National ERA Roadmap of the Czech Republic for the years 2016-2020

INTRODUCTION

The Czech Republic contributes to the advancement of European Research Area (hereinafter referred to as "ERA") from the very beginning of creation of this concept in 2000 by both its national policies as well as by engagement in international cooperation in R&D and innovation. ERA cannot exist without pro-active participation of individual Member States neither without support and coordination provided by the European Commission. Since the well-functioning ERA – contributing by means of R&D and innovation to address grand societal challenges and economic needs – is a fundamental precondition for an overall improvement of the quality of life of European citizens, **further development of the ERA is our common goal and the Czech Republic is fully prepared to be an active player in pursuing these tasks**.

The visibility and importance of ERA – granted by the reference to completion of ERA in 2014 and by confirmation of ERA as one of the cornerstones of the Europe 2020 strategy Innovation Union Flagship – gave a new impetus and momentum to a more targeted debate on the role, functioning and governance of ERA in the following years. **Recognition of significance of the advancement of ERA and the need of coherent and well targeted cooperation between the European Commission and Member States** triggered an intensive discussion on these topics both in the ERAC (*European Research Area and Innovation Committee*) and Council´s Research Working Group, which **resulted in the adoption of "ERA Roadmap for the years 2015-2020".**

The Czech Republic is of the opinion that the individual priority axes of the ERA Roadmap are well selected and defined and respond to areas, which require targeted focus for the further advancement of ERA. The Council Conclusions on the ERA Roadmap for the years 2015-2020 of May 2015 gave also enough flexibility to adapt the priority areas in view of further evolution of ERA, which is a very important element in the long-term perspective.

The above-mentioned **Council Conclusions has invited the Member States to implement the ERA Roadmap for the years 2015-2020 through appropriate actions in their national policies, action plans and strategies by mid-2016.** This timing is very convenient for the Czech R&D and innovation environment as the key policy document – **"National Research, Development and Innovation Policy of the Czech Republic for the years 2016-2020"** – had been drafted at the same time and approved by the Government of the Czech Republic on 17 February 2016.

The **National ERA Roadmap of the Czech Republic for the years 2016-2020** has been prepared with the intention to map the current status of the Czech R&D and innovation ecosystem with respect to the ERA Roadmap priorities, to reflect on the strong and weak points and to suggest further steps in line with the specific R&D and innovation environment of the Czech Republic and in the broader context of the common goals of ERA.

ERA PRIORITY 1
EFFECTIVE NATIONAL RESEARCH SYSTEMS

A. RATIONALE

The fundamental prerequisite for a "healthy" and efficiently functioning R&D and innovation ecosystem of the Czech Republic is creation of the environment that enables performance of the cutting-edge fundamental and applied research and facilitates development of advanced technologies evincing high knowledge intensity and potential for the application in innovative products and services of a high added value. The key pillars of such an ecosystem are (1) top-class research infrastructures, which enable performance of R&D at the frontiers of human knowledge; (2) qualified human resources disposing of sufficient skills for the performance of knowledge intensive R&D and innovations; (3) intensive circulation of ideas and human capital within individual segments of the knowledge triangle, including at the international level; (4) efficient transfer of knowledge from the research environment into practice and existence of strong science-industry linkages; (5) strengthening the performance of private enterprises by using well-chosen innovation policy instruments; and (6) efficient use of R&D and innovation public funding tools in a full synergy and complementarity with the European Structural and Investment Funds and Horizon 2020 instruments. The creation of such conditions is possible only if the R&D and innovation ecosystem is stably, efficiently as well as strategically managed by relevant public authorities by using appropriate policy intelligence tools and procedures.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

Since 2011, the basis for evidence-based policy making in the Czech Republic represent the outcomes of the "International Audit of Research, Development and Innovation of the Czech Republic", which was performed by the Technopolis Group. The international audit assigned by the Czech public authorities was aimed at assessing all major aspects of the Czech R&D and innovation ecosystem. Its attention was paid to the (1) governance system; (2) intensity and structure of public R&D expenditures, (2) methodology for research organizations´ evaluation and institutional funding; (3) methodology for evaluation of project-based R&D programmes; (4) current state of international cooperation in R&D and innovation and internationalization of the Czech R&D and innovation ecosystem; (5) level of cooperation between public research sector and private enterprises; (6) human resources development for R&D and innovation; (7) system of intellectual property protection; and (8) bibliometric analysis of R&D and innovation output of the Czech Republic in the international context. Since then the outcomes of audit have been used for the preparation and implementation of reforms gradually introduced into the Czech governance system of R&D and innovation.

