Approved by
The Order No V-34 of the Chairman of the Research Council of Lithuania of 30 January 2024 (with amendments approved by the Order No V-555 of the Chairman of the Research Council of Lithuania of 9 December 2024 and by the Order No V-575 of the Chairman of the Research Council of Lithuania of 18 December 2025)

IMPACT-DRIVEN PROGRAMME "INFORMATION TECHNOLOGIES FOR THE DEVELOPMENT OF SCIENCE AND KNOWLEDGE SOCIETY"

CHAPTER I
GENERAL PROVISIONS

1. The impact-driven programme "Information Technologies for the Development of Science and Knowledge Society" (from now on – the Programme) determines the implementation of innovative scientific research that promotes the development of the knowledge society based on the science and study system, has a direct impact on progress in newly emerging topics and opens the way for new directions of scientific research.

2. The Programme directly contributes to:

2.1. Enhancing progress in implementation of Lithuania's Progress Strategy "Lithuania 2030", the implementation plan of the provisions of the 18th Government Programme, preparation and implementation of the Lithuanian Digital Decade Plan;

2.2. Implementing the European Commission's communication "2030 digital decade. Policy programme: a path to the digital decade", which defines the digital ambitions of the European Union until 2030, synergy with the EU digital technology funding programme "Digital Europe Programme";

2.3. Implementing the Sustainable Development Goals (SDGs) of the United Nations Sustainable Development Agenda: SDG 8 – decent work and economic growth, SDG 9 – industry, innovation and infrastructure, SDG 12 – responsible consumption and production.

3. The Programme aims to:

3.1. improve the quality of the scientific research system in the field of information technology in Lithuania, which has a long-term impact on the careers of researchers and quality of the training of graduate and doctoral students;

3.2. ensure interdisciplinary, interinstitutional, intersectoral and international cooperation, talent attraction;

3.3. strengthen mutual relations between research and study institutions, as well as relations with the public and/or private sectors, forming an institutional system for the development of competences;

3.4. promote the integrity of science and study in the field of information technology;

3.5. take into account the extremely wide application of information technologies, the scale and depth of the impact on the economy and society;

3.6. respond to the very high and urgent demand for information technology specialists in academia, public and private sector institutions.

CHAPTER II
PURPOSE, TASKS AND IMPLEMENTATION MEASURES OF THE PROGRAMME

4. The purpose of the Programme is the creation of an ecosystem of competencies in the newly emerging and/or rapidly developing scientific topics of information technology and quantum computing,

which will have a significant impact on both Lithuanian and global science, economy and society in the near future.

5. Programme tasks are:

5.1. to promote scientific research in the newly emerging and/or rapidly developing fields of information technology, the new solutions (results) of which can have a significant impact on the creation of advanced, transformative innovations, to promote the application of scientific research results and acquired competences, enhance interaction between public and private sectors and academia, and the development of science and knowledge society by strengthening communication between institutions, popularizing scientific activities and their achievements and results in the scientific community and society;

5.2. to promote research on quantum computing and application of their results in various research areas, while promoting the practical application of research results and acquired competences.

6. During the implementation of the Programme, the following activities will be carried out (activities and topics are specified in the Appendix of the Programme), which may be adjusted and updated when announcing the Programme's calls for projects:

6.1. The use of artificial intelligence research with high application potential for new scientific and technological results and new research directions;

6.2. Development of emerging and rapidly developing scientific research relevant to cyber security;

6.3. Applying next-generation Internet research for high-impact scientific and technological results;

6.4. Development of research relevant to the application of emerging and rapidly developing quantum computing and technologies;

6.5. Development of scientific research in new areas of information technologies that appear during the implementation of the Programme and have great application potential.

