

HORIZON 2020

*Excellent Science
Global Challenges
Competitive Industries*

Open to the world!



What is the EU's Horizon 2020 programme?

- **Almost €80 billion (current prices) research and innovation funding programme (2014-2020)**
- **A core part of Europe 2020, Innovation Union & European Research Area**
 - Investing in future jobs and growth
 - Addressing concerns about livelihoods, safety and environment
 - Strengthening the EU's global position in research, innovation and technology
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges** facing EU society, e.g. health, clean energy, transport, climate change, food security and others
- **Open for participation** to all companies, universities, institutes in all EU countries and everywhere in the world!

Horizon 2020: structure

Excellent Science

European Research Council

Future and Emerging Technologies

Marie Skłodowska-Curie actions

Research infrastructures

Industrial Leadership

Leadership in enabling and industrial technologies

(ICT, nano, materials, biotech, manufacturing, space)

Access to risk finance

Innovation in SMEs

Societal Challenges

Health

Food

Energy

Transport

Climate

Inclusive societies

Security

Horizon 2020 Prizes, Science for Society, Spreading Excellence, JRC, EIT, Euratom

HORIZON 2020

Horizon 2020: open to the world

Horizon 2020 is **open to participation** from across the world

Automatic EU funding for their participation in R&I actions for:

- ✓ EU Member States (including overseas departments and overseas territories)
- ✓ Countries associated to Horizon 2020 ("Associated Countries", such as Israel, Moldova, Norway, Serbia, Turkey, [Switzerland], ...)
- ✓ exhaustive list of countries in annex to work programme

Horizon 2020: open to the world (2)

- **For other countries** (such as Australia, Brazil, Canada, China, India, Japan, Mexico, Russia, United States,...), EU funding for their participation in R&I actions only in **exceptional cases**:
 - ✓ such funding is provided for in a bilateral scientific & technological cooperation or similar agreement
 - ✓ funding for entities established in these countries is included in the call text (e.g. "... entities established in Russia ... will be eligible to receive funding...")
 - ✓ the Commission deems the participation of the entity essential for carrying out the project, for instance because it provides:
 - outstanding competence / expertise
 - access to (unique) research facilities / infrastructure
 - access to a particular geographical environment
 - access to (unique) data (sets)

Funding for Russian participants in Horizon 2020

- Individual grants and scholarships under the Marie Skłodowska-Curie mobility programme and by the European Research Council (ERC) are available for Russian scientists
- EU funding for Russian participants in collaborative R&I actions is possible on an exceptional basis

Funding support from the Russian Ministry of Education & Science (MON): procedure

EU side: Horizon 2020 programme

RU side: Federal Targeted Programme for R&D

Publication of H2020 Work Programmes and calls

Publication of the list of selected calls on the 'Russia's Country Page' of the H2020 Participant Portal

EU coordinator submits a proposal to the EC under the H2020 call

The EC carries out its standard evaluation procedure of all H2020 project proposals, including those with Russian participants

Selection of topics prioritised by the Russian Federation (i.e. those for which financial support to the Russian participants can in principle be offered)

Russian partner(s) of the consortia submit(s) a corresponding proposal to the MON

The MON carries out its standard evaluation procedure of Russian proposals which are part of a submitted H2020 project proposal

Where the EU and MON evaluations overlap, the H2020 project and its Russian part will be funded by, respectively, the EC and the MON according to their funding rules

Russia's country page on Horizon 2020 Participant Portal

http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_russia_en.pdf

Russia – Country Page

1. Available local programmes or funds that could provide support to Russian Horizon 2020 participants

Horizon 2020 is fully open to the participation of entities from across the world in all parts of the programme, and many topics are flagged as being specifically relevant for cooperation with partners from outside Europe. Russian scientists, universities, research organisations and enterprises are able to team up with their European partners to participate in projects under Horizon 2020 and make the best use of Europe's excellent opportunities in research and innovation.

Russian researchers and organisations are encouraged to participate in all actions of Horizon 2020 as consortium members and to take part in the proposal submission to the European Commission.

Russian Co-Funding Mechanisms for Research and Innovation Projects

To support Russian participation in Horizon 2020 actions and in view of the fact that participants from Russia are no longer automatically funded by the EU, the **Ministry of Education and Science of the Russian Federation** publishes dedicated calls to offer funding support for Russian Horizon 2020 participants in accordance with its own call procedures (Russian Federal Programme (FTP) "R&D in Priority Areas of Development of the Russian S&T Complex 2014-2020"). Russian applicants to these calls will have to provide a document acknowledging their participation in the consortium of the joint Horizon 2020 proposal, submitted under the Horizon 2020 call.