C. ENVISAGED GOALS

Following the outcomes of "International Audit of Research, Development and Innovation of the Czech Republic" a project aimed at reforming the evaluation and funding system of the Czech R&D and innovation was performed and accomplished in 2015. The key emphasis of this project was put on proposing a new evaluation methodology and institutional funding system of Czech research organisations. Simultaneously, a new methodology for evaluation of

Czech research infrastructures was prepared within the scope of the project (including the methodology for assessment of benefits of membership of the Czech Republic in international R&D organisations). Lastly, principles for preparation of a new methodology for evaluation of project-based R&D and innovation programmes have been defined.

Based on the outcomes of the above mentioned project and its final recommendations, **new system for evaluation and institutional funding of Czech research organisations** is expected to distinguish between different roles of various types of research organizations operated within the Czech national R&D and innovation ecosystem. The new methodology shall apply the principles of informed international peer-review and put the main emphasis on assessing the ability of research organisations to achieve internationally competitive R&D results and to transfer the scientific knowledge from the research environment into practice and innovative products and services. The research organisations´ evaluation methodology should be also no longer focused solely on the retrospective bibliometric analysis of R&D achievements, but take into consideration also other aspects and attributes of research organisations´ management such as governance structure, long-term sustainable development strategy, human resources development strategy, involvement in international R&D and innovation networks or ability to raise funds from foreign and private resources.

Simultaneously with the introduction of a new methodological framework for evaluation and institutional funding of research organisations, **new methodology for project-based funding** will be developed and focused on evaluation of R&D and innovation programmes in all their life-cycle phases (ex-ante, interim, and ex-post) and analysing their socio-economic impact.

Furthermore, the Czech Republic will keep on implementing the **new research infrastructures evaluation methodology**, which had been prepared in 2013-2014 and successfully applied in the framework of a comprehensive assessment of Czech research infrastructures in 2014 (see also the *ERA Priority 2b: Make optimal use of public investments in research infrastructures*).

Lastly, the **new methodology for evaluation of benefits of membership of the Czech Republic in international R&D organisations** will be implemented in order to evaluate the merits of the Czech participation in international R&D organisations, which are established and operated under the Public International Law.[1]

Besides developing a high-quality evaluation culture and using the internationally recognized evaluation schemes, key pillars of a strategy R&D and innovation governance system are based also on **continuous monitoring of socio-economic environment and evaluation of R&D and innovation-related incentives´ impact**. Only if policy intelligence tools include mechanisms, which enable efficient monitoring of the most up-to-date and emerging technological and/or socio-economic trends, R&D and innovation ecosystem is prepared to respond to the changing conditions by taking the appropriate measures.

[1] The Czech Republic has been a Member State of the following international R&D organisations established and operated within the framework of Public International Law: **CERN** (*European Organization for Nuclear Research*); **EMBC** (*European Molecular Biology Conference*); **EMBL** (*European Molecular Biology Laboratory*, including the research infrastructure project ELIXIR); **ESA** (*European Space Agency*); **ESO** (*European Southern Observatory*, including the *European Extremely Large Telescope*); **JINR** (*Joint Institute of Nuclear Research*) and **VKIFD** (*Von Karman Institute for Fluid Dynamics*).

Therefore, in order to increase the ability to predict and address socio-economic needs and/or opportunities, R&D and innovation policy making processes must comprise **foresight activities covering all relevant areas of grand societal challenges and future emerging technologies**. Foresight activities should be developed at all the levels of R&D and innovation policy making processes so that the ecosystem is prepared to address challenges and trends with significant impact on the Czech society and economy.

