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GUIDE

TO THE SYSTEM OF PUBLIC SUPPORT FOR RESEARCH, DEVELOPMENT AND INNOVATION IN THE CZECH REPUBLIC IN 2016

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FOREWORD

ČSNMT

The mission of the Czech Society for New Materials and Technologies (CSNMT), which was founded in 1993, is to help its members develop their creative abilities and expertise, to advance the science, engineering, and manufacturing applications of new materials and technologies, and to promote international cooperation. CSNMT believes that research, development and innovation belong to fundamental prerequisites for maintaining the competitiveness and fostering the development of the society and national economy. We owe our thanks for the inception of this guide – which provides a helpful and comprehensive overview of the system of public support for research and development – to our dear and wise friend, Dr. Tasilo Prnka, one of the founders of CSNMT, its first president, and the initiator of a majority of its efforts. The Managing Committee of CSNMT has decided to launch this publication series, which will continue to remind us of his legacy.

COMTES FHT

The mission of the company COMTES FHT is to strengthen the competitiveness of European manufacturing companies by supporting the development, innovation and implementation of state-of-the-art processes and products. COMTES FHT continues to seek new challenges, new areas and new applications to be developed and put into practice for the benefit of industry. This effort is evidenced by the company's first prize in the category of small and medium enterprises in the Best Innovator 2012 contest. Back in 2000, Mr. Libor Kraus, with several work colleagues, took a risk and founded COMTES FHT, a private company aimed to carry out research into metallic materials and forming and heat treatment processes. Over the years, the start-up based in a rented flat and run by a handful of enthusiasts has become a leading research institute whose modern facilities compare with advanced European laboratories. One of its recent major accomplishments is the completion of a project under the Research and Development for Innovation Operational Programme (RDIOP) entitled "West-Bohemian Centre of Materials and Metallurgy". In this project, a two-storey building has been erected on the company's grounds, housing laboratories for metallographic analysis, computer modelling and design, and a unique metallurgical laboratory has been set up. COMTES FHT has thus entered a new phase, with an opportunity to demonstrate its vision to a much wider audience by supporting research and development, not only in the Czech Republic but across the globe.

HISTORY OF THE GUIDE

In 1999, the Czech Society for New Materials and Technologies published the first Guide to the System of State Aid for Research and Development in the Czech Republic – 1999. This was the first time when detailed information on the programmes of state aid for research and development in the Czech Republic and on the support of international cooperation in research and development was compiled in a single booklet. After this first edition had been very well received, its later versions have continued to be published for sixteen years, eventually under the title “Guide to the System of Public Support for Research and Development in the Czech Republic”. The Guide is updated every year to provide the most recent information and to reflect the current situation in research and development.

As the CSNMT shares its ideals with COMTES FHT, this year they decided to join efforts in publishing the Guide. Both organisations believe that it will become a useful aid for not only the applicants for research and development funding but also for others interested in this field.

Doc. Ing. Karel Šperlink, CSc., FEng.
President of the CSNMT

Ing. Libor Kraus
Chairman of the Board of COMTES FHT

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INTRODUCTION

The “Guide to the System of Public Support for Research and Development in the Czech Republic – 2016” is the eighteenth publication in the series that has been published continuously since 1999. This year’s Guide has the same ambition as the very first one: to inform professionals as well as the general public about the options and ways of obtaining funding from support programmes for research and development, and to give a summary of recent developments in this field. The underlying motivation for this effort is the simple fact that the research and development landscape constantly evolves.

The first edition with 202 pages was published in 1999 in 1,000 copies. It was the first publication to provide comprehensive information on research and development in the Czech Republic from the perspective of international support as well as state aid. At that time, the ministries and offices which act as budget agencies in the Czech Republic differed greatly in their views of the government funding for research and development. Horizontal coordination of relevant programmes was practically absent, as was any integrated national research and development policy.

Since then, the system of research and development underwent many changes. In 2000, the first National Research and Development Policy was formulated. In 2002, the Support of Research and Development Act No. 130/2002 Sb. entered into effect and became crucial for shaping the future of Czech research and development. In 2007, as the new version of the National Research and Development Policy was being prepared, deficiencies in the public support of R&D were identified of such proportions that they led to what became known as the Reform of the Research, Development and Innovation System. The Reform has transformed the management of research and development and innovation (RDI) at all levels, including the state administration, and changed the course of and upgraded the standards for Czech research and development. In 2009, the amended Act No. 130/2002 Sb. came into effect. In 2012, the government adopted newly-formulated RDI Priorities, a document that identified research and development areas of key importance to the Czech Republic. In 2013, the Update to the National Research and Development and Innovation Policy (Update to NRDIP) and the Implementation of RDI Priorities were approved. In 2014, the Partnership Agreement between the Czech Republic and the EU for the 2014–2020 period was ratified. The same year, the European Commission adopted two important legal rules, the new Regulation No. 651/2014 and the new Framework for State Aid for Research, Development and Innovation.

As all these rules and documents have had and continue to have a profound impact on R&D in the Czech Republic, each of them led to updates to and expansion of the Guide in order to reflect the changes.

As with previous editions, this year’s Guide has been compiled using publicly accessible data and resources, and documents provided by the Research and Development Council and the budget agencies (public funding providers).

The 2016 Guide adheres to the structure adopted in previous editions. 2015 was the last year in which the funding for the 2007–2013 programme period was provided under Operational Programmes co-funded by the EU. Therefore, this Guide also gives an outline of the current programme period and lists the headings and operational programmes which will support research, development and innovation in the coming years. First calls for proposals in these programmes were launched in the second half of 2015. Getting an objective picture of their merit will therefore take some time.

As this booklet reports on the state of affairs as of February 2016, some information may become outdated even in the same year.

1. THE SYSTEM OF RESEARCH, DEVELOPMENT AND INNOVATION IN 2015

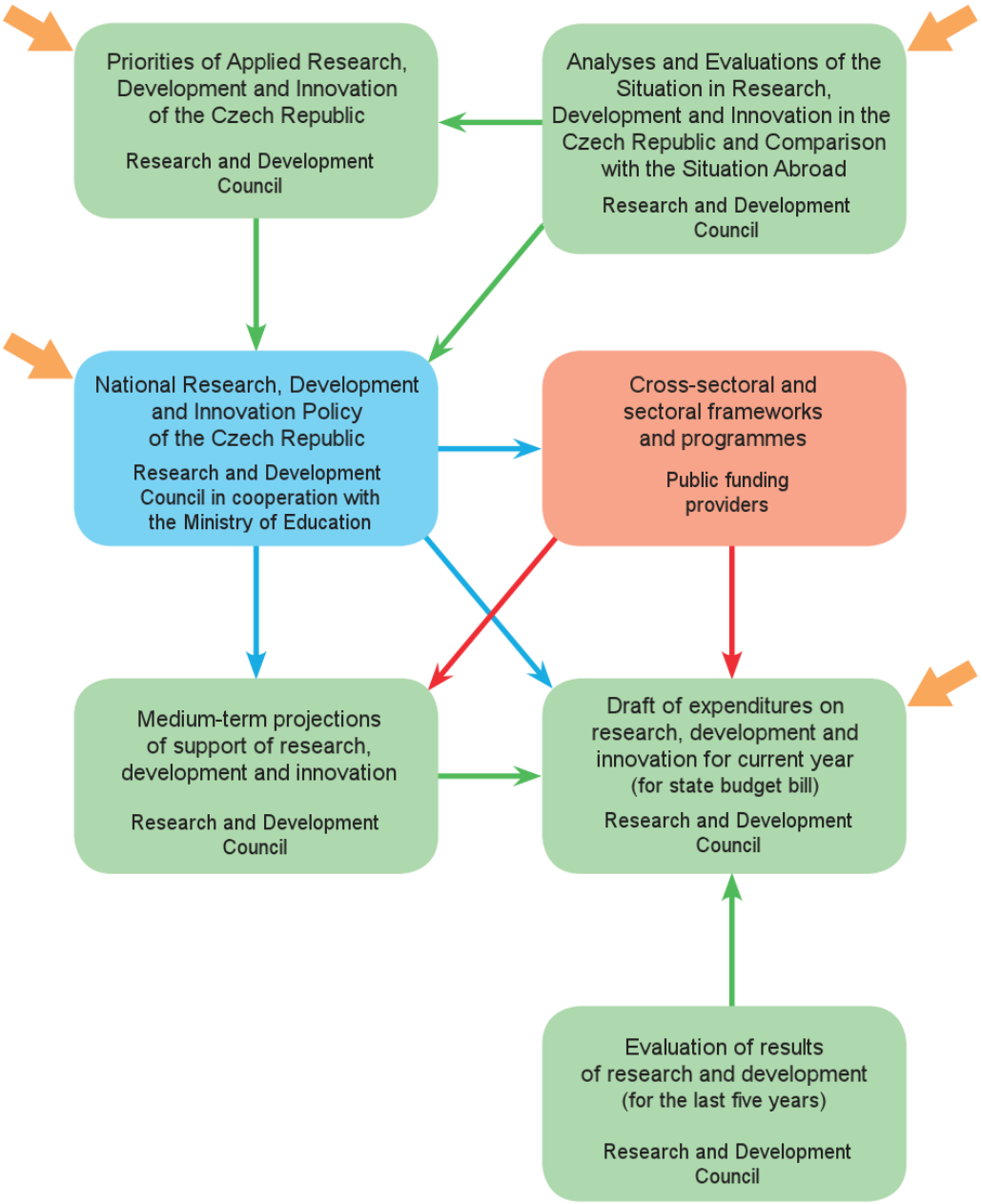
Today's system of research, experimental development and innovation (RDI) in the Czech Republic (CR) can be characterised from various perspectives, for instance through its fundamental framework documents. These documents mainly concern the part of RDI funded by the government or, more precisely, funded from all public sources, such as the state budget, EU, and other public sources, including regional and municipal administrations. Since financing from multiple sources is a common practice, the publicly-funded RDI activities are closely linked to all other RDI efforts, whether those receive funding from domestic private sources or from abroad. A significant portion of non-public funded RDI also benefits from some form of state support, e.g. through tax incentives (deduction of research and development expenditures from the income tax base).

The system of support for RDI is described below in terms of seven aspects:

1. Conceptual and strategic (the Update to the National Research, Development and Innovation Policy of the Czech Republic)
2. Thematic focus (the Priorities of Oriented RDI)
3. Legislative (the Support of Research and Development Act No. 130/2002 Sb., as amended, and the Framework for State Aid for RDI)
4. Financial (state budget for RDI, deduction of RDI expenditures, and other measures)
5. Assessment (Evaluation of Research Organisations and others),
6. Information (the RDI Information System)
7. Analytical (e.g. the Analysis of the Situation in Research, Development and Innovation in the Czech Republic and Comparison with the Situation Abroad)

The relationships among the main documents in the RDI system are outlined in Figure 1. Major roles in the system are played by the Research and Development Council (R&DC) and the Ministry of Education, Youth and Sports (MEYS). In terms of the actual RDI funding, the key actors are ten ministries, i.e. public funding providers.

Figure 1: Schematic of the RDI framework (links between documents)



1.1 National Research, Development and Innovation Policies of the Czech Republic

The National Research, Development and Innovation Policy of the Czech Republic is a document which is approved at the government level. It outlines the main goals of the funding to be provided, the thematic focus, gives estimates of RDI spending from the state budget, the EU funds and private sources, and describes the priorities of applied research, development and innovation, and the measures for their implementation. It is a fundamental document that defines the orientation of the entire system for the next period.

Since 1994, there have been a number of predecessors to the current version of the policy. The following are a few examples from the recent period (after 2004):

- The National Research and Development Policy of the Czech Republic for 2004–2008
- The National Innovation Policy of the Czech Republic for 2005–2010
- Harmonization of the National Research and Development Policy of the Czech Republic for the period from 2004 to 2008 with the National Innovation Policy of the Czech Republic and other relevant Czech and EU documents
- The National Research, Development and Innovation Policy of the Czech Republic for 2009–2015
- The Update to the National Research, Development and Innovation Policy of the Czech Republic for 2009–2015 and Projection until 2020 (2013 Update to NRDIP)
- The National Research, Development and Innovation Policy of the Czech Republic for 2016–2020

The drafting process for the new policy in 2007 revealed problems and shortcomings in the existing system of public support for R&D of such gravity that profound changes to the entire system were necessary. In response, the R&D Council drafted the Reform of the Research, Development and Innovation System.

The Reform brought these fundamental changes:

1. In order to facilitate coordination and minimize the overlap of responsibilities, the number of public funding providers was considerably reduced (from 22 to 11).
2. The institutional funding, which is intended to foster the development of research organisations, is no longer allocated on the basis of assessment of general large research projects (known as “research plans”) but either on the basis of a comprehensive evaluation of the results produced by research organisations or based on an evaluation carried out by the public funding provider (the Academy of Sciences of the Czech Republic).
3. A significant portion of the responsibility for the specific-purpose funding for R&D was transferred from ministries and government offices to agencies: the Czech Science Foundation (GA CR) and the Technology Agency of the Czech Republic (TA CR); the latter was established by an amendment to Act No. 130/2002 Sb.
4. However, the ministries retained responsibilities for supporting four cross-sectoral and three sectoral areas.
5. Each of the four cross-sectoral areas is supported as a whole: International Collaboration in R&D (MEYS), Security R&D (Ministry of the Interior), Applied R&D of National and Cultural Identity (Ministry of Culture), and Support of Large R&D Infrastructures (MEYS).
6. The specifics of the three sectoral areas make it impossible for the TA CR to provide effective support like in other sectoral R&D fields. These areas are therefore supported through their respective ministries: Applied Agricultural R&D (Ministry of Agriculture), Applied Defence R&D (Ministry of Defence), and Applied Healthcare R&D (Ministry of Health).
7. Conditions and rules have been defined for establishing centres of excellence and for creating large infrastructures for R&D.

8. Principles were set out for RDI funding provided from the EU funds until 2013 (or 2015) under the following operational programmes: Research and Development for Innovation (RDIOP), Entrepreneurship and Innovation (EIOP), Education for Competitiveness (ECOP), Prague – Competitiveness, and Prague – Adaptability.

1.1.1 National Research, Development and Innovation Policy of the CR for 2009–2015

The Reform was approved by the government on 26 March 2008 and published as Government Resolution No. 287. The R&D Council was called on to partner with the MEYS, and to submit by 31 March 2009 a draft National Research, Development and Innovation Policy of the Czech Republic for 2009–2015.

This new policy drew on the following strategic studies carried out by the Technology Centre AS CR:

- Green Paper on Research, Development and Innovation in the Czech Republic
- White Paper on Research, Development and Innovation in the Czech Republic
- Blue Paper on Research, Development and Innovation in the Czech Republic

Other resources used for drafting the National Research, Development and Innovation Policy for 2009–2015 included materials of the EU and the Organisation for Economic Cooperation and Development (OECD). In the 2007–2013 budget period, the EU Cohesion Policy offered considerable potential for RDI in the Czech Republic. In accordance with the Lisbon Strategy, the new Cohesion Policy supported an increased use of Structural Funds and the Cohesion Fund for developing R&D capacities. In the 2007–2013 period (in some cases until 2015), an annual investment in RDI of approx. CZK 13 billion from EU funds was available to the Czech Republic under three operational programmes (RDIOP, EIOP, and ECOP).

The National Research, Development and Innovation Policy of the CR for 2009–2015 approved by Government Resolution No. 729 of 8 June 2009 comprised the actual policy document, as well as the Priorities of Applied Research, Development and Innovation 2009–2011, and five annexes.

The National RDI Policy consisted of six inter-related parts:

1. Background to the NRDIP
2. Main principles of the NRDIP
3. NRDIP objectives and activities
4. Main principles of the NRDIP after 2015 (background, financial aspects, international aspects, and regional aspects)
5. Demands and ramifications (demands on legislation, state budget, and other requirements for the economy, society, and the environment)
6. The Priorities of Applied Research, Development and Innovation of the CR for 2009–2011

The Policy was arranged into 35 specific measures to meet nine objectives (the administrator of each objective is listed in the parentheses):

1. Establish strategic management of RDI at all levels (R&DC) – 4 measures
2. Focus the public funding of R&D on the needs of sustainable development (R&DC) – 2 measures
3. Improve the efficiency of the system of public support of RDI (R&DC) – 5 measures
4. Apply the results of R&D to innovation and improve the public-private cooperation in RDI (Ministry of Industry and Trade (MIT), MEYS, and TA CR) – 10 measures
5. Strengthen the engagement of the Czech Republic in the international cooperation in RDI (MEYS, MIT, and AS CR) – 3 measures
6. Secure quality human resources for RDI (MEYS, MIT, and AS CR) – 3 measures

7. Create in the Czech Republic an environment which stimulates RDI (MEYS with MIT and AS CR) – 3 measures
8. Provide effective links to policies in other areas (R&DC) – 2 measures
9. Rigorously evaluate the RDI system (R&DC) – 3 measures

The document included the Priorities of Applied Research, Development and Innovation. The NRDIP and the Priorities of Applied Research, Development and Innovation are available at www.vyzkum.cz under the heading Documents / R&D&I Policy 2009-2015. In its National Reform Programme, the government committed to gradually increase the GDP share of public spending on RDI to eventually reach 1 % of GDP in 2020.

1.1.2 Update to the National Research, Development and Innovation Policy of the Czech Republic for 2009–2015 and Projections until 2020

The Research and Development Council (R&DC) began working on the Update to NRDIP in September 2010. Studies were developed for individual measures and their conclusions became inputs for updating the National RDI Policy. Analyses of the performance of NRDIP activities are available at www.vyzkum.cz.

Finally, R&DC proposed to update the NRDIP, to include projections until 2020, and to align its structure to similar documents of other EU Member States. The reason was that in 2014, while the NRDIP was still in effect, the new 2014–2020 programming period for the EU funds began, for which it was practical to have a national policy consistent with those of partner countries.

Another reason was the need for bringing the support for research, development and innovation in the Czech Republic in line with the capacity of the state budget. As the policy had been drawn up in 2008, the annual increase in the government spending on research was anticipated at 8 %. After 2010, however, the figure became much lower. The budget constraints and the economic outlook led to a review of the objectives to make the NRDIP financially viable.

The Update to the National Research, Development and Innovation Policy of the Czech Republic for 2009–2015 and Projections until 2020 (2013 Update to NRDIP) was approved by Government Resolution No. 294 from 24 April 2013. The same resolution required that the updated National Research, Development and Innovation Policy should be submitted to the government by 31 December 2015.

The 2013 Update to NRDIP was an umbrella document for relevant strategic and conceptual documents for the Czech Republic:

1. The Strategy of International Competitiveness of the Czech Republic for 2012–2020 specifies actions which should help the Czech Republic to join the twenty most competitive countries in the world
2. The National Innovation Strategy of the Czech Republic which aims to advance the national innovation system
3. The National Priorities of Oriented Research, Experimental Development and Innovation (National Priorities of Oriented RDI) which identify six priority areas for focusing the RDI in the Czech Republic in the period until 2030

The 2013 Update to NRDIP drew on the evaluation of the previous Policy. It was divided into the following four sections, each of which directly fulfilled the main objective: establishing favourable conditions for creating new knowledge and for its use in innovation.

1. High-Quality and High-Productivity Research System: this section comprises actions to be taken to secure quality human resources for RDI, and to create quality research

infrastructures, to improve the effectiveness of public funding of RDI, and to facilitate the engagement of the Czech Republic in international R&D cooperation.

2. Environment for Effective Knowledge Dissemination and Utilization: this aims to develop competencies for effective knowledge transfer between research organisations (RO) and innovating enterprises, to launch and efficiently use financial tools to promote knowledge transfer from research to practice, and to make use of new R&D findings in innovation.
3. Innovating Enterprises: this section deals with improving the innovation performance of enterprises, with the creation and efficient use of tools that promote innovation activities in companies, and with attracting direct foreign investment in research and innovation in the Czech Republic.
4. Stable, Effective and Strategically Managed RDI System: this section comprises measures aimed to improve the coordination or RDI management system, to strengthen the strategic approach to formulation and implementation of the RDI policy, and to boost the role of the Czech Republic in shaping the ERA.

The 2013 Update to NRDIP also covered several aspects to which the existing NRDIP had devoted limited space, such as innovation or the linking of educational, research and innovation activities together. Innovation was approached as an interactive process, wherein the interaction among the stakeholders in the RDI system, including the customers who are users of the resulting innovations, generates positive effects. The 2013 Update to NRDIP thus placed a greater emphasis on creating an environment and conditions for introducing innovations into the private and public sectors, and linking stakeholders together to encourage effective transfer of new knowledge and market stimuli.

Greater stress was laid on assessment which was incorporated, in various contexts and relations, into all the blocks of the 2013 Update to NRDIP, including the assessment of the impacts of the funded activities. The formative aspect of assessment was accentuated as well, i.e. adapting and updating the NRDIP and its specific tools in response to the assessment results. The 2013 Update to NRDIP attempted to provide for effective use of funds from national sources, as well as to make maximum use of financial sources from abroad, namely the tools and means of EU funds.

The 2013 Update to NRDIP comprised two chapters distinguished by the level of detail. The strategic chapter set out the Update's vision and objectives. The implementation chapter then listed concrete actions to be taken to meet these objectives, and the relevant performance criteria, deadlines and indicators. The choice of methods of implementation of individual measures was up to the bodies responsible for completing individual tasks.

1.1.3 The National Research, Development and Innovation Policy of the Czech Republic for 2016–2020

The National Research, Development and Innovation Policy of the Czech Republic for 2016–2020 (NRDIP 2016) aims to provide favourable conditions for creating new knowledge, promote its conversion into innovation, and contribute to fulfilment of the vision. NRDIP 2016 focuses on key needs and issues (and is therefore problem-oriented), such as the management of the RDI system, the public sector of RDI, collaboration between the private and public sectors of RDI, innovation in enterprises, and RDI focusing. The document sets strategic and specific objectives and defines relevant measures. Previous analyses have shown the crucial aspects: appropriate strategic management of the RDI policy, and efficient use of funds from the state budget and from European structural and investment funds.

One of the sources for formulating the NRDIP 2016 was the assessment of the success of the objectives and measures set out by the 2013 Update to NRDIP. It was carried out by the Technology Centre of the Academy of Sciences of the Czech Republic. The conclusions drawn from this assessment were included in the Policy. The findings were as follows:

- The system of management and funding of research, development and innovation is fragmented and its strategic orientation is inadequate. Coordination mechanisms are either lacking or ineffective, which hinders the collaboration between individual elements of the system.

- There has been general improvement in public research (research infrastructures and capacities, and publication quality). At the same time however, the public research sector remains isolated (on the international scale and from domestic industrial cooperation).
- There is inadequate output of applied results of research, inadequate knowledge transfer from public research to applications, and weak collaboration between research organisations and companies.
- The investment of enterprises in research and innovation is growing. In this respect, multinational corporations are the dominating players, whereas the sector of research and technology-oriented small and medium enterprises remains relatively underdeveloped.

NRDIP 2016 focuses on supporting applied research to meet the needs of the economy, and on advancing applied research for the needs of the central bodies of state administration, including the response to societal needs. Its objective is to orient the applied research in the Czech Republic towards sectoral needs in order to strengthen the country's competitiveness. The prerequisite for success is to define, albeit generally, the research needs of particular sectors of the national economy. NRDIP 2016 introduces a continuous process of monitoring and evaluating the material needs of enterprises and other users involved in applied research. Upon a broad discussion, these material needs will be incorporated into applied research programmes to meet demand by the private sector and other users. Another tool expected to contribute to effective management of research, development and innovation and to the support for applied research on national and regional levels is the National RIS3 Strategy. It aims to meaningfully channel the funding (from European, national and private sources) into relevant sectors to support innovation.

NRDIP 2016 therefore sets the following strategic goals:
Establishing a stable, effective, strategically-managed and financially viable system of research and innovation

- Creating a stable and high-quality sector of research organisations which are ready for and open to collaboration and knowledge sharing
- Setting up a system of cooperating enterprises, research organisations, public administration bodies and other stakeholders to provide new resources and knowledge for innovation
- Improving the innovation performance of enterprises in the Czech Republic by boosting research activities and introducing new technologies and procedures to improve the efficiency of business processes
- Strategically focusing the support for applied research on current and potential needs of enterprises and the society

Each of the strategic objectives is divided into specific objectives for which relevant measures are identified together with deadlines and responsible institutions.

The measures to support and fulfil the priorities of applied research will be closely linked to periodic updates to the Implementation Plan of the National RIS3 Strategy and the National Priorities of Oriented Research, Experimental Development and Innovation, and will be taken into account in the preparation of the research, development and innovation budget for the 2017–2019 period.

To implement and finance the measures set out in the NRDIP 2016, maximum use will be made of the European Structural & Investment Funds which are available to the Czech Republic in 2014–2020. The state budget for RDI will provide matching funding for other foreign sources, most notably the Horizon 2020 framework programme.

The NRDIP 2016 also covers gender equality and reconciliation of work and family life. The approval of the NRDIP 2016 will have a positive impact on gender equality and the business environment of the Czech Republic.

1.2 Priorities of oriented research, development and innovation

1.2.1 Long-Term Principal Research Directions

Until 2008, research and development priorities were referred to as “long-term principal research directions” (LTPRD). Despite all the effort, the LTPRD remained too broad, reflecting all scientific (research) disciplines in the Czech Republic (7 directions).
The LTPRD used a single framework in all seven thematic directions:

1. Sustainable development
2. Molecular biology
3. Energy resources
4. Materials research
5. Competitive engineering
6. Information society
7. Security research

1.2.2 Priorities of Applied Research, Development and Innovation of the Czech Republic for 2009–2011

In 2008, the LTPRD document was reviewed. It was updated again in 2009, renamed as the Priorities of Applied Research, Development and Innovation of the Czech Republic for 2009–2011, and incorporated into the National Research, Development and Innovation Policy of the Czech Republic for 2009–2015. Due to requests for adding even more topics, the priorities failed to focus on those directions of research, development and innovation whose outcomes could be decisive for economic competitiveness and societal development. A majority of developed countries focus on between 3 and 5 priorities. By contrast, the Priorities of Applied Research, Development and Innovation of the Czech Republic for 2009–2011 had 8 priorities:

1. Biological and environmental aspects of sustainable development
2. Molecular biology and biotechnology
3. Energy resources
4. Materials research
5. Competitive engineering
6. Information society
7. Security and defence
8. Priorities of development of the Czech society

1.2.3 National Priorities of Oriented Research, Experimental Development and Innovation

The Priorities of Applied Research, Development and Innovation of the Czech Republic for 2009–2011 were formulated in a very general and all-encompassing manner. They lacked adequate focus on the needs of the society, namely the societal and economic development of the country. The insufficient concentration of public resources on relevant areas led to underfunding of certain important research directions capable of delivering breakthrough discoveries in oriented research and applied research solutions for enhancing the competitiveness of the Czech Republic and meeting the needs of societal

development. Although the RDI programmes that provided the specific-purpose funding frequently referred to the existing research directions, the actual connection was all too often just formal.

The Priorities of Applied Research, Development and Innovation of the Czech Republic for 2009–2011 were substituted with new National Priorities of Oriented Research, Experimental Development and Innovation (RDI Priorities), approved by Government Resolution No. 552 of 19 July 2012.

The RDI Priorities were stipulated as a definite and concrete matter of state and public interest which combined long-term objectives with multidisciplinary orientation, was relevant and desirable across the society, and achievable in the long term through RDI activities using the country's available material and human resources. The application of the new RDI Priorities was expected to facilitate the effective use of public resources for specific-purpose funding of RDI, and therefore to better meet the key needs of the development of the Czech society. The most important contribution and purpose of the RDI Priorities was the strategic re-orientation of a portion of national RDI efforts (mainly in applied research and development but also in basic research) towards areas which help to address the Czech Republic's challenges of today and the foreseeable future, and to exploit potential opportunities for the country's balanced development.

The Implementation of RDI Priorities was approved by Government Resolution no. 569 from 31 July 2013. The RDI Priorities cover the period until 2030 and are included in the Update to NRDIP. The Implementation of RDI Priorities requires that they are reflected in the newly-prepared RDI programmes for specific-purpose funding and in the response to the 2014–2020 period of EU Structural Funds.

At present, there are six Priorities which are further divided into areas, sub-areas and sub-objectives. Their complete version can be found at www.vyzkum.cz under the heading Dokumenty / Národní priority VaVaI / the "Národní priority VaVaI schválené vládou" button:

- Priority 1 – Competitive knowledge-based economy
- Priority 2 – Sustainable power industry and material resources
- Priority 3 – Environment for quality life
- Priority 4 – Social and cultural challenges
- Priority 5 – Healthy population
- Priority 6 – Secure society

The RDI Priorities build on not only the NRDIP objectives, but also the International Competitiveness Strategy 2 and the National Innovation Strategy 3, while reflecting the priority areas of the Horizon 2020 framework programme.

Although the RDI Priorities, i.e. the individual priority areas defined in response to fundamental societal challenges, were conceived in such a way as to avoid overlaps between them, it is understandable that some connections will exist between various priority areas and their objectives. The design of new RDI programmes aimed to meet these priority objectives must reflect those connections to ensure that the support is comprehensive. State budget spending on RDI was another consideration involved in preparing the RDI Priorities. As their name indicates, RDI Priorities were given priority in the plans of RDI spending for the relevant calendar year approved according to the State Budget Act.

Since the RDI Priorities (objectives) are to be implemented on a continuous basis until 2030 and the future RDI spending from the state budget is impossible to predict, the expenditures on individual RDI Priority areas were indicated for reference as shares of the total spending on all RDI Priorities. Another reason why exact amounts could not be specified is that the RDI Priorities are expected to be pursued not only through the specific-purpose funding for open-grant and programme projects but also through RDI activities funded from other sources (e.g. institutional funding of long-term systematic development of research organisations and for international cooperation). Some objectives may even be achieved as part of specific academic research. In addition, the available matching private funding for projects aimed at RDI Priorities was expected to vary among the priority areas.

1.2.4 Needs of sectoral research

Over the most recent two years, the Office of the Government of the Czech Republic (OG CR) has been working on initiating strategic dialogue with representatives of individual sectors of the national economy to facilitate effective use of the state budget and European funding for sectoral needs and for improving the competitiveness of the national economy. Sector platforms have been established under the auspices of the OG CR to identify the key obstacles that enterprises are facing in RDI, and to discuss their material needs in applied research. Members of these platforms are sector leaders in terms of private RDI investment and, at the same time, product manufacturers who therefore shape certain sectors of the national economy, or represent strategic and emerging sectors. In the NRDIP 2016, the ministries set out the following needs in applied research:

Ministry of Transport

- Sustainable transport
- Interoperable transport
- Safe transport
- Economic transport
- Intelligent transport
- Spatial data in transport

Ministry of the Environment

- Sustainable power generation and material resources
- Environment for quality life
    - Natural resources
    - Global changes (adaptation to climate change)
    - Sustainable development of landscape and human settlements
    - Environmentally-friendly society
- Social and cultural challenges
    - Governance and administration
    - Development and utilization of human potential
- Secure society

Ministry of Justice

- Evaluation research – evaluation of impacts of enacted laws and measures in criminal law policy (both prevention and sanctions)
- Specific problems
    - The youth
    - Monitoring
    - Recidivism
    - Specific types of crime
    - Miscellaneous
- International comparison

Ministry of Foreign Affairs

- Expert reports on foreign policy priorities
- Economic diplomacy
- Applied research into the conceptual framework of foreign policy
    - Foreign development and humanitarian aid collaboration
    - Support for human rights and cooperation on transformation
    - Reputation of the Czech Republic (public diplomacy, cultural diplomacy and branding)
- Territorial focus

Ministry of Regional Development

- Research and development in the fields of regional policies, tourism, area planning and housing policy
- Research and development for effective harmonization with European legislation under National Coordination Authorities

Ministry of Labour and Social Affairs

- Family policy research
- Social policy research
- Research into occupational safety and health protection
- Employment research
- Social insurance systems research
- Research into new societal challenges
- Research into internal processes of the sector

The existing RDI Priorities remain in force in this period but measure no. 25 of the NRDIP 2016 orders the Research, Development and Innovation Section of the OG CR, the co-administrator which is the Ministry of Industry and Trade, and other administration offices responsible for research and development in their areas of authority to “Develop and implement principles for identifying principal directions of applied research and preparing the related RDI programmes”. The first milestone under this measure is creation of implementation principles for identifying principal directions to be completed in 2016.

1.3 Legislation and legal regulations

The legal framework of the public support for RDI in the Czech Republic is provided by:

- Act No. 130/2002 Sb., on the support for research, experimental development and innovation from public funds and on changes to certain related acts (Support of Research and Development Act), as amended
- The implementing instrument for Act No. 130/2002 Sb. is Government Resolution No. 397/2009 Sb., on the research, experimental development and innovation information system
- Act No. 341/2005 Sb., on public research institutions, as amended
- Act No. 227/2006 Sb. on research on human embryonic stem cells and related activities and on changes to certain related acts, as amended
- Communication from the Commission: Framework for State Aid for Research, Development and Innovation (2014/C 198/01)
- Commission Regulation (EU) No. 651/2014 of 17 June 2014, declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty – General Block Exemption Regulation
- Act No. 586/1992 Sb., on income tax, as amended

All the above-mentioned and some other regulations are available in Czech at www.vyzkum.cz, under the heading Dokumenty, some of them in English on the English version of the site.

Act No. 130/2002 Sb., on the support for research, experimental development and innovation (Support of Research and Development Act) has been amended thirteen times. Responding to this scope of changes, the Prime Minister promulgated the full text of Act No. 130/2002 Sb. as Act No. 211/2009 Sb. However, even this full text is now outdated, as Act No. 130/2002 Sb. was again amended by Act No. 420/2011 Sb., on changes to certain acts in relation to the enactment of the Act on the criminal liability of legal entities and proceedings against them. The 24th part of Act No. 420/2011 Sb. amended the sections 7, 9 and 18 of the Support of Research and Development Act, and added the new section 14a concerning the qualifications of an applicant. Further changes were brought by Act No. 469/2011 Sb. which amended the Support of Research and Development Act by altering the time limits for proposal submission and evaluation. The most recent amendments to the Support of Research and Development Act arose from Act No. 469/2013 Sb., concerning the bodies of the Czech Science Foundation and the Technology Agency of the Czech Republic.

In 2015, the R&D Council formulated the substance of a new bill on the support for research, development and innovation, which was intended to supersede Act No. 130/2002 Sb. in the future. The Council approved the proposal in its 307th session on 4 September 2015 and for circulation for comments from the ministries (it is available in Czech only at www.vyzkum.cz in the section RVVI / Zasedání). Due to the number of fundamental comments received, the Council was still dealing with them at the time of this booklet's deadline, preparing the proposal for submission to the government.

The implementing instrument for Act No. 130/2002 Sb. is Government Resolution No. 397/2009 Sb., on the research, experimental development and innovation information system, which identifies the data relevant to individual parts of the information system.

Act No. 341/2005 Sb., on public research institutions, as amended, has transformed a majority of the RDI institutions funded by contributions from the state budget to new legal entities. This act has been amended eight times. It provides for the following:

a) The method of establishment, entry in the register, operation, methods of dissolution, and deletion from the register of public research institutions
b) The positions and competences of the establishing entities, and of bodies of public research institutions

c) The transformation of research institutions funded by contributions from the state budget to public research institutions

Act No. 227/2006 Sb., on research on human embryonic stem cells, allows research on these cells to be conducted under transparent conditions. It also addresses importing and exporting embryonic stem cells and prohibits the export of embryos for research purposes. It has been amended six times.