The Ministry of Education and Science of the Russian Federation has established a functional mailbox horizon2020@mon.gov.ru to which the Russian scientific community may send enquiries about support available in Russia for participation in Horizon 2020.

Depending on the nature of their proposed research, Russian participants of Horizon 2020 research and innovation projects are also encouraged to apply to the regular calls of the **Russian Foundation for Basic Research** (www.rfbr.ru), the **Russian Foundation for the Humanities** (www.rfh.ru) and the **Russian Science Foundation** (www.rscf.ru), which may be able to provide funding support in accordance with their own funding rules.

In addition, the **Russian Foundation for Assistance to Small Innovative Enterprises** (www.fasie.ru) may be able to support the participation of small innovative Russian enterprises in Horizon 2020 projects on a case-by-case basis in accordance with its own funding rules.

Enquiries concerning participation in Horizon 2020 may also be directed to the offices of the appointed Russian National Contact Points:

http://ec.europa.eu/research/participants/portal/desktop/en/support/national_contact_points.html

Horizon 2020 statistics*: Russia's participation

102 eligible proposals submitted involving **132 applicants** from Russia

39 proposals retained for funding involving **53 successful applicants** from Russia

Russia's applicant **success rate of 31,8%** is almost twice as high as the average Third Countries applicant success rate

Among the Third Countries Russia ranks:

- 11th in terms of number of applicants
- 19th in terms of applicants success rate
- 6th in number of participations and
- 6th in budget share

** As of October 2016*

Horizon 2020: projects with Russian participation

1. HoNESt (2015-09-01 to 2018-08-31): *History of Nuclear Energy and Society*

Budget: EUR 3 052 269

HoNESt (History of Nuclear Energy and Society) involves an interdisciplinary team with many experienced researchers and 24 high profile research institutions.

HoNESt's goal is to conduct a three-year interdisciplinary analysis of the experience of nuclear developments and its relationship to contemporary society with the aim of improving the understanding of the dynamics over the last 60 years. HoNESt's results will assist the current debate on future energy sources and the transition to affordable, secure, and clean energy production.

Participants (23): Spain, Finland, United Kingdom, Germany, Denmark, Belgium, Sweden, United Kingdom, France, Greece, Lithuania, Netherlands, Bulgaria, Russia, Portugal, United States

Participant from Russia: FEDERAL STATE BUDGETARY INSTITUTION OF SCIENCE INSTITUTE OF HISTORY AND ARCHAEOLOGY OF THE URAL BRANCH OF THE RUSSIAN ACADEMY OF SCIENCES

Horizon 2020: projects with Russian participation

2. PROMISE (2016-05-01 to 2019-04-30): *PROMoting youth involvement and Social Engagement: Opportunities and challenges for 'conflicted' young people across Europe*

Budget: EUR 2 724 107,50

"Young people face tough choices in key areas of social life that affect their participation in society, and their potential marginalisation from it: from structural issues of unemployment, lack of access to affordable housing and debt problems, to information overload on big questions like the environment, identity, faith and radicalisation, and negotiating the moral challenges of illegal markets and an increasingly sexualised social-media generation. The PROMISE project will investigate how young people's, often negative, responses to these problems create conflict, and how, instead, their responses can provide opportunities for positive social engagement".

Participants (11): Italy, Germany, Spain, Portugal, Slovakia, Finland, Germany, Estonia, Russia, Croatia

Participant from Russia: FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION FOR HIGHER EDUCATION NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS



Horizon 2020: projects with Russian participation

3. ComPat (2015-10-01 to 2018-09-30): *Computing Patterns for High Performance Multiscale Computing*

Budget: EUR 4 122 864,36

"Our main objective is to develop generic and reusable High Performance Multiscale Computing algorithms that will address the exascale challenges posed by heterogeneous architectures and will enable us to run multiscale applications with extreme data requirements while achieving scalability, robustness, resiliency, and energy efficiency. Our approach is based on generic multiscale computing patterns that allow us to implement customized algorithms to optimise load balancing, data handling, fault tolerance and energy consumption under generic exascale application scenarios. We will realise an experimental execution environment on our pan-European facility, which will be used to measure performance characteristics and develop models that can provide reliable performance predictions for emerging and future exascale architectures. "