7. The following measures may be applied when implementing the Programme:

7.1. Research funding that aims to support researchers and their research teams to:

7.1.1. encourage the creation and development of scientific research groups working on high-impact and at the same time high-risk research in the field of information technology;

7.1.2. help the researchers become independent and start assembling their future research groups;

7.1.3. help them to continue their scientific careers by developing new and advanced ideas;

7.1.4. engage the researchers in informatics, informatics engineering and other scientific fields in applied research that requires the application of the latest information technologies, helps to develop the skills of researchers, and improve competencies;

7.1.5. engage the students of computer science and other study areas in applied research that requires the application of the latest information technologies;

7.1.6. conduct interdisciplinary research that has a direct impact on advances in emerging areas of information technology.

7.2. Promotion of international cooperation aimed at:

7.2.1. integrity of science and study areas by attracting students to joint activities with the best Lithuanian and foreign researchers or postdoctoral trainees from abroad during the implementation of breakthrough projects;

7.2.2. support the international mobility of researchers;

7.2.3. attraction from abroad the high-level researchers working in fields of information technology science that are underdeveloped in Lithuania;

7.2.4. encouragement of cooperation between scientists and initiatives of international cooperation, as to attract the best researchers, and to enhance the exchange of knowledge.

8. Promoting international cooperation the following activities may be financed:

8.1. Internships of Lithuanian researchers in scientific or business institutions of foreign countries;

8.2. Internships of researchers from foreign countries in Lithuanian research and study institutions;

8.3. Recruitment of high-level scientists from foreign countries in Lithuanian research and study institutions;

8.4. Recruitment of researchers from foreign countries or postdoctoral trainees to research groups in Lithuanian research and study institutions;

8.5. Participation in international conferences;

8.6. Organization of international conferences.

9. During the implementation of the Programme projects, additional funding may be allocated to meet the newly emerging needs for the implementation of applied scientific research or the distribution of their results, which could not have been foreseen when applying:

9.1. External research infrastructure and computing resources;

9.2. Recruitment of students and doctoral students;

9.3. Admission of new doctoral students in the field of information and quantum technologies;

9.4. International cooperation activities specified in Section 8 of the Programme.

10. The conditions of additional financing are determined in the special requirements of the calls for projects published under the Programme.

11. Main evaluation criteria for Programme project proposals:

11.1. The novelty of scientific research, the relevance of the problem to society, and the viability of the application of obtained results for advanced, transformative innovations;

11.2. Feasibility of the project, planned results of the project, competence-based participation of researchers in the project (in interdisciplinary projects - also the involvement of researchers from other research fields) to achieve strategic goals and the ability to manage risks, develop interaction with project partners;

11.3. Impact of the scientific results of the project: the perspective and expected continuity of the scientific research results, the dissemination of the project results to the scientific community and the general public;

11.4. Integrity of research and studies, by attracting students to contribute to scientific research activities (having a clearly defined role in the project, developing competencies and accumulating their first experience of conducting scientific research).

CHAPTER III
EXPECTED RESULTS, POSSIBILITIES OF THEIR USE

12. It is expected that during the Programme execution period:

12.1. The number of researchers working in relevant fields of information and quantum technologies will increase significantly, and talents from Lithuania and abroad will be attracted to these fields;

12.2. The level of competences of researchers working in relevant fields of science and application of information and quantum technologies will increase;

12.3. The number of masters and doctors of science with work experience in relevant fields of information and quantum technologies will increase;

12.4. Innovative solutions based on the application of the latest information or quantum technologies will be proposed in the fields of science and technology for the public and private sectors.

CHAPTER IV
MAIN TARGET INDICATORS AND EVALUATION CRITERIA

13. Programme implementation evaluation criteria:

13.1. Innovative solutions based on the application of the latest information technologies and quantum technologies;

13.2. Research groups, including interdisciplinary ones, working in relevant fields of science and application of information technology and quantum technology;

13.3. Researchers working in relevant fields of science and application of information technology and quantum technology;