On 27 June 2014, the European Commission issued a new Framework for State Aid for Research, Development and Innovation (2014/C 198/01) (Framework) which superseded the Community Framework for State Aid for Research, Development and Innovation (2006/C 323/01). The Framework governs the aid rate for projects in basic research, applied research and experimental development, the rules for aid for feasibility studies, for the costs of industrial property rights, the aid for process and organisational innovation, innovation in services, highly qualified personnel, innovation clusters, and other aspects.

In 2014, the European Commission issued the Regulation (EU) No. 651/2014 of 17 June 2014, declaring certain categories of aid compatible with the internal market in accordance with Articles 107 and 108 of the Treaty – General Block Exemption Regulation (GBER). This Commission Regulation superseded the Commission Regulation (EC) No. 800/2008 which declared certain categories of aid compatible with the internal market in accordance with Articles 107 and 108 of the Treaty (the earlier General Block Exemption Regulation). In research, development and innovation, this Commission Regulation permitted exemption from the notification requirement and, where applicable, shortening or omitting the notification proceedings altogether, provided that the conditions of the Framework and the GBER were met, although these requirements are normally mandatory for any form of state aid for research, development and innovation.

The GBER and the Framework led to several changes which were fundamental to research, development and innovation in the Czech Republic, namely:

1) New definitions of terms in the GBER (Article 2, points 83–98), and in the Framework (point 15, paragraphs a–jj):

- Instead of the term “applied research”, the term “industrial research” is used.
- “Applied research” is therefore now defined as “industrial research, experimental development or their combination”.
- For the term “project”, objectives were specified as mandatory elements, for whose achievement all activities, costs and requirements must be stated in order for the (anticipated) results to be assessed and compared to the objectives.
- For “research and knowledge-dissemination organisations” (research organisations – RO), the scope of non-economic activities was expanded to include knowledge transfer, whereas the interpretation of “education” was narrowed to public education.
- “Knowledge transfer” now comprises predominantly research collaboration, consultancy, licensing, spin-off creation, publication, and mobility.
- “Collaborative research” subject to effective collaboration (between ROs or between an RO and an undertaking under the conditions of point 28 of the Framework) is now expressly defined as a non-economic activity.
- “Contract research” (research on behalf of undertakings) – provision of services, equipment lease, and other activities are expressly defined as economic activities.
- There is a new definition of the term “research infrastructure” which only applies to equipment, resources and services for research.
- “Exclusive development” means the public procurement of research and development services.
- “Pre-commercial procurement” is now defined as sharing the results between the contracting entity or authority and the provider (e.g. prototypes, test series, and others).

2) Increased notification thresholds (Art. 4, point 1, paragraph i) of the GBER):

- Two-fold increase (current levels: EUR 40 million for fundamental research, EUR 20 million for industrial research, and EUR 15 million for experimental development).

3) Incentive effect (Art. 6, point. 2 of the GBER, points 62–65 of the Framework):

- Simplification – with small and medium enterprises (SMEs), an application for funding prior to commencing the work is sufficient (section 14, paragraph 3 of Act No. 218/2000 Sb., on budget rules, sets out the elements of such applications), whereas large enterprises may be required by the public funding provider to provide additional information.

4) Aid intensity (Art. 7 of the GBER, points 73–77, 89, and Annex II to the Framework):

- A ratio of total public funding and total approved costs of the project (i.e. not just the proportion of the specific-purpose funding), formerly "aid rate".
- The maximum basic aid intensity remains unchanged but the calculation method used for aid increase is modified slightly (for industrial research and experimental development in SMEs).

5) Cumulation of aid (Art. 8 of the GBER, points 83–93 of the Framework):

- Cumulation of aid is allowable from various R&D sources (including various projects and institutional funding for development of research organisations) and even from sources outside R&D (i.e. those governed by other Articles of the GBER).

6) Eligible costs (Art. 25, point 3 of the GBER, point 73a of the Annex I to the Framework):

- Specified mainly in terms of personnel costs (overhead costs should not include personnel costs directly related to the project).

7) Investment in research infrastructures (Art. 26, point 6 of the GBER):

- The aid intensity must not exceed 50 % of the eligible costs.

Research and development and its public funding are governed not only by the aforementioned rules but also by other related legislation which sets out limits for state intervention in competition (the Public Support Act No. 59/2000 Sb.), provides for public procurement, defines the status of state research organisations and the grant policy (Budget Rules Act No. 218/2000 Sb.), defines the status of the Academy of Sciences of the Czech Republic, establishes institutions of higher education, governs the rules of public administration information systems, and other matters. In addition, research and development are provided for by general legal rules for contractual relations, protection of industrial rights, provision of information, and auditing.

As of 1 January 2005, amendments to Act No. 586/1992 Sb., on income tax (Income Tax Act), introduced a deduction from the tax base equal to 100 % of expenses on R&D, i.e. approximately one quarter of the grant awarded to meet the total project costs.

Act No. 458/2011, which was due to take effect in 2015 as an amendment to this Income Tax Act, retained the support for R&D projects through the deduction of project costs from the income tax base (deduction of 100 % of costs) but introduced two key changes. Firstly, the deductible expenses can include those services for research and development projects which were provided by public higher education institutions or by research organisations. Secondly, the total deduction rate has been increased from 100 % to 110 % for expenses which increased over the previous period. The statutory measure of the Senate No. 344/2013 Sb., which was passed in response to the new Civil Code, altered the provisions regarding tax deductions for research and development, and brought the effective date of the above Act forward to 1 January 2014.

1.4 Budget for research, development and innovation

1.4.1 Draft budget preparation

The key player in preparing the initial draft of the budget for research, development and innovation is the Research and Development Council (R&DC). When it comes to the final draft, the decisive institutions are the Ministry of Finance, the government, and the Chamber of Deputies of the Czech Republic. Once the state budget is approved by the Chamber of Deputies, the Ministry of Finance allocates funds to individual budget agencies – the public funding providers.

The preparation of the draft budget has several stages (those described below apply to the RDI budget for 2017):

1. In November (2015), the R&D Council approved the R&DC Guideline for Drafting State Budget Expenditure of the Czech Republic for Research, Development and Innovation for 2017–2019 with Projections until 2021.
2. In December (2015) the R&DC proposed the total expenditures on research, development and innovation for individual budget headings and the amount of institutional expenditure on the development of research organisations for the coming year (2017).
3. In January (2016), budget agencies submitted detailed proposals of expenditures for the coming year (2017) and draft medium-term projections for the next two years (2018–2019).
4. In February (2016), the R&DC and budget agencies discussed these proposals. Subsequent steps (at the time of this booklet's deadline still waiting to be taken) will be defined by a Guideline for Budget Drafting and by general legal regulations.
5. At the end of April (2016) the R&DC is to approve the draft budget which will be submitted to the government of the Czech Republic.
6. By September (2016), the government-approved expenditure on research, development and innovation is to be incorporated by the Ministry of Finance into the (2017) state budget bill.
7. In September (2016) the government is to approve the (2017) state budget bill and present it to the Chamber of Deputies.
8. The Chamber of Deputies debates on the state budget bill for the coming year (2017) in the first reading. If it is approved at this stage, it is no longer possible to alter the overall expenditures and revenues. Then the bill is debated in the parliamentary committees, which is followed by second and third readings in December (2016). If the state budget bill of the Czech Republic for the coming year (2017) is not approved by the Chamber of Deputies, provisional budget rules begin to apply.

Once the budget is approved by the Chamber of Deputies, its items must be specified in detail within one month, after which relevant funds may be released to recipients. In the field of research, development and innovation, the release of funds is conditioned on meeting the requirements stipulated by Act No. 130/2002 Sb., as amended. The main ones concern the recipient's fulfilment of its 2016 obligations from the running projects, and entering relevant data about projects and other RDI activities into the RDI Information System.

For running projects, Act No. 130/2002 Sb. stipulates a maximum time limit for providing the funds as 60 days from the start of the calendar year. With new projects and other activities, the 60-day period starts on the effective date of the contract or the grant award decision. If the recipient is in default of its performance, the public funding provider is entitled to enter into a contract with the next-ranking applicant. If the public funding provider is in default, the recipient is entitled to a compensation corresponding to the planned project costs for the period of the default.

In recent years, this procedure was delayed and the draft state budget for RID was submitted to the government at the end of June or in July. In 2010 and 2011, the government did not approve the draft budget submitted by the R&D Council. Based on a proposal by the Ministry of Finance, the government then defined the total expenditures on R&D in September in its state budget bill of the Czech Republic

for the coming year. In 2012, the government approved the proposed RDI expenditures of the state budget for 2013 and the projections for 2014 and 2015 via its Resolution No. 458 of 26 June 2012. These expenditures were lower than those planned for 2012. However, in September 2012, the expenditures of the Academy of Sciences of the Czech Republic were increased in the course of the debate on the state budget bill for 2013. As a result, the total RDI expenditure of the 2013 state budget was CZK 26.1 billion, approximately CZK 0.5 billion lower than in the previous year.

In 2013, the budget preparation process was even lengthier. The RDI expenditure proposal for the 2014 state budget with projections for 2015 and 2016 was approved by Government Resolution No. 518 as late as 3 July 2013. There was an increase for this period (i.e. 2013–2016) of CZK 2.1 billion. However, this proposal was subsequently revoked and substituted with Government Resolution No. 729 of 25 September 2013, On the State Budget Bill of the Czech Republic for 2014, and the Proposals of Medium-Term Projections for the State Budget of the Czech Republic for 2015 and 2016 and on the Revocation of Government Resolution No. 518 of 3 July 2013 on the Proposal of RDI Expenditure of the State Budget of the Czech Republic for 2014 and the Projections for 2015 and 2016. As a result, the state budget expenditure on research, development and innovation for 2014 was approved at CZK 26.6 billion.

In 2014, the proposed state budget expenditure on research, development and innovation for 2015 was again approved only as part of the state budget bill of the Czech Republic for 2015 and the medium-term projections for 2016 and 2017, reaching CZK 26.9 billion.

In 2015, the RDI expenditure proposal for the state budget for 2016 was approved by Government Resolution No. 380 of 25 May 2015. The RDI expenditure for 2016 was thus increased to CZK 28.6 billion, with a reserve of additional CZK 0.5 billion. By this 0.5 billion, the RDI expenditure of the state budget for 2016 was increased to CZK 29.1 billion through Government Resolution No. 748 of 23 September 2015, On the State Budget Bill of the Czech Republic for 2016, and the Proposals of Medium-Term Projections for the State Budget of the Czech Republic for 2017 and 2018 and Medium-Term Expenditure Frameworks for 2017 and 2018.

At present, as the deadline of this 2016 Guide is approaching, discussions on the research, development and innovation budget for 2017, together with projections for 2017 and 2018, are still under way.

The preparation of the state budget for research, development and innovation for 2017 with projections for 2018 and 2019 is regulated by Government Resolution No. 1067 of 21 December 2015, Improving the Security and Long-Term Stability of the Research, Development and Innovation System after the End of the Programming Period of the European Structural & Investment Funds and on Preparation of the Draft Budget for Research, Experimental Development and Innovation for 2017 and the Medium-Term and Long-Term Projections until 2021. By this resolution, the government called on the Deputy Prime Minister Mr. Pavel Bělobrádek to present in collaboration with the Minister of Education a long-term projection for the research, development and innovation budget until 2021, and set out its fundamental parameters and principles.

1.4.2 Structure of the RDI budget

The public funding of research and development has two forms:

Specific-purpose funding for research projects and other activities. Specific-purpose funding is provided by budget agencies through subsidies to legal or natural persons or through increased expenditures on organisational units of the state, organisational units of regional self-government units or organisational units of ministries engaged in research and development, in the following forms:

- **"Open-grants"** for basic research, i.e. funding for projects proposed by natural or legal persons, where the recipients themselves determine the objectives and methods of investigation
- **"Programme funding"** for applied research, development and innovation projects which meet the objectives of programmes designed and launched by public funding providers. The programmes are designed and announced by budget agencies, reviewed by the Research and Development Council, and approved by the government. Some of them support "projects for state administration", for which the desired results are defined by the state administration itself. Since the sole user of those results is the state, the public tenders are announced in accordance with Act No. 137/2006 Sb.,
- **Funding of specific academic research**, which is defined as research carried out by students in accredited doctoral or Master's study programmes in direct relation to their education,
- **Funding of large infrastructures for research, development and innovation**, where individual projects are approved at the government level.

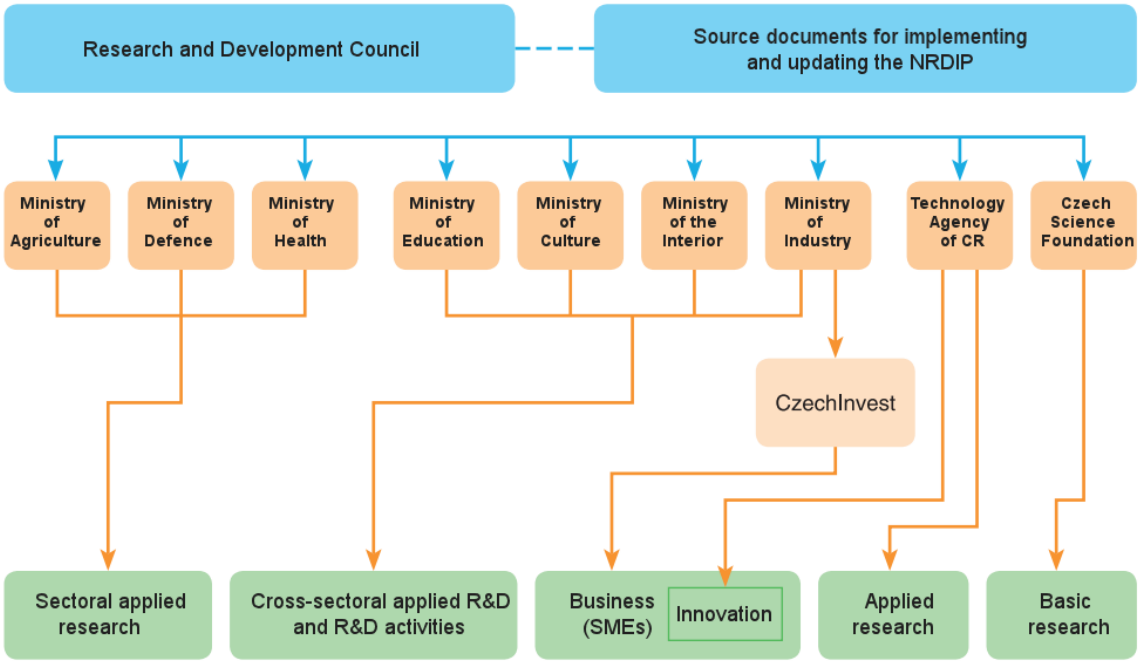
Institutional funding for research organisations and other activities:

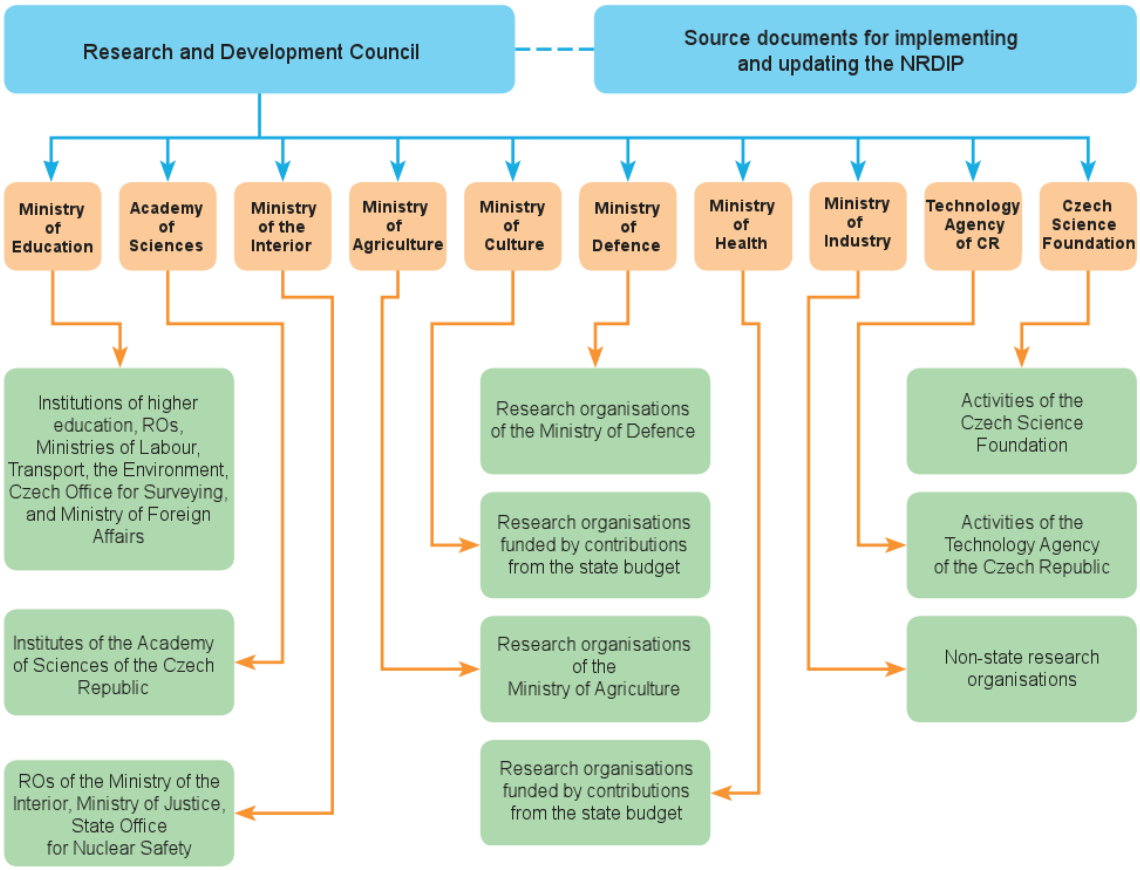
- **Long-term conceptual development of a research organisation** based on assessment of its results, and which, during the transition period (until the end of 2014), may be used for completing large research projects from the previous period (referred to as "research plans"),
- **International cooperation of the Czech Republic in research and development** on the basis of international agreements, which includes fees for the country's participation in international programmes and membership in organisations, as well as the funding of international collaboration projects where the projects are selected by the European Union or another international organisation (e.g. EU Framework Programmes),
- **Operational programmes in research, development and innovation**, or parts thereof, where the projects are selected through a competitive bidding process according to the GBER. The government expenditure on RDI is used for 15 % co-funding of three RDI-related operational programmes for which the European Commission provides the remaining 85 % of public funding. In previous years, this arrangement was used for the RDIOP (MEYS) and, in modified formats, for the ECOP (MEYS) and EIOP (MIT) programmes. These operational programmes ended in 2015 and were replaced by the Research, Development and Education Operational Programme (RDEOP) administered by the MEYS and the Enterprise and Innovation for Competitiveness Operational Programme (EICOP) administered by the Ministry of Industry and Trade of the Czech Republic (MIT).
- **Costs of the system of support for research, development and innovation**, namely the costs of public tenders and project evaluation, awards and other expenses, as well as the operating costs of the Research and Development Council, Czech Science Foundation, Technology Agency of the Czech Republic and the Academy of Sciences of the Czech Republic.

The institutional funding provided for large research projects known as "research plans" and, recently, the funding for development of research organisations, is governed by certain conditions. From 2007, it was the Community Framework. As of 2014, it is the Framework for State Aid for Research, Development and Innovation. The funding is available to research organisations, i.e. all public and private legal entities, which meet the provisions of Act No. 130/2002 Sb., as amended. In relation to research organisations, these provisions require the following:

- Their main purpose is to carry out basic research or applied research or applied development and they disseminate their results through teaching, publishing or technology transfer.
- Their profits are invested back in said activities.
- Preferential access to their research capacities or results is not available to entities engaged in economic activities consisting in offering goods or services, which could exert influence on the research organisation.

Fig. 2: Overview of specific-purpose and institutional funding of RDI





1.4.3 Identification of research organisations

The decision on whether an entity meets the definition of a research organisation is the responsibility of the public funding provider, in accordance with Articles 107 and 108 of the Treaty on the Functioning of the European Union. The Research and Development Council reviews the fulfilment of the conditions across all relevant organisations. On 30 January 2015, the Council published the List of Identified Research Organisations (reflecting the state as of 30 January 2015). This List is based on the new Framework for State Aid for Research, Development and Innovation. The List is updated on a continuous basis. Its most recent version was published by the R&D Council in December 2015 (available in Czech at www.vyzkum.cz / Dokumenty / Posuzování výzkumných organizací).

Act No. 130/2002 Sb. sets out the rules for the amount of institutional funding allocated to each provider's research organisations. The amount mainly depends on the results they had produced. In addition, these research organisations must be identified as such by the R&D Council. Competent public funding providers now have the authority to decide on providing institutional funding for the development of research organisations.

1.5 Evaluation of results produced by research organisations

The evaluation of results produced by the research organisations which receive public funding only started after the year 2000. Evaluations before then typically took the form of "self-evaluation", if performed at all. The National Innovation Policy of the Czech Republic for 2005–2010 therefore called on the R&D Council to develop and continuously improve the methodology of research evaluation.

A number of changes have been made since 2004, when the Methodology of Evaluation was drafted and used for the first time. The document, as well as the results of evaluations, is available in Czech at www.vyzkum.cz under the heading Hodnocení VaVaI.

The Methodology of Evaluation of Research Organisations and Results of Completed Programmes (for 2010 and 2011) did not differ significantly from the 2012 version. It provided for evaluating only those results which met the relevant definitions, the conditions for being entered in the Research, Development and Innovation Information System of the Czech Republic (RD&I IS), and which were actually entered in this system.

The 2012 Methodology had the following elements:

- No evaluation of the effectiveness of research organisations (ROs) was conducted.
- The evaluation of results only applied to those ROs which were eligible for institutional funding according to the rules approved by the R&D Council, and according to the current government-approved draft of state budget expenditure on RDI. Some ROs could have been added upon discussion on the draft budget for the coming year between the R&D Council and the public funding providers.
- The evaluation covered results applied in the previous five years, regardless of the funding source used for achieving them.
- In accordance with Act No. 130/2002 Sb., the evaluation also applied to new results which were entered in the Information Register of R&D Results (IRRDR) between 30 May of the previous year and 30 May of the year of evaluation, i.e. until 29 May 2012.
- In accordance with the mentioned Act, the evaluation of results of completed programmes included results which had already been evaluated as results of ROs but were also related to the relevant programme, and the results produced by other recipients under that programme which had been entered in the IRRDR within 250 days of the end of support.

The Methodology of Evaluation of Research Organisations and Results of Completed Programmes (for 2013–2015) was approved by Government Resolution No. 475 of 19 June 2013.

It relies on three interrelated pillars which brought about the following changes:

- **Pillar I: Subject-based evaluation of publications.** For each subject group, the methodology defines the relevant types of results and their maximum share of available points. This evaluation pillar comprises the so-called Subpillar I, which defines the peer review process and methods for selected types of results, e.g. books, chapters in books and articles in peer-reviewed journals without impact factor.
- **Pillar II: Evaluation of quality of short-listed results.** Its objective is to introduce a democratic principle, whereby each RO has the right to select and submit a limited number of results for expert evaluation. Within each subject group, an expert panel with a considerable share of foreign experts selects no more than 20 % of those results to be awarded a special bonus. In addition, a special excellence bonus will be awarded to those research organisations whose members succeed in obtaining project funding from the ERC (European Research Council).
- **Pillar III: Evaluation of patents and non-publication results of applied research.** As opposed to the previous practice where all non-publication results of research were awarded fixed numbers of points, this rule now only applies to patents. The point scores for all the other

results will depend on the amount of funding for applied research projects and on the volume of contract research.

In 2013, only Pillars I and III were used. Pillar II and the full version of Subpillar I were to be deployed in 2014. The purpose of the 2013 transition period and the stepwise launch of the other pillars was to allow research organisations to prepare for this methodology without disrupting data collection processes that were running.

The final outcomes of the 2013 evaluation of research organisations were delayed. They were published on 30 May 2014 on the website of the R&D Council.

The R&D Council approved the outcomes of the 2014 evaluation on 18 December 2015 and subsequently published them (in Czech at www.vyzkum.cz / Dokumenty / Posuzování výzkumných organizací).

In 2015 and 2016, the evaluation of research organisations should follow the updated Methodology of Evaluation of Research Organisations and Results of Completed Programmes. It is the one approved for 2013–2015, which was updated and extended for one more year, i.e. for 2016. The approval for this extension was given by the Research and Development Council on 29 May 2015. A new aspect will be the joint 2015-2016 evaluation, which should start in 2015 and finish by the end of 2016.

For a long time, the R&DC has been developing a new system for evaluating research organisations and their institutional funding. It draws on the outcomes of a project entitled “Effective System of Research Financing, Development and Innovation” carried out as part of the IPN scheme (Individual National Projects) under the Research and Development for Innovation Operational Programme (www.metodika.reformy-msmt.cz). The most recent relevant information on its progress available before this booklet’s deadline was Government Resolution No. 1067 of 21 December 2015. Its paragraph II.5 called on the Deputy Prime Minister Mr. Pavel Bělobrádek to update the system, upon which the National Sustainability Programme I would be gradually transformed.

1.6 The Research, Development and Innovation Information System

The Research, Development and Innovation Information System (RD&I IS) is a public administration information system for collecting, processing, disseminating and using data on publicly-funded research, development and innovation.

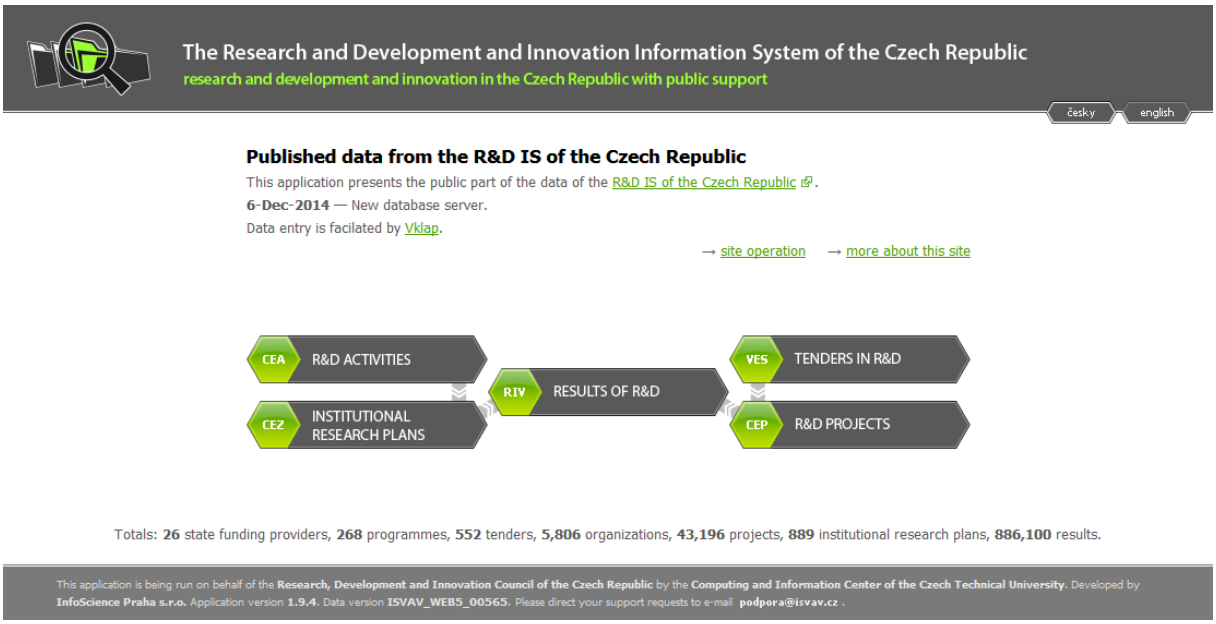
The purpose and the content of the RD&I IS, its users' rights and duties, and the procedure for submitting, entering, processing and disseminating the data are set out in the Support of Research and Development Act No. 130/2002 Sb., as amended, in Government Resolution No. 397/2009 Sb., on the research, experimental development and innovation information system, in special legal regulations, and in the Operating Rules of the RD&I IS.

The RD&I IS is administered by the Research and Development Council. Its operator is the Office of the Government of the Czech Republic.

The structure of the system is as follows (Czech acronyms are used as the names of registers):

- Central Register of Activities – CEA
- Central Register of Projects – CEP
- Central Register of Research Plans – CEZ
- Information Register of R&D Results – RIV
- Register of Public Tenders in Research, Experimental Development and Innovation – VES

Figure 3: Home page of The Research, Development and Innovation Information System



1.7 Analyses of the Situation in Research, Development and Innovation in the Czech Republic

The documents entitled “Analysis of the Situation in Research, Development and Innovation in the Czech Republic and Comparison with the Situation Abroad” (RDI Analyses) have been prepared on a regular basis since 1999. From 2003, it is the R&D Council which compiles and submits them to the government every year. They are then published in Czech and English versions on-line and in printed form. RDI Analyses do not contain any proposals to eliminate the weaknesses or promote the strengths identified. They are, however, used as source documents for preparing important conceptual and strategic documents which concern the field of RDI and the entire economy. The analyses have repeatedly found slight improvements in RDI inputs and outputs in the Czech Republic, but also reported that the country was significantly and continuously lagging behind developed countries.

RDI Analyses provided inputs for drafting the National R&D Policies and the National Innovation Policy for 2005–2010. Drawing on the RDI Analyses were also other general frameworks and strategies, such as the Economic Growth Strategy in 2005, and the National Strategic Reference Framework. The latter became the foundation for developing operational programmes. Under these programmes, EU funds were used for implementing the Cohesion Policy in the 2007–2013 budget period. RDI Analyses provided a background for preparing the Green and White Papers on Research, Development and Innovation in the Czech Republic, and provided substantiation for the proposal of the Reform of the Research, Development and Innovation System. They were among the source documents used for developing the NRDIP 2016.

The 2014 RDI Analysis, which was noted by the government on 30 September 2015, showed substantial differences to the earlier ones. First, it was not drawn up by an external partner but by the Section of the Deputy Prime Minister for Science, Research and Innovation. Second, it featured a new graphical design and a new structure, as it consisted of 10 chapters.

The chapters of the 2014 RDI Analysis were as follows:

1. Financial flows
2. Funding RDI from the state budget
3. RDI funding in the Czech Republic from European resources
   3.1. Strategic Framework of RDI funding from European Structural and Investment Funds
   3.2. The new Horizon 2020 framework programme
4. Human resources in research and development
5. RDI infrastructures
6. Results of research and development
   6.1. Types of results and time trends of their volumes
   6.2. Structure of results in terms of disciplines and its changes in time
   6.3. Quality of results and their international comparison
7. Innovation performance of the Czech economy and its international comparison
   7.1. Innovation performance based on basic indicators
   7.2. Innovation performance based on compound indicators
8. Sectors of national economy in relation to RDI
9. RDI data sources
10. Strategic recommendations

The 2014 RDI Analysis identified the following strengths and weaknesses of the R&D support system:

Strengths

- Completed infrastructure, such as: 8 new European centres of excellence, 40 regional research centres.
- Qualified human resources and traditionally strong academic background – of the more than 92,000 employees in the RDI system, over 55 % are researchers.

- The Czech Republic surpasses countries like Poland and Hungary but severely lags behind more advanced economies, such as Germany or Austria.
- Strong culture of publication activity (greatly improved after the relevant assessment criterion began to be applied) and gradually increasing internationalization leading to excellence in some disciplines. From the quality perspective, there is a perceptible increase in the share of publications in periodicals indexed in the Web of Science. The largest quantity of such publications is reported by higher education institutions. The highest share of those in comparison with other publications is reported by institutes of the Academy of Sciences of the Czech Republic.
- The quality of publications and the level of international collaboration are improving year on year. Most high-quality publications are produced in the subject groups Biological Sciences, Chemical Sciences, Physical Sciences, Astronomy, and Clinical Medicine. In addition, the publications in Clinical Medicine, Physics and Astronomy are cited considerably more often than the average.
- Among joint publications authored and co-authored by Czech scientists, the largest share includes those with American, German, British and French scientists.
- Extensive EU resources are available for developing the RDI system.

Weaknesses

- Overall complexity, unpredictability and fragmentation of the RDI funding system.
- The seemingly positive outcome of the international comparison of the Czech Republic is due to temporary funding which will cease to be available after 2020/2023.
- From the innovation perspective, the Czech Republic is comparable to Spain and Italy, while severely lagging behind Sweden, Germany, Denmark, Netherlands, Belgium, and Austria.
- In the RDI system, the majority of private expenditure goes to the private sector, which is an indication of ineffective collaboration between the private and public sectors in the RDI system.
- Deficiencies of the evaluation system – the present evaluation set-up strongly favours basic, non-oriented research which leads to improvements in publication activity but also to a low degree of collaboration with the private sector.
- The share of actually applied results has been low in the long term (now less than 11 %). The applied results include very few patents.
- Inadequate coordination between national and European sources.
- The annual amount of funds in the public sector of the RDI system is approximately CZK 35 billion. This is in fact equal to the separate state budget heading of the Ministry of Transport! Yet, science and research are not administered by a separate ministry with an insight into funding routes and adequate oversight. This fragmentation of the system is a major threat to the future of the RDI in the Czech Republic.

More detailed information can be found at:
www.vyzkum.cz / Dokumenty / Analýzy VaV / the button “Analýza VaVal 2014” / third paragraph with the sentence “Anglický překlad dokumentu je k dipozici ZDE.”
http://www.czso.cz/csu/czso/ukazatele-vyzkumu-a-vyvoje-za-rok-2014
http://www.statistikaamy.cz/category/analyzy/veda-a-vyzkum/
http://www.czso.cz/csu/czso/prima-verejna-podpora-vyzkumu-a-vyvoje-v-ceske-republice-v-roce-2014

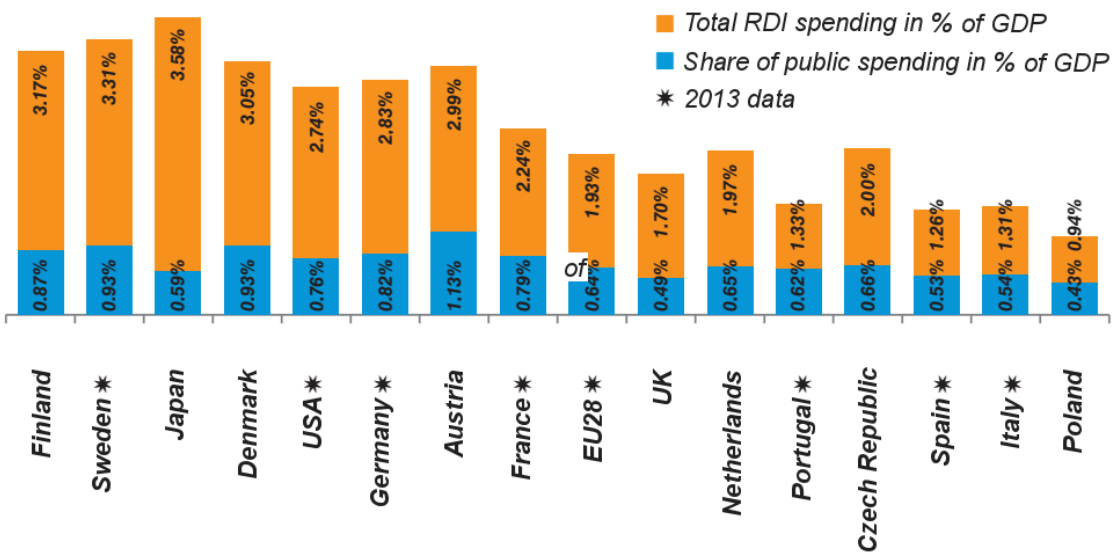
2. PUBLIC FUNDING OF RESEARCH AND DEVELOPMENT

Direct public funding is the primary tool for implementing R&D policies in the Czech Republic and elsewhere. The amounts of total direct funding and public funding are among basic indicators for evaluating R&D in various countries. The EU as a whole is known to lag behind the USA and Japan, or Asian economies, in the amount of R&D spending. The Lisbon Strategy was adopted in 2000 with the objective of making the EU the most competitive global economy by 2010. In 2002, a concrete R&D objective was announced in Barcelona: to increase the total R&D expenditure to 3 % of GDP by 2010, of which one-third would come from public sources and two-thirds (2 % of GDP) from private (business) sources. The EU has not achieved these objectives yet, and neither has the majority of its Member States.