Participants (10): Poland, Germany, Netherlands, United Kingdom, Russia

Participant from Russia: SAINT PETERSBURG NATIONAL RESEARCH UNIVERSITY OF INFORMATION TECHNOLOGIES, MECHANICS AND OPTICS

Horizon 2020: projects with Russian participation

4. ONION (2016-01-01 to 2017-12-31): *Operational Network of Individual Observation Nodes*

Budget: EUR 2 598 820

“Operational Network of Individual Observation Nodes,” (ONION) investigates the distribution of spacecraft functionalities into multiple cooperating nodes, leveraging on the emerging fractionated and federated satellite system concepts. The proposed concept provides augmentation, supplementation, and possibilities of new mission for future EO Missions (for science and commercial applications).

ONION objectives:

1. Review the emerging fractionated and federated observation system concepts
2. Identify potential benefits to be obtained in light of observation needs in different Earth Observation domains
3. Identify key required technology challenges entailed by the emerging fractionated and federated satellite system concepts, to be faced in Horizon 2021-2027
4. Validate observation needs with the respective user communities to be fit for purpose in terms of scientific and commercial applications
- 5: To propose an overall strategy and technical guidelines to implement such concepts at Horizon 2021-2027.

Participants (7): Spain, Portugal, France, Russia, Poland, Belgium

Participant from Russia: SKOLKOVO INSTITUTE OF SCIENCE AND TECHNOLOGY

Horizon 2020: projects with Russian participation

5. EVAg (2015-04-01 to 2019-03-31): *European Virus Archive goes global*

Budget: EUR 12 168 054,68

The overall objective will be to create and mobilise an International network of high calibre centres around a strong European group of institutes selected for their appropriate expertises, to collect, amplify, characterise, standardise, authenticate, distribute and track, mammalian and other exotic viruses. The network of EVAg laboratories including 25 institutions represents an extensive range of virological disciplines. The architecture of the consortium is based on the association of capacities accessible to the partners but also to any end-users through the EVAg web-based catalogue.

Participants (24): Germany, United Kingdom, Switzerland, Slovenia, Slovakia, Italy, Netherlands, France, South Africa, Russia, China, Australia, Sweden, France

Participant from Russia: 1) FEDERAL STATE BUDGETARY SCIENTIFIC INSTITUTION CHUMAKOV INSTITUTE OF POLIOMYELITIS AND VIRAL ENCEPHALITIDES, 2) SCIENTIFIC RESEARCH INSTITUTE OF INFLUENZA OF THE MINISTRY OF HEALTHCARE AND SOCIAL DEVELOPMENT OF THE RUSSIAN FEDERATION, 3) RESEARCH INSTITUTE OF VACCINES AND SERA II MECHNIKOV

Horizon 2020: projects with Russian participation

6. NanoHybrids (2015-11-01 to 2019-04-30): *New generation of nanoporous organic and hybrid aerogels for industrial applications: from the lab to pilot scale production*

Budget: EUR 4 354 905,75

The main objective of the project is the development of the pilot scale production system of the new generation of nanoporous organic and hybrid aerogels with multiple functions for application in gas and humidity adsorption, personal care and food. Thereby the fast manufacturing in form of spherical particles will be in focus in order to reduce the process time and to decrease the overall process costs. Thereby the purpose is to insure the high porosity and internal pore size distribution of the particles in order to provide the high surface area, pore volume and defined pore size needed for good adsorption capability. The production of organic aerogel particles in sufficient amounts will firstly enable the possibility to build prototypes for the applications in gas and humidity adsorption and food and to perform the corresponding tests. Based on the results of the test the properties of aerogels will be fine-tuned for the corresponding real applications in industrial environments. By this means it is intended to increase the technology readiness level of organic aerogels production from TLR 4 to TLR 6 by the end of the project..

Participants (11): Germany (3), United Kingdom, Turkey (2), France, Sweden, Russia, Greece (2)

Participant from Russia: MENDELEYEV UNIVERSITY OF CHEMICAL TECHNOLOGY OF RUSSIA

Horizon 2020: projects with Russian participation

7. Future Sky Safety (2015-01-01 to 2018-12-31)

Budget: EUR 16 382 874,25

The EC Flight Path 2050 vision aims to achieve the highest levels of safety to ensure that passengers and freight as well as the air transport system and its infrastructure are protected. However, trends in safety performance over the last decade indicate that the ACARE Vision 2020 safety goal of an 80% reduction of the accident rate is not being achieved. A stronger focus on safety is required. There is a need to start a Joint Research Programme (JRP) on Aviation Safety, aiming for Coordinated Safety Research as well as Safety Research Coordination. The proposed JRP Safety, established under coordination of EREA, is built on European safety priorities, around four main themes with each theme consisting of a small set of projects.