D. TOP ACTION PRIORITIES

- **New methodologies for (1) research organisations evaluation and institutional funding and (2) evaluation of project-based R&D and innovation programmes will be prepared, introduced into the Czech R&D and innovation governance system and implemented in the course of the period 2017+.**

- **Methodology for research infrastructures evaluation (prepared in 2013/2014 and used within the comprehensive evaluation of Czech research infrastructures in 2014) will be applied for evaluation of large infrastructures for research, experimental development and innovation approved by the Government of the Czech Republic for public funding in the course of the period 2016+. This evaluation will be performed in 2017 and 2019.**

- **New methodology for assessment of benefits of membership of the Czech Republic in international R&D organisations will be used for the respective evaluation to be carried out in 2016 and 2019.**

- **The use of existing and emerging professional platforms (being a source of the strategy information needed for the evidence-based policy making) will be strengthened within the R&D and innovation governance system in the course of the period 2016+. Particular attention will be paid to the smart specialisation and technology foresight activities.**

ERA PRIORITY 2(a)
JOINTLY ADDRESSING GRAND CHALLENGES

A. RATIONALE

From the global as well as the European perspective the Czech Republic is a relatively small economy characterized by limited material, financial and human resources. Therefore in order to ensure sustainable economic growth and ability to cope with current and emerging socio-economic challenges, it is crucial that the Czech Republic is actively involved in cross-border and international cooperation in R&D and innovation. Only intensely internationalized R&D and innovation ecosystem will allow the concentration of critical mass of capacities as well as capabilities, which are necessary for the performance of excellent R&D and innovation leading to the strengthening of international competitiveness of the Czech Republic built on the basis of knowledge economy.

One of the main drivers for reaching the advanced level of internationalization of the Czech R&D and innovation ecosystem is to improve linking of Czech R&D facilities, human resources and financial capital within international networks. If the Czech Republic wants to succeed on the global knowledge market, it must strive to become a highly attractive place for world-class researchers allowing them to perform cutting-edge R&D and innovation. Simultaneously the Czech Republic shall intensely participate in international activities in R&D and innovation so that the ecosystem is able to respond to the challenges of high socio-economic relevance, which can be addressed only if the national capacities and capabilities are shared and linked at the international level and used in a synergy and complementary way.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

There is a number of ERA initiatives the Czech Republic participates in and which are aimed at improving the interoperability of national approaches and at allowing to develop more intense cross-border cooperation. For years the Czech Republic has been a Member State of the **COST** (*European Cooperation in Science and Technology*) and **EUREKA** R&D programmes and has developed national instruments for the financial support of Czech research organizations and private enterprises taking part in these particular projects.

In the same way the Czech Republic has been a Member State of the programmes **EUROSTARS** (*European Programme dedicated to R&D-performing SMEs*) and **EMPIR** (*European Metrology Programme for Innovation and Research*) operated under the Treaty on the Functioning of the European Union (hereinafter referred to as "TFEU") Article 185. Another example of successful Czech participation in international R&D and innovation activities is the TFEU Article 187 joint technology initiative **ECSEL** (*Electronic Components and Systems for European Leadership*).

The Czech Republic, being a Visegrad Group country, co-funds educational and R&D activities managed by the **International Visegrad Fund**. At this specific and particular macro-regional level, the cooperation has been developed not only in the Czech Republic-Hungary-Poland- and Slovak Republic format. In the recent years, common R&D and innovation activities have

been spread also beyond the European boundaries by means of establishing cooperation with Japan and Republic of Korea within the **V4+ framework**.

Concerning the involvement in **Joint Programming Initiatives**, the Czech Republic is currently a member and observer of 5 of them and participates in their joint actions such as collection of data and supportive R&D information. Nevertheless, due to limited financial resources and persisting lack of sectorial coordination the participation in Joint Programming Initiatives and ERA-NET and ERA-NET Co-fund schemes in a larger extend is still a goal to be achieved by the Czech Republic in the future.

