4 November 2014 “On the National Research Center “Institute named after N.E. Zhukovsky”.

Objectives:

- research work organization and performance;
- development of new technologies in priority areas of aeronautical engineering;
- R&D fast-track manufacturing application;
- use of scientific achievements in aircraft industry for the benefits of the economy of the Russian Federation.

Functions:

- R&D and scientific support of the introduction of new technologies in the field of aircraft engineering;
- preparation of proposals on coordination of scientific, research, technical and production activities of the organizations for the benefit of implementing large innovative projects in the aircraft industry;
- assistance in the development of research and innovation infrastructure of the aircraft industry;
- participation in scientific personnel training in the field of aircraft engineering;

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- assessment of R&D technology readiness in the field of aircraft engineering, technology development of the aircraft industry, scientific research effectiveness;
- forecasting of scientific and technological development of the Russian Federation in the field of aircraft engineering;
- participation in formation of the national research and development policy of the aircraft industry;
- participation in the implementation of international scientific and technological cooperation projects in the aircraft industry;
- use of the research and development findings for the development of other sectors of the economy of the Russian Federation.

NRC develops an innovative system for introducing new control mechanisms to develop aircraft engineering technologies in applied science at both the strategic and tactical levels, thus forming an advanced scientific and technical basis.

For this purpose, NRC relies on the general objectives of science and technology development in the civil aircraft industry in Russia:

- achieving an acceptable level of aviation safety;
- increasing affordability and physical accessibility, as well as the quality of transport services provided with the use of the Russian-made aircraft;
- reduction of the aviation environmental impact.

An integrated scientific and technical basis, both for the aeronautical engineering and for the benefit of other sectors of the economy, is formed within the framework of integrated scientific and technological projects that take into account the mutual influence of technological innovations in various components of complex systems.

The current scope of integrated scientific and technological projects and structural and technology platforms corresponds to the specified structure of the State Program of the Russian Federation “Aviation industry development, 2013-2025”, which takes into account the results of the world trends analysis in the scientific and technological development of aircraft engineering contained in such documents as “Forecast of science and technology development of the Russian Federation for the period up to 2030”. Transportation and space systems”, “Aviation science and technology 2030, Foresight. Basic provisions”.

NRC includes 5 largest and most significant Russian research organizations in the field of aeronautics:

- The Central Aerohydrodynamic Institute named after prof. N.E. Zhukovsky (**TsAGI**), Zhukovsky, Moscow Region;
- The Central Institute of Aviation Motors named after P.I. Baranov (**CIAM**), Moscow;
- The State Research Institute of Aviation Systems (**GosNIAS**), Moscow;
- The Siberian Aeronautical Research Institute named after S.A. Chaplygin (**SibNIA**), Novosibirsk;
- The State-owned aircraft systems scientific testing ground (**GKNIPAS**), settl. Belozersky, Moscow Region.

NRC, as a research center, forms a structure that provides centralized management of aviation science in order to develop promising aviation technologies and combine efforts of sectoral and academic science.

The research carried out by NRC and its subordinate organizations within the framework of national and international projects covers **all areas of aviation science**:

- Air transport system,
- Aircraft engines,
- Onboard equipment,
- Rotorcraft,
- Civil aircraft,
- Robotic aviation systems.

NRC’s partners in Russia are large research organizations, such as: VIAM (All-Russian Institute Of Aviation Materials), NIISU, Krylov State Research Center, NIAT, RAS FRC “Computer science and Management”, Simonov Design Bureau, UAC, Russian Helicopters, ODC, KRET (Concern Radio-Electronic Technologies), DKBA, “Technodynamics”, etc.

Experimental facilities

TsAGI

TsAGI's experimental facilities include more than 60 wind tunnels and gas-dynamic facilities providing sub-, trans-, super- and hypersonic speeds, as well as a complex of test benches for control systems, static and dynamic, thermal and acoustic strength tests, fatigue and aeroelastic tests; thermal strength, acoustic and climatic test laboratories, vibration test laboratory, aircraft engine and compressor test benches. TsAGI also has a hydrodynamics experimental base, flight simulators and computer complexes.

CIAM

CIAM's experimental facilities provide the ability to simulate high-altitude flight conditions for air breathing engines for large-scale models of future hypersonic high-speed civil aircraft, as well as stand-alone tests of combustion chambers, compressors, turbines, afterburners, ramjets.