Participants - 31

Participant from Russia: FEDERAL STATE UNITARY ENTERPRISE THE CENTRAL AEROHYDRODYNAMIC INSTITUTE NAMED AFTER PROF. N.E. ZHUKOVSKY

Horizon 2020: projects with Russian participation

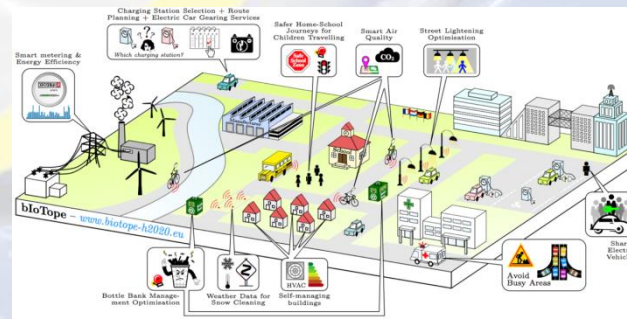
8. bIoTope (2016-01-01 to 2018-12-31): *Building an IoT Open innovation Ecosystem for connected smart objects*

Budget: EUR 9 429 160

bIoTope (Building an IoT OPen innovation Ecosystem for connected smart objects) is a RIA (Research and Innovation action) project funded by the Horizon 2020 programme, Call ICT30: Internet of Things and Platforms for Connected Smart Objects. bIoTope lays the foundation for open innovation ecosystems, where companies can – with minimal investment – innovate by creating new Systems-of-Systems (SoS) platforms for connected smart objects. To achieve this goal, bIoTope provides the necessary standardised Open APIs to enable the publication, consumption and composition of heterogeneous information sources and services from across various platforms, including FI-WARE, OpenIoT, city dashboards, etc. (visit the [OBJECTIVES](#) page). This will foster new forms of co-creation of services ranging from simple data collection, processing, to context-driven, intelligent and self-adaptive support of consumers' everyday work and life. bIoTope also establishes a governance roadmap for ecosystem orchestration to properly maintain, grow and sustain the socio-technical and business-wise bIoTope ecosystem.

Participants - 22

Participant from Russia: SAINT PETERSBURG NATIONAL RESEARCH UNIVERSITY OF INFORMATION TECHNOLOGIES, MECHANICS AND OPTICS



Horizon 2020: projects with Russian participation

9. CORONA II (2015-09-01 to 2018-08-31):

Enhancement of training capabilities in VVER technology through establishment of VVER training academy (CORONA II)

Budget: EUR 2 063 938,75

The main objective of the proposed CORONA II project is to enhance the safety of nuclear installations through further improvement of the training capabilities aimed at building up the necessary personnel competencies.

Specific objective of the proposed CORONA II project is to proceed with the development of state-of-the-art regional training center for VVER competence (which will be called CORONA Academy), whose pilot implementation through CORONA project (2011-2014) proved to be viable solution for supporting transnational mobility and lifelong learning amongst VVER operating countries. The project aims at continuation of the European cooperation and support in the area for preservation and further development of expertise in the nuclear field by improvement of higher education and training. This objective will be realized through networking between universities, research organisations, regulatory bodies, industry and any other organisations involved in the application of nuclear science, ionising radiation and nuclear safety.

Participants - 8

Participant from Russia: "NATIONAL RESEARCH NUCLEAR UNIVERSITY ""MEPhI"""

Horizon 2020: projects with Russian participation

10. AGILE (2015-06-01 to 2018-05-31): *Aircraft 3rd Generation MDO for Innovative Collaboration of Heterogeneous Teams of Experts*

Budget: EUR 8 965 932,29

AGILE targets multidisciplinary optimization using distributed analysis frameworks. The involvement of many disciplinary analyses ranging up to high levels of fidelity and agile workflow management are considered to be state-of-the-art and starting point for AGILE.

Advanced optimization techniques and strategies will be developed in order to exploit available computing systems and to gain faster convergence to optimal solutions. Surrogates, decomposition, robust design and uncertainties, global-local optimization, mixed fidelity optimization and system-of-system optimization are central fields of research.