The Czech Republic adopted the Lisbon Strategy as well, which has been reflected in documents that set the course of the country's R&D. One positive indication is that the Czech Republic achieved the total R&D spending of 2 % of GDP in 2014. Hence, although the country still fails to meet the overall objectives, it has achieved the EU average level. Most of the investment which contributed to this came from private sources.

2.1 Total and public spending on R&D in selected developed countries in 2014

Graph 1: Total and public spending on R&D in selected developed countries in 2014 (% of GDP)



Source: EUROSTAT, OECD MSTI 2014/1

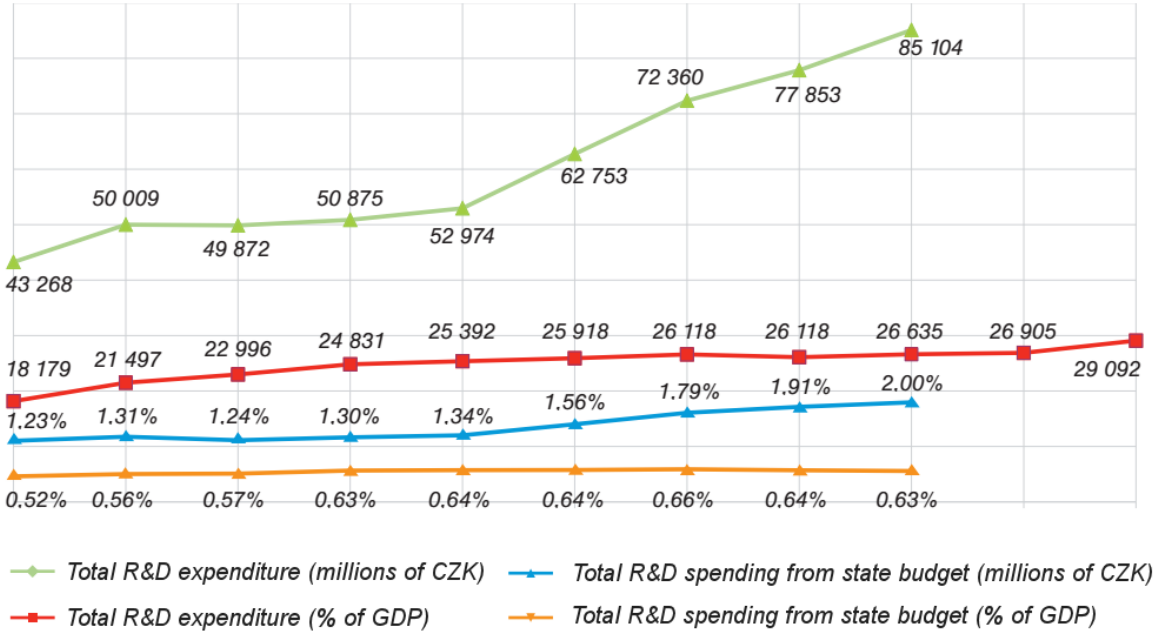
In 2013 and 2014, the only EU countries which were able to meet the first criterion of the Lisbon Strategy (total R&D spending of 3 % of GDP) were Finland, Sweden and Denmark. Those which came closest were Germany and Austria, the latter reporting a level just under 3 %. The R&D spending in these countries exceeds the EU average.

In 2014, the second criterion (2 % of total spending coming from non-public sources) was met by Finland, Sweden, Denmark, and Germany. Recent years have seen no substantial changes here. The EU as a whole has not met any of these criteria yet, and neither has the Czech Republic. Of the selected countries referred to in this section, Spain, Italy, Portugal and Poland reported lower total spending on R&D than the Czech Republic.

A high share of private investment in R&D is typical of Asian countries, such as Japan. No EU country reports more than a 70 % share of private expenditures on R&D.

2.2 Total expenditure from the state budget of the Czech Republic on research, development and innovation

Graph 2: Total expenditure from the state budget of the CR on RDI between 2006 and 2012 (% of GDP and millions of CZK)



Source: Czech Statistical Office, state budgets of the Czech Republic for the given years

State budget expenditures on R&D continuously increased until 2012, although the rate of this increase slowed down greatly after the economic crisis. As R&D was one of the government's main priorities, expenditures rose even during the crisis, despite sweeping cuts in other public spending. After a slight decrease in 2013, the RDI expenditure began to grow again. 2016 has seen a substantial increase of more than CZK 2 billion, the largest since 2007.

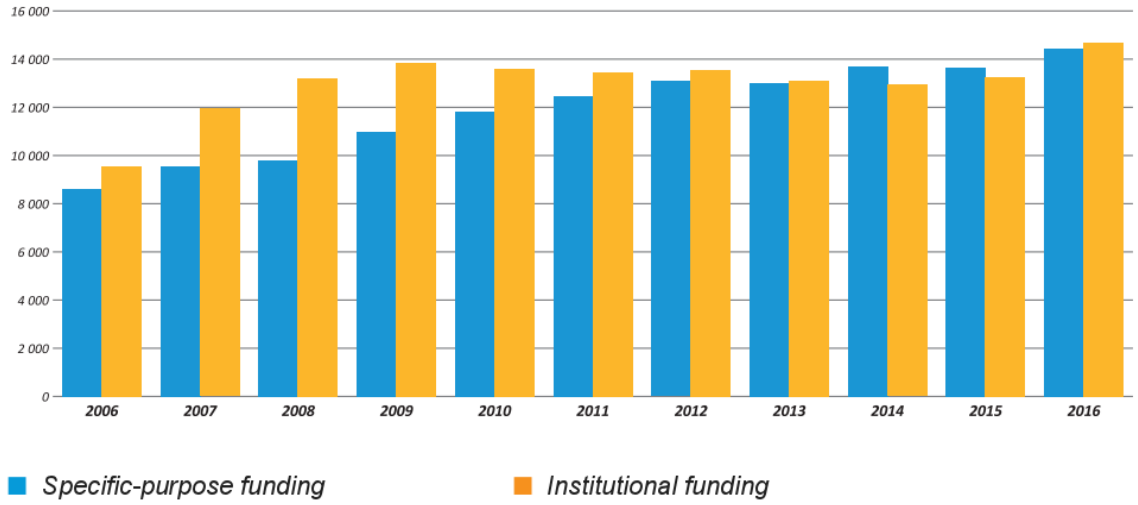
However, when expressed as a share of GDP, the state budget expenditure on R&D has shown no substantial growth since 2009. A change can be expected in 2016 but it depends on the current GDP performance.

Nevertheless, the state budget expenditures on R&D are not the only public sources available. Since 2007, Structural Funds of the EU have been gaining importance, namely the Research and Development for Innovation, and, to a lesser extent, the Education for Competitiveness and Entrepreneurship and Innovation Operational Programmes. More than CZK 100 billion from the EU resources was allocated for research and development under these three operational programmes until 2015. Since 2015, the newly-launched operational programmes Research, Development and Education (RDEOP) and Enterprise and Innovation for Competitiveness (EICOP) promise to become the largest available sources.

After 2010, once the effects of the economic crisis began to subside, the total expenditure on R&D showed a rising trend. In 2014, it exceeded CZK 80 billion for the first time, bringing the Czech Republic to a level slightly above the EU average.

2.3 Institutional and specific-purpose funding from the state budget for research, development and innovation

Graph 3: Institutional and specific-purpose funding of RDI in the Czech Republic between 2006 and 2016 (millions of CZK)



Source: State budgets of the Czech Republic for the given years

The total state budget spending on R&D is divided into two streams. The first is specific-purpose funding, and the second institutional funding.

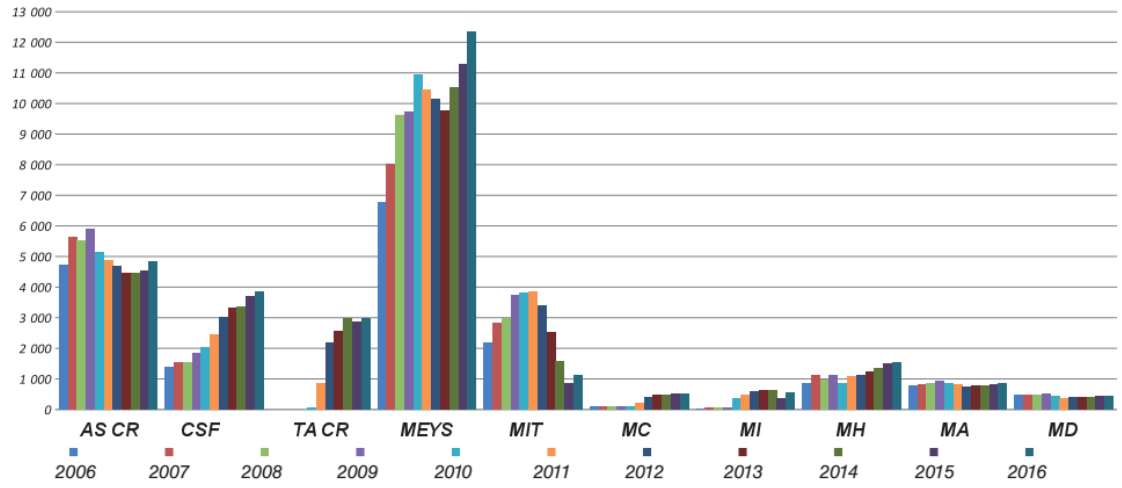
Specific-purpose funding is distributed predominantly through public tenders for selected research projects. These include open-grant projects, where the objectives and methods of basic research projects are determined by the researchers themselves. Then there are programme projects in applied R&D which aim to fulfil the objectives of a particular programme. Specific-purpose funding also goes to those research projects that fulfil the needs of the state (public research and development contracts). Finally, it is also provided for expanding R&D infrastructures and for specific academic research.

The dominant form of institutional funding provided to research organisations today is reimbursement of the costs of their development based on evaluation of their results. Institutional funding is also awarded for certain activities in international R&D cooperation and as co-funding for operational programmes in RDI. Finally, institutional funding meets the costs of public tenders, evaluation procedures, and financial awards for extraordinary achievements, as well as the operating costs of the Academy of Sciences of the Czech Republic and other institutions. The ratio between institutional and specific-purpose funding in the Czech Republic cannot be compared to similar indicators abroad because their structures differ.

After 2001, institutional funding was higher than specific-purpose funding. In the past, the R&D Council strove to reduce the differences between them. Specific-purpose funding tends to be awarded on the basis of competition, whereas institutional funding is in fact often granted automatically, once the beneficiary meets certain basic conditions. However, the data gathered after 2010 are not directly comparable with those from the previous years. This is due to changes in R&D funding (e.g. the funding for specific academic research used to be reported as institutional funding until 2009, whereas from 2010 it has been classified as specific-purpose funding). 2014 was the first year when the amount of specific-purpose funding exceeded institutional funding. It remained so in 2015 as well. According to the approved 2016 budget, institutional funding for 2016 is again higher than specific-purpose funding.

2.4 Expenditure on research, development and innovation by selected public funding providers

Graph 4: Total expenditures on RDI by selected public funding providers between 2006 and 2016 (millions of CZK)

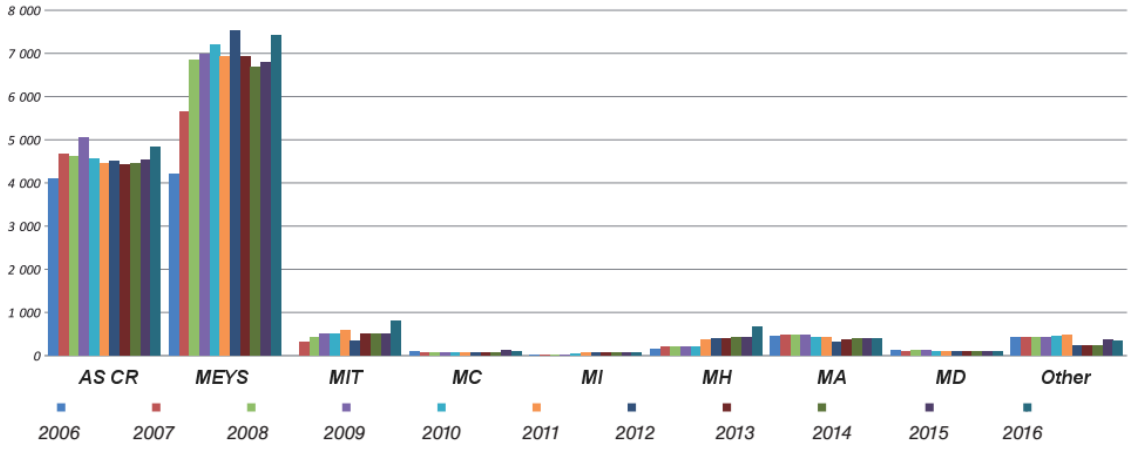


Source: State budgets of the Czech Republic for the given years

The graph shows the trends in funding provided by today's 10 public funding providers. The Reform of the Research, Development and Innovation System from 2008, which was approved by the government, reduced the number of state budget headings (and therefore the number of corresponding public funding providers) for R&D from 22 to 11. (The eleventh one, from which no external organisations are funded, is administered by the Office of the Government of the Czech Republic, and is used for funding the operation of the Research and Development Council.)

2.5 Institutional funding of research and development by selected public funding providers

Graph 5: Institutional funding of R&D by selected public funding providers between 2006 and 2016 (millions of CZK)



Source: State budgets of the Czech Republic for the given years

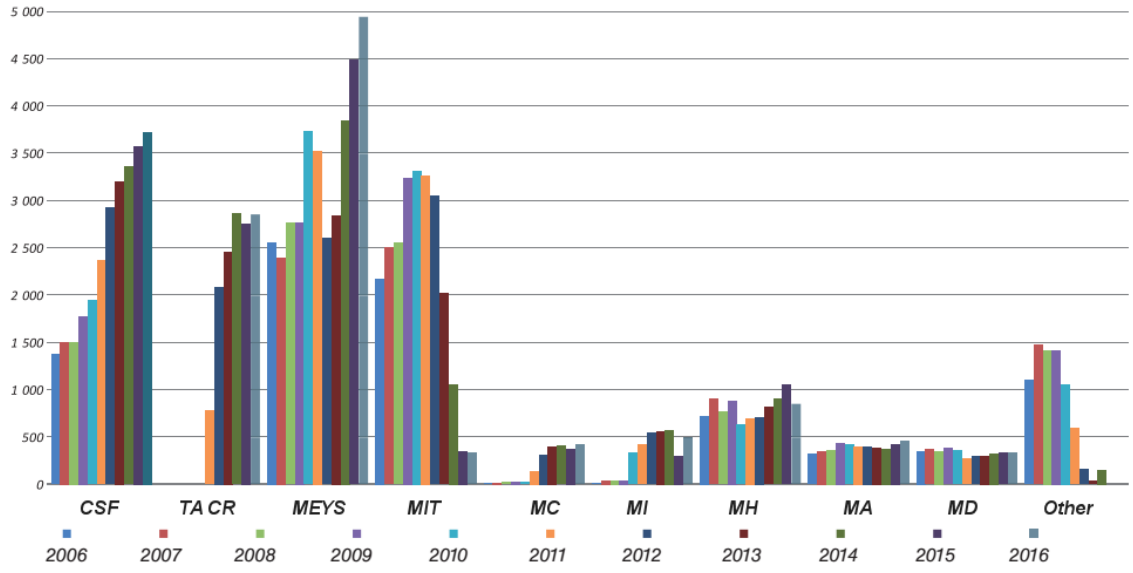
The Reform of the Research, Development and Innovation System, which was approved by the government (Government Resolution No. 287 of 26 March 2008), fundamentally changed the way institutional funding was provided. Still running large research projects (referred to as “research plans”) were to be completed as planned, but no calls for new ones were to be announced. A new basis for granting institutional funding was chosen: the evaluation of research organisations according to government-approved methodology or, in the case of the Academy of Sciences of the Czech Republic, self-evaluation. Today, the Research and Development Council draws on the outcomes of this evaluation for drafting the state budget for RDI. (In the 2013–2015 period, the Council followed the principle of 20 % allocation on the basis of evaluation scores, and 80 % allocation on the basis of the previous year’s allocation. However, its RDI budget drafts were not approved in those years. In 2016, the R&DC’s draft built mainly on approved medium-term projections and on the outcomes of budget negotiations with individual public funding providers.)

As mentioned above, institutional funding is also used to match the funding provided under operational programmes in RDI, to meet the costs of public tenders, and to conduct evaluation of and provide financial awards for extraordinary achievements.

The lion's share of institutional funding is distributed by the Ministry of Education of the Czech Republic (MEYS) and the Academy of Sciences of the Czech Republic (AS CR). MEYS provides institutional funding to higher education institutions and to some research organisations. It also co-funds operational programmes in RDI AS CR provides institutional funding to its institutes. Therefore, the expenditures are not directly comparable.

2.6 Specific-purpose funding of research, development and innovation by selected public funding providers

Graph 6: Specific-purpose funding of RDI by selected public funding providers between 2006 and 2016 (millions of CZK)



Source: State budgets of the Czech Republic for the given years

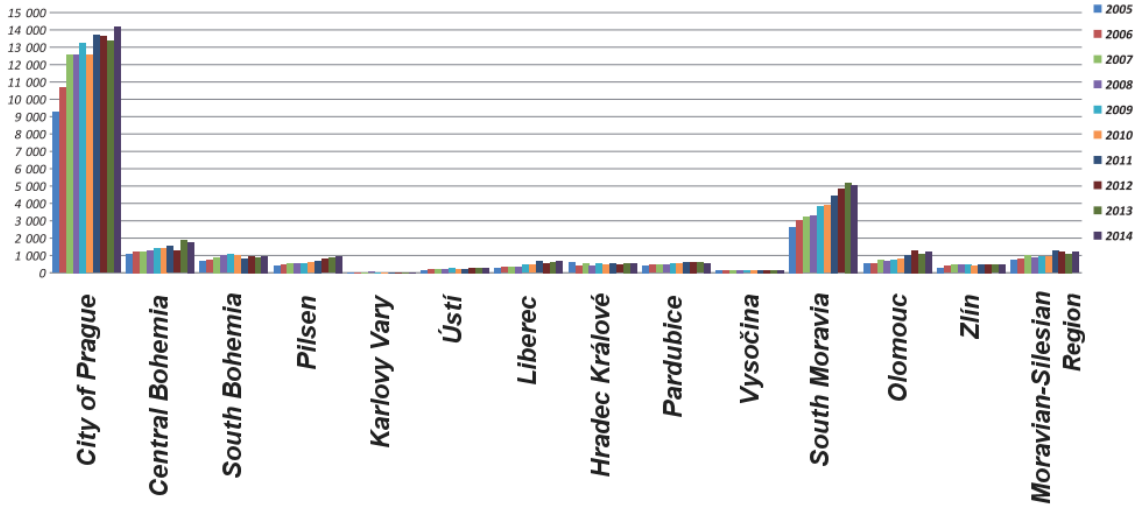
Specific-purpose funding for R&D is awarded for R&D projects upon public tenders. The Czech Science Foundation (CSF) provides funding for open-grant projects in basic research. Other public funding providers, including the Technological Agency of the Czech Republic (TA CR), support programme projects under their R&D programmes. The Ministry of Defence, Ministry of the Interior and the TA CR also award public contracts in R&D.

The increase in the Czech Science Foundation's expenditures (CSF) after 2010 – seen in the above graph – results from a change in the rules of support: since 2011, CSF has also been funding wage costs of new projects. TA CR expenditures began to rise after it had taken over responsibility for several R&D areas previously administered by other budget agencies which ceased to provide funding for RDI.

The increase in the amount of funding under the state budget heading of the Ministry of Education (MEYS) is due to the launch of the National Sustainability Programme I (NSP I), and the National Sustainability Programme II (NSP II). These promote the sustainability of the new research centres established under RDIOP and Prague – Competitiveness Operational Programme (PCOP). As of 2016, substantial funds are available for individual projects of large infrastructures.

2.7 Total state aid for research, development and innovation in regions

Graph 7: Total state aid for RDI in individual regions between 2005 and 2014 (millions of CZK)



Source: State budgets of the Czech Republic for the given years, RD&I IS

The above figures for the total public funding of R&D include all specific-purpose funding that was provided in the relevant years. Of the other type of public funding, the institutional funding, only that for the former large research projects (referred to as “research plans”), and for the development of research organisations, has been included here. The funding of specific academic research and selected international cooperation activities in R&D was excluded.

In geographic terms, public funding is distributed rather unevenly across the territory of the Czech Republic, as in many other countries. This reflects the historical distribution of R&D facilities across the country. The capital city of Prague absorbs more than 50 % of the total public funding of R&D. Of the total fourteen regions, a mere four regions, including Prague, receive almost 80 % of the total funding. Establishment of new R&D infrastructures infrastructures outside Prague was expected to mitigate these differences. This effort was funded by the EU under the Research and Development for Innovation Operational Programme. The measure was only partially effective in equalizing the regional distribution because the proposal evaluation process did not take the geographic aspect into account. The greatest improvement in investment was seen in the South Moravia, Olomouc, Pilsen and Central Bohemia Regions. These, however, are the regions in which the R&D spending was second to Prague even before then.

3 RDI PUBLIC FUNDING PROVIDERS AND PROGRAMMES IN THE CZECH REPUBLIC

3.1 Czech Science Foundation (CSF)

The Czech Science Foundation began its operations in 1993. One of its tasks is to award grants to the best basic research projects from all fields of science on the basis of annual public tenders in research (the type of public tenders defined in Act No. 130/2002 Sb.).

Every year and for each project, the CSF reviews the progress and compliance with the objectives of the project. Finally, it evaluates the results of each completed project. The CSF acts as a budget agency, which means that it awards grants and specific-purpose funding from a separate heading of the state budget.

According to information from the Central Register of Projects (CEP) for the period from 1994 (launch of the CEP) to February 2016, a total of 15,477 projects have been supported by state aid totalling CZK 39.463 billion. Every year, about 3,000 proposers apply for funding from the CSF, of whom approximately one quarter succeed.

The funding goes to so-called 'standard projects', 'post-doctoral projects' (which are being gradually replaced with 'junior projects'), and 'international (bilateral) projects. In 2014, international "LA Grants" and Junior Grants began to be awarded by the CSF.

The activities of the CSF are as follows:

- Prepares and conducts public tenders in research through which grants are awarded.
- Its expert consulting bodies evaluate project proposals, and select the best ones to receive funding.
- Awards grants within current financial limits, i.e. based on the allocation from the state budget, and makes contracts with applicants.
- Monitors the project progress and fulfilment of objectives through annual interim project reports.
- Evaluates the results achieved by the project, based on its final report.
- Reviews the project team's management of project funds, i.e. the purpose of expenses, and compliance with relevant regulations and requirements.
- Cooperates with foreign scientific bodies and institutions, in particular from the Member States of the European Community.

Types of open-grant projects:
The CSF provides specific-purpose funding for the following types of open-grant projects:

- Standard grant projects (GA)
- Post-doctoral grant projects (GP)
- International (bilateral) projects (GC)
- Excellence projects (GB)
- Junior grants (GJ)
- LA grants (GL)

3.1.1 CSF Discipline Committees and Panels

Discipline committees receive, screen, and evaluate project proposals in basic research. They have been established for the following groups of disciplines:

- Technical sciences
- Physical sciences
- Medical and biological sciences
- Social sciences and humanities
- Agricultural and biological-environmental sciences

Within these groups, the scope is narrowed down to panels:
(On 7 March 2013, the CSF specified in greater detail the content of panels P102, P108, P402, and P403. Rather than choosing panels merely by name, applicants should first familiarize themselves with the panel content.)

1. Technical sciences

- P101 Mechanical engineering
- P102 Electrical engineering and electronic engineering
- P103 Cybernetics and information processing
- P104 Construction materials, architecture
- P105 Structural mechanics and construction, fluid mechanics
- P106 Technical chemistry
- P107 Materials and metallurgy
- P108 Materials science and engineering

2. Physical sciences

- P201 Mathematics
- P202 Computer science
- P203 Nuclear and particle physics, plasma and low temperature physics
- P204 Condensed matter and material physics
- P205 Biophysics, macromolecular physics, and optics
- P206 Analytical chemistry – chemical and structural analysis of atomic, molecular and biomolecular systems
- P207 Chemical and biochemical transformations
- P208 Chemical physics and physical chemistry
- P209 Astronomy and astrophysics, atmospheric physics, meteorology, climatology and hydrology, physical geography
- P210 Geophysics, geochemistry, geology and mineralogy, hydrogeology

3. Medical and biological sciences

- P301 Genetics, experimental oncology, medical biochemistry, metabolism, and nutrition
- P302 Morphological disciplines, microbiology, immunology, epidemiology, and hygiene
- P303 Physiological disciplines, pharmacology, neurosciences, and toxicology
- P304 Clinical and preclinical research, experimental medicine
- P305 Molecular, cellular, structural and developmental biology and bioinformatics

4. Social sciences and humanities

- P401 Philosophy, theology, religious studies
- P402 Economic sciences, macroeconomics, microeconomics, econometrics, quantitative methods in economics
- P403 Business sciences, finance, administration, management
- P404 Sociology, demography, social geography, and media studies
- P405 Archaeology and pre-modern history (until 1780)

- P406 Linguistics and literature
- P407 Psychology, pedagogy
- P408 Juridical sciences and political science
- P409 Aesthetics, musical sciences and art sciences
- P410 Modern history (after 1780) and ethnology

5. Agricultural and biological-environmental sciences

- P501 Plant physiology and genetics, plant medicine
- P502 Animal physiology and genetics, veterinary medicine
- P503 Food science, ecotoxicology and environmental chemistry
- P504 Landscape management, forestry and soil biology, ecosystem ecology
- P505 Animal and plant ecology
- P506 Botany and zoology

3.1.2 Standard grant projects (GA)

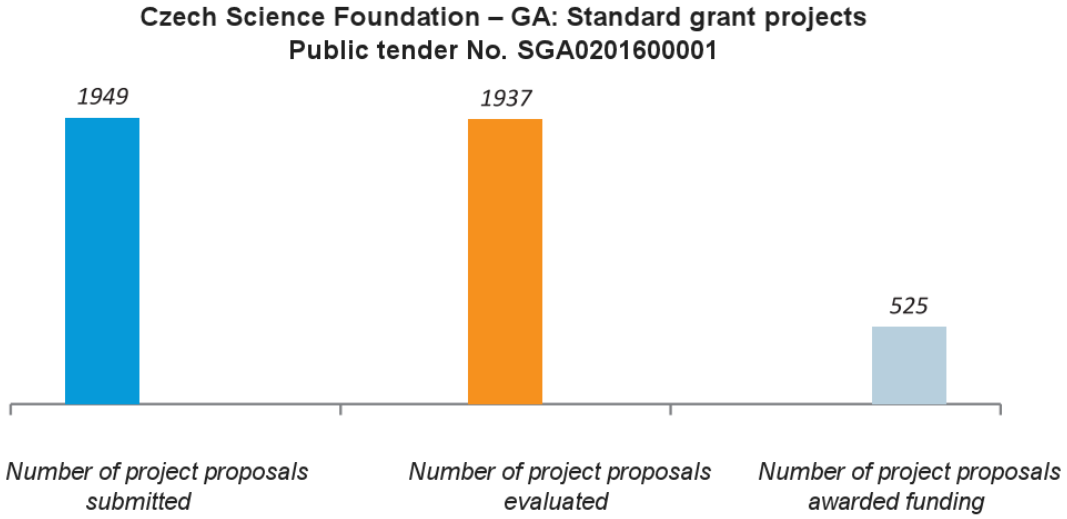
Standard grant projects are basic research projects. The CSF has supported such projects since its establishment in 1993. **According to information from the CEP, the CSF has, until March 2016, supported 12,845 projects with state aid totalling CZK 31.119 billion.**

- The typical project period is 2–5 years
- Any field in basic research is eligible for support
- The project topic is chosen by the proposer
- Eligible applicants include all legal and natural persons, organisational units of the state or regional self-governments, or those organisational units of the Ministry of Defence and Ministry of the Interior which are engaged in research and experimental development
- Public tenders are typically announced once a year, normally in March. Evaluations are completed in the autumn and the results are announced before the end of the calendar year
- The investigator can be either one person or an entire research team, whose members may even come from various institutions
- The main criteria considered for awarding the grant are the proposed objectives, the method of investigation, the planned outcomes, the applicant's foreign cooperation and earlier collaboration with CSF, and commensurate funding requirements.

Funding allocated in 2015:

Period	2016	2017	2018	Total
Specific-purpose funding allocated (CZK)	827,669,000	850,281,000	822,568,000	**2,500,518,000**

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 2,500,518,000)



Source: Research, Development and Innovation Information System

In 2016, another call for proposals under this programme was announced.

3.1.3 International (bilateral) projects (GC)

International open-grants are awarded for basic research projects carried out in bilateral cooperation between scientists or research teams. The projects are selected in collaboration with various foreign funding providers: Deutsche Forschungsgemeinschaft (DFG), National Research Foundation of Korea (NRF), and National Science Council of Taiwan (NSC). **According to information from the CEP, the CSF has, until March 2016, supported 107 projects with state aid totalling CZK 373 million.**

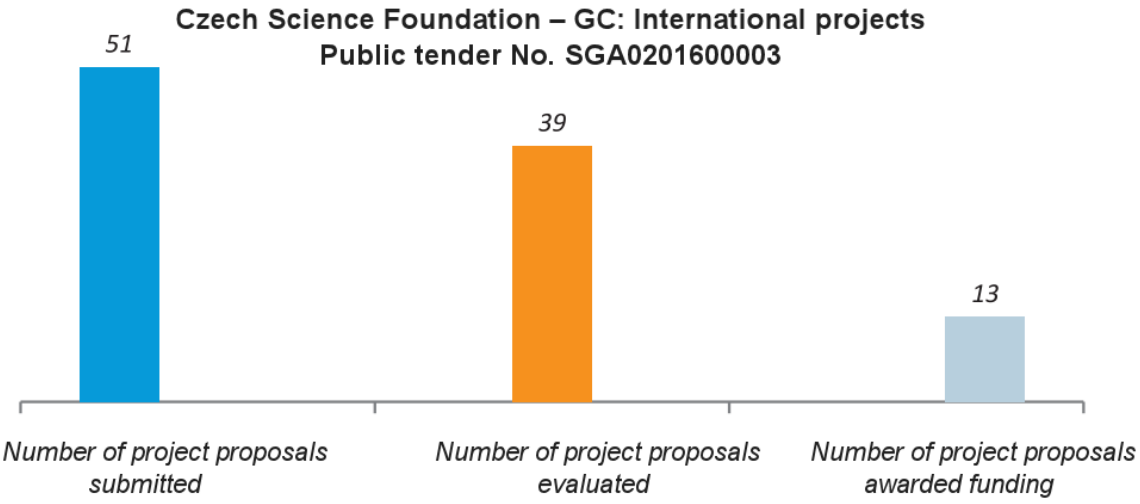
The CSF can only award a bilateral project grant if the foreign provider awards the funding as well, i.e. the proposal must be accepted by both national providers.

- The projects can focus on any field of basic research
- The project topic is chosen by the proposer
- The project duration is 2–3 years
- In the Czech Republic, these public tenders are typically announced once a year, normally in March. The evaluation is completed in autumn and the date on which the results are announced in the Czech Republic depends on the date of award in the partner country
- Each national provider only funds the project activities on its territory

Funding allocated in 2015:

Period	2016	2017	2018	Total
Specific-purpose funding allocated (CZK)	19,547,000	20,057,000	19,558,000	**59,162,000**

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 59,162,000)



Source: Research, Development and Innovation Information System

In 2016, another call for proposals under this programme was announced.

3.1.4 Junior grants (GJ)

In 2014, the CSF announced, for the first time, a public tender to award junior grants for projects proposed by excellent young scientists. The funding was released in 2015. These public tenders will continue to be announced on an annual basis until 2022. To be eligible, proposers must be under 35 years old in the year they submit the proposal. The project period should be three years. **According to information from the CEP, the CSF has, until March 2016, supported 57 projects with state aid totalling CZK 272 million.**

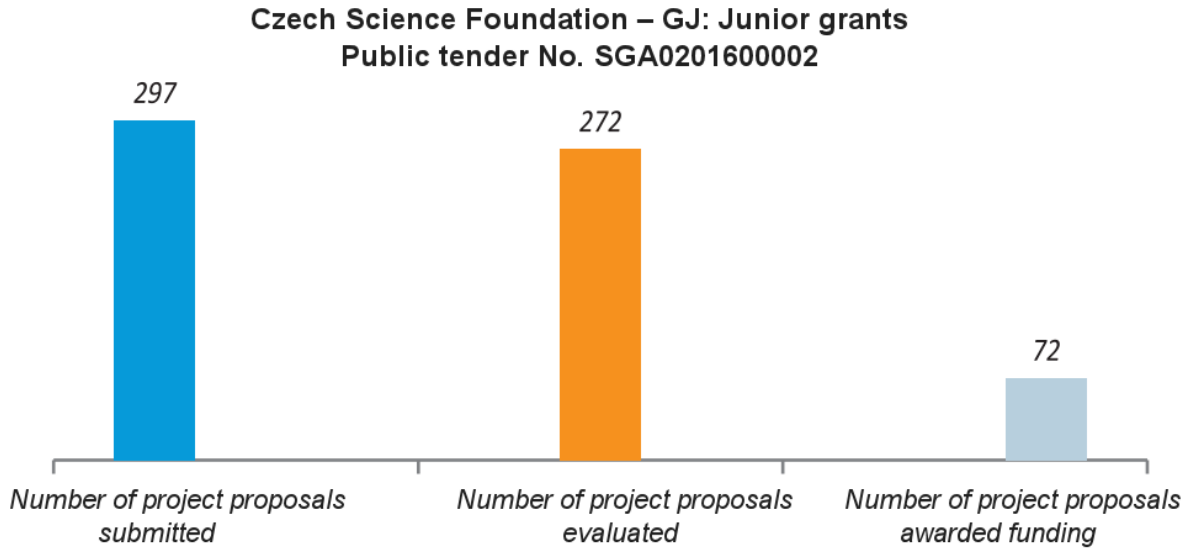
In a single junior grant competition, each proposer can only submit one proposal. If this proposal is awarded funding, the proposer will not be allowed to apply for a junior grant again. Proposals may also be submitted by those who are already conducting another standard grant project, an international project or a post-doctoral grant project with funding from the CSF. In the year of the proposal submission, the proposer and the project team members must be under 35 years of age and, if having a PhD or an equivalent degree, they must have received it within the previous 8 years.