C. ENVISAGED GOALS

The Czech Republic has been for years facing the challenge of major internationalisation of its R&D and innovation ecosystem and deeper involvement in international R&D and innovation structures, initiatives and programmes. The first top action priority for the years to come is thus maintaining at least the current level of the so far successful participation in the **COST, EUREKA, EUROSTARS, EMPIR and ECSEL programmes** that the Czech Republic is a Member State of. As there is an obvious lack of the Czech participation in **Joint Programming Initiatives, ERA-NET/Co-fund tools and the TFEU Article 185 R&D programmes**, public authorities will develop a concrete set of coordination and funding measures that will enable participation in these kinds of cross-border cooperation. Moreover research organisations will be encouraged to establish and develop long-term high strategy partnerships with their foreign partners on the basis of **Horizon 2020 "Teaming" instrument**.

D. TOP ACTION PRIORITIES

- **Public authorities will prepare, adopt and implement an Action Plan for International Cooperation of the Czech Republic in R&D and Innovation and Internationalisation of the Czech R&D and Innovation Ecosystem.**

- **In order to keep on enabling participation of Czech research organisations and private enterprises in the COST and EUREKA programmes (that the Czech Republic is already a Member State of) the "Inter-Excellence" R&D programme will be prepared, adopted and implemented since 2016 as well as other complementary funding instruments that will preserve the Czech involvement in the EUROSTARS, EMPIR and ECSEL programmes.**

- **Public authorities of the Czech Republic will identify barriers and develop a concrete set of coordination and funding measures, which will enable an intensified involvement of Czech research organisations and private enterprises in cross-border and international R&D initiatives and programmes based on the interoperability of national approaches and mutual recognition of evaluation procedures. In this respect particular focus will be put on participation of Czech R&D performing entities in Joint Programming Initiatives, ERA-NET, ERA-NET Co-fund schemes and the TFEU Article 185 programmes AAL (*Active and Assisted Living R&D Programme*), EDCTP (*European & Developing Countries Clinical Trials Partnership*) and PRIMA (depending on the decision of European Commission).**

- **Public authorities of the Czech Republic will support the Czech research organisations to develop long-term international strategy partnerships established within the framework of the Horizon 2020 "Teaming" instrument. Related investment costs will be covered by using the European Structural and Investment Funds (hereinafter referred to as "ESIF") raised within the implementation framework of the Operational Programme Research, Development and Education (hereinafter referred to as "OP RDE").**

ERA PRIORITY 2(b)
MAKE OPTIMAL USE OF PUBLIC INVESTMENTS IN RESEARCH INFRASTRUCTURES

A. RATIONALE

In recent years, the Czech Republic has responded to the significantly growing importance of research infrastructures within ERA and worldwide. Taking into consideration that **research infrastructures are principal backbones of the Czech R&D and innovation ecosystem** and one of the major tools for strengthening the competitiveness of the Czech Republic within ERA, a number of steps aimed at providing the Czech research infrastructures with a stable legal and financial environment have been made.

In consequence the Czech Republic has gradually developed a **specific funding framework for the Czech research infrastructures as well as the national road-mapping procedures** resulting (among others) in intensive networking of Czech research infrastructures at the international level and in joining a number of emerging **ERIC** (*European Research Infrastructure Consortia*): **BBMRI** (*Bio-banking and Bio-molecular Resources Research Infrastructure*); **CERIC** (*Central European Research Infrastructure Consortium*); **CLARIN** (*Common Language Resources and Technology Infrastructure*); **EATRIS** (*European Infrastructure for Transitional Medicine*); **ESS** (*European Spallation Source*); **ESS Survey** (*European Social Survey*); **SHARE** (*Survey of Health, Ageing & Retirement in Europe*); and **ICOS** (*Integrated Carbon Observation System*); expecting to become a founding Member State of **ELI** ERIC (*Extreme Light Infrastructure*) in 2016/2017.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

In 2009 the "Act No. 130/2002 Coll. on the Support of Research, Experimental Development and Innovation from Public Funds and on the Amendment to Some Related Acts" established a brand new legal instrument for financing the research infrastructures of the Czech Republic from the state budget expenditures. The Ministry of Education, Youth and Sports was entitled to become the national funding authority for the so called **large infrastructure for research, experimental development and innovation**, which was defined as "*a unique research facility, including its acquisition and related investment costs and the costs of ensuring its activities that are essential for comprehensive research and development with heavy financial and technological demands and which is approved by the Government of the Czech Republic and established by one research organisation for the use of other research organisations*".