Participants - 19

Participant from Russia: FEDERAL STATE UNITARY ENTERPRISE THE CENTRAL AEROHYDRODYNAMIC INSTITUTE NAMED AFTER PROF. N.E. ZHUKOVSKY



Horizon 2020: projects with Russian participation

11. ASPIRE (2016-01-01 to 2017-12-31): Aerodynamic and acouStic for high-by-Pass ratio tuRbofan intEgration

Budget: EUR 3 406 735

The ASPIRE proposal, gathering DLR, NLR, ONERA and TsAGI, responds to the topic JTI-CS2-2014-CFP01-AIR-01-01 "Aerodynamic and acoustic capabilities developments for close coupling, high by-pass ratio turbofan Aircraft integration". The comprehensive experience of the partners working on innovative engine aircraft integration concepts both individually and in previous collaborative efforts motivated their common application.

The high level objectives of the ASPIRE proposal lead to improve and validate numerical and experimental capabilities to assess the aerodynamic and acoustic performance of innovative aircraft configurations equipped with ultra-high by-pass ratio turbofan (UHBR). For that purpose, the numerical activities will be performed on a reference configuration partially designed by the consortium (generic fan/OGV combination) and by the lead industrial partner (nacelle, pylon, wing). Cross-comparison of codes are foreseen in specific tasks to improve the reliability of tools and better understand the tremendous interactions between airframe and UHBR engines. The experimental activities aim at improving the efficiency of acoustic means during wind-tunnel and flight tests.

Participants - 4

Participant from Russia: FEDERAL STATE UNITARY ENTERPRISE THE CENTRAL AEROHYDRODYNAMIC INSTITUTE NAMED AFTER PROF. N.E. ZHUKOVSKY



Horizon 2020: projects with Russian participation

12. FASTNET (2015-10-01 to 2019-09-30): *FAST Nuclear Emergency Tools (FASTNET)*

Budget: EUR 4 573 905

When dealing with emergency, two issues with fully different time requirements and operational objectives, and thus different methods and tools, have to be considered: emergency preparedness and emergency response. This project will address both issues by combining the efforts of organizations active in these two areas to make already identified deterministic reference tools and methods a decisive step toward. In particular capabilities of these methods and tools will be extended to tackle main categories of accident scenarios in main types of operating or foreseen water-cooled NPPs in Europe, including Spent Fuel Pools.

Participants - 20

Participant from Russia: SCIENTIFIC AND ENGINEERING CENTRE FOR NUCLEAR AND RADIATION SAFETY

HORIZON 2020



Horizon 2020: projects with Russian participation

13. PROGRESS (2015-01-01 to 2017-12-31) - Prediction of Geospace Radiation Environment and solar wind parameters

Budget: € 2,358,230.5

The objective of the Project is to produce a set of forecast tools to accurately predict the occurrence and severity of space weather events.

Participants (8): U.K., Finland, France, Russia, Sweden, Ukraine, United States.

Participant from Russia: Skolkovo Institute of Science and Technology



Horizon 2020 Work Programme 2016-17: Open opportunities

- Budget of almost **€16 billion** for two years.
- Nearly **600 topics** covered.
- All research calls are **open** for Russian project partners.
- Please read the Work Programmes of the calls.
- Please apply
 - as project participant in a research consortium,
 - or for a mobility grant to the Marie Skłodowska-Curie programme,
 - or a grant from the European Research Council.

Useful links

- Horizon 2020 official webpage:
<http://ec.europa.eu/programmes/horizon2020/>
- Participant Portal:
<http://ec.europa.eu/research/participants/portal/>
- European Commission – Research & Innovation:
<http://ec.europa.eu/research/index.cfm>
- Delegation of the European Union to the Russian Federation:
<http://www.EUinRussia.ru>
Science & Technology section:
delegation-russia-science@eeas.europa.eu
- Ministry of Education & Science of the Russian Federation (for enquiries about the possibility of funding support):
horizon2020@mon.gov.ru
- EU-Russia Year of Science 2014:
<http://eu-russia-yearofscience.eu>
<http://godnauki-rossiya-ec.ru>

The background of the slide features a vibrant blue space-themed graphic. On the left, a transparent sphere containing a map of Europe is shown, with bright blue light rays emanating from it. The background is a deep blue space filled with stars and abstract, flowing blue lines that suggest a cosmic or technological theme.

HORIZON 2020

**Thank you
for your attention!**