The aid rate can be up to 100 %. The maximum amount of funding for a single project is defined by the Framework (i.e. EUR 20 million) but tends to be approximately two orders of magnitude lower for projects of this type.

Funding allocated in 2015:

Period	2016	2017	2018	Total
Specific-purpose funding allocated (CZK)	129,041,000	124,840,000	121,210,000	**375,091,000**

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 375,091,000)



Source: Research, Development and Innovation Information System

In 2016, another call for proposals under this programme was announced.

3.1.5 LA grants (GF)

LA grants are awarded by the CSF for those international projects whose proposals are evaluated using the "Lead Agency" principle. Their purpose is to support international cooperation in basic research. According to information from the CEP, the CSF has, until March 2016, supported 9 projects with state aid totalling CZK 45 million.

Project proposals are evaluated on an international basis pursuant to section 7, subsection 4 of the Support of Research and Development Act No. 130/2002 Sb. In this scheme, the calls for proposals are published by the partner agency. The proposals should follow the partner agency's rules.

LA grants started in 2015 and their support will end in 2022. In the final two years, no new projects will be launched, and those running (from 2020) will be finished as planned.

The project duration in this scheme was set at 24–36 months as being the optimum period for achieving their objectives.

The aid rate is up to 100 %. The maximum amount of funding for a single project is defined by the Framework (i.e. EUR 20 million) but tends to be more than three orders of magnitude lower for projects of this type. Another call for proposals is to be announced in 2016.

3.1.6 Public tenders

Programme code	Announcement date	Proposal submission deadline	Announcement of results
GA	15 Feb 2016	30 Mar 2016	25 Nov 2016
GC	15 Feb 2016	30 Mar 2016	25 Nov 2016
GJ	15 Feb 2016	30 Mar 2016	25 Nov 2016
GF	Another call is to be announced in 2016.		

3.1.7 Contacts and additional information

Grantová agentura České republiky
Evropská 2589 / 33b, 16000, Praha 6, Czech Republic
Phone: +420 227 088 841
E-mail: info@gacr.cz

Useful links:
http://www.gacr.cz

3.2 Technology Agency of the Czech Republic (TA CR)

The Technology Agency of the Czech Republic is an organisational unit of the state, established in 2009 by Act No. 130/2002 Sb., which commenced its activities in 2010. TA CR centralises the state aid for applied research and development, which had previously been fragmented and administered by a large number of public funding providers.

According to information from the CEP, the TA CR has supported 1,361 projects with state aid totalling CZK 17.138 billion since 2011 when it began to distribute funding. In addition to the programmes described in more detail below, new programmes are under preparation, and are now going through the approval procedure. These include the BETA II, THETA, and ZETA programmes, and National Competence Centres II. Their launch is conditional on the government's approval and on the state budget.

The TA CR fulfils the following tasks:

- Designs and implements applied research, development and innovation programmes, including those designed to meet the needs of the state administration, conducts public tenders in research, and awards public contracts
- Evaluates and selects project proposals in thematic programmes
- Provides specific-purpose funding for programme projects through grant agreements and grant award decisions
- Monitors the performance of grant agreements and compliance with grant award decisions, and audits the use of specific-purpose funding
- Evaluates and audits programme projects, their objectives, and the results produced
- Fosters cooperation between research organisations and the private sector, and co-funds programme projects

3.2.1 The BETA Programme of Public Contracts in RDI for State Administration 2012–2016 (TB)

This programme's objective is to improve the existing practices, methodologies, regulatory mechanisms and supervisory activities, as well as to acquire new knowledge, skills, services, information and management products and procedures for the execution of state administration. These outputs should lead to greater innovation and improved quality, sustainability and enforcement, as well as greater economies. **According to information from the CEP, the agency has, until March 2016, supported 128 projects with state aid totalling CZK 265 million.** No further calls are to be announced under this programme. The BETA programme will be replaced by BETA II, which is currently going through the approval procedure.

The programme supports the construction of various models, and the development of amendments to existing legislation and government policy strategies in both national and European contexts (e.g. economic or social policies). Its outputs should include new methods of evaluating the effectiveness of such policies and strategies, and background documents for shaping future policies, improving the performance of state administration, and for more effective allocation of public resources.

The programme aims to meet the needs of various state administration bodies and its objectives are classified accordingly. The goals in each project must be clearly defined in its tender dossier.

The government of the Czech Republic adopted a change to the BETA programme by its Resolution No. 75 of 30 January 2013. Starting from 31 January 2013, the TA CR will conduct public procurement for the following authorities and ministries:

- The Czech Mining Authority
- The Czech Office for Surveying, Mapping and Cadastre
- Ministry of Transport
- Ministry of Labour and Social Affairs
- Ministry of Industry and Trade
- Ministry of Regional Development
- Ministry of the Interior
- Ministry of Foreign Affairs
- Ministry of the Environment
- The State Office for Nuclear Safety
- other public funding providers implementing research and development programmes

3.2.2 The OMEGA Programme for Applied Social Science Research and Development 2012–2017 (TD)

The main objective of the programme is to advance research in applied social sciences, make use of its results for greater competitiveness of the Czech Republic and a higher quality of life in its territory, and for balanced socio-economic development of society. **According to information from the CEP, the agency has, until March 2016, supported 128 projects with state aid totalling CZK 234 million.** No further calls are to be announced under this programme.

The programme aims to boost the real-life impact of research and development in social sciences to achieve the following results:

- New procedures created and implemented to improve the effectiveness of existing public policies on central, regional and local levels, and new procedures developed and embedded to introduce and apply new public policies in the Czech Republic in the context of the implementation of common EU policies.
- New procedures developed and introduced to promote Czech public interests.
- New procedures designed and implemented to develop the country and its regions towards identified goals, and to strengthen its position within the EU in the framework of the ongoing European integration process.
- New procedures and methods developed and introduced to analyse and evaluate social and economic problems and their impacts on the sustainable development of society, as well as the impacts of the socio-economic development of society on the environment.
- New procedures created and implemented and new methods and systems developed to evaluate the ramifications of state interventions for economic and societal development.
- New procedures and systems developed to predict economic development and to improve the competitiveness of the Czech economy in the global environment, and to monitor and analyse the effects of banking and financial market regulations in the Czech Republic.
- New procedures and methods designed and implemented to control the adverse consequences of the on-going social stratification in Czech society and to mitigate the emerging social inequalities.
- New procedures and methods developed and introduced to counter the negative impacts of demographic changes in the Czech Republic.
- New procedures, methods and systems created and introduced to develop human capital and to improve the effectiveness of the existing education system in the Czech Republic.

3.2.3 The GAMA Programme of Applied Research, Experimental Development and Innovation 2014–2019 (TG)

This programme's objective is to promote and streamline the conversion of R&D results – those produced by research organisations (ROs) alone or in collaboration with businesses – into real-world applications with a view to their commercialization. The programme aims to stimulate innovation in enterprises (primarily small and medium-sized ones) through commercialization of the results generated by publicly-funded ROs. **According to information from the CEP, the agency has, until March 2016, supported 21 projects with state aid totalling CZK 411 million.**

This involves innovations to existing products, services or technologies for commercial use in new areas (market expansion), as well as the development of completely new products, services or technologies (creation of new markets). The programme has two sub-programmes, each with different working methods and recipients of funding.

Sub-programme 1 supports proof-of-concept efforts related to the R&D results of research organisations. Such results must show promise of practical application in new or upgraded products, manufacturing routes or services, and a potential for high added value and for boosting competitiveness. Sub-programme 1 supports the R&D stage, which begins with an R&D result that shows potential for practical use and ends with a model, functional sample or a prototype proving the commercial potential. Research organisations are the only eligible recipients.

Sub-programme 2 supports mainly experimental development projects, as well as applied research projects that demonstrably lead to commercialization. The commercialization itself, however, is not eligible for funding. Support is available for the completion of functional prototypes, verification of their properties, trials of test series, and evaluations of all the technological, economic, social, health and other impacts of the innovated product or service. Only enterprises are eligible for funding while research organisations can participate only as partners in the project.

Amount of funding planned for the entire programme period:

Period	Approved funding (CZK)
2014	104,000,000
2015	226,000,000
2016	352,000,000
2017	392,000,000
2018	365,000,000
2019	359,000,000
Total	1,798,000,000

Project period

The planned programme period is 6 years (2014–2019). The first public tender was announced in 2013 and funding was released in 2014. In Sub-Programme 1 (SP1), annual public tenders were announced from 2013 to 2016 with funding released accordingly in the years 2014–2017. In Sub-Programme 2 (SP2), projects which are awarded funding in public tenders in the 2013–2017 period begin to receive it accordingly in the 2014–2018 period, unless such projects also receive funding for the same topic under the new Research, Development and Education or Enterprise and Innovation for Competitiveness Operational Programmes in the Czech Republic.

Based on previous experience in the Czech Republic and abroad, the minimum and maximum project periods under SP1 were set at 36 and 60 months, respectively. Sub-projects are limited to a minimum of 6 months and a maximum of 36 months. Under SP2, the minimum and maximum project periods are 12 and 36 months, respectively.

Form and amount of funding
Research organisations (ROs) receive funding in the form of a grant. Organisational units of the state and organisational units of ministries engaged in research and development receive support in the form of increased expenditure limits. The ROs are expected to use the funding to conduct specific R&D sub-projects (the term "sub-project" is used to distinguish a project that aims to prove the commercial viability of a particular R&D result and is funded by the RO from an overall project whose proposal will be submitted by the RO under the SP1).

Eligible for funding under SP2 is pre-commercial development of results of publicly-funded applied research or experimental development that has been conducted by research organisations. Therefore, eligible recipients are those enterprises which intend to use or sell such a result.

Overall, the maximum available aid rate is 65 % in the programme. The maximum aid rates under SP1 and SP2 are 100 % and 55 %, respectively.

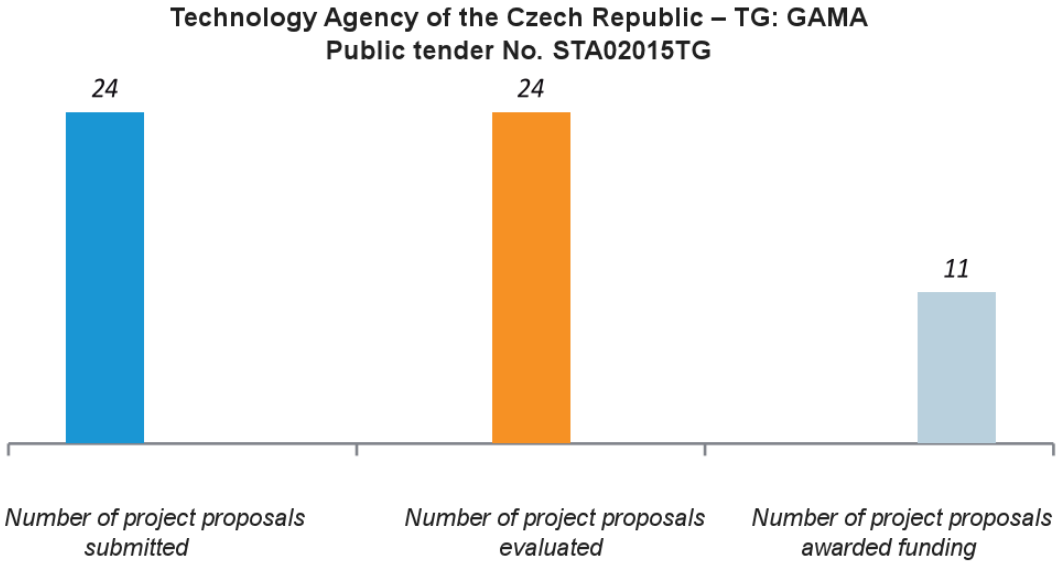
Recipients of funding
Under SP1, the only eligible recipients and project participants are research organisations which meet the provisions of the Support of Research and Development Act No. 130/2002 Sb.

Under SP2, the only eligible recipients are enterprises. ROs can only take part in the projects as non-recipients, either through their non-economic activities, or in the same regime as enterprises.

Funding allocated in 2015:

Period	2015	2016	2017	2018	2019	Total
Amount of funding (CZK)	7,112,000	44,893,000	66,949,000	58,454,000	39,690,000	**217,100,000**

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 217,000,000)



Source: Research, Development and Innovation Information System

3.2.4 The DELTA Programme for Collaboration in Applied Research and Experimental Development through Joint Projects of Technology and Innovation Agencies 2014–2019 (TF)

The DELTA programme aims to increase the quantity of relevant results of applied research and experimental development in areas of shared interests with foreign partners. Such results are expected to be applied in practice and to strengthen the competitiveness of the Czech Republic. To this end, the programme supports bilateral and multilateral cooperation between leading Czech and foreign researchers. Project proposals must respond to the current or future needs of the relevant country. In the Czech Republic, these needs are outlined in the National Priorities of Oriented Research, Experimental Development and Innovation. **According to information from the CEP, the agency has, until March 2016, supported 4 projects with state aid totalling CZK 46 million.**

The programme promotes cooperation in applied research and experimental development. It supports projects conducted jointly by enterprises and research organisations and enables funding to be obtained from the TA CR and from renowned foreign technology and innovation agencies or other institutions. Before a particular public tender is announced, cooperation must exist between the TA CR and the other foreign agency. Below, such foreign agencies or institutions are referred to as “partner agencies”. Each tender dossier contains a list of relevant partner agencies for the public tender. This programme is not thematically-oriented. Topics for joint projects are selected on an ad hoc basis from disciplines preferred by both the TA CR and the partner agency. For each partner agency, there is a separate range of research topics. These reflect either the priorities or areas of excellence in applied research and experimental development in both countries. These differ not only from agency to agency but also between public tenders announced for the same agency in different periods.

Anticipated amount of funding for the entire programme period:

Period	Approved amount of funding (CZK)
2014	74,000,000
2015	83,000,000
2016	70,000,000
2017	200,000,000
2018	200,000,000
2019	142,000,000
For the entire programme period	769,000,000

Project period

The programme is planned for 6 years from 2014 to 2019.

Public tenders will be announced no more than four times a year. The first one took place in 2013, followed by public tenders in 2014–2016. Public tenders may also be announced in 2017, depending on the amount of funds available. Projects can be conducted in collaboration with one or more partner agencies at a time. The maximum project period is 3 years. The project period must not extend beyond the period of the entire programme.

Form and amount of funding

Each participant receives funding from sources in their country. Funding from the state budget of the Czech Republic provided through the TA CR may only be awarded to applicants identified in section 18 of the Support of Research and Development Act No. 130/2002 Sb. (referred to as "applicants from the Czech Republic") and in accordance with the other provisions of this Act.

The aid rate for individual participants from the Czech Republic must not exceed the maximum aid rate allowed under the GBER. The maximum allowed aggregate aid rate for all recipients under a single project is defined for each public tender separately. Special bonuses can be awarded for meeting the conditions of effective collaboration in accordance with the GBER. Applicants are required to provide co-funding.

Table of maximum aid rates for individual categories of enterprises in applied research

Aid rates for applicant categories	Small enterprise	Medium-sized enterprise	Large enterprise	Research organisation
Anticipated share of the DELTA programme's allocated resources for the entity type	25 %	15 %	15 %	45 %
Maximum allowed aid rate subject to demonstrated effective collaboration with a research organisation	80 %	75 %	65 %	100 %

Table of the maximum aid rate for individual categories of enterprises in experimental development

Aid rates for applicant categories	Small enterprise	Medium-sized enterprise	Large enterprise	Research organisation
Anticipated share of the DELTA programme's allocated resources for the entity type	30 %	30 %	30 %	10 %
Maximum allowed aid rate subject to demonstrated effective collaboration with a research organisation	60 %	50 %	40 %	100 %

Recipients of funding

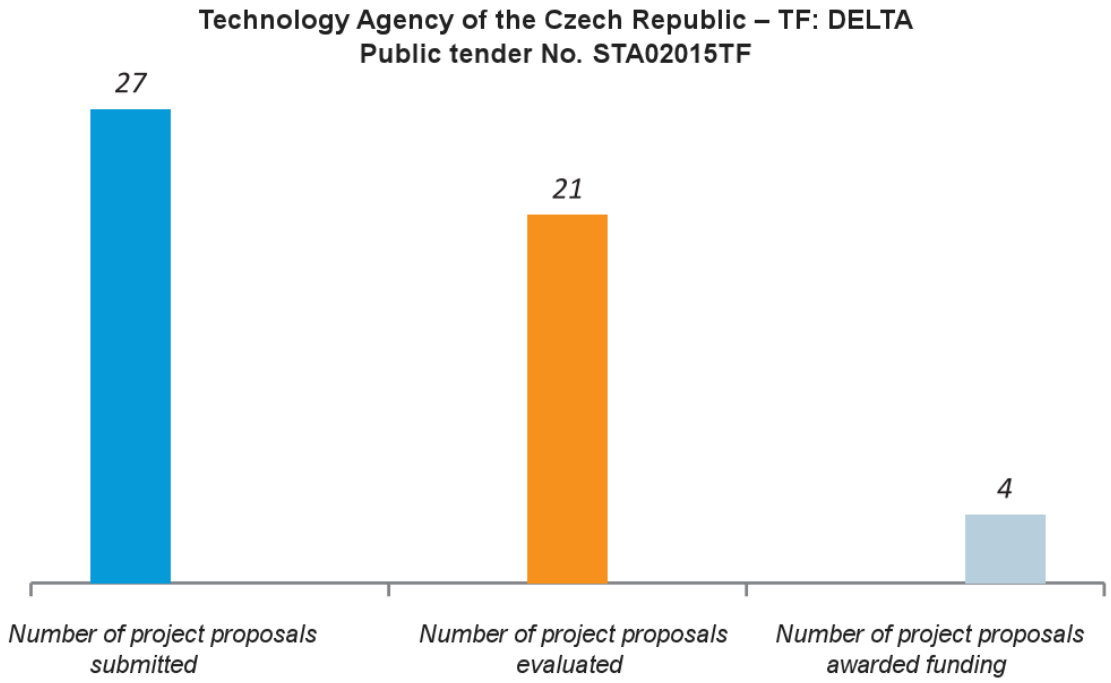
In accordance with the Support of Research and Development Act No. 130/2002 Sb., the Framework, and the GBER, eligible recipients of project funding include:

- Businesses – legal entities which, according to Annex 1 to the GBER, conduct economic activities and carry out the project alone or in cooperation with other participants, and which prove their ability to co-fund the project from non-public resources.
- Research organisations – legal entities which, according to the Framework and the Support of Research and Development Act No. 130/2002 Sb., meet the definition of a research organisation, which carry out the project alone or in cooperation with other participants, and which prove their ability to co-fund the project from non-public and public institutional resources.

Funding allocated in 2014:

Period	2015	2016	2017	2018	Total
Specific-purpose funding allocated (CZK)	13,332,000	15,772,000	15,938,000	839,000	**45,881,000**

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 45,881,000)



Source: Research, Development and Innovation Information System

3.2.5 The EPSILON Programme for Applied Research and Experimental Development 2015–2025 (TH)

The objective of the EPSILON programme is to support projects which deliver results with a significant potential for being rapidly applied in real-world products, manufacturing routes, and services. The programme spans multiple sectors, as it aims to fulfil the National Priorities of Oriented Research, Experimental Development and Innovation (RDI Priorities). Its projects should therefore be aligned to the research objectives set out for the relevant priority areas and sub-areas. They should be focused predominantly on new technologies and materials to be used in power generation, environment and transport. **According to information from the CEP, the agency has, until March 2016, supported 88 projects with state aid totalling CZK 857 million.** The programme comprises 3 sub-programmes:

- Sub-programme 1 – Knowledge economy
- Sub-programme 2 – Power generation and materials
- Sub-programme 3 – Environment

Anticipated amount of funding for the entire programme period:

Period	Approved amount of funding (CZK)
2015	700,000,000
2016	1,300,000,000
2017	1,880,000,000
2018	1,850,000,000
2019	1,800,000,000
2020	1,300,000,000
2021	720,000,000
2022	140,000,000
Total	9,690,000,000

Project period
The planned programme period is 11 years (2015–2025). The first public tender was announced in 2014 and funding was released in 2015. Public tenders are to be announced on an annual basis throughout the 2015–2018 period. Their funding will begin to be provided between 2016 and 2019. The maximum project period under this programme is 48 months. On average, the projects can be expected to run for 36 months. The project period must not end later than the programme period.

Form and amount of funding
Under the programme as a whole, the maximum available aid rate is 60 %.

The aid rate for each recipient and each participant does not exceed the maximum allowed aid rate set out in the GBER. The maximum allowed aggregate aid rate for all recipients under a single project is defined separately for each public tender. Special bonuses may be awarded for meeting the conditions of effective collaboration in accordance with the GBER. Applicants are required to provide co-funding. Maximum aid rates for applied research and experimental development and for individual categories of participants are given in the following tables:

Table of maximum aid rates for individual categories of enterprises in applied research

Aid rates for applicant categories	Small enterprise	Medium-sized enterprise	Large enterprise	Research organisation
Maximum allowed aid rate reflecting the premium for small and medium-sized enterprises	70 %	60 %	50 %	100 %
Maximum allowed aid rate subject to demonstrated effective collaboration with a research organisation	80 %	75 %	65 %	100 %

Table of the maximum aid rate for individual categories of enterprises in experimental development

Aid rates for applicant categories	Small enterprise	Medium-sized enterprise	Large enterprise	Research organisation
Maximum allowed aid rate reflecting the premium for small and medium-sized enterprises	45 %	35 %	25 %	100 %
Maximum allowed aid rate subject to demonstrated effective collaboration with a research organisation	60 %	50 %	40 %	100 %

Recipients of funding

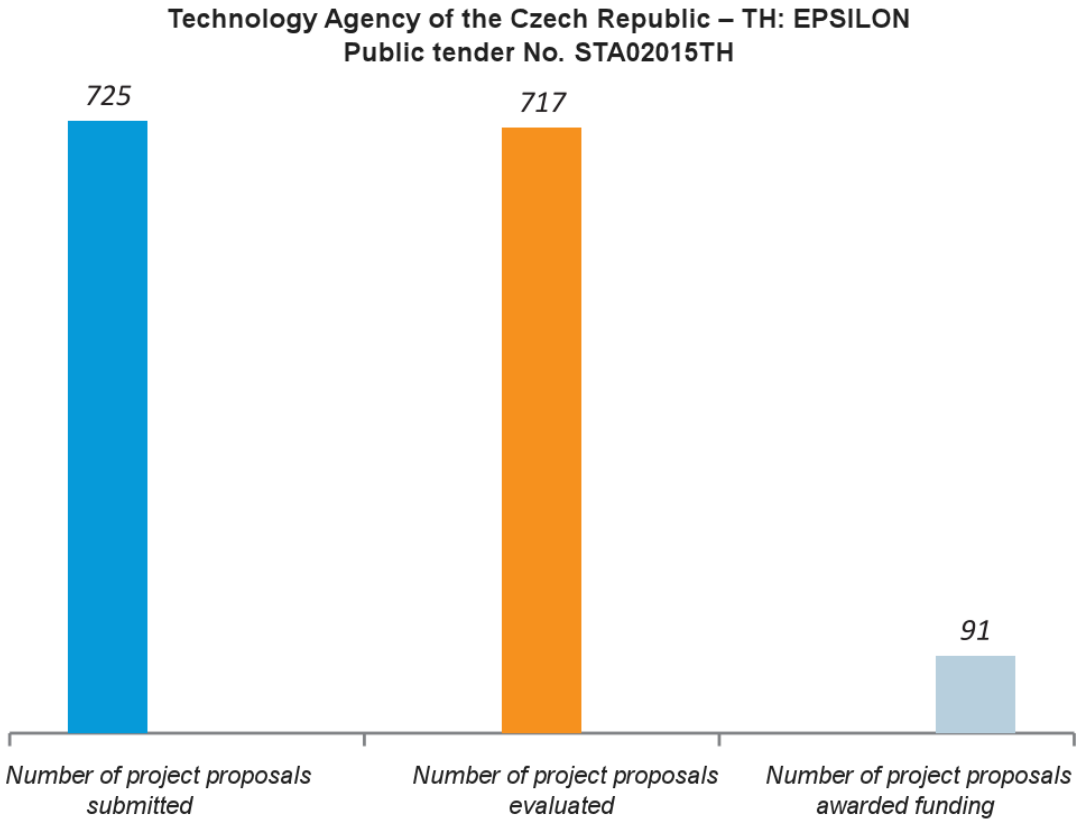
In accordance with the Support of Research and Development Act No. 130/2002 Sb., the Framework, and the GBER, eligible recipients of project funding include:

- Businesses – legal entities which, according to Annex 1 to the GBER, conduct economic activities and carry out the project alone or in cooperation with other participants, and which prove their ability to co-fund the project from non-public resources.
- Research organisations – legal entities which, according to the Framework and the Support of Research and Development Act No. 130/2002 Sb., meet the definition of a research organisation, which carry out the project alone or in cooperation with other participants, and which prove their ability to co-fund the project from non-public and public institutional resources.

Funding allocated in 2014:

Period	Funding allocated (CZK)
2015	248,694,000
2016	283,479,000
2017	258,539,000
2018	89,146,000
2019	1,184,000
Total	881,042,000

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 881,042,000)



Source: Research, Development and Innovation Information System

3.2.6 Public tenders

Programme code	Announcement date	Proposal submission deadline
TH	1st quarter 2016	
TG	29 January 2016	8 March 2016
TF	2nd quarter 2016	

3.2.7 Contacts and additional information

Technology Agency of the Czech Republic
TA CR Office
Evropská 1692/37
160 00 Praha 6, Czech Republic
Phone: +420 234 611 111
E-mail: info@tacr.cz

Useful links:
http://www.tacr.cz

3.3 The Ministry of Culture (MC)

The Ministry of Culture administers two programmes of applied research and development of national and cultural identity referred to as “NAKI”. The currently running programme is NAKI II. No new calls will be launched under its predecessor, which will end in 2017. According to information from the CEP, the Ministry of Culture has, between 1994 (launch of the CEP) and February 2016, supported 716 projects with state aid totalling CZK 2.434 billion.

3.3.1 The NAKI II Programme for Applied Research and Development of National and Cultural Identity 2016–2022 (DG)

The main objective of the programme is to support research and development activities in the field of national and cultural identity to deliver economic or other societal benefits. **According to information from the CEP, the Ministry of Culture has, until March 2016, supported 57 projects with state aid totalling CZK 1.480 billion.**
The programme’s two overall objectives comprise six specific objectives.

Overall objective 1: National Identity

- Specific objective 1.1 Research and its application – Historical sciences and archaeology
- Specific objective 1.2 Research and its application – Language and literature
- Specific objective 1.3 Research and its application – Creation of art

Overall objective 2: Cultural Heritage

- Specific objective 2.1 Research and its application – Cultural heritage and territories of historical value
- Specific objective 2.2 Technologies and procedures for preserving cultural heritage
- Specific objective 2.3 Cultural heritage, education and media

Anticipated amount of funding for the entire programme period:

Period	Amount of funding (CZK)
2016	357,804,000
2017	373,877,000
2018	425,000,000
2019	425,000,000
2020	425,000,000
2021	425,000,000
2022	425,000,000
Total	2,856,681,000

Project period
The programme is planned for 7 years from 2016 to 2022. Its projects are expected to run for at least 3 years but no more than 5 years and must be completed by 31 December 2022 at the latest. In 2021 and 2022, the running projects launched before 2020 will be completed and no new projects will commence under the programme.

Form and amount of funding
Funding will be provided in the form of grants for approved costs to legal entities, and in the form of increased expenditure limits to organisational units of the state and to organisational units of ministries which are, at the same time, research organisations.

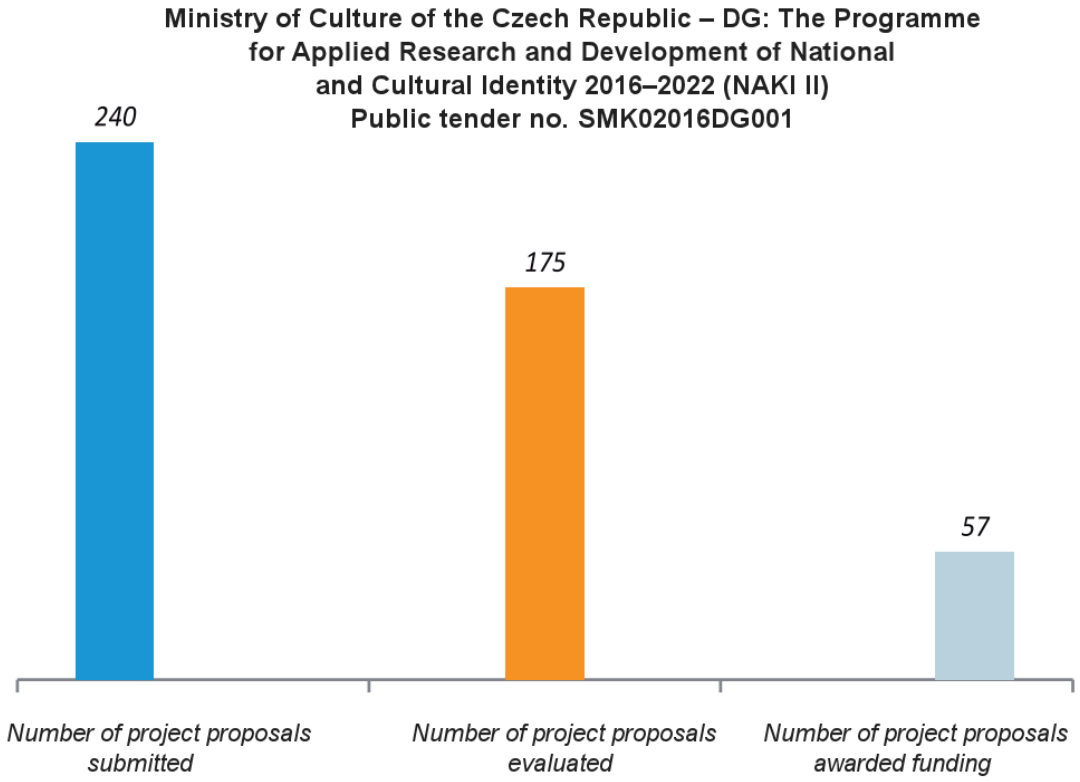
The aid rate may reach 100 %. The maximum allowed amount of project funding (without the notification requirement and detailed assessment by the European Commission) stipulated in section 6 (1) (e), point ii) of the GBER and Article 7.1 of the Framework as EUR 10 million will not be exceeded. Under the programme, the aid rate, defined as a percentage of approved project costs, will be calculated separately for each project, each recipient, and each additional participant, according to the GBER and the Framework. The amount of funding applied for must be justified and commensurate with the objectives, the project duration and the envisaged project results.

Recipients of funding
Funding will only be provided to research organisations.

Funding allocated in 2015:

Period	Specific-purpose funding allocated (CZK)
2016	209,053,000
2017	231,229,000
2018	223,091,000
2019	226,881,000
2020	157,792,000
Total	1,048,046,000

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 1,048,046,000)



Source: Research, Development and Innovation Information System

Public tender
The first public tender was announced in March 2015, with the funding to be released in 2016. Two more public tenders are planned for 2017 and 2019, for which the funding will be released in 2018 and 2020, respectively.

3.3.2 Public tenders

This year, no public tender is expected to be announced under the NAKI II programme.

3.3.3 Contacts and additional information

Ministry of Culture
Maltézské náměstí 1, 118 11 Praha 1, Czech Republic
Department of Research and Development
Office in Prague 7: Dukelských hrdinů 47
Phone: +420 224 301 431
E-mail: martina.dvorakova@mkcr.cz

Useful links:
http://www.mkcr.cz

3.4 Research programmes of the Ministry of Defence (MD)

The Ministry of Defence administers two R&D programmes. According to information from the CEP, the Ministry of Defence has, between 1994 (launch of the CEP) and February 2016, supported 766 projects with state aid totalling CZK 5.374 billion.

3.4.1 The Defence Applied Research, Experimental Development and Innovation Programme 2011–2017 (OF)

The programme has multiple objectives: to methodically advance defence research, development and innovation; to foster the acquisition and exploitation of new knowledge; and to develop expertise for acquiring, mastering, maintaining and expanding specific abilities needed for the country's defensive capacity, national security, and relevant operational abilities of its Armed Forces. The operational ability is required for tasks that arise from national and international standards, obligations and political-military ambitions of the Czech Republic in the period until 2020. According to information from the CEP, the Ministry of Defence has, until March 2016, supported 91 projects with state aid totalling CZK 1.441 billion. No further calls are expected to be announced under this programme.

Many objectives, obligations and requirements for the operational abilities of the Armed Forces of the Czech Republic are directly or indirectly related to the activities of the NATO STO (NATO Science and Technology Organisation). NATO STO aims to promote and conduct research and information exchange among NATO states to enable effective use of national investments, to meet the military needs of the Alliance, and to maintain military technological dominance and inform the decisions of key NATO officials.

3.4.2 Development of Armed Forces of the Czech Republic (OW)

The main goal of this programme is to develop the abilities of the Armed Forces of the Czech Republic in areas which are essential for the defence of the country, for achieving the country's declared political-military ambitions, and for the Armed Forces' successful performance in all other roles.

The programme has the following specific objectives:

- To expand the ability of the Armed Forces of the Czech Republic to uptake the outcomes of research and development and related knowledge for meeting its tasks.
- To continue the development of novel and upgraded products, services and technologies resulting from RDI programmes.
- To measure the benefits of the uptake of research results by the Ministry of Defence and to obtain feedback for decision-making at all management and command levels.

Under the programme, RDI projects will be carried out to meet precisely defined needs and requirements of the Ministry of Defence in the following areas:

Development of national defence policy, command and control support in the changing security and operational environment, and the role of the Armed Forces of the Czech Republic in society

- Developing and implementing tools for decision-making support at all control levels, and for modelling individual and unit planning and training processes.
- Designing methods and procedures for securing effective performance of the Armed Forces of the Czech Republic in all areas of operational art, and securing high-quality professionals for the Armed Forces.

Development of new weapon and defence systems

- Developing weapon systems, technologies and equipment to support the operation of the Armed Forces of the Czech Republic, to enhance the effectiveness of their combat deployment, and to improve their compatibility with NATO and European weapon systems.
- Improving the technical and technological efficiency of existing weapon systems, and enhancing the protection and effective use of the human factor.

Effective protection of the forces and material

- Generating new principles and designing new methods of developing materials and technology for various aspects of protection against weapons of mass destruction.
- Generating new principles and designing new methods of developing means of protection, resilience and safety of material, personnel and equipment, including ballistic protection, camouflage and deception.

Preparation, mobility and effective operation of the forces

- Designing and applying materials and technologies extending the lifetime and improving the reliability of material and equipment, and supporting the operation of units.
- Developing and applying materials with resistance to adverse climatic and severe wear conditions, and developing materials for the protection of individuals with suppressed thermal, radio and acoustic emissions to reduce the risk of detection.