13.4. Innovative topics for students' final theses proposed based on scientific research, and master's theses defended;

13.5. PhD dissertations defended and under preparation;

13.6. Students with research experience;

13.7. Presentations at prestigious scientific conferences;

13.8. Scientific articles in prestigious journals;

13.9. Internships of Lithuanian scientists in foreign countries;

13.10. Internships of foreign scientists in Lithuania;

13.11. Organized international conferences.

14. The main evaluation indicators of the Programme:

14.1. Funded research projects (units) – 50 units;

14.2. Offered innovative solutions (units) in various fields of application of information technologies – 50 units;

14.3. Employed scientists (persons) who worked on the Programme project for at least 960 hours – 100 scientists;

14.4. Employed students (persons) who worked on the Programme project for at least 960 hours – 200 students;

14.5. Researchers from foreign countries were employed in Lithuanian research and study institutions, measuring the hours worked in the Programme projects – 20,000 hours.

CHAPTER V
FINAL PROVISIONS

15. The beginning of the implementation of the Programme – 2024, the end – 2028.

16. To implement the Programme in 2024-2028 it is planned to allocate 18.0 million euros. Preliminary distribution of funds for the year: 2024 – 0.8 million euros, 2025 – 4.5 million euros, 2026 – 5.7 million euros, 2027 – 4.5 million euros and 2028 – 2.5 million euros.

17. Monitoring of Programme implementation will be carried out annually.

18. The Programme’s projects can be financed with additional funds from public national, EU or private sources.

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APPENDIX
of the impact-driven programme
"Information technologies for the
development of science and knowledge
society"

TOPICS OF ACTIVITIES PROVIDED FOR THE IMPLEMENTATION OF THE TASKS OF THE IMPACT-DRIVEN PROGRAMME "INFORMATION TECHNOLOGY FOR THE DEVELOPMENT OF SCIENCE AND KNOWLEDGE SOCIETY"

Programme task	**Activities and topics**
1. To promote scientific research in the newly emerging and/or rapidly developing fields of information technology, the new solutions (results) of which can have a significant impact on the creation of advanced, transformative innovations, to promote the application of scientific research results and acquired competences, enhance interaction between public and private sectors and academia, and the development of science and knowledge society by strengthening communication between institutions, popularizing scientific activities and their achievements and results in the scientific community and society;	1.1. Artificial intelligence research with high application potential for new scientific and technological results and new research directions: 1.1.1. Adaptation of generative and large base models to solve specific tasks; 1.1.2. Generating datasets and improving their quality; 1.1.3. Machine learning for spatial and other irregularly structured data; 1.1.4. Machine learning using distributed computing resources; 1.1.5. Explanatory machine learning and quantitative assessment of reliability of results; 1.1.6. Development and application of parallel computing methods; 1.1.7. Development and application of multimodal data fusion methods for improving deep learning models using semi-supervised learning strategies. 1.2. Development of emerging and rapidly developing research relevant to cyber security: 1.2.1. Generating datasets to improve information security; 1.2.2. Security of critical infrastructures; 1.2.3. Monitoring of digital space, automated analysis and detection of unauthorized use; 1.2.4. Detection of threats in social networks; 1.2.5. Security of systems based on artificial intelligence; 1.2.6. Post-quantum cryptography; 1.3. Applying next-generation Internet research for high-impact scientific and technological results: 1.3.1. Reliable and energy-saving advanced networks and service infrastructure technologies and systems; 1.3.2. 5G technology applied research; 1.3.3. Software-based infrastructures; 1.3.4. Internet of Things; 1.3.5. Cloud infrastructures and smart clouds; 1.3.6. Applications and services based on transparent access language and personalized access to objects, information and content, including social networks;

Programme task	**Activities and topics**
	1.3.7. Development of Web3 and decentralized technologies. 1.4. Development of scientific research in new areas of information technologies that appear during the implementation of the programme and have great application potential: 1.4.1. New quantum algorithms.
2. To promote research on quantum computing and the application of their results in various research areas, while promoting the practical application of research results and acquired competencies.	2.1. Development of research relevant to the application of emerging and rapidly developing quantum computing and technologies: 2.1.1. Simulators of quantum computers; 2.1.2. Quantum sensors; 2.1.3. Quantum communication; 2.1.4. The use of quantum computing in various areas relevant to business and society.