In 2010 the very 1st **Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation** was issued following the structure of the ESFRI Roadmap and early afterwards updated in 2011. The overall significance given to the research infrastructures was also further emphasised as **individual proposals for large infrastructures public funding have been submitted for the final adoption of the Government of the Czech Republic**. The Ministry of Education, Youth and Sports, being the central authority responsible for large infrastructures of the Czech Republic, also established an expert advisory board for consulting the respective tasks – **Council for Large Infrastructures for Research, Experimental Development and Innovation** – gathering the representatives of all relevant stakeholders.

While the **operational costs** of large infrastructures have been covered in the past years by using the state budget expenditures on R&D, the **investment costs** for upgrading the existing facilities and/or construction of brand new ones have been funded predominantly by the tools of EU cohesion policy. Major investments in the technological devices of large infrastructures situated in the regions outside Prague were made via the **Operational Programme Research and Development for Innovation** (*managed by the Ministry of Education, Youth and Sports*) while the investments in large infrastructures situated directly in Prague were made via the **Operational Programme Prague – Competitiveness** (*implemented by the City of Prague*).

Following on the 1st phase (since 2010) of financing the large infrastructures from the state budget expenditures on R&D and investments made by using the EU cohesion policy tools in the course of the period 2007-2015 a **comprehensive international evaluation of the Czech research infrastructures was performed in 2014**. All the facilities regardless of their previous main funding source (state budget expenditures or EU structural funds) and current state-of-play (preparatory, implementation, operational or decommissioning phase) were subject to this assessment.

The evaluation was made by an international committee in accordance with the methodology that had been inspired by ESFRI evaluation procedures. Its main outcome was identification of 58 research infrastructures recommended by the international committee for funding and divided in 4 performance-related groups indicating the priority for funding in direct proportion to the quality-differentiated outputs of the evaluation. The outcomes and recommendations made by the international evaluation committee served as an independent expert basis for:

- Preparation of the **"Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016-2022"**;

- Adoption of Resolution of the Government of the Czech Republic of 21 December 2015 No. 1066 on the **funding of large infrastructures for research, experimental development and innovation during the multiannual financial framework 2016+** combining the state budget expenditures on R&D with the ESIF raised within the framework of OP RDE;

- **Declaring political and financial commitment to pan-European research infrastructures** (with involvement of the Czech facilities), which were **submitted for the ESFRI Roadmap update 2016**;

- **Joining the emerging ERIC** and other legal platforms within which pan-European research infrastructures and other international research infrastructures are operated.

C. ENVISAGED GOALS

By 2020 the Czech Republic will keep on **harmonizing and aligning its research infrastructures approaches with good practice examples agreed at the ESFRI and e-IRG levels**.

The large infrastructures for research, experimental development and innovation approved by the Government of the Czech Republic for public funding in the course of the period 2016+ will be **continuously assessed by an international evaluation committee**.

The research infrastructures funding approach of the Czech Republic will continue to be based on **synergy combination of the state budget expenditures on R&D (operational costs) with the ESIF (investment costs)**.

The **"Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016-2022" will be updated on a regular basis so the process is synchronized with the ESFRI Roadmap updates** and the Czech Republic is able to provide pan-European research infrastructures applying for the ESFRI Roadmap (having the participation of Czech facilities) with both political and financial commitment.