Training of personnel

- Developing objective methods of selection and training for individuals for extreme physical and mental stress according to deployment standards.
- Developing and introducing simulators and simulation equipment for the training of forces.

Transport and sustainability of the forces

- Developing technologies which reduce direct hazards to personnel and which can be deployed, for instance, in remote chemical reconnaissance and artillery reconnaissance, and for recovery of individuals from hazardous locations.
- Implementing advanced integrated logistic support technologies throughout the life cycle comprising procurement, operation, maintenance and disposal.

Medical support

- Developing healthcare equipment and material for specialized military medicine and for field conditions, emergency medicine and disaster medicine, including technologies for detecting the health condition of individuals.

Development of command and control systems, communication and information systems and cyber defence

- Introducing unified interoperable tools for decision-making support in operations and exercises of multinational allied and alliance forces. Acquiring and using a shared picture of the operational situation.
- Developing and implementing procedures and methods that improve the security of communication and information systems.
- Developing ISTAR support systems (Intelligence, Surveillance, Target Acquisition and Reconnaissance).
- Construction and development of radio reconnaissance systems capable of detection (monitoring), direction-finding and jamming modern radio systems.
- Finding theoretical solutions for and implementing new methods of signal classification, and rapid analysis of complex signals within current frequency bands.

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2015	20,000,000
2016	110,000,000
2017	240,000,000
2018	350,000,000
2019	350,000,000
2020	334,000,000
2021	226,000,000
2022	103,000,000
Total	1,733,000,000

Project period
The programme is planned for 8 years from 2015 to 2022. Projects under this programme with a minimum project period of 1 year and a maximum of 4 years are to be completed by 31 December 2022 at the latest.

The first public tender was announced in 2014 and its funding began to be provided in 2015. Further public tenders will be announced as required, depending on the amount of funds available.

Form and amount of funding
The criteria for cost eligibility and further information will be stipulated in each tender dossier. The funding is provided for approved costs of the project, as defined in section 2, subsection l of the Support of Research and Development Act No. 130/2002 Sb. Approved costs must be used for activities directly related to project implementation and match the specific RDI categories.

Recipients of funding
In accordance with the Support of Research and Development Act No. 130/2002 Sb., the recipient of funding and other project participants can be any entity that meets the applicant definition given in section 1, subsection 2, paragraph b) of Act No. 130/2002 Sb., and the supplier definition given in section 17, subsection 1, paragraph a) of Act No. 137/2006 Sb. Under this programme, funding can be awarded only to those applicants who fulfil the qualification criteria set out in sections 50–57 of Act No. 137/2006 Sb. If a project proposal is submitted by multiple applicants, each of them will be required to prove their qualifications separately. The method of proving qualifications is defined by the public funding provider in the tender dossier.

3.4.3 Public tenders

The Ministry of Defence announced on its website that the practice of publishing an overview of planned, running and completed public contracts was discontinued as of 1 Jan. 2015.

3.4.4 Contacts and additional information

Ministry of Defence of the Czech Republic
Tychonova 1
160 01 Praha 6, Czech Republic
Phone: + 420 973 201 111
E-mail: posta@army.cz

Useful links:
http://www.vyzkum.army.cz
http://www.army.cz

3.5 Research programmes of the Ministry of Industry and Trade (MIT)

The TIP 2009–2017 Programme is coming to an end at the Ministry of Industry and Trade, and is to be replaced by the TRIO programme which is planned to run from 2016 to 2021. **According to information from the CEP, the Ministry of Industry and Trade has, between 1994 (launch of the CEP) and February 2016, supported 3,132 projects with state aid totalling CZK 38.709 billion.**

3.5.1 The TRIO Programme for Applied Research and Experimental Development (FV)

The programme's mission is to support applied research and experimental development of of Key Enabling Technologies (KETs). These are knowledge-intensive technologies, which are associated with high research intensity, rapid innovation cycles, and require highly-skilled personnel. KETs can find use in new products and services with added value, and can contribute to economic growth and enhanced competitiveness of the Czech Republic and the European Union.

The programme aims to support projects focused on the following KETs:

- Photonics
- Micro and nanoelectronics
- Nanotechnology
- Industrial biotechnologies
- Advanced materials
- Advanced manufacturing processes

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2016	300,000,000
2017	710,000,000
2018	1,070,000,000
2019	920,000,000
2020	530,000,000
2021	170,000,000
Total	3,700,000,000

Project period

The planned programme period is 6 years (2016–2021). The first public tender was announced in 2015 and funding was released in 2016. The next public tenders are to be announced in 2016 and 2017. Their relevant funding will begin to be provided in 2017 and 2018. Project duration is expected to be no more than 48 months.

Form and amount of funding
Under the programme, the maximum allowed aggregate aid rate is 80 % of the approved costs. In accordance with the GBER, a bonus may be awarded beyond the general aid rate to participants who have met the conditions for effective collaboration. Within the definition of the GBER and the Framework, effective collaboration means collaboration of no fewer than two independent parties to exchange knowledge or technology, or to achieve a common objective based on the division of labour where the parties jointly define the scope of the collaborative project and share its risks and outputs. The project costs may be borne in full by one or more parties, which can thus relieve the other parties of financial risk. Collaboration is understood not to include contract research and provision of research services.

Maximum aid rates for various activity categories and participants:

Activity category / participant	Small enterprise	Medium-sized enterprise	Large enterprise
Industrial research	70 %	60 %	50 %
Industrial research under conditions of effective collaboration	80 %	75 %	65 %
Experimental development	45 %	35 %	25 %
Experimental development under conditions of effective collaboration	60 %	50 %	40 %

Research organisations may receive up to 100 % aid but only for their non-economic activities pursuant to Article 2.1.1, section 19 of the Framework, and provided that all related provisions of the GBER and the Framework are met, and the maximum allowed aid rate for a single project under the programme does not exceed 80 %.

Recipients of funding
In accordance with the Support of Research and Development Act No. 130/2002 Sb., the applicants may include enterprises, and legal and natural persons which, in line with Annex 1 to the GBER, conduct economic activities and carry out the project in effective collaboration with at least one research organisation. A research organisation may apply for funding as well but it will be considered as an enterprise, i.e. it will have to prove its ability to provide co-funding for the project from non-public resources, demonstrate implementation of project results in practice, and accept the conditions applicable to enterprise with respect to the rate of public aid. Under such circumstances, the project need not be carried out with effective collaboration between multiple entities.

Other participants may include enterprises and research organisations, where the latter are understood as legal entities which meet the definition of a research organisation as given by law, the GBER and the Framework. Screening, to ascertain whether an entity meets the definition of a research organisation, will be carried out by the public funding provider on an individual basis, as part of the project proposal evaluation, and by a procedure approved by the Research and Development Council.

3.5.2 Public tenders

Under the TRIO programme, a new public tender will be announced in the second quarter of 2016.

3.5.3 Contacts and additional information

Ministry of Industry and Trade of the Czech Republic
Na Františku 32, 110 15 Praha 1, Czech Republic
Department of Research, Development and Offset Programmes
Phone: +420 224 853 200
E-mail: faltus@mpo.cz

Useful links:
http://www.mpo.cz
http://www.mpo.cz/cz/podpora-podnikani/vyzkum-a-vyvoj/
http://www.mpo.cz/dokument160144.html

3.6 Research programmes of the Ministry of Education, Youth and Sports (MEYS)

Currently, MEYS administers three RDI support programmes (in addition to the international cooperation programmes described in chapter 7): National Sustainability Programme I, National Sustainability Programme II, and Information – the Foundation of Research Programme. **According to information from the CEP, the Ministry of Education has, between 1994 (launch of the CEP) and February 2016, supported 8,350 projects with state aid totalling CZK 64.608 billion.** No public tender will be announced under any of these programmes in 2016. MEYS is preparing an Inter-Excellence programme which is now going through the approval procedure.

3.6.1 National Sustainability Programme I (NSP I) 2013–2020 (LO)

The programme strengthens the development and sustainability of new European centres of excellence, regional research centres, and other research centres built in the Czech Republic in 2007–2013/2015 with funding from the European Regional Development Fund, whose building costs were less than EUR 50 million, and which currently receive no further support from Structural Funds. These centres were funded from the Research and Development for Innovation Operational Programme (RDIOP), Priority Axis 1 (Centres of Excellence) and Priority Axis 2 (Regional Research Centres in Regions outside the Capital City of Prague), and from Prague – Competitiveness Operational Programme (PCOP). According to information from the CEP, the Ministry of Education has, until March 2016, supported 48 projects with state aid totalling CZK 5.859 billion. No further calls will be announced under this programme.

3.6.2 National Sustainability Programme II (NSP II) 2013–2020 (LQ)

NSP II contributes to the sustainability of those centres of research, experimental development and innovation which house large infrastructures, were built in the Czech Republic in 2007–2013/2015 under the operational programmes of European Structural Funds, had building costs of more than EUR 50 million, and currently receive no further support from Structural Funds. These centres were funded from the RDIOP – Priority Axis 1 (Centres of Excellence) and Priority Axis 2 (Regional Research Centres in Regions outside the Capital City of Prague), and from the PCOP. No further calls will be announced under this programme.

3.6.3 Information – the Foundation of Research 2013–2017 (LR)

The programme expands access to electronic information resources for research organisations in the Czech Republic through the rapid development of an information infrastructure for research. This infrastructure is essential for the primary research-oriented non-economic activities of research organisations. The programme focuses on the effective use of discount-priced country-wide or sector-wide volume licenses. According to information from the CEP, this programme has, until March 2016, supported 9 projects with state aid totalling CZK 1.017 billion. No further calls are expected to be announced under this programme.

3.6.4 Public tenders

No further public tenders will be announced under the currently running national programmes of the Ministry of Education of the Czech Republic.

3.6.5 Contacts and additional information

Ministry of Education of the Czech Republic
Karmelitská 7, 118 12 Praha 1, Czech Republic
E-mail: posta@msmt.cz

Useful links:
http://www.msmt.cz

3.7 Research Programmes of the Ministry of the Interior (MI)

The Ministry of the Interior is currently concluding two programmes, and is providing funding under its two follow-on programmes. **According to information from the CEP, the Ministry of the Interior has, between 1994 (launch of the CEP) and February 2016, supported 334 projects with state aid totalling CZK 3.525 billion.**

3.7.1 Programme for Security Research of the Czech Republic 2015–2020 (VI)

The main objective of the programme is to deliver better national security through new technologies, knowledge, and other outcomes of applied research, experimental development and innovation in the identification of, the prevention of, and protection against unlawful behaviour, and natural and industrial catastrophes that may harm the citizens, organisations, property, and infrastructures of the Czech Republic. The complexity of threats and risks, and the need for relevant changes to the security system of the Czech Republic continue to increase. Concatenation of potential security threats to the country and multiplication of their consequences are conceivable occurrences. According to information from the CEP, this programme has, until March 2016, supported 45 projects with state aid totalling CZK 869 million.

The dependence on technologies and on the long-distance transfer of energy, and the transport of raw materials and goods is increasing. Additional risks include the persistent instability at the periphery of the Euro-Atlantic area and the potential concurrence of natural and man-made disasters (attacks and accidents). The programme's sub-objectives are results-oriented and linked to the key priorities of the national policy of security and security research. These sub-objectives are grouped in thematic areas derived from key strategic documents, namely the Security Strategy.

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2015	200,000,000
2016	400,000,000
2017	400,000,000
2018	400,000,000
2019	400,000,000
2020	400,000,000
Total	2,200,000,000

Project period
The programme is planned for the period from 1 January 2015 to 31 December 2020. Projects are expected to run for at least 2 years but no more than 6 years. Projects implemented under the programme must be completed by 31 December 2020 at the latest.

The first public tender for research under the programme was announced in 2014 and the funding was released in 2015. For the public tenders in 2015 and 2016, funding is to be released in 2016 and 2017, respectively.

Additional calls will be announced depending on the available funding and the objectives of the programme. The public tender for research will then be a single-round competition according to the Support of Research and Development Act No. 130/2002 Sb.

Form and amount of funding
The aid rate defined as a percentage of the approved project costs will be calculated separately for each project, each recipient, and each additional participant according to the Community Framework. It will depend on the applicant organisation type, the category of research and development, and the nature of project activities. The aid rate is determined with respect to a basis defined by the total approved costs of the project.

The average amount of funding (from the state budget) for individual years is expected to equal 75 % of the total approved costs of a project.

The maximum aid rates for applied research and experimental development, for individual categories of recipients, and for other participants are given in the following table:

	Small enterprise	**Medium-sized enterprise**	**Large enterprise**	**Research organisation**
Applied research	70 %	60 %	50 %	100 %
Applied research with premium	80 %	75 %	65 %	100 %
Experimental development	45 %	35 %	25 %	100 %
Experimental development with premium	60 %	50 %	40 %	100 %

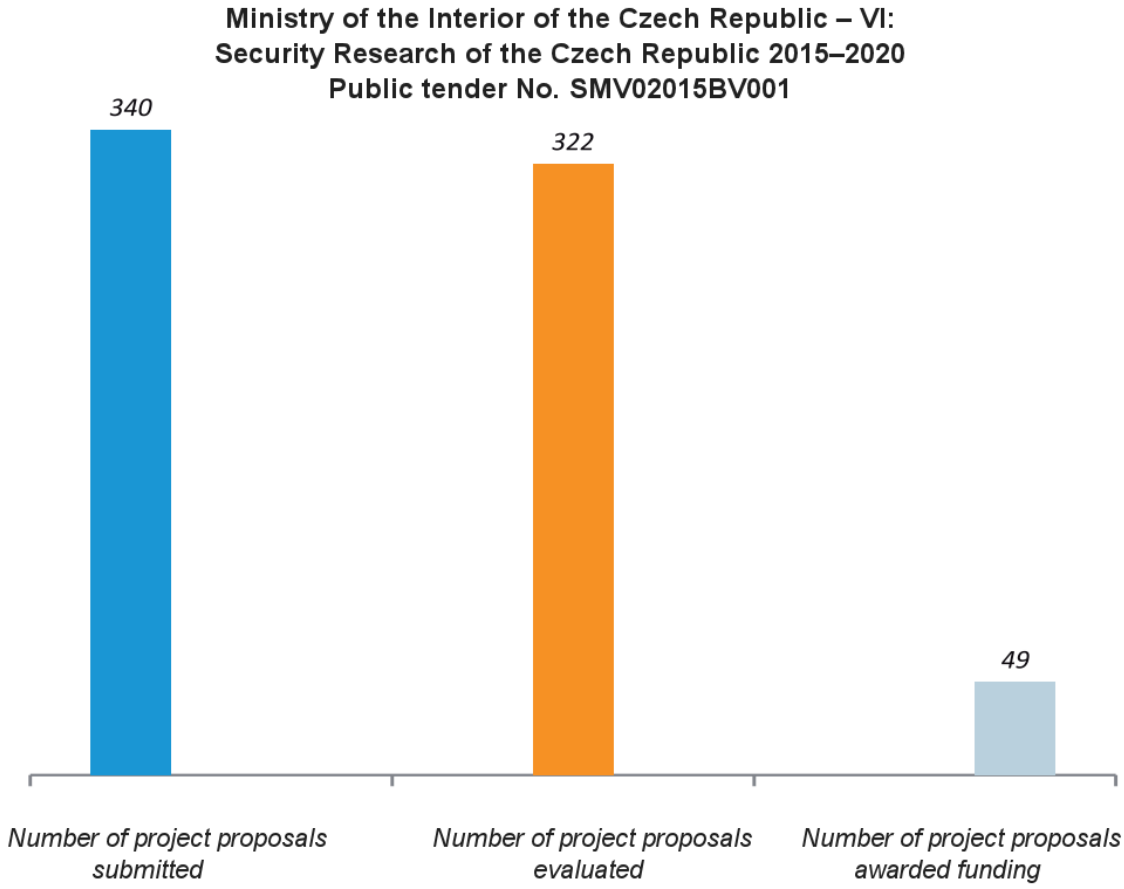
Recipients of funding
In accordance with the Support of Research and Development Act No. 130/2002 Sb., and the Framework, those eligible for funding include:

- Research organisations – legal entities which meet the definition of a research organisation given in the Support of Research and Development Act No. 130/2002 Sb. and in the Framework, which carry out the project alone or in cooperation with other participants.
- Businesses – legal entities which, according to Annex 1 to the Commission Regulation No. 800/2008, conduct economic activities, and which carry out the project alone or in cooperation with other participants, and which prove their ability to co-fund the project from non-public resources.

Funding allocated in 2015:

Period	**Specific-purpose funding allocated (CZK)**
2015	51,312,000
2016	292,199,000
2017	214,287,000
2018	206,143,000
2019	134,560,000
2020	50,088,000
Total	948,589,000

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 948,589,000)



Source: Research, Development and Innovation Information System

3.7.2 Programme for Security Research for National Needs 2016–2021 (VH)

The main objective of the programme is to deliver better national security by supporting research that meets the needs of state administration and enables those responsible for national security to acquire, master, maintain and develop specific abilities for performing effectively.

The programme's mission and objectives build on the previous programme Security Research for National Needs in 2010–2015.

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2016	100,000,000
2017	140,000,000
2018	140,000,000
2019	140,000,000
2020	140,000,000
2021	140,000,000
Total	800,000,000

Project period
The VH programme is planned for the period from 1 January 2016 to 31 December 2021. Calls for tenders for public contracts began to be announced in 2015. 2020 will be the last one for awarding new contracts. Given the focus on research and development, and the variety of needs, the minimum public contract period is to be 12 months. The maximum contrast period is 60 months. All projects must be completed before the end of the programme period.

Form and amount of funding
As this programme is to be conducted through public contracts according to current legislation, and the sole user of their results is the state, the maximum allowed aid rate is 100 %.

Recipients of funding
Pursuant to section 2, subsection 2, paragraph b) of the Support of Research and Development Act No. 130/2002 Sb., eligible applicants for the specific-purpose funding include organisational units of the state, organisational units of ministries engaged in research and development, as well as legal and natural persons.

3.7.3 Public tenders

3.7.4 Contacts and additional information

Ministry of the Interior of the Czech Republic
Education and Police Academy Administration Section
Department of Research and Development
Nad Štolou 3, 170 00 Praha 7, Czech Republic
Phone: +420 974 833 268,
E-mail: vyzkum@mvcr.cz

Useful links:
http://www.mvcr.cz
http://www.mvcr.cz/bezpecnostni-vyzkum.aspx

3.8 Research programmes of the Ministry of Health (MH)

In 2015, the Ministry of Health announced the first public tender under its new Programme to Support Applied Medical Research and Development (NV). **According to information from the CEP, the Ministry of Health has, between 1994 (launch of the CEP) and February 2016, supported 5,119 projects with state aid totalling CZK 13.786 billion.**

3.8.1 Programme to Support Applied Medical Research and Development 2015–2022 (NV)

A healthy population is essential for the economic, social and individual-based success of any society. There are many discrepancies associated in one way or another with what is understood as health: some of the most difficult ones are those between advances in medicine and the financial strength of the country. Medicine must focus must on the most widespread and most severe threats: chronic non-infectious diseases, such as cardiovascular and cerebrovascular diseases, cancer, dementia and other mental diseases, or chronic diseases of the musculoskeletal system, and others. Attention must be paid to effects of the environment, which are changing profoundly. It is important to support the creation and evolution of new treatments and techniques (such as genetics and nanotechnology). New infectious diseases and the ever increasing resistance of new agents must be monitored. In response, virology and other disciplines must be supported. Fighting chronic non-infectious lifestyle diseases caused mostly by the unhealthy behaviour of a large part of the population will be a major challenge. The mission of the health care system is to adapt to the changing environment, knowledge, and society in order to provide all citizens with guaranteed access to health support and protection, to encourage healthy lifestyle, and enforce the rules of effective disease prevention. According to information from the CEP, this programme has, until March 2016, supported 157 projects with state aid totalling CZK 1.559 billion.

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2015	450,000,000
2016	1,050,000,000
2017	1,050,000,000
2018	1,050,000,000
2019	1,050,000,000
2020	1,050,000,000
2021	800,000,000
2022	600,000,000
Total	7,100,000,000

Project period
The programme is planned for 8 years from 2015 to 2022. The first public tender under this programme was announced in 2014.

Projects under this programme are expected to run for at least 3 years but no more than 5 years and must be completed by 31 December 2022 at the latest. Five-year projects should focus on very demanding and complex issues, and their authors will be required to meet the strict criteria of excellent research imposed by the Project Evaluation System. Details are given in the relevant tender dossiers.

Form and amount of funding
Funding is provided to legal entities and natural persons in the form of grants for approved costs. By contrast, the support for organisational units of the state and organisational units of ministries takes the form of increased expenditure limits.

The aid rate defined as a percentage of approved project costs will be calculated separately for each project, each recipient, and each additional participant according to the GBER, and the Framework. Pursuant to Support of Research and Development Act No. 130/2002 Sb., the Framework and the GBER, the maximum allowed aid rate in a single project conducted by only research organisations can reach 100 % of the approved costs.

For projects which are co-investigated by enterprises, the maximum allowed aid rates for applied research and experimental development and categories of recipients and other participants will be stipulated in the tender dossier, in accordance with the applicable regulations of the European Union.

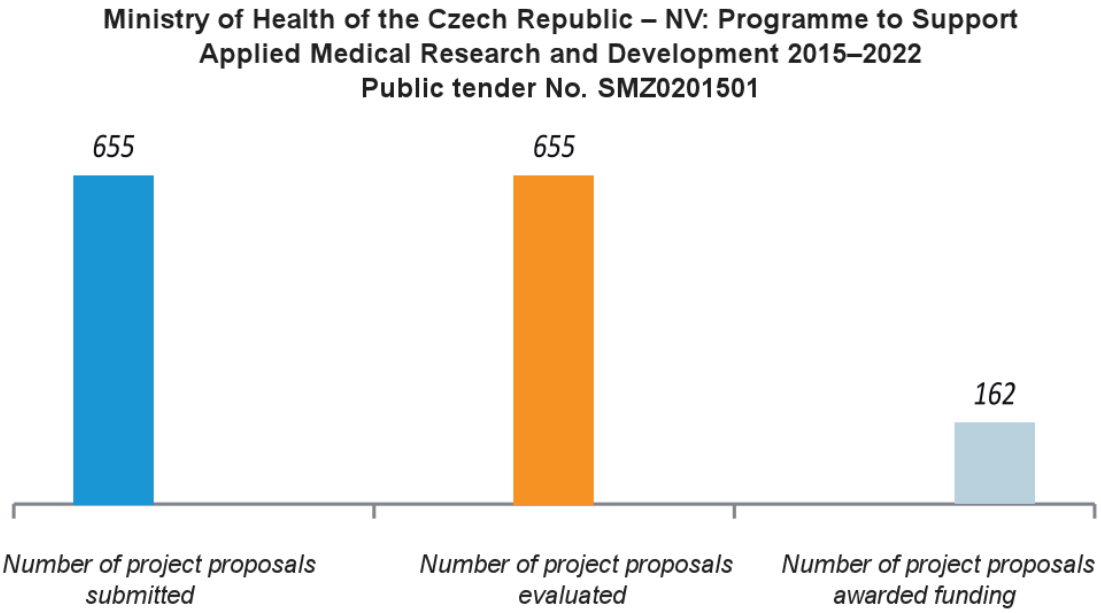
Recipients of funding
According to Support of Research and Development Act No. 130/2002 Sb., the GBER and the Framework, eligible applicants, recipients, and other participants are the following:

- Research organisations – legal entities which, according to the GBER, meet the definition of a research organisation, carry out the project alone or in cooperation with other participants, and prove their ability to co-fund the project from non-public resources.
- Businesses – legal entities and natural persons which, according to Annex 1 to the GBER, conduct economic activities, carry out the project alone or in cooperation with other participants, and prove their ability to co-fund the project from non-public resources.

Funding allocated in 2014:

Period	Specific-purpose funding allocated (CZK)
2015	292,441,000
2016	429,036,000
2017	425,105,000
2018	388,992,000
2019	69,551,000
Total	1,605,125,000

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 1,605,125,000)



Source: Research, Development and Innovation Information System

3.8.2 Public tenders

Another call for proposals is to be announced in 2016.

3.8.3 Contacts and additional information

Ministry of Health of the Czech Republic
Department of Science and Research
(Czech Agency for Healthcare Research)
Ruská 2412/85, 100 05 Praha 10, Czech Republic
Martina Lišková, Secretariat
Phone: +420 271 019 257
E-mail: martina.liskova@azvcr.cz

Useful links:
http://www.mzcr.cz
http://www.azvcr.cz

3.9 Research programmes of the Ministry of Agriculture (MA)

A programme entitled Comprehensive Sustainable Systems in Agriculture 2012–2018 (QJ) is currently coming to an end at the Ministry of Agriculture. The Ministry is preparing a follow-on programme under the name Programme for Applied Research of the Ministry of Agriculture "Earth". Its draft is now going through the approval procedure. **According to information from the CEP, the Ministry of the Agriculture has, between 1994 (launch of the CEP) and February 2016, supported 1,665 projects with state aid totalling CZK 8.530 billion.**

3.9.1 Comprehensive Sustainable Systems in Agriculture 2012–2018 (QJ)

The objective of the programme is to contribute to the food security of the Czech Republic through increasing the agricultural crops and livestock production capacity. To fulfil this objective, the programme expects to follow multiple steps: facilitate sufficient production of high quality and safe foodstuffs of domestic origin for feeding the population; introduce new methods, process routes and systems for greater competitiveness of Czech agriculture in the EU; foster sustainable development of the agricultural sector, rural areas and regions; exploit new knowledge for sustainable utilization of natural resources with minimized environmental burden; introduce farming systems which help reduce negative impacts of climate change on the functions of ecosystems in agriculture, forestry and water management; and increase the potential of non-production aspects of agriculture, forestry, and water management. According to information from the CEP, this programme has, until March 2016, supported 182 projects with state aid totalling CZK 1.923 billion. No further calls will be announced under this programme.

Research activities will be conducted in three sub-programmes.

- Sustainable agricultural systems
- Sustainable development of forestry, water management, and other areas of agriculture
- Support of agricultural policy

3.9.2 Public tenders

No further public tenders will be announced in the programmes of the Ministry of Agriculture.

3.9.3 Contacts and additional information

The Ministry of Agriculture of the Czech Republic has established the National Agency for Agricultural Research. The Agency is part of the Research, Education and Consultancy Department of the Ministry. In cooperation with programme committees appointed by the Deputy Minister of Agriculture, it conducts

public tenders for R&D projects according to the conditions and criteria identified by the Ministry. On an annual basis, the Agency organizes the evaluation of interim and final project reports.

Ministry of Agriculture of the Czech Republic
Research, Education and Consultancy Department
National Agency for Agricultural Research
Těšnov 65/17, Praha 1, 110 00, Czech Republic
E-mail: info@mze.cz, posta@mze.cz

Useful links:
http://www.eagri.cz
http://eagri.cz/public/web/mze/poradenstvi-a-vyzkum

3.10 Overview of calls under current support programmes

Public funding provider	Programme code	Name of activity	Start	End	Call in 2016	Future calls
CSF	GA	Standard projects	1993	–	Y	Y
CSF	GC	International projects	1994	–	Y	N
CSF	GJ	Junior grants	2014	–	Y	Y
CSF	GL	LA grants	2014	–	Y	Y
TA CR	TH	EPSILON	2015	2022	Y	Y
TA CR	TG	GAMA	2014	2019	Y	N
TA CR	TF	DELTA	2014	2019	Y	N
MC	DG	Applied Research and Development for National and Cultural Identity Programme II	2016	2022	N	Y
MD	OW	Development of Armed Forces of the CR	2015	2022	Y	Y
MIT	FV	TRIO	2016	2022	Y	Y
MI	VI	Programme for Security Research of the Czech Republic 2015–2020	2015	2020	Y	Y
MI	VH	Security Research for the Needs of the State 2016–2021	2016	2021	Y	Y
MA	NV	Programme to Support Applied Medical Research and Development 2015–2022	2015	2022	Y	Y

4. RESEARCH AND DEVELOPMENT IN THE CZECH REPUBLIC IN THE CONTEXT OF THE EUROPEAN UNION

This chapter is devoted to the Enterprise and Innovation for Competitiveness Operational Programme 2014–2020 (EICOP), and the Research, Development and Education Operational Programme (RDEOP).

4.1 Enterprise and Innovation for Competitiveness Operational Programme 2014–2020

The objective of the Enterprise and Innovation for Competitiveness Operational Programme 2014–2020 is a competitive and sustainable economy based on knowledge and innovation. The word "competitive" refers to the ability of local businesses to succeed in global markets and create enough jobs. The word "sustainable" highlights the long-term horizon of competitiveness, and therefore also entails environmental aspects. The programme follows the rules of the Cohesion Policy for the 2014–2020 programme period and draws on key strategic documents adopted by the European Union and by the Czech Republic. Priority Axis 1, Promotion of research and development for innovation, is of major importance for R&D. Entities engaged in R&D can use the other priority axes only to a limited extent and for their subsidiary activities.

EICOP objectives:

- **Supporting Czech companies which are capable of reaching and pushing the technological boundaries of their fields**, with the emphasis placed on developing their in-house research, development and innovation capacities and their external links.
- **Advancing entrepreneurship and innovation in small and medium-sized enterprises in sectors of lower knowledge intensity**, where support focuses primarily on the realization of new business plans, and promoting services which improve SMEs' competitive advantage on an international scale.
- **Taking steps towards an energy-efficient and low-carbon economy** by improving the energy efficiency of the business sector, using renewable energy sources, upgrading the power infrastructure, and introducing new technologies in energy and secondary raw material management.
- **Promoting advances in entrepreneurship, services, and access to government services via high-speed Internet access** and a wider choice of information and communication technology (ICT) services, as the competitiveness of an information society stems from the efficient use of advanced ICT services.

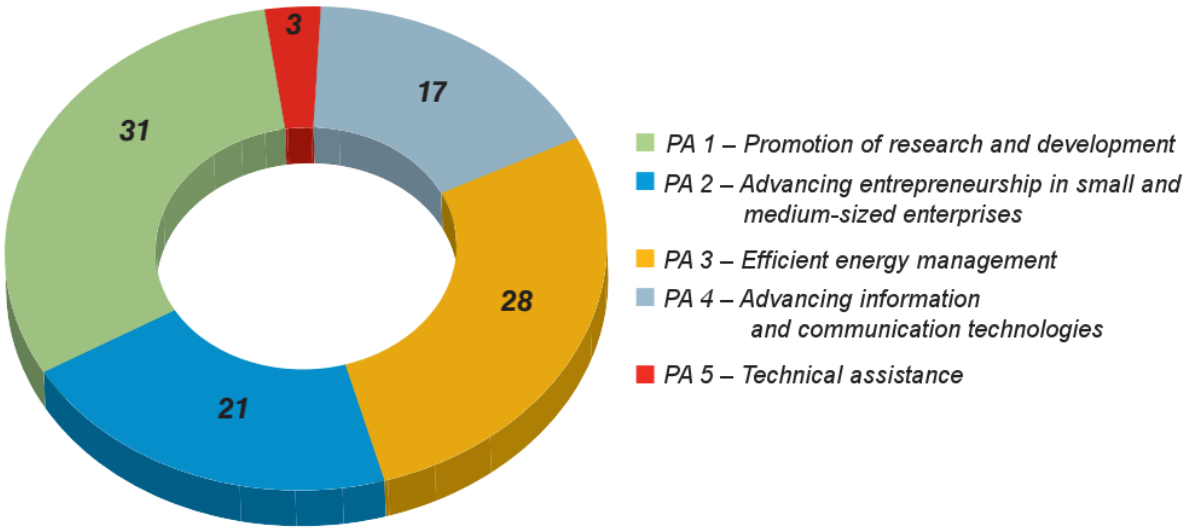
4.1.1 Funding

All support programmes under EICOP will be co-funded from the resources of the European Regional Development Fund. For each of these programmes, objectives have been defined together with eligible recipients of funding and activities, as well as the conditions for submitting project proposals, and other aspects. Based on these government-approved support programmes, calls for proposals are being announced. A total of CZK 116 billion has been allocated for these projects (the European Regional Development Fund). A major portion of this (almost 60 %) goes to Priority Axes 1 and 3, which are directly related to some of the key objectives of the Europe 2020 strategy.

Grants for small, medium-sized and large enterprises may account for no more than 45 %, 35 %, and 25 % of the approved costs, respectively. Exceptions are allowed in industrial research, experimental development or energy saving projects. The nature of the planned investment and the rules of the particular call for proposals will play a role as well.

Geographical location plays a role in the grant award as well. Eligible recipients are entrepreneurs from all regions of the Czech Republic, except Prague, the capital city. If, despite that, Prague-based entities decide to invest outside the capital's borders, the same rules as those for entrepreneurs from other regions will apply to them.

Graph: Distribution of funding among Priority Axes



Source: EICOP

4.1.2 Priority Axis 1: Promotion of research and development for innovation

Investment priority 1: Promoting business investment in research and innovation, and developing links and synergies between enterprises, research and development centres, and the higher education sector. Emphasis will be placed on promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, the formation of clusters, and achieving open innovation through smart specialisation. Support will be provided for technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities, and primary production, in particular in key enabling technologies, and in the dissemination of technologies for general use.

- **Specific objective 1: Increasing innovation performance of enterprises**
  The main goal is to advance entrepreneurship which relies on the intensive creation and exploitation of unique knowledge in all sectors relevant to the specialization of the Czech Republic. The intended expansion of advanced manufacturing and R&D infrastructures will strengthen the innovation capacity of enterprises, enable their own R&D activities, and boost demand for the services of research organisations, including technologies promising the largest growth. Fulfilment of strategic objectives will pave the way to the market for higher-order innovations, and improve the technical stages of the innovation process.

- **Specific objective 2: Improving the intensity and efficiency of cooperation in research, development and innovation**
  By improving the quality of services of supporting infrastructures, joint RDI activities of enterprises and public and business sectors will be accelerated. Fulfilment of this specific objective will promote knowledge and technology transfers, mobility, cross-sectoral cooperation, growth of innovative firms, and strengthen competitive advantages, the vital element of the country's innovation system.

4.1.3 Priority Axis 2: Development of SMEs' entrepreneurship and competitiveness

Investment priority 1: Promoting entrepreneurship by fostering the commercialization of new ideas, and the creation of new firms, whether independently or through business incubators.

- **Specific objective 1: Enhancing competitiveness of start-ups and emerging SMEs**
  Small and medium-sized enterprises are important elements for the country's prosperity and employment. They generate a decisive share of new jobs and contribute to the competitiveness of large enterprises, and to innovations which transform product sub-markets. The main objective is enhanced competitiveness of the SME segment by stimulating new and innovative start-ups and business plans with high growth potential, as well as those with value chains at lower levels, and supporting entrepreneurs in the service sector who contribute to employment.

4.1.4 Priority Axis 3: Efficient energy management, development of energy infrastructure and renewable energy sources, and support for the introduction of new technologies in the management of energy and secondary raw materials

Investment priority 4: Promoting research and innovation in, and adoption of, low-carbon technologies.