GosNIAS

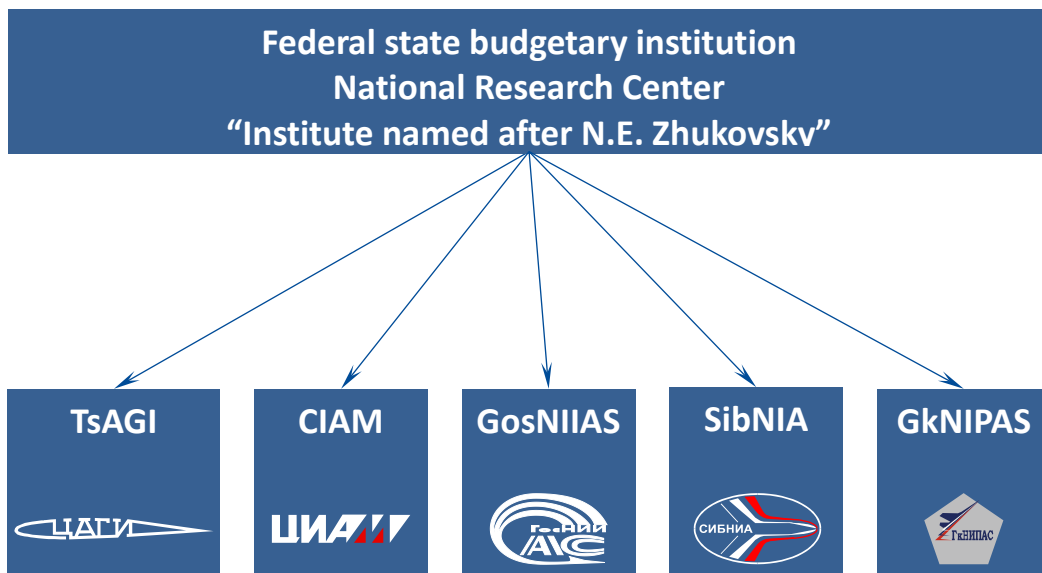
GosNIAS includes: a research and production complex; testing laboratory of avionics hardware and software; test site; laboratory of flight tests and experimental studies of hardware and software of airborne avionics systems. The testing facilities are in constant development (for example, a solar simulation complex is being created).

SibNIA

The experimental base of the Institute allows performing static, fatigue and dynamic tests. There are flying laboratories of specialized application. Flight research of means of navigation and landing aids are carried out.

GkNIPAS

A unique test site with an area of more than 10,000 hectares for carrying out a variety of ground-based tests of aircraft complexes and their main units and components.



International Collaboration

Cooperation on the basis of technological and academic network:

NRC's activity is aimed, among other things, at the international scientific and technological cooperation in the field of aeronautics and its development.

As part of its international activities, NRC:

- represents its interests in the international scientific unions;
- develops contacts with foreign and international scientific organizations;
- participates in international scientific and technological programs;
- organizes the interaction of Russian scientific and educational organizations with international organizations, including experts exchange, participation in organizing and holding of international scientific congresses, conferences, symposia and seminars.

NRC’s participation in international scientific cooperation - EU Framework Programmes

The organizations subordinate to NRC conduct international activities and they are long-time and successful participants of EU Framework Programmes (6FP, 7FP, 8FP “Horizon 2020”), under which more than 45 joint scientific and technological projects have been implemented and are being implemented at the moment: RUMBLE, ARTEM, TILDA, Future Sky Safety, AGILE, ASPIRE, INAFLOWT, AIRPASS, HEXAFLY-INT, POLARBEAR, BUTERFLI, AFLONEXT, HAIC, RESEARCH, ORINOCO, DREAM, SARISTU, X-NOISE EV, ESWIRP, HISAC, COBRA, ASHLEY, ENOVAL, SCARLETT and others.

Funding opportunities

Currently, NRC’s subordinate organizations may receive funding for the implementation of international projects on a competitive basis in the framework of various national programs and activities of scientific foundations of Russia:

- Russian State Programme “Aviation Industry Development, 2013–2025” ([FTPRD](#)),
- Russian Federal Targeted Programme “Research and Development in Priority Areas of Development of the Russian Scientific and Technological Complex for 2014—2020”(rus) ([FTPRD](#)),
- Russian Foundation for Basic Research ([RFBR](#)),
- Russian Science Foundation ([RSF](#)),

NRC and its subordinate organizations continue to develop their international activities in the field of aeronautical sciences and technologies and are open to international cooperation.²

More information you can find here:

- ✓ NRC official website <http://nrczh.ru/press/english.php>,
- ✓ TsAGI official website: <http://tsagi.com/>,
- ✓ CIAM official website: <http://www.ciam.ru/en/>,
- ✓ GosNIIAS official website: <http://www.gosniias.ru/index-e.htm>,
- ✓ SibNIA official website: <http://sibnia.com/>,
- ✓ GkNIPAS official website (rus.): <http://www.fkpgknipas.ru/>,
- ✓ Russian NCP “Aeronautics” support: +7 495 556 31 62, +7 498 483 29 09, <http://ncp.tsagi.ru/en/>.

² Prepared using the materials of the official websites of NRC: <http://nrczh.ru/>, TsAGI: <http://tsagi.com/>, CIAM: <http://www.ciam.ru/>, GosNIIAS: <http://www.gosniias.ru/>, SibNIA: <http://sibnia.com/>, GkNIPAS: <http://www.fkpgknipas.ru/>.