- **Specific objective 4: Application of innovative low-carbon technologies in energy management and the use of secondary raw materials**
  The technological change which is fundamental to achieving the goals of the Czech Republic and the EU in terms of energy and raw materials is conditional upon upgrades to the technological basis of Czech enterprises. However, a wider uptake of innovative low-carbon technologies is precluded by the business interruptions that their adoption entails. The competitiveness of enterprises and sustainability of the Czech economy should be promoted through implementing new technology solutions in the field of management of energy and secondary raw materials.

4.1.5 Priority Axis 4: Development of high-speed internet access networks, and information and communications technologies

Investment priority 2: Developing ICT products and services, e-commerce, and enhancing the demand for ICT.

- **Specific objective 2: Improving realization of the potential of the ICT sector boost the competitiveness of the economy**
  Sophisticated ICT products and related services are essential for all sectors, for the effective realization of business plans, and improving the quality of life of society. The Czech ICT sector has a major potential which has not yet been utilized in full. By meeting this specific objective, this potential will translate into tangible results. The aim is to enhance competitiveness through developing and exploiting highly-innovative ICT.

4.1.6 Schedule of programme calls

Priority axis / union priority	Name of call	Type of call	Planned call announcement date
PA1	**1st call of the Proof of Concept Programme**	fixed-deadline	May 2016
PA1	**1st call of the Innovation Vouchers Programme**	fixed-deadline	May 2016
PA1	**3rd call of the Innovation Programme**	fixed-deadline	August 2016
PA1	**4th call of the Innovation Programme: Industrial Property Protection Project**	fixed-deadline	August 2016
PA1	**2nd call of the Potential Programme**	fixed-deadline	August 2016
PA1	**1st call of Pre-Commercial Public Procurement**	fixed-deadline	August 2016
PA1	**2nd call of the Application Programme**	fixed-deadline	August 2016
PA1	**2nd call of the Knowledge Transfer Partnership Programme**	fixed-deadline	August 2016
PA1	**2nd call of the Infrastructure Services Programme**	fixed-deadline	August 2016
PA1	**2nd call of the Cooperation Programme: Clusters**	fixed-deadline	August 2016
PA1	**2nd call of the Cooperation Programme: Technology Platforms**	fixed-deadline	August 2016

This information is valid as of February 2016.

4.1.7 Contacts and additional information

Ministry of Industry and Trade of the Czech Republic
Na Františku 32, 110 15 Praha 1, Czech Republic
Phone: +420 224 851 111
E-mail: posta@mpo.cz

Links:
http://www.mpo.cz/cz/podpora-podnikani/oppik
http://www.mpo.cz/dokument166283.html

4.2 The Research, Development and Education Operational Programme (RDEOP)

Administered by the Ministry of Education of the Czech Republic, this multi-year programme offers funding from the Structural Funds of the European Union for the 2014–2020 programme period.

It helps shift the structure of the Czech economy towards a competitive economy based on a qualified, motivated and creative labour force, high-quality research results and their use. The programme will thus fulfil one of the three priorities of the Strategy for Smart, Sustainable and Inclusive Growth (Europe 2020 strategy), the Smart Growth priority. The objective of the Programme is to enhance the quality of research, and the focus on societal challenges, market needs, and the knowledge domains relevant for smart specialisation according to the National Research and Innovation Strategy for Smart Specialisation of the Czech Republic (the National RIS3) and its regional annexes.

The key principle is to develop human resources for a knowledge-based economy and for sustainable development in a socially-cohesive society using interventions under multiple priority axes. Qualified personnel are a key input for high-quality research. Interventions in education under this programme will be accompanied by systemic changes to improve the entire education system.

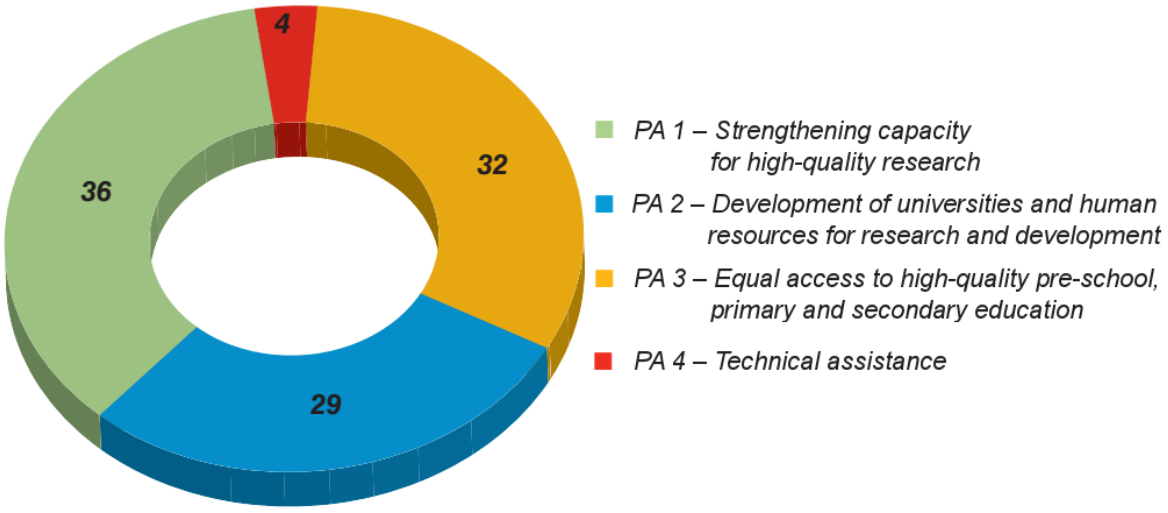
The areas of action include:

- Supporting equal access to quality education
- Developing competences needed for the labour market and for long-term needs of the society
- Strengthening the capacity for high-quality research and its impact on the society

4.2.1 Funding

The planned allocation to RDEOP is CZK 3.438 billion (2.768 billion from the EU and 0.670 billion from national resources).

Graph: Distribution of funding among Priority Axes



Source: RDEOP

Under RDEOP, the following project types are supported:

- Major project – a project defined by Articles 100–103 of the Common Provisions Regulation ((EU) No. 1303/2013).
- Simplified project – a project consisting exclusively of standardised activities with outputs or results defined by the Managing Authority. For individual activities (or outputs or results), the Managing Authority specifies precise amounts of funding in line with rules for simplified reporting.
- Individual project – these projects may differ in their nature and focus. They may include conceptual projects addressing fundamental issues, delivering overall solutions, and verifying them in practice. They may complement systemic projects. They do not address their topics at the level of isolated institutions. In conceptual projects, emphasis is placed on monitoring, regular evaluation, and reporting to the Managing Authority. They are not subject to approval by the Monitoring Committee.
- Other types of projects include regional projects which take a comprehensive approach, covering entire regions, areas or territories. Projects of Thematic Partnerships and Networks involve establishing partnerships and networking of institutions and other entities e.g. in a certain territory or region. Other projects deal with their topics at the level of individual institutions. Individual Systemic Projects represent a specific category. They address the matter comprehensively across a certain area or territory.

4.2.2 Priority Axis 1: Strengthening capacity for high-quality research

Interventions under this axis focus on fostering internationally-recognised state-of-the-art research in the Czech Republic, developing research collaboration, improving the infrastructure for training future researchers, advancing the management of research, and societal benefits of research. Priority Axis 1 responds to deficiencies identified in the Czech research system and its research infrastructures, their equipment, utilization and sharing, the infrastructures for training researchers, multi-disciplinarity of research teams, the involvement of research teams in international collaboration, cooperation between public and private sectors on long-term research themes, the strategic management of research, and the national research policies. All these deficiencies are addressed in four specific complementary objectives.

Under this priority axis, funding is provided for systemic projects, individual projects, and major projects.

Investment priority 1: Strengthening research and innovation infrastructure and capacities for research and innovation excellence, and supporting centres of competence, in particular those of European interest.

- **Specific objective 1: Bringing research and its results to the international level**
  By providing better conditions for excellent research, the aim is to increase the number of research teams that achieve international quality in terms of the originality and real-world impact of their research. Funding is provided to those research teams and the infrastructure they use which demonstrate qualities that promise research excellence (e.g. publications, applied results, participation in international projects). Emphasis is placed on utilizing the existing modern infrastructures, greater internationalisation of research teams, and channelling human and financial resources for excellent research into global societal challenges, in line with RIS3 priorities. The aim is to reinforce, expand and utilize existing research capacities to provide conditions for world-class research. No funding will be provided to establish new research centres outside the City of Prague.
- **Specific objective 2: Building capacities and strengthening long-term cooperation of research organisations with industry**
  The objective is to make research more effective in addressing societal challenges and benefiting society through building and expanding capacities for effective cooperation in pre-commercial research between research and industry. The outcomes will contribute to

addressing the major themes of society, and delivering a better quality of life. The research will meet the strategic long-term needs of the market by making use of the existing research infrastructures. Synergies with this objective will be delivered by those interventions under the Enterprise and Innovation for Competitiveness Operational Programme which focus on technology transfer between and joint industrial research of research organisations and enterprises.

- **Specific objective 3: Improving the infrastructure for research-educational purposes**
  The objective is to expand high-quality infrastructure for research-oriented curricula in line with the needs identified in the RIS3. Infrastructure-focused interventions will be aligned to support research-oriented curricula under specific objective 5 of Priority Axis 2.
- **Specific objective 4: Improving strategic management of research at the national level**
  The aim is to improve strategic management of research, development and innovation at the national level, and to introduce incentive elements into the evaluation and funding of research organisations. Better strategic management will rely on feedback concerning the real-world impact of programmes and policies, and on more efficient coordination of research policy management across all hierarchical levels

4.2.3 Priority Axis 2: Development of universities and human resources for research and development

Priority Axis 2 aims to improve the quality and output of higher education institutions, contributing to one of the Europe 2020 priorities, Innovation Union. Quality-oriented measures focus on the relevance of higher education for the labour market and societal needs. Priority Axis 2 also focuses on developing human resources in R&D and the related improvement in conditions for research-linked training. Under this priority axis, funding is provided for individual projects.

Investment priority 1: Improving the quality and impact of, as well as access to tertiary and equivalent education with a view to increasing participation and attainment levels, especially for disadvantaged groups. Under this investment priority, funding is provided for individual projects. Simplified projects mainly focus on mobility. No major projects within the definition of Articles 100–103 of the Common Provisions Regulation ((EU) No. 1303/2013) are planned.

- **Specific objective 1: Improving the quality of higher education and its relevance to the labour market**
  The aim is to improve the quality, focus and relevance of higher education to the labour market, including entrepreneurship and other modern competences in students.
- **Specific objective 2: Increasing the participation of students with specific needs, from socio-economically disadvantaged groups and from ethnic minorities in higher education, and decreasing the drop-out rates of students**
  The aim is to increase the participation of students with special needs from socio-economically disadvantaged groups and from ethnic minorities in higher education, and to reduce the drop-out rates of students, through relevant, higher quality support.
- **Specific objective 3: Improving the conditions for lifelong learning at higher education institutions**
  The aim is to enable higher education institutions to respond flexibly to the demand for lifelong learning from adults and from partners from industry.
- **Specific objective 4: Setting up and developing an evaluation, quality and strategic management system at higher education institutions**
  The aim is to increase the focus of the evaluation system and the system of funding of higher education institutions on quality. Internal quality evaluation and assurance should be introduced to and embedded in higher education institutions to identify and respond to deficiencies in internal management processes, including staffing levels and professional capacity.

- **Specific objective 5: Improving the conditions for research-linked training and for developing human resources in research and development**
  The aim is to develop the qualifications of researchers and other staff in R&D, provide a sufficient number of highly-skilled higher education graduates with hands-on research experience, enhance the inflow of top experts from abroad and from the private sector into research organisations, and improve personnel qualification for effective implementation of the RIS3. Funding will go towards establishing and developing strategic partnerships between the public and the private sector at regional and international levels via new instruments contributing to realization of the RIS3. Interventions under this specific objective will also support female researchers and stimulate interest among students and the public in research and its outcomes.

Investment priority 2: This relates to the investment in general and vocational education and professional training to promote skills and lifelong learning by developing the education and training infrastructure. Funding is provided for so-called individual projects.

- **Specific objective 1: Improving the higher education infrastructure for better education, improved access for disadvantaged groups, and opening higher education institutions**
  The purpose of the funding will be to complement the investment from the ESF in specific objectives 1, 2, and 4 with investment in infrastructure and investment-intensive equipment. In 2007–2013, only limited investment in the educational infrastructure (unrelated to research activities) was provided through cross-financing under the ECOP. The ERDF interventions under Priority Axis 2 aim to prepare conditions for upgrading the infrastructure for undergraduate and post-graduate instruction. The infrastructure of research-oriented programmes is addressed in specific objective 1 under Priority Axis 1.

4.2.4 Schedule of programme calls

Under RDEOP, calls for project proposals have been announced since 2015. Five calls are planned for 2016, and another two for the turn of 2016/2017.

Schedule of calls according to the Ministry of Education of the Czech Republic.

Priority axis / Union priority	Activities supported	Type of call	Planned call announcement date
PA1	Supporting open access to scientific information. National S3 manager with a team Development of strategic management of the policy of RDI	continuous	June 2016
PA1	Design, development and roll-out of a national system for centralized access to information resources for research, development and innovation, along with the design, development and roll-out of a national system for purchasing licences to electronic information resources for research, development and innovation	continuous	June 2016
PA1	Research projects at the pre-commercial stage	fixed-deadline	July 2016
PA1	Preparation and conduct of long-term projects of collaboration between research organisations and enterprises and cross-sector partnerships (such as European centres of competence and colocation centres).	fixed-deadline	July 2016
PA2	Promotion of international mobility of researchers: 1) Attachments of researchers to research organisations and enterprises abroad (both within and outside the EU) 2) Exchanges of researchers between Czech and foreign (EU) research institutions 3) Attachments of foreign researchers to research organisations in the Czech Republic, reintegration and support for building high-quality teams (support is to be provided not only to high-performing Czech researchers but also to foreign ones, depending on performance criteria)	fixed-deadline	January 2017
PA2	Expansion of capacities and expertise in the strategic management of research organisations (ROs), including quality assessment and assurance systems; implementation of systems for popularizing R&D through ROs, communication training for scientists, popularization activities	fixed-deadline	October 2016
PA2	Enhancing inter-sectoral mobility of researchers in the Czech Republic: Section 1: Inter-sectoral mobility in institutions of higher education: 1) Guest lecturing by experts from businesses at institutions of higher education 2) Professor chairs (joint funding of excellent scientists by several enterprises) 3) Career support from industry and the research sector for young researchers Section 2: Strengthening the collaboration between ROs and industry: 4) Industry specialist working on a research project in a RO 5) Exchange of experience and establishment of a platform for further collaboration between the research and industrial sectors (fostering the research environment)	fixed-deadline	January 2017

This information is valid as of February 2016.

4.2.5 Contacts and additional information

Ministry of Education of the Czech Republic
Managing Authority, OP VVV
Karmelitská 7, 118 12 Praha 1, Czech Republic

Links:
www.msmt.cz/uploads/OP_VVV/OP_VVV_AJ_verze1.pdf
http://www.msmt.cz/strukturalni-fondy-1/harmonogram-vyzev-op-vvv
http://www.msmt.cz/strukturalni-fondy-1/op-vvv

5. INTERNATIONAL COOPERATION OF THE CZECH REPUBLIC IN RESEARCH AND DEVELOPMENT

The Czech Republic sees as one of its key priorities in international cooperation its engagement in the research and development structures of the European Union (European Research Area). This means, above all, effective participation in EU framework programmes of research and development, and in the EURATOM programme.

Other priorities include developing, structuring and strengthening the European Research Area (Ljubljana Process), realizing the Europe 2020 strategy (achieving competitiveness comparable with the USA and Japan), and meeting the Barcelona objective (European R&D expenditures of 3 % of GDP). Other important efforts include multilateral and bilateral projects, and participation in international governmental and non-governmental organisations and activities. Formulation of the country's policy of international cooperation in research and development must reflect not only the situation in developed European countries but also the legislation in the Central European region, and the research and development policies in the USA, Canada and developed Asian countries.

In 2011, the Ministry of Education of the Czech Republic saw major changes in the way international cooperation in R&D was managed and the way the country participated in the European Research Area. The Department of International Cooperation in R&D was established with responsibility for the Czech Republic's membership in the ERA (including participation in and evaluation of framework programmes). In addition, the Department of Funding Research and Development Projects was formed to oversee the implementation of bilateral and multilateral R&D international cooperation agreements, and the funding of the applicable cooperation programmes. Since 2013, the Research and Development Department and the Department of Support of Higher Education Institutions and Research of the Ministry have been operating. They are responsible for international cooperation, funding, and participation of the Czech Republic in the ERA.

5.1 Horizon 2020

The Seventh Framework Programme of the EU, the predecessor of Horizon 2020, ran from 2007 to 2013 (some of its projects can, however, continue until 2017). In the 2011–2013 period, the draft of the Horizon 2020 framework programme was being prepared and discussed. It was approved by the EU Council on 3 December 2013. Its budget is EUR 77 billion.

Horizon 2020 (H2020) was proposed in November 2011. Its overall objectives were defined together with their rationale, the value added by the common approach, i.e. one shared across the European Union, was identified, as well as the financial framework, the management of the programme and its monitoring and evaluation. This became a working draft for the European Parliament and the European Council. In spring 2012, the Danish Presidency of the EU Council organised events aimed at clarifying the issues raised by the national administrations and national and European institutions after studying the draft. In spring 2013, under the Irish Presidency, comitology procedures in regard of the Horizon 2020 programme took place, in particular concerning the organisation and the programme committee procedure. Thanks to thorough preparation of H2020, no major changes were required. The first working programmes under H2020 and the first calls were announced on 13 December 2013.

H2020 is open to all entities regardless of their legal form. Some calls may require the participation of a concrete legal entity type in the consortium (e.g. an SME). In order to foster international cooperation, projects in most areas of the H2020 programme are to be proposed by a consortium consisting of several entities. The minimum participation condition (minimum number of project consortium members) requires that at least three independent entities from three different EU-28 countries, or countries associated to H2020, take part in a project. If this requirement is met, entities from other countries eligible

for funding may become participants as well (the call for proposals may in some cases specifically prescribe the consortium members' countries of origin). Partners from developed countries (e.g. the USA, Canada, and Japan) and other wealthy countries (e.g. countries of the Arabian Peninsula) are an exception to the minimum participation condition, but they will not be eligible for EU funding in most cases. Some project types are exempted from the minimum participation condition as well (ERC grants, coordination and support actions, Marie Skłodowska-Curie actions and SME tools), and their proposals can therefore be submitted by a single applicant.

Several types of actions are defined under H2020, which may differ in form, the amount of funding, the minimum number of consortium members, the administration process, and in other aspects.

5.1.1 Main priorities of H2020

H2020 focuses on three priorities:

- Excellent science
- Industrial leadership
- Societal challenges

The H2020 budget also covers these efforts and initiatives:

- Non-Nuclear actions of the Joint Research Centre
- European Institute of Innovation and Technology
- Science with and for society
- Spreading excellence and widening participation

5.1.2 The H2020 budget

The budget of the H2020 programme was approved at EUR 77.028 billion with the structure given in the following table. Complementary to H2020 is the EURATOM programme, whose overall budget for the 2014–2018 period is EUR 1.603 billion.

Approved H2020 budget in millions of EUR at current prices

Priority	Budget in millions of EUR	Proportion allocated
Excellent science I	24,441	31.73 %
Industrial leadership II	17,016	22.09 %
Societal challenges III	29,679	38.53 %
EIT	2,711	3.52 %
Science with and for society	462	0.60 %
Spreading excellence and widening participation	816	1.06 %
Non-nuclear direct actions of the Joint Research Centre	1,903	2.47 %

5.1.3 H2020 priorities

A. Excellent science (total of EUR 24,441 million). The Excellent Science priority focuses on activities that push the current boundaries of knowledge or technical limitations. It comprises the following areas:

a) European Research Council (EUR 13,095 million)
b) Future and emerging technologies (EUR 2,696 million)
c) Marie Skłodowska-Curie Actions (EUR 6,162 million)
d) European research infrastructures, including e-infrastructures (EUR 2,488 million)

a) The **European Research Council (ERC)** supports world-class frontier research, the topics of which are proposed by researchers themselves from around the world. The condition is that the grant recipient carries out research at a European research facility. The Council was established by the European Commission in February 2007 as the first European organisation to support state-of-the-art basic research. The only criterion for evaluating the proposals it receives is scientific excellence – of both the project proposal and the investigator. The projects must show the potential for an impact on their fields, pushing the boundaries of knowledge, and opening up new research perspectives. The European Research Council supports all science disciplines and does not set any thematic priorities. Its grants can be transferred because they are linked to the principal specialist investigator. The investigator can therefore join a new host institution.
b) **Future and emerging technologies (FET)** comprise three programmes:
   - FET Open – this programme supports the early stages of high-risk research. It focuses on young researchers and innovative high-tech SMEs. Project proposals are submitted and evaluated on a continuous basis.
   - FET Proactive – this programme focuses on encouraging the pursuit of auspicious emerging research topics. It aims to deliver adequate numbers of interrelated and cooperating projects that represent different perspectives on their topic.
   - FET Flagships – this programme supports extensive interdisciplinary research. It also supports the Graphene Flagship and Human Brain Project initiatives.
c) **Marie Skłodowska-Curie Actions** focus on developing human resources in research by promoting mobility, education and professional growth with an emphasis on professional skills for innovation. Importance is also placed on communicating the outcomes of EU-funded research to the general public. The grants for individual scientific and research projects have recently become transferable. The previous eight types of Marie Curie actions have also been merged into four focus areas: accelerating the professional growth of early-stage researchers, mainly doctoral students; fostering excellence of experienced researchers through international and interdisciplinary mobility; stimulating innovation through interconnection of knowledge; and increasing structural impact by co- financing the relevant activities.
d) **European research infrastructures** aim to build world-class research infrastructures accessible not only to research facilities but also enterprises. The focus is on developing European infrastructures in the period until 2020 and beyond, as well as on stimulating the innovation potential of research infrastructures and their human capital, and on promoting the policy of building European infrastructures, and international cooperation.

B. European Industrial Leadership (total EUR 17,016 million). The European Industrial Leadership priority aims to strengthen the position of European industry in the global context. The priority focuses on enabling (driving radical, step changes) and industrial technologies. It supports the innovation activities of small and medium-sized enterprises (SMEs). It comprises the following parts:

a) Enabling and industrial technologies (EUR 13,557 million)
b) Access to risk finance (EUR 2,842 million)
c) Innovation in SMEs (EUR 616 million)

a) **Enabling and industrial technologies** supports enabling and industrial technologies in six focus areas: information and communication technologies, nanotechnologies, advanced materials, biotechnology, advanced manufacturing and processing, and space applications. Emphasis is placed on reducing energy consumption, new materials, security, interoperability of systems and development of standards, and on validating research results in pilot applications.
b) **Access to risk finance** has the goal of expanding and intensifying the use of debt and capital financial tools, which simplify access to risk capital. The financial facilities of the Horizon 2020

programme (the debt facility and the equity facility) complement the financial facilities of the COSME programme. The European Investment Bank and the European Investment Fund play an important role in their implementation.

c) **Innovation in SMEs (small and medium-sized enterprises)** sets the objective of creating a single tool for supporting all innovative SMEs which have a strong ambition to develop, grow, and follow an international orientation. The support will apply to all types of innovation and all stages of its introduction. It will cover the three stages of the innovation cycle listed below with seamless transitions between them, provided that the applicant meets all the requirements.
   - Stage 1: The input to this stage is a brief outline of an innovation idea-based business plan. Successful applicants receive funding in the form of a lump sum of EUR 50,000. This stage only takes 6 months, during which a feasibility study should be developed to verify the technological/practical, as well as the economic viability of the innovation idea/concept. The results of this study are used to developing an initial business plan for Stage 2.
   - Stage 2: At this stage, the idea/concept is to be converted into a tangible product or service as the next step towards commercial exploitation. The input to Stage 2 is an elaborated business plan and a description of innovation (and, if relevant, research) activities planned for this stage. The entry to Stage 2 is not conditioned on completing Stage 1. The time frame for this stage is 12–24 months and the typical EU grant is between EUR 0.5 million and 2.5 million. At Stages 1 and 2, applicants can also benefit from indirect support: coaching and mentoring services available through the Enterprise Europe Network.
   - Stage 3: Stages 1 and 2 should translate the innovative idea/concept into a competitive outcome prepared for market launch. Stage 3 is expected to involve commercialization of innovative products and services. At this stage, no direct funding is provided. Nevertheless, SMEs can make use of the financial facilities available under the second priority of Horizon 2020, access to risk finance.

C. Societal challenges (total EUR 29,679 million). It is assumed that the European Institute of Innovation and Technology (EIT) will play a central role in addressing these challenges.

a) Health, demographic change and wellbeing (EUR 7,472 million)
b) Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bio-economy (EUR 3,851 million)
c) Secure, clean and efficient energy (EUR 5,931 million)
d) Smart, green and integrated transport (EUR 6,339 million)
e) Climate action, environment, resource efficiency and raw materials (EUR 3,081 million)
f) Europe in a changing world: inclusive, innovative and reflective societies (EUR 1,309 million)
g) Secure societies: protecting the freedom and security of Europe and its citizens (EUR 1,695 million)

a) **Health, demographic change and wellbeing** has the goal of improving the life-long health and wellbeing of all EU citizens. In the H2020 draft, “Health, demographic change and wellbeing” is outlined in these themes: understanding health, ageing and diseases; better diagnostics; innovative treatments and technologies; supporting active and healthy ageing; integrated, sustainable care, patient-centred care; better health information, use of data and input to health policies and regulations; coordination activities. Attention is paid to gender issues, ethical rules, the use of animals in research, and others. An important aspect is continuous, lifelong and adequate health education not only in the population and groups of citizens with certain disabilities, but also the lifelong education of healthcare professionals at all levels.
b) **Food security, sustainable agriculture, marine research, and bio-economy** aims to provide a sufficient supply of safe and high-quality foods and bio- products obtained with the aid of advanced biotechnologies, to develop support services for interrelated ecosystems, and promote competitive low-carbon production chains, accelerating the transition to a sustainable European bio-economy. In the H2020 draft, the area of Food security, sustainable agriculture marine research and bio-economy is outlined in these four themes: sustainable food production; nutrition and foodstuffs, Blue Growth – tapping the potential of fishery, aquaculture and marine biotechnologies; innovative, sustainable and inclusive bio-economy.

c) **Secure, clean and efficient energy** has the objective of making the transition to a reliable, sustainable and competitive energy system in the face of increasingly scarce resources, increasing energy needs, and climate change. In the H2020 draft, “Secure, clean and efficient energy” comprises the following seven themes: reducing energy consumption and the carbon footprint by the smart and sustainable use of energy; low-cost, low-carbon electricity supply; alternative fuels and mobile energy sources; a single, smart European electricity grid; new knowledge and technologies; robust decision making and public engagement; market uptake of energy innovation – building on the Intelligent Energy Europe (IEE) programme.

d) **Smart, green and integrated transport** aims to build a transport system in Europe which efficiently uses resources, is environmentally friendly, secure, and provides citizens, the economy and society with the connectivity they need. In the H2020 draft, “Smart, green and integrated transport” involves four themes: efficient and green transport; better mobility, less congestion, more safety and security; leading position for the European transport industry in the global context; and socioeconomic research and development scenarios for policy making.

e) **Climate action, environment, resource efficiency and raw materials** aims to build a resource-efficient economy which is resilient to climate changes. Another objective is to provide a sustainable supply of raw materials to meet the demand of the world’s growing population in the face of limited natural resources on our planet. These activities will contribute to the competitiveness of Europe, improved living conditions, environmental balance and sustainability, and keeping average global warming below 2° C. Ecosystems and society will thus be able to adapt to climate change. In the H2020 draft, “Climate action, resource efficiency and raw materials” involves six themes:
   - Fighting and adapting to climate change
   - Protecting the environment, and implementing sustainable management of natural resources, water, biodiversity and ecosystems
   - Ensuring a sustainable supply of non-energy and non-agricultural raw materials
   - Enabling the transition towards a green economy and society through eco-innovation
   - Developing comprehensive and sustained global environmental observation and information systems
   - Cultural heritage

f) **Europe in a changing world: inclusive, innovative and reflective societies** supports research into and seeking solutions to numerous burning issues of European societies, namely in economy, European integration and societal trends, such as ageing, and unemployment among young people, and in the foreign relations of the EU. In the H2020 draft, “Europe in a changing world: inclusive, innovative and reflective societies” involves four areas: overcoming the crisis: new ideas, strategies and structures of governance; the young generation in an inclusive, innovative and sustainable Europe; reflective societies: cultural heritage and European identities; Europe as a global actor; and new forms of innovation.

g) **Protecting freedom and security of Europe** aims to prepare for potential threats through prevention and coordination of action in real-world situations of natural or man-made disasters and dealing with their aftermath. The programme also aims to increase cyber security, improve border protection, and fight terrorism and organized crime. The H2020 draft outlines the area of protecting the freedom and security of Europe in four themes: DRS: Resilience to disasters; FCT: Fighting terrorism and crime; BES: Protection of borders and foreign security; DS: Cyber security, trust and privacy.

5.1.4 Financial Rules of Participation in H2020

In H2020, project funding is only available for eligible costs, whose forms may however differ in various types of actions.

Where the total eligible costs of a project are quantified, the maximum amount of aid from the EU must be determined. Generally, and in the most frequent actions, the EU contribution can cover 70–100 % of the total eligible costs, depending on the type of action.

An overview of funding for the main types of actions is given in the following table:

<table>
<tr><th>Type of action</th><th>Overhead costs</th><th>Payment of total eligible costs</th></tr>
<tr><td>Research and innovation actions</td><td rowspan="4">flat rate of 25 % *</td><td rowspan="5">100 %</td></tr>
<tr><td>Innovation actions (where the recipient is a non-profit entity)</td></tr>
<tr><td>Coordination and support actions</td></tr>
<tr><td>European Research Council grants</td></tr>
<tr><td>Marie Skłodowska-Curie actions</td><td>unit costs outlined in the work programme</td></tr>
<tr><td>Innovation actions (where the recipient is a for-profit entity)</td><td rowspan="2">flat rate of 25 % *</td><td rowspan="2">70 %</td></tr>
<tr><td>Tool for SMEs</td></tr>
</table>

** of direct costs without subcontracts and non-financial contributions from third parties, which are not performed on the recipient's premises*

In H2020 projects, the EU contribution is provided gradually over individual reporting periods. Immediately after the project start, the recipient receives an advance to provide for adequate cash-flow to launch the project activities. In the subsequent periods, the recipient receives regular payments provided against complete interim reports (including financial statements). After the project completion and once the last interim report and a final report of adequate quality are submitted, the recipient receives the balance of the contribution.

5.1.5 Schedule of calls

Czech calls under the H2020 programme are available at:
http://www.h2020.cz/cs/seznamy/vyzvy

Further information can be found in Czech at these addresses:
http://www.evropskyvyzkum.cz/cs/nastroje-spoluprace/ramcove-programy/horizont2020
http://www.h2020.cz/cs
http://www.h2020.cz/files/svobodova/TCAV-brozura-Horizont-2020-web.pdf

5.2 Horizon 2020-related initiatives

The H2020 budget is used for additional horizontal activities – Spreading excellence and widening participation; Science with and for society – as well as non-nuclear activities of the Joint Research Centre EK and the European Institute of Innovation and Technology.

Spreading excellence and widening participation
The objective of these actions is to help overcome significant disparities between Member States or regions in terms of fostering and exploiting the research and innovation potential, and to promote participation in the H2020 programme to uniformly spread excellence in research across the European

Research Area. “Spreading excellence and widening participation” is based on four measures: Teaming; Twinning; ERA chairs; and the Policy Support Facility.

Science with and for society
The aim of this activity, which directly builds on Science in Society, a priority under the 7th Framework Programme, is to build a fruitful relationship between science and society, to recruit new talent for science, and to pair scientific excellence with social awareness and responsibility.

“Science with and for society” comprises the following themes: scientific and technological careers (EURAXESS); gender equality; formal and informal science education; open access and the use of results; governance and ethics; responsible research and innovation; and science communication

5.2.1 ERA-NET PLUS

The ERA-NET and ERA-NET PLUS programmes are jointly implemented by participating countries with contributions from the EU, e.g. through harmonized work programmes, joint or coordinated calls for proposals, joint evaluation procedures and joint implementation of projects. The purpose of projects of the ERA-NET-type is to link national and regional research programmes to bring them closer, and to develop and pursue joint activities. The ERA-NET scheme was launched already as part of the 6th Framework Programme (FP) as one of the tools strengthening the coordination of national and regional research policies in the EU. In the 7th Framework Programme, the scheme continued successfully, both in the form of new ERA-NET activities, the existing ones that started in the 6th FP and as their upgraded versions on the ERA-NET Plus level. The ERA-NET scheme is now one of the tools of the Horizon 2020 programme.

The ERA-NET Plus scheme started under FP7 as a support tool for selected projects which receive an additional bonus from the European Commission to announce joint calls. ERA-NET Plus supports initiatives that deepen the collaboration in given fields through joint research programmes, and enables them to translate into initiatives within the definition of Article 185 of the Treaty on the Functioning of the European Union. As in ERA-NET projects, the eligible participants of ERA-NET Plus projects are only programme managers and programme owners. However, under this scheme, they must have already created their own research programme.

5.2.2. EURATOM

The EURATOM programme was launched for the 2014–2018 as a research programme complementary to and integrated into Horizon 2020, having a total budget of EUR 1,603 million. It sets out objectives of research and development activities and specifies their support tools. The overall aims of the programme include research into, and specialist training in continuous improvement in nuclear safety, security and radiation protection, as well as safe decarbonisation of the energy system.

Specific objectives of indirect actions focus on nine areas:

- Support of safety of nuclear systems
- Solutions for the long-term disposal of final nuclear waste
- Development and maintenance of expert knowledge
- Radiation protection and medical applications of radiation
- Demonstration of the feasibility of fusion
- Development of materials, technologies and conceptual design for future fusion power plants
- Promoting innovation and industrial competitiveness through technology transfer
- Availability and use of key research infrastructures
- European nuclear fusion programme

Another part of the programme comprises the direct actions of the Joint Research Centre (JRC).

Actions of the Joint Research Centre (JRC)
The JRC is a Directorate-General of the European Commission under the responsibility of Tibor Navracsics, Commissioner for Education, Culture, Youth and Sport. It consists of seven research institutions based in five Member States: Belgium, Germany, Italy, Netherlands and Spain.

The Joint Research Centre was established in 1957 to disseminate European expertise in nuclear energy. Over time, it has become an extensive, diverse and multifunctional research institute integrated into the European Commission. It is at the frontier between technology research and real-world applications of this research in Community policies. As part of preparation of FP7, new rules were developed for JRC activities. JRC pursues basic research and supports EU policies with scientific and technical consultancy. In close cooperation with the EU's Directorate-Generals, the JRC addresses major societal issues by stimulating innovation, advancing new methods, tools and standards, and sharing know-how with Member States, the scientific community and international partners. The Joint Research Centre can take part as a partner in calls for proposals for implementing its policies under Horizon 2020. Non-nuclear direct actions of the Joint Research Centre are supported with EUR 1,903 million, which equals 2.47 % of the budget of Horizon 2020.

5.2.3 European Institute of Innovation and Technology (EIT)

The EU established the EIT in 2008. The Institute does not provide any project funding. It builds and co-funds a knowledge and innovation community to establish links between universities, research, and business. The EIT helps overcome structural deficiencies in the EU, which are reflected in the poor innovation performance and generation of new products, services and processes. Although the Institute currently has its own budget, the H2020 programme anticipates it will contribute to tackling EU's societal challenges.

The EIT's objective is to integrate the "knowledge triangle" of research, innovation and education, and thus strengthen the innovation capacity of the Union and seek solutions to Community challenges. The EIT concentrates on seven focus areas: transfer and use of activities in higher education, research and innovation for starting new businesses; cutting-edge research focused on innovation in areas of economic and societal interest; bringing up talented, qualified and enterprising people through education and vocational training; disseminating proven procedures and systematic knowledge sharing; the international dimension; strengthening Europe-wide impact through innovative funding schemes; opening European opportunities to regions. Knowledge and innovation communities, which were launched in 2010, focus on the following: climate change (Climate-KIC); sustainable energy (KIC InnoEnergy); and information and communication technologies (KIC EIT ICT Labs).
Under Horizon 2020, calls will be announced and funding provided for the following five new KICs: Innovation for healthy living and active ageing; Raw materials – sustainable exploration, extraction, processing, recycling and substitution; Food4Future – sustainable supply chain from resources to consumers; Added-value manufacturing; and Urban mobility.

5.2.4 Related initiatives

P2Ps and Cofund
Under Horizon 2020, partnerships within the public sector (Public-Public Partnerships, P2Ps) are assisted through a new tool, the programme cofund action. The rules for participation and dissemination in Horizon 2020 define this as an action funded through a grant, the main purpose of which is supplementing individual calls or programmes funded by entities other than Union funding bodies. A programme cofund action may also include complementary activities of networking and coordination between programmes in different countries.

Further information can be found at this address:
https://www.era-learn.eu

Contractual Public-Private Partnerships (cPPPs)
Together with Joint Technology Initiatives (JTIs), the contractual public-private partnerships foster cooperation between the public sector, research, and the business sector for the benefit of research, development and innovation. Eight cPPPs were launched by the European Commission on 17 December 2013, and a ninth one on 13 October 2014. Their areas are of strategic importance to European industry. Unlike JTIs, the cPPPs do not announce their own calls. Instead, the funding – the allocated amount is no less than EUR 6 billion – is provided through the Horizon 2020 calls. Every euro from public resources is expected to be matched with 3–10 euros provided by the private sector for developing new technologies, products and services which secure for the European industry a leading position on global markets.

Further information can be found at this address:
http://europa.eu/rapid/press-release_MEMO-13-1159_en.htm

Joint Technology Initiatives – Institutional PPPs
Joint Technology Initiatives are one of the forms of public/private partnerships (PPPs) launched early in FP7 with strong support from the European Commission and European industry, known as institutional PPPs. They built on several industry-relevant European Technology Platforms and were the first example of industry, the research community and public authorities jointly funding ambitious common research objectives on a European scale. Joint undertakings were set up to achieve the objectives of JTIs in accordance with article 187 of the Treaty on the Functioning of the European Union (ex Article 171 of the TEC).

The JTIs continue under Horizon 2020 and bring together the needs and resources of the European Union and industry. They set out commitments, including financial commitments, over a seven-year period from both the EU and from the industry partners. They each have clear objectives and establish their own strategic research and innovation agendas, on the basis of which they fund projects evaluated and selected through calls for project proposals.

Further information can be found at this address:
http://ec.europa.eu/research/jti/index_en.cfm?pg=individual

European Technology Platforms
European Technology Platforms (ETPs) bring together key actors (industrial companies, trade associations and unions, higher education institutions and other research organisations, financial institutions, public administration bodies and user and consumer associations) in technology fields of strategic importance. Their purpose is to define and realize visions for medium-term and long-term research, development and innovation (Strategic Research and Innovation Agenda). ETPs should mobilize the research and innovation capacities of their members and other partners, and strengthen

the position of their fields on both European and global markets by implementing their strategic research agenda. European Technology Platforms play a role in the functioning of the European Commission as well, as part of the external advice and societal engagement needed to implement Horizon 2020. ETP members establish consortia and develop project proposals to be submitted to H2020, which is why active participation is crucial for the relevant Czech institutions and organisations.

Further information can be found at this address:
http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=etp

European Innovation Partnerships
European Innovation Partnerships (EIPs) are a new approach to research and innovation identified by the EU in one of the flagship initiatives of the Europe 2020 strategy – the Innovation Union. EIPs are not a new programme or tool but joint platforms for partnership and cooperation, focusing on key tasks in areas which are crucial to the economic growth of Europe. Their primary objectives are to define joint tasks, coordinate activities across sectors and policies, link European and national levels, strengthen private/public sector collaboration, eliminate persistent hurdles from innovation and research processes, and accelerate the uptake of innovative ideas by the market. EIPs streamline, coordinate, encompass and complement existing tools and initiatives, wherever relevant. Funding for EIPs is provided from public resources, typically through grants from running programmes at European, national or regional levels. The private sector contributes to these partnerships as well.

Further information can be found at this address:
http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=eip

5.3 European Research Council – ERC

The European Research Council (ERC) was founded to support investigator-driven frontier research.

The main objective of the ERC is to stimulate scientific excellence by supporting the best, truly creative scientists. Scientists are motivated to push the current boundaries of knowledge and limits of scientific disciplines. The ERC complements other EU funding schemes (established as part of FP7 and continuing under Horizon 2020), such as national research-funding agencies, and is a flagship of the Ideas programme of FP7. The ERC follows the bottom-up approach in selecting its projects, and therefore enables researchers to identify new opportunities and directions in science disciplines of their interest.

ERC grants are awarded in open competitions to projects led by early-stage as well as experienced scientists, regardless of their nationality, who either work in Europe or are about to relocate to Europe. The only criterion for selection is scientific excellence.

More information, including contacts, can be found at:
http://erc.europa.eu

5.4 European research and innovation area

The European Research Area (ERA) was established by the European Council to create a unified European environment for research and development, to improve cohesion in this area, and to improve European competitiveness with the United States and certain Asian countries. It was a response to the steadily decreasing spending on European research and development, namely private investment in research, the low attractiveness of careers in science or research, the declining or inadequate share of women in research, the insufficient use of research resources for the benefit of society, and the low mobility of European research workers. An added factor was the absence of coordinated support of large research infrastructures, which contribute to excellence of science in Europe, and recurrent problems related to science ethics (e.g. stem cell research). The European Research Area was a step towards tackling these issues.

The ERA includes EU Framework Programmes, national policies and research programmes of EU Member States, and their coordination, as well the operation of European research organisations and their infrastructure. Framework programmes are therefore designed and launched with the objective to promote the formation and structuring of the ERA. The aim is to improve quality of life in the EU and Europe through efficient use of investment in R&D (public and private investment, and private/public partnerships – PPP), improved performance of research and development, and better research infrastructure.

Information on and documents concerning the European Research Area (in Czech) can be found at the European Research portal http://www.evropskyvyzkum.cz

5.5 European Programme for the Competitiveness of Enterprises and SMEs (COSME)

This multi-year programme of Competitiveness of Enterprises and Small and Medium-Sized Enterprises 2014–2020 is a European Community scheme. Its focus areas include: simpler access to financing for small and medium-sized enterprises, easier creation and development of enterprises, business education in Europe, strengthening the competitiveness of European companies in the long term, and supporting the internationalization of small and medium-sized enterprises and their access to foreign markets. COSME complements both Horizon 2020 and the Cohesion Policy of the EU, where the latter is supported from the Structural Funds under national Operational Programmes in Member States.

The programme was allocated EUR 2.5 billion for the 2014–2020 period, and is expected to contribute more than EUR 1 billion to the European GDP every year.

More information about the programmes, including contacts, can be found at the following addresses:
http://www.czechinvest.org/cosme-2014-2020
http://ec.europa.eu/cip/index_en.htm
http://www.enterprise-europe-network.cz
http://ec.europa.eu/growth/smes/cosme

5.6 The Research Fund for Coal and Steel – RFCS

When the Czech Republic joined the European Union, it also became a member of what used to be the European Coal and Steel Community. The revenues generated from the assets of the European Coal and Steel Community (established by the 1952 Treaty for a period of 50 years, which expired on 23 July 2002) were transferred to the European Union in 2002 and are used to support activities under the RFCS research programme. The administrator of the Czech membership is the Ministry of Industry and Trade and the co-administrator is the Ministry of Education. The Research Fund for Coal and Steel funds projects conducted by all types of businesses, as well as research organisations. Grants are awarded for research, pilot and demonstration projects outside the EU Framework Programmes.

The main objective of the programme is to support competitiveness of the coal and steel-related sectors. Its priorities in the coal section include strengthening the EU's competitive position, the health and safety in mines, and better use of coal as a clean source of energy. A total of 12 Coal and Steel Technical Groups have been formed to monitor and evaluate projects; three of them focus on coal. The European Commission administers the remaining assets of the European Coal and Steel Community and uses the annual interest to fund RFCS research projects. This amounts to approximately EUR 55 million a year.

The Research Fund co-finances successful project proposals from its budget in the following proportions: 27.8 % for coal and 78.2 % for steel. The RFCS co-funding potential in coal-related projects is not fully used by the organisations in the Czech Republic.

Applicants for funding are mostly SMEs, businesses, and research institutes. They may come from the former ECSC countries (European Coal and Steel Community), from candidate countries, or even from third countries, on condition that they meet the programme objectives. The applicants' activities need not be directly related to coal and steel, but their research and technical development plans must be in accord with the programme.

The programme supports research work that leads to streamlined production, provided that the equipment to be installed as part of the effort is adequately sophisticated.

For research projects, the maximum financial contribution is 60 % of the eligible costs. For pilot and demonstration projects, it is 40 %, and for accompanying measures and preparation activities it is 100 % of the eligible costs. The public grant may only be used for the purpose and activities specified in the contract, and only to cover the necessary costs related to the project. The programme's typical annual budget is about € 53 million. The call for proposals is continuous, with an annual deadline on 15 September.

The conformity of each proposal's objectives with the interests of the EU is examined. The preferred proposals are those characterized by coordinated interaction, complementarity, and synergies between various research programmes, and by information exchange between projects funded from this programme, FP7, and Horizon 2020.

More information about the programme, including contacts, can be found at the following addresses:
http://www.isvav.cz/programmeDetail.do?rowId=7C
http://ec.europa.eu/research/industrial_technologies

5.7 Copernicus

Copernicus (formerly GMES) is a European programme for monitoring the environment and security situation in order to deliver early and accurate information for decision-making. It represents the Europe's own capacity for monitoring the Earth, and is considered the European contribution to the GEOSS system. It provides its users with free, full and open access to data and information. Its initial stage in 2011–2013 involved the preparation of the programme's data policy. In 2014, Copernicus became fully operational.

Copernicus and its service components are coordinated by the European Commission. Its Space Component is the joint responsibility of the European Space Agency (ESA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT). The In Situ Component is coordinated by the European Environment Agency. Separate Copernicus services are delivered by authorized European institutions in cooperation with the European Commission.

Throughout 2014–2020, public tenders, mainly for infrastructure construction, will be announced by the European Commission and the European Space Agency. Small-scale projects can receive additional funding from Horizon 2020 as part of the Industrial Leadership – Space section (for data utilization, COPERNICUS applications, and other topics). Eligible applicants include entities from EU Member States (in public tenders announced by the European Commission), and ESA Member States (in public tenders announced by the ESA). The participation in Horizon 2020 projects is governed by the rules of this programme. The COPERNICUS programme was approved for the 2014–2020 period with a budget of EUR 4.3 billion.

More information about the programme, including contacts, can be found at the following addresses:
http://gmes.gov.cz/
http://copernicus.eu/

5.8 Other actors in international cooperation

5.8.1 CZERA

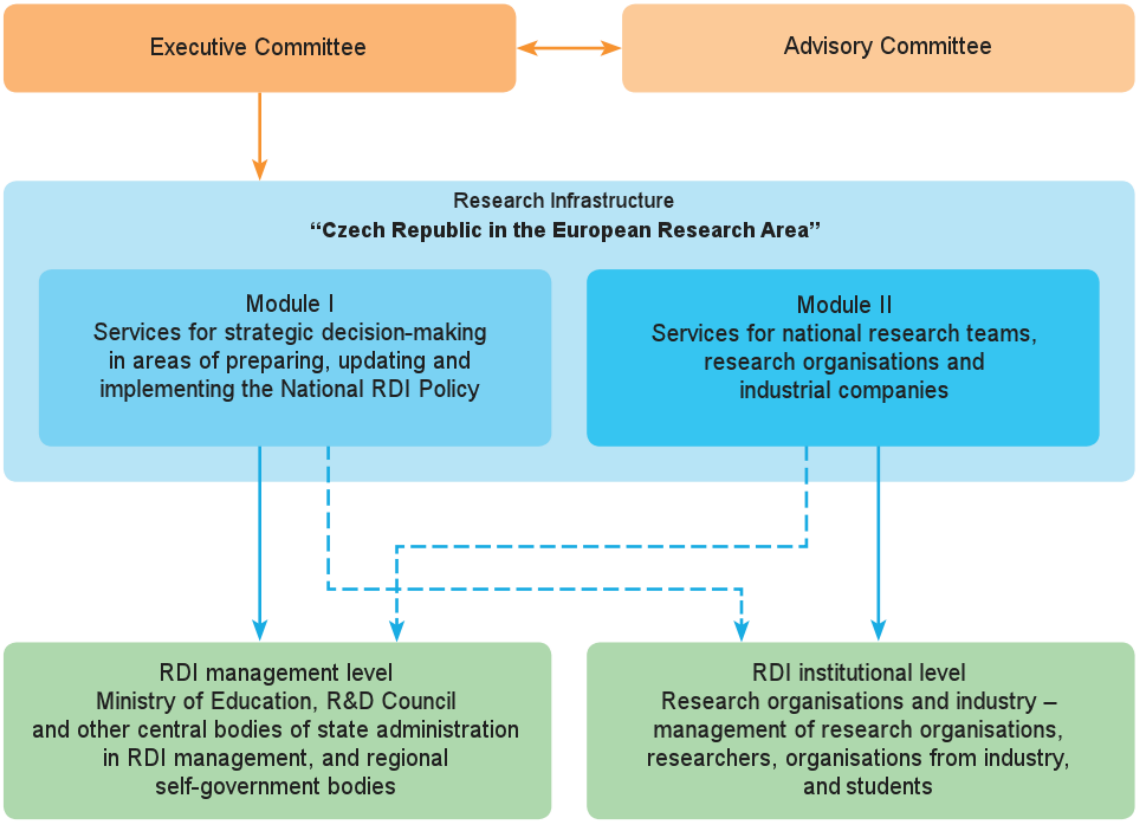
Since 2013, comprehensive support for participation of Czech organisations in the ERA has been provided under the CZERA (Czech Republic in ERA) infrastructure project, specifically under its Module II. As part of its CZERA efforts, the Technology Centre AS CR runs the National Contact Point for FP7, organizes FP7 and Horizon 2020 information and training events, and provides consultancy to teams involved in preparation and implementation of projects under Horizon 2020. Special attention is devoted to small and medium-sized enterprises. The outputs of the project include ECHO, a magazine that brings information about ERA, various publications concerning European research and framework programmes, and a web portal on the ERA and the Czech participation: http://www.evropskyvyzkum.cz

In 2000, the national information infrastructure for the 6th Framework Programme of the EU, NINET (National Information Network) was established to facilitate international cooperation of the Czech Republic in research and development. Its activities continued under FP7 and are still running under Horizon 2020. NINET serves as the Czech national information network for framework programmes, bringing together regional organisations and trade associations. NINET's task is to provide information and consultancy services regarding framework programmes. The network is funded by the Ministry of Education (EUPRO and EUPRO II programmes).

More information, including contacts, can be found at:
http://www.ninet.cz

The team of the Technology Agency of the Academy of Sciences of the Czech Republic maintains contact with the European network of National Contact Points, the National Information Network (NINET) and other contact points in the Czech Republic, and thereby strengthens links between Czech national facilities and the ERA. It also cooperates with the European Commission and Czech representatives on the committees of Horizon 2020. The team organises annual Czech Days for European Research (CZEDER) – a conference on Czech participation in framework programmes, and on current events in European research. In 2013, this conference was devoted to Teaming and the launch of the Horizon 2020 programme in the Czech Republic. It was attended by a member of the EU Commission responsible for research, science and innovation. In 2014, the topic of the Czech Days for European Research was "Synergies between selected tools of H2020 and operational programmes".

CZERA – Outline of activities



5.8.2 Czech Liaison Office in Brussels – CZELO

The Czech Liaison Office – CZELO – was established in Brussels in 2005. It is run by the Technology Centre of AS CR, and supported from a grant of the Ministry of Education. The office facilitates the information exchange between the European Commission and the Czech research community.

It aims to involve Czech partners in the European research cooperation through framework programmes. The office provides its services to researchers in all disciplines and to research organisations in the Czech Republic free of charge. Similar offices in Brussels are run by many other Member States. All of them are associated in the informal IGLO network.

More information about the programme, including contacts, can be found at the following addresses:
http://www.iglortd.org
http://www.czelo.cz

5.8.3 Large infrastructures for research, development and innovation

The term "large infrastructure for research, development and innovation" (referred to as "large infrastructure") encompasses a unique research facility, as well as the process of its acquisition, the related investment costs and the costs of its activities that are essential for comprehensive research and development with heavy financial and technological demands. It must be approved by the Government of the Czech Republic and established by a single research organisation for the use by other research organisations. Section 3, subsection 2, paragraph d), and section 4, subsection 1, paragraph e) of Act

No. 130/2002 Sb. stipulate that large infrastructure projects are subject to government approval and their specific-purpose funding is to be granted by the Ministry of Education (the administrator of activities in national and international research) under the specific-purpose heading of the state budget entitled Large Infrastructure Projects for RDI.

Methodical steps have been taken on a national level to make the approach to large infrastructures more strategic. The Ministry of Education (MEYS) has established the Council for Large Infrastructures for Research, Development and Innovation. Its purpose is to evaluate new proposals of large infrastructures and their fitness for awarding funding, to monitor and oversee running projects, and to review the strategic actions of the Czech Republic on both national and European levels.

As a Czech equivalent of the ESFRI Roadmap (European Strategy Forum for Research Infrastructures), the Roadmap of the Czech Republic for large infrastructures for research, experimental development and innovation for 2016–2022 (Roadmap) was developed by MEYS. The Czech government noted the Roadmap at its meeting on 30 September 2015.

The Roadmap divides large infrastructure projects into six thematic sections: Social sciences and humanities, Environmental sciences, Physics of materials and space, Power generation, Biomedicine, and e-Infrastructures. It comprises 33 priority projects and 20 auspicious projects of large infrastructures. The Roadmap is a purely strategic document. It provides no guarantees of realization or funding of large infrastructure projects.

More information about the programme, including contacts (in Czech) can be found at:
http://www.msmt.cz/vyzkum-a-vyvoj-2/velke-infrastruktury-vyzkumu

6. INTERNATIONAL COOPERATION PROGRAMMES

In the Czech government, the department responsible for international cooperation in research and development is the Ministry of Education. It follows a long-term strategy for this cooperation based on joint research and development projects and participation in international multilateral projects and activities. Some bilateral cooperation agreements are limited to researcher mobility. Details of such arrangements are described below with reference to individual countries.

In the Czech Republic, the legal framework for bilateral cooperation in R&D comprises three types of agreements: those on cooperation in science and technology, the cultural agreements, and the agreements on economic, industrial and science and technology cooperation. The first are negotiated by the Ministry of Education. The second are the joint responsibility of the Ministry of Education, the Ministry of Culture, and the Ministry of Foreign Affairs. The last-named agreements are prepared by the Ministry of Education, and the Ministry of Industry and Trade.

6.1 CONTACT II programme (LH)

CONTACT II is a programme of international cooperation in research and development. It supports bilateral international projects in basic and applied research with emphasis countries outside the EU.

The range of eligible applicants is broad: natural persons and legal entities whose registered purpose of activity is research and development, public higher education institutions, public research institutions, research organisations, small and medium-sized enterprises cooperating with research institutions, organisational units of the state, and the organisational units of ministries engaged in research and development.

The Ministry of Education awards funding for:

- Personnel costs
- Instrument and equipment costs
- Costs of contract research, technical know-how and patents
- Costs of consultancy and equivalent services
- Additional overhead costs directly related to the research project
- Other operating expenses, including material costs

In joint research projects under this programme, each party to the agreement meets the costs incurred on their side. The Ministry of Education of the Czech Republic provides funding to the Czech part of the project team, whereas its counterpart does the same for their part of the team. Neither the amounts of funding awarded nor the structures of eligible costs are expected to be identical on both sides.

On each side, the project proposal must be submitted by the local part of the team to their national funding provider in accordance with the local criteria. At the first stage, the proposal is evaluated separately by the national funding providers. At the second stage, an international committee of representatives of both funding providers makes the decision on awarding public funding in the partner countries. The proposals selected by this procedure are then announced as winners of CONTACT II competitions.

Public tenders for research under the CONTACT II programme are announced each year on the website of the Ministry of Education of the Czech Republic.

Anticipated amount of funding for the entire programme period:

Period	Specific-purpose funding allocated (CZK)
2011	33,825,000
2012	55,336,000
2013	91,000,000
2014	131,000,000
2015	128,000,000
2016	95,000,000
2017	60,000,000
Total	594,161,000

At present, the cooperation under CONTACT II involves: China, Israel, India, Japan, Korea, the Russian Federation and the United States.

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders: CZK 56,115,000)

Source: Research, Development and Innovation Information System

More information about the programme, including contacts, can be found at the following addresses:
http://www.msmt.cz/vyzkum-a-vyvoj/program-kontakt-ii-lh
http://www.msmt.cz/vyzkum-a-vyvoj/ramec-podpory-1

6.1.1 People's Republic of China

One call for proposals of joint Czech-Chinese research projects is announced every two years in both countries. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://www.most.gov.cn/eng
http://www.msmt.cz/vyzkum-a-vyvoj/cinska-lidova-republika-1

6.1.2 Japan

The Czech Republic supports joint Czech-Japanese research projects on the basis of the Agreement between the Ministry of Education and the Academy of Sciences of the Czech Republic on Promoting Bilateral Czech-Japanese Scientific Cooperation. The purpose of this Agreement is to enable Czech public institutions of higher education to take part in activities related to the Memorandum of Understanding on Cooperation in Science and Technology between the Academy of Sciences of the Czech Republic and the Japan Society for the Promotion of Science. Each year, funding is awarded to three joint projects for a two-year period.

Eligible Czech applicants include the science institutes of the Academy of Sciences, public higher education institutions and other research institutions cooperating with universities, and research facilities administered by the Japanese Ministry of Education, Culture, Sports, Science and Technology.

Further information can be found at these addresses:
http://www.jsps.go.jp
http://www.msmt.cz/vyzkum-a-vyvoj/podpora-spolecnych-cesko-japonskych-vyzkumnych-projektu-1

6.1.3 Republic of Korea

A call for proposals of joint Czech-Korean research projects is announced every two years in both countries. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://english.moe.go.kr/enMain.do
http://www.msmt.cz/vyzkum-a-vyvoj/korejska-republika-2

6.1.4 The United States of America

A call for proposals of joint Czech-American research projects is announced annually in both countries. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://www.msmt.cz/vyzkum-a-vyvoj/spojene-staty-americke
http://www.dzs.cz/cz/americka-vedecka-informacni-agentura

6.1.5 Israel

A public tender for research focused on joint Czech-Israeli research projects has been announced once in every two years since 2012. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://www.msmt.cz/vyzkum-a-vyvoj/podpora-spolecnych-cesko-izraelskych-vyzkumnych-projektu
http://most.gov.il/English/Pages/default.aspx

6.1.6 India

A public tender for research for joint Czech-Indian research projects has been announced once in every two years since 2012. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://www.msmt.cz/vyzkum-a-vyvoj/podpora-spolecnych-cesko-indickych-vyzkumnych-projektu
http://www.dst.gov.in/

6.1.7 Russia

A public tender for research for joint Czech-Russian research projects has been announced on an annual basis since 2012. On the Czech side, the call has the form of a public tender under the CONTACT II programme.

Further information can be found at these addresses:
http://www.msmt.cz/vyzkum-a-vyvoj/rusko
www.mon.gov.ru

6.2 GESHER/BRIDGE programme (LJ)

The GESHER/BRIDGE programme of international cooperation in applied research and experimental development between the Czech Republic and the State of Israel was designed specifically to fulfil the Agreement between the Government of the Czech Republic and the Government of the State of Israel on Bilateral Cooperation for the Support of Industrial Research and Development in the Private Sector, which had been signed in Prague on 30 March 2009.

As the programme was launched in 2010 for a period until 31 December 2016, no further proposals will be accepted.

Further information can be found at this address:
http://www.czechinvest.org/1program-geshermost

6.3 COST programme (LD)

The COST programme (European Cooperation in Science and Technology) is a European framework for multilateral cooperation in research and development focusing on both basic and applied research. COST coordinates research and development through COST Actions which can be joined by researchers from COST Member Countries (and from other countries, subject to the approval by the Committee of Senior Officials) with their own projects. COST relies on the bottom-up principle with actions proposed by scientists and researchers through a two-round open-call procedure organised by the COST office. The supreme body of the programme is the COST Ministerial Conference. In the period between these conferences, this role is fulfilled by the Committee of Senior Officials on which all COST Member Countries, the European Commission, and the EU Council (more precisely, its secretariat which also makes up the so-called COST secretariat) are represented.
As the COST programme was announced for the 2011–2017 period, no more project proposals are accepted.

Further information can be found at these addresses:
http://www.cost.eu/
http://www.msmt.cz/vyzkum-a-vyvoj-2/cost-cz-ld

6.4 EUREKA CZ programme (LF)

The EUREKA Programme – European cooperation in applied and industrial research and development – was created in 1985. Its objective was to support cooperation between industrial companies, research institutes, and higher education institutions. Through this effort, it aimed to advance the technological level and efficiency of the European industry, develop its common infrastructure, and deal with trans-national problems.

EUREKA projects serve civilian purposes and focus on the private, as well as public sector. Their output includes state-of-the-art marketable products, technologies and advanced services. The aim is to enhance the active role of research and development in the market economy – which means that commercial exploitation of R&D results is a must in all projects.

This programme, in fact an assistance network, neither sets any thematic tasks nor centralises the funding or selection of projects. It follows the bottom-up principle, starting from enterprises and research institutes which themselves express an interest in cooperation. For the same reason, no limits are set on the total costs, project duration, number or participants or other aspects.

EUREKA has 40 members from among European countries, the European Union being the 41st member. In addition to the Member Countries, it also has three Associated Countries: Canada, the Republic of Korea, and South Africa. There are no prior restrictions on project themes. Instead, the topics arise from current industrial trends. The projects typically focus on information technologies, the environment, biotechnologies and healthcare technologies, new materials, robotics and automation, communication technologies, transportation, energy, and lasers. Those interested in EUREKA projects have two options: They may come up with their own idea and seek partners for its development or join an already approved project, provided that they meet the criteria set by its proposer.

Preparing a high-quality project takes 6–8 months. Each project is proposed and managed by its participants with only minimal administrative burden. Proposals must be submitted on appropriate international forms through the office of the relevant National Project Coordinator. There are no deadlines.

The requirements are as follows: cooperation between enterprises and research organisations from at least two different EUREKA countries; appreciable progress must be achieved (higher-order innovation) in terms of the technical and utility value of the product, technology or service to be developed; there must be a marketable potential and a promise of financial profit; the project must have a civilian purpose; and the participants must possess technical, financial and management capacities and competences for its implementation.

EUREKA creates no fund for supporting the projects. Participants meet their own project costs. However, the participation in the EUREKA network enables rapid accumulation of funds from private sources, grants, or public loans. The reason is that in many countries, including the Czech Republic, there are public as well as other sources available for funding EUREKA projects. The Czech government provides financial support of up to 50 % of the project research costs to industrial companies, research organisations and institutions of higher education which participate in EUREKA projects.

The EUREKA office in Brussels runs the programme, coordinates the efforts, circulates project proposals, seeks international cooperation partners, publishes information materials, and maintains the public database. It also works on the protection of information and intellectual property, industrial property rights, and standardisation.

National Project Coordinators manage EUREKA activities in their member countries. They provide information, consultancy and advisory services, facilitate international evaluation of projects, and submit project proposals to the international network within EUREKA. They also assist in securing project funding.

In the Czech Republic, there is the EUREKA Programme Council of the Czech Republic which acts as an advisory body of the Ministry of Education. The managing authority of the entire EUREKA programme is the High Level Group whose members are high government officials from Member States, and one representative of the European Commission. This Group is responsible for developing strategic documents, sharing information between the Member States on potential cooperation, approving new project proposals, and awarding the EUREKA project status. The supreme body of the EUREKA programme is the Ministerial Conference attended by ministers from the Member States, and one representative of the European Commission responsible for research, development and technology. The Ministerial Conference has the authority to make decisions on further development, focus and objectives of the programme, and admitting new members.

The Ministry of Education of the Czech Republic co-funds only the internationally qualified projects of the EUREKA programme. In 2011, the first public tender of the EUREKA CZ programme was announced in the Czech Republic. This local scheme uses the original conditions of the international EUREKA programme.

Anticipated amount of funding for the entire EUREKA CZ programme period:

Period	Specific-purpose funding allocated (CZK)
2011	36,000,000
2012	69,134,000
2013	108,000,000
2014	140,000,000
2015	148,000,000
2016	105,000,000
2017	70,000,000
Total	676,134,000

Graphic representation of figures for the last public tender
(Amount of specific-purpose funding to be awarded through public tenders for 2015–2017: CZK 118,729,000)

Source: Research, Development and Innovation Information System

Further information can be found at these addresses:
http://www.eurekanetwork.org
http://www.msmt.cz/vyzkum-a-vyvoj-2/eureka-cz-lf

6.5 ERC CZ programme (LL)

This programme supports selected frontier research projects (projects that push the boundary of knowledge) of internationally acclaimed Czech researchers. The proposals of these projects must have succeeded in the international panel evaluation of the European Research Council with the conclusion that “The proposal is of good quality and fundable but not retained for funding due to budgetary constraints.” As follows from its principles, the ERC CZ programme is not divided into sub- programmes. The main goal of the programme is to promote excellent research in the territory of the Czech Republic in a targeted and effective manner. By extension, it also aims at greater production of high-quality and internationally recognized research results.

The programme period, i.e. the funding period, is 2012–2019. The first public tender for research under the ERC CZ programme took place in 2012. Dates of the calls should follow the announcement of results of ERC calls. Therefore, each ERC CZ public tender for research should take place after the results of an ERC call have been announced, either in the same or the next calendar year at the latest.

The project period must match the project period set in the ERC call under which the proposal was evaluated. (For instance, the typical maximum project duration for ERC starting grants is five years). No further calls are expected to be announced.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/erc-cz

6.6 The RETURN programme (LK)

The main objective is to provide conditions for the return of prominent researchers to the Czech Republic, raise their interest in high-qualification positions in Czech research, as well as stimulate the interest of Czech research institutions in them. Projects under the RETURN programme (in Czech: NÁVRAT) must foster rapid professional and career growth of experts returning to their home country, and provide adequate professional conditions and facilities for their research. The programme period, i.e. the funding period, is 2012–2019. No further calls are expected to be announced.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/program-navrat

6.7 EUPRO II programme (LE)

The EUPRO II programme follows on the EUPRO programme which contributed to integrating Czech research facilities into the network of their EU counterparts, and to Czech participation in EU framework programmes for R&D. Under EUPRO, the National Information Centre for European Research (NICER) and the Czech National Information Network for Framework Programmes of the EU (NINET) were built. NINET brings together regional and trade contact organisations.

EUPRO II supports infrastructure for international cooperation in research and development. It provides funding for involvement of Czech research institutions in coordinating European research, and their participation in international research and development programmes and bilateral activities. The programme is planned to run from January 2010 to 2017. Between 2010 and 2014, one single-round public tender was announced every year. The programme also supports regional and trade contact organisations. In 2013, the NICER project became part of the CZERA large infrastructure programme. No further calls are expected to be announced.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/eupro-ii-le

6.8 The INGO II programme (LG)

INGO II 2011–2017 follows on the INGO (LA) programme. Its objective is to facilitate participation of Czech scientific institutions in research programmes conducted by top international non-governmental organisations, and involvement of Czech scientists in the managing bodies of international scientific organisations. The programme is divided into two sub-programmes. No further calls are expected to be announced.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj/program-ingo-ii-lg-1

6.9 The MOBILITY activity

The MOBILITY activity is part of international cooperation in research and development. It helps its participants establish contacts and develop cooperation between research and development institutions in partner countries. To this end, the programme supports mobility of researchers who collaborate on international projects in basic research.

The typical period of research projects eligible for support is two years. The rule that is followed on the Czech part is that a project team with the same members should not be awarded institutional funding more than three times. A six-year period is considered sufficient for establishing contacts between the partner institutions, building a joint research team, and preparing a project proposal to seek another source of funding.

The projects under this activity are awarded funding for travel and subsistence costs incurred by research scientists travelling abroad. The sending party covers the investigator's travel to and from the destination in the country of the receiving party (including health insurance), and the receiving party meets relevant subsistence costs (accommodation, meals and sundry expenses). Short-term trips of 1–15 days and long-term ones of 1–3 months are supported.

The costs of the foreign travel (including the costs of health insurance) are calculated by the Czech investigator of a joint research project. The maximum contribution provided by the Ministry of Education for a single trip abroad is CZK 15,000 for travel to European countries and CZK 50,000 for countries outside Europe. The maximum contribution that can be provided to a Czech investigator to meet the subsistence costs of a foreign investigator in the Czech Republic (accommodation, meals, and sundry expenses) is CZK 2,000/day for short trips, and CZK 30,000/month for long-term stays.

For a single joint research project, the Ministry of Education provides a contribution of no more than CZK 100,000/year, i.e. CZK 200,000 for the entire project period to cover the cooperation with partners from European countries. Where countries outside Europe are involved, the maximum contribution is CZK 160,000/year, i.e. CZK 320,000 for the entire project period.

No contribution is provided under this activity to researchers attending seminars, conferences and other meetings in partner countries, unless these are directly related to investigation of the joint research project.

Institutional funding under the MOBILITY activity can be awarded to natural persons, public higher education institutions, public research institutions, and other research facilities which qualify as research organisations within the definition of Article 2.2, paragraph d) of the Community Framework for State Aid for Research, Development and Innovation (2006/C 323/01). The proposals of joint research projects must qualify as basic research projects defined in Article 2.2, paragraph e) of the Community Framework for State Aid for Research, Development and Innovation (2006/C 323/01).

The proposal of a joint research project must be submitted simultaneously by the Czech part of the team in the Czech Republic, and by the foreign part of the team in the partner state, and in line with the criteria set by respective funding providers. At the first stage, the proposal of the joint research project is evaluated separately in each partner country. At the second stage, an international committee of representatives of both funding providers makes the decision on awarding public funding in the partner countries.

At present, the cooperation under the MOBILITY activity involves: Argentina, France, Germany, Poland, Austria, Greece, Slovakia, and Slovenia.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/mobility-6

6.10 Programmes under Art. 185 initiatives

Following ERA-NET and ERA-NET Plus, the initiatives based on Article 185 of the Treaty on the Functioning of the European Union (ex Article 169 of the Treaty establishing the European Community) represent a higher level of coordination of research programmes. They integrate entire national research programmes, including their management and funding, and even generate joint calls for proposals. In order to jointly realize such an initiative, a new implementation structure must be created to deal with the responsibility for managing the joint programme and its financial matters.

Under Horizon 2020, four Art. 185 initiatives are currently running (AAL2, EMPIR, Eurostars2, EDCTP2). These already existed under FP7. A fifth one, BONUS, is under preparation. The Czech Republic is only involved in Eurostars2 and EMPIR.

6.10.1 European Metrology Programme for Innovation and Research (EMPIR)

The European Metrology Programme for Innovation and Research (EMPIR) was made part of the Horizon 2020 framework programme by the applicable Commission Regulation. The EMPIR programme follows on the successful European Metrology Research Programme (EMRP) under FP7. Like EMRP, EMPIR is managed by EURAMET, the European Association of National Metrology Institutes whose membership comprises metrology institutes from 28 Member Countries. EURAMET focuses on consolidating research activities in the field, preventing their overlaps, and achieving the critical mass for research progress. There is an increased focus within EMPIR on specialized modules concerning industrial research and utilization, the support of technical standardisation, and creation of essential elements of the metrology infrastructure. On EMPIR and EURAMET, the Czech Republic is represented by the Czech Metrology Institute. Associate members are the Czech Hydrometeorological Institute, the Institute of Photonics and Electronics of the Academy of Sciences of the Czech Republic, and the Research Institute of Geodesy, Topography and Cartography.

Further information can be found at these addresses:
http://www.msmt.cz/vyzkum-a-vyvoj-2/empir-8b
http://ec.europa.eu/research/era/art-185-individual-initiatives_en.html

6.10.2 EUROSTARS2

Under this scheme, support is provided according to the rules of EUREKA programmes. Its predecessor, the EUROSTARS programme was officially announced on 2 October 2007. The EUROSTARS2 programme, part of Horizon 2020, began in 2014.

Together with other European Community programmes, it targets small and medium-sized enterprises which pursue research and development alongside their principal activity. It supports new projects carried out by international consortia for the benefit of SMEs collaborating with each other, research institutions, and large companies. It aims at European SMEs, especially those with high growth potential. The purpose is to generate new market opportunities and activities based on R&D results, and facilitate rapid commercialization of new products, services and technologies.

The EUROSTARS2 programme currently associates 33 Member Countries. The Czech Republic was one of the founder states. The primary contact and information point for the EUROSTARS2 programme is the EUREKA National Programme Coordinator.

Further information can be found at these addresses:
http://www.eurostars-eureka.eu
http://www.msmt.cz/vyzkum-a-vyvoj-2/program-eurostars-2-7d

7 OTHER ACTIVITIES OF INTERNATIONAL COOPERATION

7.1 Czech-Bavarian R&D cooperation (8E)

The Ministry of Education of the Czech Republic and the Bavarian State Ministry for Education, Science and the Arts announced a joint call for proposals of joint Czech-Bavarian research projects to be carried out in the 2016–2017 period. The basis for this call is the Joint Declaration of Intent of Scientific Cooperation between the Ministry of Education of the Czech Republic, and the Bavarian State Ministry for Education, Science and the Arts signed on 3 July 2014 in Prague.

The call aims to promote scientific cooperation between the Czech Republic and Bavaria. Academics and scientists from the Czech Republic and Bavaria are invited to submit their joint proposals of bilateral projects. The maximum annual contribution for a single project is EUR 20,000, which must be matched by the applicants' own funding equal to at least 20 % of the project costs.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/cesko-bavorska-spoluprace-ve-vav

7.2 Czech-Israeli RDI cooperation (8G)

On 25 November 2014, the Joint Declaration of Cooperation in Research and Development of the Czech Deputy Prime Minister for Science, Research and Innovation, and the Ministry of Science, Technology and Space of the State of Israel was signed in Jerusalem. On its basis, the Ministry of Education of the Czech Republic announced a call for proposals of Czech-Israeli projects in basic research or industrial research. The themes of these projects were set as the “environmental protection technology: pollution prevention and removal of contaminants from the air, soil and water sources” and “information and communication technologies with emphasis on data processing, transfer and storage”.

The proposal of a joint research project must be submitted simultaneously by the Czech part of the team in the Czech Republic and by the Israeli part of the team in Israel and must comply with the criteria set by the respective support provider. The topics and contents of the proposals submitted separately by both teams in their countries must match. The aid rate is 100 % for basic research and 50 % for applied research.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/cesko-izraelska-spoluprace-ve-vavai

7.3 Czech-Norwegian research programme (7F)

The European Free Trade Association (EFTA) has introduced a financial mechanism through which its countries (Iceland, Liechtenstein and Norway) provide funding contributions to new EU Member States, and to EFTA itself, for projects within the expanded internal market area. Furthermore, Norway contributes under the bilateral Norwegian Financial Instrument (Norsk Finansieringsordning). On the basis of both mechanisms, European Economic Area (EEA) countries and Norway committed to support the less economically developed countries in the EEA by providing grants for investment and development projects in priority areas, such as the protection and restoration of cultural heritage, environment protection, judicial system, healthcare and infant care, research and development in priority areas, and others.

The research support fund covers the area of "Bilateral Cooperation in Research and Development" and has been allocated EUR 17,078,091. Of this amount, 85 % is the funding from Norway Grants. The remaining 15 % is provided by the Czech Ministry of Education. At least 20 % of the budget is allocated to projects in social sciences and humanities.

Across all thematic areas, the funding for a single project ranges from EUR 100,000 to 1,000,000. The priority areas in the bilateral trans-national cooperation include:

- Social sciences and humanities
- Health
- Environment

More information about the programme, including contacts, can be found at the following addresses:
http://www.eeagrants.org/
http://www.msmt.cz/vyzkum-a-vyvoj-2/norske-fondy
http://www.msmt.cz/vyzkum-a-vyvoj-2/zakladni-informace-k-programu-cz09-fond-na-podporu-vyzkumu

7.4 Cooperation between the EU and the Russian Federation (ISTC) and Ukraine (STCU)

International cooperation pursued by the EU in research and development includes the support of research and development in the Russian Federation and Ukraine. This effort aims to help reorientate military research towards civilian purposes. As part of this effort, the International Science and Technology Centre (ISTC) in the Russian Federation, and the Science and Technology Centre in Ukraine (STCU) have been established.

They organize cooperation in science and technology between the facilities in the EU Member States, and in the Russian Federation and Ukraine. ISTC and STCU are intergovernmental organisations founded in 1992 based on an agreement between the EU, USA, Japan, and the Russian Federation (and Ukraine).

Their objective is to offer highly-qualified scientists in military research programmes in the former Soviet Union an opportunity to apply their talent to civilian activities.

Further information can be found at these addresses:
http://www.istc.int
http://www.stcu.int

7.5 The Fulbright Commission

The Fulbright Commission is a state institution established by the Czech Ministry of Education and funded by contributions from the state budget. The work of the Commission is co-financed by the governments of the United States and the Czech Republic. The American side bears all personnel costs (wages, costs, and benefits) and the operating costs of the Advising Centre, which provides information about study in the United States. The Czech side bears the operating costs of the office space. Scholarship programmes are co-financed by both partner states.

The main objective of the Fulbright Commission is to support educational, scientific and cultural exchanges between the Czech Republic and the United States of America. The Commission offers scholarships, grants and other programmes for study, teaching and research in the Czech Republic and the United States. It receives and processes proposals, organises selection procedures and assists Czech scholarship holders with their study in the United States, and selects and supports American scholarship holders in the Czech Republic.

Further information can be found at this address:
http://www.fulbright.cz

7.6 NATO Science Programmes – Civilian Research

The Science for Peace and Security (SPS) Committee was formed through a merger of the Science Committee and the Committee on the Challenges of Modern Society. The objective of the SPS Committee is to contribute to the security, sustainable development, stability and solidarity among nations through cooperation, infrastructure expansion, democratic development, and fostering economic growth. The SPS Programme is funded from the NATO budget. Applications are submitted by scientists or developed by the SPS secretariat or, on the national level, drafted by individual countries.

The SPS Programme awards grants to scientists from NATO and partner countries, and the Mediterranean Dialogue countries. Grants are also provided to academic institutions in partner states for the development of computer infrastructure and optimisation of electronic communication. As a rule, there must be cooperation between scientists from NATO countries and scientists from partner states or Mediterranean Dialogue countries. Applications are submitted to the NATO headquarters for evaluation. For individual disciplines, there are committees of international experts, which convene three times a year to evaluate the applications.

Those eligible for grants are scientists from the NATO countries, partner states and Mediterranean Dialogue countries. Each application must be submitted jointly by an applicant from a NATO country and an applicant from a partner or Mediterranean Dialogue country. The proposals often involve partners from other NATO and partner countries, and Mediterranean Dialogue countries, depending on the subject.

Applications can be submitted at any time. The dates of individual rounds are 1 March, 1 July and 1 November.
Applications for funding from national resources must be developed by individual states in accordance with the guidelines. They should focus on the key priorities defined by the SPS Committee.

The priorities have three main categories: counter-terrorism, meeting other security challenges, and priorities of partner countries.

The grant mechanisms under the programme include: pilot studies for 3–5 years, short-term projects with a specific focus taking 12–24 months, and topical workshops. Support grants facilitate the participation of foreign experts in national projects.

NATO – Russia Council (NCR)
This is a specific programme aimed at supporting cooperation between scientists from Russia and NATO countries in seven priority areas: detection of explosives, psychological and social ramifications of terrorism, disaster prediction and prevention, CBRN defence, cyber security, transportation security, including border security, and issues related to environment protection. No deadlines were set for submitting applications, with individual rounds taking place on the following dates: 1 March, 1 July and 1 November.

Further information can be found at this address:
http://www.nato.int/science/about_sps/introduction.htm

7.7 European Space Agency (ESA)

The European Space Agency (ESA) is an intergovernmental organisation for space research and technologies, and their applications. The ESA's mission is to coordinate and harmonise the European astronautic strategies and policies, expand the scientific knowledge about our planet, the Solar System and space, and about materials and living organisms using the International Space Station, satellites and interplanetary probes, and mobilize a broad technical base and support of the European industry to produce and operate space systems and ground infrastructure, and use technical knowledge and skills to meet the ever increasing demands of the society and the market.

The ESA activity programme and its scope is defined by the ESA Ministerial Council, depending on available funding. The Council convenes once in every two or three years, attended by designated ministers from the Member Countries. The meetings took place in 2012 and 2014 (the latter in Luxembourg).

The ESA's activity is managed by the ESA Council and its Committees (Industrial Policy Committee, Scientific Programme Committee, Administration and Finance Committee, and International Relations Committee). ESA optional programmes are managed by Programme Committees. All these bodies are composed of delegates of Member Countries and, where relevant, countries involved in the optional programme. The Czech Republic became an ESA member on 12 November 2008. The ESA activities are divided into mandatory and optional ones.

The mandatory activities include the General Studies Programme, Science Programme, Science Core Technology Programme, and the Technology Transfer Programme. Then there are the Innovation Triangle Initiative, the Basic Technology Research Programme, Centre Spatial Guyanais, and programmes of Experiments for University Students (BEXUS and REXUS).

The Czech Republic takes part in the optional programmes of scientific research (PRODEX), technology programmes (GSTP), programmes of life sciences studying microgravity conditions (ELIPS), Earth observation (EOEP), development of meteorological satellites and satellites for Earth observation (MTG and MetOp-SG), Mars robotic exploration (MREP), space weather and near-Earth objects (SSA-SWE and SSA-NEO), development of launchers and space vehicles (FLPP), navigation (EGEP), and research in telecommunications (ARTES 1, ARTES 5, ARTES 14, ARTES 20).

Further information can be found at these addresses:
http://www.czechspace.cz
http://www.esa.int/esaCP/Czech.html

7.8 The European Science Foundation (ESF)

The European Science Foundation (ESF) is an association of European national organisations responsible for support of scientific research. It was founded in 1974 with headquarters in Strasbourg and had 66 member organisations from 29 countries. These included scientific institutions, academies, and grant agencies. The Czech member was the Czech Science Foundation. The ESF is an independent non-profit organisation whose members were receiving contributions from government budgets of individual member states. The ESF was the administrator of the COST programme. Czech Science Foundation officially resigned from the ESF as of 31 December 2015. On the same date, another 52 organisations withdrew, and 5 organisations applied for a change from the full member status to that of associate member.

Further information can be found at this address:
http://www.gacr.cz/mezinarodni-aktivity/esf/

7.9 EMBC, EMBO, EMBL and the ELIXIR project

The European Molecular Biology Conference – EMBC is an intergovernmental organisation supporting activities in molecular biology and related fields.

The European Molecular Biology Laboratory (EMBL) is an international research organisation established in 1973 by EMBC member countries. With its headquarters in Heidelberg, Germany, it brings together 21 European countries which are also members of the EMBC. It has built the most important and technologically most advanced European research infrastructure for molecular biology and genetics. Its research activities are pursued in five sites: Heidelberg, Cambridge, Grenoble, Hamburg, and Monterotondo. In June 2013, the EMBL Council approved an official application of the Czech government for membership. Full membership was granted to the country in 2014 after a ratification procedure. The motivation for joining the organisation was the prospect of integrating the Czech research centres Central European Institute of Technology (CEITEC), Biotechnology and Biomedicine Center of the Academy of Sciences and Charles University in Vestec (BIOCEV) and the International Clinical Research Center of St. Anne's University Hospital Brno (FNUSA-ICRC) into broad international cooperation. The access is, however, very valuable for a number of other research facilities as well (the Institute of Molecular Genetics of the Academy of Sciences of the Czech Republic, the Institute of Macromolecular Chemistry of Academy of Sciences of the Czech Republic, the Institute of Biophysics of the Academy of Sciences of the Czech Republic, Masaryk University in Brno, Charles University, and the Institute of Chemical Technology Prague). More detailed information on EMBL can be found at http://www.embl.org.

The European Molecular Biology Organisation (EMBO) is a non-governmental organisation whose members are leading European scientists from the various fields of molecular biology. EMBO is in charge of implementing the EMBC General Programme. Therefore, the individual activities under the General Programme carry the EMBO name.

Each year, EMBC and EMBO jointly award more than 600 scholarships for research, and organise more than 70 courses and conferences. There are two deadlines for applications, 15 February and 15 August.

The EMBO Young Investigators programme aims at excellent young scientists in the first years of establishing their research laboratories. Being selected for this programme equals a prestigious recognition of the quality of one’s scientific work. Those selected receive a three-year grant of EUR 15,000 per year, and have a unique opportunity to meet previous awardees and EMBO members. The application deadline is 1 April.

A special Installation Grant programme was launched in selected EMBC Member States, including the Czech Republic, to support research in molecular biology and related sciences. The grants are intended for research team leaders who plan to establish their own laboratory, have an excellent publication record, and had received an offer from an organisation to host such laboratory. In addition, the applicants must have worked for at least two consecutive years outside the planned host country. The application deadline is 15 April each year.

The EMBC also supports the EMBO Science for Society programme, which promotes dialogue between scientists and the society, and the Electronic Information Programme which provides web-based services for the EMBO science community.

EMBC funds various prestigious Europe-wide meetings to foster cooperation, exchange of experience, and advances in molecular biology. Their annual attendance is more than 5,000 scientists. Hands-on courses enable them to acquire new skills for state-of-the-art techniques, and workshops provide a discussion forum for various fields.

In 2011, the ELIXIR infrastructure project was launched under the auspices of EMBL. Its objective is to build and maintain a Europe-wide distributed infrastructure for acquisition, classification, storage, and

dissemination of data from molecular biology research projects across a range of life sciences: biology, chemistry, medicine, pharmacy, and others. The project headquarters are in Hinxton, UK. Today, a total of 12 countries are taking part in the project, and another 6 have signed the Memorandum of Understanding. The project has been included in the ESFRI Roadmap, as well as in the Roadmap of Large Infrastructures for Research, Experimental Development and Innovation of the Czech Republic. Having signed the ELIXIR Consortium Agreement in November 2013, the Czech Republic has become one of the five founding members of the consortium. The Czech national Node entitled “ELIXIR-CZ” is now being established under the coordination of the Institute of Organic Chemistry and Biochemistry of the Academy of Sciences of the Czech Republic.

Further information can be found at these addresses:
http://www.elixir-europe.org
http://www.embo.org

7.10 Organisation for Economic Cooperation and Development (OECD)

The Organisation for Economic Cooperation and Development is an intergovernmental organisation of 34 countries from around the world. The Czech Republic has been a member since 1995.

The Czech Ministry of Education (MEYS) represents the Czech Republic on the Committee for Scientific and Technological Policy, and in its working groups: Technology and Innovation Policy, Working Party on Biotechnology, and Working Party on Nanotechnology. MEYS contributes to the cooperation in research and development by drafting reports and processing extensive questionnaires which serve as source documents for OECD analyses and studies and, most notably, the Science, Technology and Industry Outlook, which offers a comparative analysis of policies and tools across the OECD and many developing countries. In addition, MEYS contributes to thematic projects of the working groups (most recently the "Innovation-driven Growth in Regions: The Role of Smart Specialization" project, and "Financing, Transferring and Commercialising Knowledge") as well as OECD's horizontal projects (e.g. the Innovation Strategy, and the Green Growth Strategy). The objective is to use the outputs and concrete recommendations from these projects to shape national policy and strategy. MEYS is working on matters related to research organisations in horizontal thematic projects of new technologies, which are seen as the basis of economic growth and collaboration between the public and private sectors (e.g. the Innovation Strategy, and the Green Growth Strategy). Other topics include recruiting human resources, acquiring knowledge, skills, and fostering career growth, as well as international cooperation in the context of the growing importance of exploitation and sharing of R&D experience among OECD Member States.

OECD's committees employ an analytical and multidisciplinary approach in formulating qualified recommendations for dealing with today's problems whose global nature calls for better cooperation with some non-Member States and international organisations.

Further information can be found at this address:
http://www.oecd.org

7.11 European Southern Observatory (ESO)

Since 2007, the Czech Republic has been a regular member of the European Organisation for Astronomical Research in the Southern Hemisphere, also known as the European Southern Observatory. This international organisation, whose mission is ground-based astronomy research, is supported by 16 Member States, along with the host state of Chile. Poland and Brazil are in the process of ratifying their membership. ESO operates multiple sites, including the technologically most advanced astronomical observatory on the Paranal Mountain in Chile. Together with partners from the USA, Canada, Brazil, South Korea and Japan, it is a member of the ALMA consortium which operates the largest ground-based array of antennas for observation outside the visible light range on Llano de Chajnantor in the Atacama Desert in Chile. ESO's current effort focuses on building the European Extremely Large optical/infrared Telescope (E-ELT) by 2021, the largest mirror-based telescope in the world. The ESO headquarters are located in Garching, near Munich, Germany. It is the scientific, technical and administrative centre of ESO. Astronomers in the Czech Republic can benefit from the ESO membership through using unique ESO observation technologies in their projects, and Czech doctoral students have an opportunity to complete internships in state-of-the-art observatories. Finally, enterprises from the Czech Republic can compete for the organisation's contracts in mechanics, optics, software and other fields.

Further information can be found at these addresses:
http://www.eso.org/public

7.12 European Organization for Nuclear Research (CERN) and the Joint Institute for Nuclear Research (JINR) in Dubna

The Czech Republic is a regular member of CERN and JINR Dubna, international organisations for research in nuclear and subnuclear physics and high-energy physics. On the Czech side, the cooperation is administered by the Committee for Cooperation with CERN, the Committee for Cooperation with the JINR Dubna, and managed and funded by the Ministry of Education. Projects involving partnership with CERN and JINR are co-funded from the INGO II programme.

Specific-purpose funding is provided by the Ministry of Education for the participation of Czech institutions in major CERN programmes, such as ATLAS, ALICE, COMPASS, TOTEM, and others. The collaboration of Czech facilities with JINR in joint projects is funded from the Czech contributions to JINR.

Further information can be found at these addresses:
http://www.cern.ch
http://www.particle.cz/vyborcern
http://www.jinr.ru
http://www.sujv.cz

7.13 Other institutions in international cooperation

7.13.1 Central European Initiative

The Central European Initiative (CEI) is a regional cooperation organisation with 18 Member States, which supports non-EU members in their integration into the EU. It fosters their transformation and regional cooperation in a number of thematic areas, including research and development. CEI focuses on strengthening cohesion and solidarity in Europe and preventing new dividing lines on the continent.

Further information can be found at this address:
http://www.ceinet.org

7.13.2 Visegrad Group

The Visegrad Group reflects the effort of the countries of the Central European region to work together in a number of fields of common interest. The cooperation takes place through meetings on many levels. The working group of ministers or deputy ministers (often including the Slovenian Republic as well) convenes on an annual basis in one of the Member States to exchange experience and align policies for participating in EU programmes and projects.

Further information can be found at this address:
http://www.msmt.cz/vyzkum-a-vyvoj-2/visegradska-skupina
http://www.visegradgroup.eu

7.13.3 Salzburg Forum

The Salzburg Forum is an initiative of ministers of the interior of 9 countries meeting annually in Salzburg, Austria to promote political cooperation. Some discussions to harmonise views of the members also take place during the Competitiveness Council meetings. In the Salzburg Declaration (8/2009), the Member States pledged to maximise the benefits of the European Research Area. Another objective of the Salzburg Forum is to offer expertise and political support to future presidencies of the Salzburg Forum.

Further information can be found at this address:
http://www.salzburgforum.org
http://www.evropskyvyzkum.cz/cs/nastroje-spoluprace/mezinarodni-programy-podpory/salcburska-skupina

7.13.4 EU Strategy for the Danube Region

It is the second macro-regional strategy of the EU after the Strategy for the Baltic Region adopted by the European Commission in December 2010 and endorsed by the European Council in 2011. A macro-regional strategy is a new regional cooperation concept. The key document for the present strategy is the Action Plan, which identifies areas for strengthening the regional cooperation, as well as issues and challenges to be addressed by projects carried out under the Strategy.

Further information can be found at this address:
http://www.danube-region.eu
http://www.evropskyvyzkum.cz/cs/nastroje-spoluprace/iniciativy-ek/danube

7.13.5 Von Kárman Institute for Fluid dynamics

The international association that conducts research and provides education for experts in fluid dynamics was founded in 1956. Its objective was to develop the qualification and skill levels of experts in the construction of aircraft and aircraft propulsion and experts in liquid mechanics. The association also disseminates recent findings in fluid mechanics, and findings from its own theoretical and experimental research into numerical methods in internal and external aerodynamics.

Further information can be found at this address:
http://www.vki.ac.be

7.13.6 ARTEMIS, ENIAC and ECSEL partnerships

By co-funding the costs of participation of domestic research organisations and enterprises in projects of the Joint Technology Initiatives known as the former ARTEMIS joint undertaking and the current ENIAC initiative, the Ministry of Education of the Czech Republic (MEYS) supports cooperation between the public research sector and enterprises, and their involvement in international R&D projects concerning embedded computing systems, microelectronics and nanoelectronics. ARTEMIS (Advanced Research & Technology for Embedded Intelligence and Systems) and ENIAC (European Nanoelectronics Initiative Advisory Council) have been established as long-term public-private-partnerships with the support of the European Commission. To make these partnerships real, new legal entities, so-called joint undertakings, were established in 2008 in accordance with Article 187 of the Treaty on the Functioning of the European Union. Unlike in the IMI (Innovative Medicines Initiative) JTI, the FCH (Fuel Cells and Hydrogen) JTI, and the Clean Sky (Aeronautics and Air Transport) JTI, where the majority of the public funding is provided by the European Commission, ENIAC and ARTEMIS projects are co-funded to a great extent by the Member States, an the contribution from the European Commission is no more than 16.7 % for ARTEMIS and 15 % for ENIAC projects.

MEYS has been supporting the involvement of Czech research organisations and enterprises in ARTEMIS and ENIAC projects since the time their funding began to be provided in 2009. The MEYS contribution is governed by the Community Framework for State Aid for Research, Development and Innovation (2006/C 323/01). Research organisations can receive up to 83.3 % of the total approved costs for ARTEMIS projects and 85 % for ENIAC projects. SMEs are eligible for contributions up to 63.3 % of the total approved costs under ARTEMIS and 65 % under ENIAC. The funding for large enterprises can reach 33.3 % of the total approved costs for ARTEMIS projects and 35 % for ENIAC projects. The aid rate depends on the research and development category. Overhead costs are reimbursed to a level of 30 % of the total approved costs (flat rate).

The ECSEL JTI (Electronic Components and Systems for European Leadership) is an integral part of the Horizon 2020 (2014–2020) framework programme and is carried out by a Brussels-based joint undertaking bearing the ECSEL name. The ECSEL joint undertaking was established according to the applicable Council regulation. Its members include the EU, represented by the European Commission, and the Member States which have joined the undertaking. It supports research, development and innovation of embedded computing systems, microelectronics and intelligent systems through annual calls for project proposals.

Further information can be found at these addresses:
http://www.ecsel-ju.eu
https://artemis-ia.eu
http://www.eniac.eu
http://www.msmt.cz/vyzkum-a-vyvoj-2/spolecne-technologicke-iniciativy-5
http://www.msmt.cz/vyzkum-a-vyvoj/artemis-a-eniac
http://www.msmt.cz/vyzkum-a-vyvoj-2/ecsel

7.13.7 Antarctic Cooperation

Argentina
On the Czech side, the implementation bodies of the relevant Agreement are the Ministry of Foreign Affairs and the Ministry of Education, Youth and Sports. On the Argentinian side, this role is played by the National Antarctic Directorate of the Ministry of Foreign Affairs, International Trade and Worship. The Agreement provides legal framework for both parties to develop cooperation on the Antarctic territory in the area of science, technology, logistics and environment protection. The Agreement enables exchange of scientific and technical personnel, participation in joint science programmes, joint use of scientific facilities and research laboratories, and exchange of scientific information.

Chile
The implementation bodies for the Agreement are the Ministry of Education, Youth and Sports on the Czech side, and the Ministry of Foreign Affairs, working through the Chilean Antarctic Institute, on the Chilean side.

Under the Agreement, the parties pledged to cooperate in the following main areas: preparation of joint scientific and technical projects, exchange of information in areas of common interest, support of education and professional human resource training, and improvement of transport in Antarctic areas.

The parties envisage that the cooperation will develop on the basis of the Agreement primarily in areas such as physics of the atmosphere, cosmic rays, meteorology, geology, geophysics, palaeontology, oceanic and terrestrial ecology, glaciology, biology and medical science, with a focus on uncovering changes of global importance which can be observed in Antarctica, and observation and monitoring of such changes.

CONCLUSION

This publication offers recent information about the system of public support for research and development in the Czech Republic. Like every year, it attempts to guide you as clearly as possible through the ever labyrinthine schemes of the country's public funding. Recent launches of new operational programmes under the auspices of EU Structural Funds were complicated by delays and by a heavy administrative burden, problems which now appear to have been resolved. Still, the number of completed calls is too small yet to indicate whether these programmes are indeed a step forward. They will certainly contribute to the sustainability of the large research centres that have been built under the Research and Development for Innovation Operational Programme, but their benefits for other applicants are yet to be shown.

In terms of spending on research, development and innovation and other RDI input indicators, the Czech Republic is getting closer to the EU-average levels. This process was, however, slowed down by the economic crisis, and remained so for too long, even after the economic upturn. In 2016 – for the first time since 2008 – government spending on research and development increased by more than CZK 2 billion on the previous year, which certainly is a good sign. Let us hope that the trend of increasing government spending on R&D will continue in the coming years.

Deficiencies persist in the production of R&D results. Whereas their numbers have been rising, in terms of both publications and applied results, truly excellent ones are still rare. One of the major weaknesses of Czech research, development and innovation continues to be the ability to translate results into actual innovation, practice, and commercialization. The low numbers of implemented results, when compared to the investment, are thus reflected in the small overall contribution of R&D to the Czech economy. This proves to be an area for improvement.

The system of support for research, development and innovation is continuously changing. Some of the changes are desirable, eliminating the consequences of ineffective interventions made in the past, whereas others arise from external circumstances. The latter include the transposition of European regulations into Czech legislation. Other changes are due to the still turbulent political scene, where each change in government in past years automatically led to changes to long-term R&D strategies. As a result, the system lacks the stability needed for planning for several years ahead, although the first attempts to prepare long-term projections of spending are under way. The lack of stability has an adverse impact on the management and results of research organisations and other organisations linked to research, development and innovation. This is one of the major obstacles that hinder Czech research and its progress towards the European and global level.

Despite all the shortcomings in the RDI system, there are opportunities to secure funding for high-quality research projects and other research activities in the Czech Republic, to sustain and raise the standard of Czech research and development, and thus close the gap on competitive European economies. The Czech Society for New Materials and Technologies and COMTES FHT are hopeful that this publication will become your guide on this journey.

LIST OF ACRONYMS AND ABBREVIATIONS

AAL2	Active and Assisted Living 2
ALICE	A Large Ion Collider Experiment
ALMA	Atacama Large Millimeter/submillimeter Arra
ARTEMIS	Advanced Research & Technology for Embedded Intelligence and Systems
ARTES	Advanced Research in Telecommunications Systems
AS CR	Academy of Sciences of the Czech Republic
ATLAS	A Toroidal LHC Apparatus
BIOCEV	Biotechnology and Biomedicine Center of the Academy of Sciences and Charles University in Vestec
CBRN	Chemical, biological, radiological and nuclear
CEA	Centrální evidence aktivit (Central Register of Activities, part of the Research, Development and Innovation Information System of the Czech Republic)
CEI	Central European Initiative
CEITEC	Central European Institute of Technology
CEP	Centrální evidence projektů (Central Register of Projects, part of the Research, Development and Innovation Information System of the Czech Republic)
CERN	European Organization for Nuclear Research
CEZ	Centrální evidence výzkumných záměrů (Central Register of Research Plans, part of the Research, Development and Innovation Information System of the Czech Republic)
COMPASS	Common Muon and Proton Apparatus for Structure and Spectroscopy
COSME	European Programme for the Competitiveness of Enterprises and SMEs
COST	European Cooperation in Science and Technology
CR	Czech Republic
CSF	Czech Science Foundation
CSNMT	Czech Society for New Materials and Technologies
CZEDER	Czech Days for European Research
CZELO	Czech Liaison Office
CZERA	Czech ERA Portal
CZK	Czech koruna
ECOP	Education for Competitiveness Operational Programme
ECSC	European Coal and Steel Community
ECSEL	Electronic Components and Systems for European Leadership
EDCTP2	European & Developing Countries Clinical Trials Partnership

EEA	European Economic Area
E-ELT	European Extremely Large Telescope
EFTA	European Free Trade Association
EICOP	Enterprise and Innovation for Competitiveness Operational Programme
EIOP	Entrepreneurship and Innovation Operational Programme
EIP	European Innovation Partnerships
ELIPS	European Programme for Life and Physical Sciences in Space
ELIXIR	European Life-science Infrastructure for Biological Information
EMBC	European Molecular Biology Conference
EMBL	European Molecular Biology Laboratory
EMBO	European Molecular Biology Organisation
EMPIR	European Metrology Programme for Innovation and Research
EMRP	European Metrology Research Programme
ENIAC	European Nanoelectronics Initiative Advisory Council
EOEP	Earth Observation Envelope Programme
ERA	European Research Area
ERA-NET	European Research Area Network
ERC	European Research Council
ESA	European Space Agency
ESF	European Science Foundation
ESFRI	European Strategy Forum for Research Infrastructures
ESO	European Southern Observatory
ETP	European Technology Platform
EU	European Union
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EUR	Euro
EURAMET	European Association of National Metrology Institutes
FCH	Fuel Cells and Hydrogen
FLPP	Future Launchers Preparatory Programme
FNUSA-ICRC	International Clinical Research Center of St. Anne's University Hospital Brno
FP	Framework programme
FP7	7th Framework Programme
GBER	General Block Exemption Regulation (Commission Regulation (EU) No. 651/2014 of 17 June 2014)

GDP	Gross Domestic Product
GEOSS	Global Earth Observation System of Systems
GMES	Global Monitoring for Environment and Security
GNSS	Global Navigation Satellite Systems
GSTP	General Support Technology Programme
H2020	Horizon 2020
ICT	Information and communication technologies
IGLO	Informal Group of RTD Liaison Offices
IMI	Innovative Medicines Initiative
INGO	Inter Non-Governmental Organization
IRRDR	Information Register of Research and Development Results
ISTAR	Intelligence, Surveillance, Target Acquisition and Reconnaissance
ISTC	International Science and Technology Centre
JINR	Joint Institute for Nuclear Research
JRC	Joint Research Centre
JTI	Joint Technology Initiative
KETs	Key enabling technologies
KIC	Knowledge and Innovation Community
LTPRD	Long-Term Principal Research Directions
MA	Ministry of Agriculture of the Czech Republic
MC	Ministry of Culture of the Czech Republic
MD	Ministry of Defence of the Czech Republic
MetOp-SG	Meteorological Operational Satellite Programme – Second Generation
MEYS	Ministry of Education, Youth and Sports of the Czech Republic
MH	Ministry of Health of the Czech Republic
MI	Ministry of the Interior of the Czech Republic
MIT	Ministry of Industry and Trade of the Czech Republic
MREP	Mars Robotic Exploration Preparation Programme
MSTI	Main Science and Technology Indicators
NAKI	Programme of Applied Research and Development of National and Cultural Identity
NATO	North Atlantic Treaty Organization
NCR	NATO – Russia Council
NEO	Near-Earth Object Segment

NICER	National Information Centre for European Research
NINET	National Information Network
NRDIP	National Research and Development and Innovation Policy
NSP I	National Sustainability Programme I
NSP II	National Sustainability Programme II
OECD	Organisation for Economic Cooperation and Development
OG CR	Office of the Government of the Czech Republic
P2P	Public-Public Partnership
PA	Priority Axis
PCOP	Prague – Competitiveness Operational Programme
PRODEX	Programme de développement d'expériences scientifiques
R&D	Research and development
R&DC	Research and Development Council
RDEOP	Research, Development and Education Operational Programme
RDI	Research, development and innovation
RD&I IS	Research, Development and Innovation Information System of the Czech Republic (at http://www.isvav.cz)
RDIOP	Research and Development for Innovation Operational Programme
RDIOP	Research and Development for Innovation Operational Programme
RFCS	Research Fund for Coal and Steel
RIS3	Research and Innovation Strategy for Smart Specialisation
RIV	Rejstřík informací o výsledcích (Information Register of Research and Development Results, part of the Research, Development and Innovation Information System of the Czech Republic)
RO	Research organisation
RVVI	Rada pro výzkum, vývoj a inovace (Research & Development Council, R&DC)
Sb.	Sbírka, the collection of laws of the Czech Republic
SME	Small and medium enterprise
SP1	Sub-Programme 1
SP2	Sub-Programme 2
SPS	Science for Peace and Security
SSA	Space Situational Awareness
STCU	Science and Technology Centre in Ukraine
STO	Science and Technology Organization
SWE	Space Weather

TA CR	Technology Agency of the Czech Republic
TOTEM	Total, Elastic and Diffractive Cross-section Measurement
VES	Evidence veřejných soutěží ve výzkumu, experimentálním vývoji a inovacích (Register of Public Tenders in Research, Experimental Development and Innovation, part of the Research, Development and Innovation Information System of the Czech Republic)

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