Public authorities of the Czech Republic will keep on supporting the Czech top-class research infrastructures to network at the macro-regional, pan-European and other international levels thus helping these facilities to establish themselves as solidly based and valued R&D facilities with significant mark on the ERA landscape. **Particular attention will be paid to networking of research infrastructures within the ERIC and other legal framework schemes.**

D. TOP ACTION PRIORITIES

- **Funding of the operational and investment costs of large infrastructures for research, experimental development and innovation approved by the Government of the Czech Republic for public funding will be of a multi-source nature in the years 2016+ and will place spending of state budget expenditures on R&D (operational costs) in a full synergy with the ESIF raised through the OP RDE (investment costs).**

- **Interim assessment of large infrastructures for research, experimental development and innovation approved by the Government of the Czech Republic for public funding in the course of the period 2016+ will be performed in 2017 and 2019.**

- **Calls for the update of the "Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016-2022" will be launched in 2016/2017 and 2018/2019.**

- **The "Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016-2022" will be updated in 2018 and 2020 in line with the ESFRI Roadmap updates.**

- **Public authorities of the Czech Republic will continuously promote the membership of the Czech Republic in ERIC and other legal frameworks the macro-regional and/or pan-European research infrastructures are managed and operated within.**

ERA PRIORITY 3
AN OPEN LABOUR MARKET FOR RESEARCHERS

A. RATIONALE

Researchers are the driving force of ERA and as such have been in the forefront of interest when drawing up EU level policy and initiatives. Since 2000 the EU has done much to advance the objective of **single market for knowledge and free movement of researchers**. It has dealt with various issues (establishment of the Steering Group for Human Resources and Mobility, adoption of the Third Country Directive, European Charter for Researchers, Code of Conduct for Recruitment of Researchers and Human Resources Strategy for Researchers, operation of the EURAXESS centres etc.) to create and enhance the ERA.

The EU invites Member States to strengthen their capacity to create favourable conditions for researchers, to offer **internationally competitive careers**, to promote **optimal circulation of scientific knowledge** and to keep the workforce in Europe. In this respect all programmes and initiatives developed at EU and national levels dealing with researchers´ careers, mobility, skills development and inter-sectorial cooperation shall play a crucial role in the advancement of ERA. Application of **open, transparent and merit-based recruitment practices** with regard to the research positions was claimed as the priority how to achieve an open labour market for researchers within ERA. The Member States are also encouraged to review their national conditions and recruitment processes in a reflective way, amending them where necessary to advance openness and transparency, including issue of **gender equality and diversity**.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

Strengthening the integration of the Czech Republic into ERA is contingent upon the creation of an environment that will facilitate a full-fledged development of human resources as well as an open labour market for researchers. In the Czech Republic there is currently no national strategy or action plan dealing particularly with the human resources development in R&D and innovation and with open labour market for researchers in a comprehensive manner. The mobility of Czech researchers is both in the geographical and inter-sectorial terms insufficient. Moreover, the Czech labour market in R&D and innovation may not be sufficiently financially attractive, as compared internationally, so as to attract foreign researchers in large numbers, despite the fact that the pace of salary increases for researchers is higher than the increase in average salary in the Czech Republic. Thus, to strengthen the competitiveness of the Czech Republic in this respect adequate conditions and incentives shall be established and further elaborated on to enhance the mobility of researchers in the national, international and inter-sectorial context and to develop appropriate skills to increase their competitiveness on the global markets. These incentives to stimulate various forms of mobility must take into account also gender differences in biographical paths of women and men researchers.

Despite the lack of systematic national strategy or action plan dealing with human resources development in R&D and innovation the Czech Republic has done much to advance an open labour market for researchers. In 2007 the **Council Directive 2005/71/EC of 12 October 2005** on a specific procedure for admitting third-country nationals for purpose of scientific research

was transposed into the Czech national legislation by "Act No. 326/1999 Coll. on the Residence of Foreign Nationals on the Territory of the Czech Republic and Amendments to Some Related Acts." Intense cooperation among interested service centres and institutions was established.

Following to the European Charter and Code of Conduct for the Recruitment of Researchers the Government of the Czech Republic adopted the **Resolution of 16 August 2006 No. 951** whereby endorses the Commission Recommendation concerning the Charter and the Code of Conduct. The Government of the Czech Republic has assigned heads of central bodies of public administration and the President of the Czech Academy of Sciences the task of supporting the implementation of the Recommendation on the Charter and Code of Conduct on a continual basis and within their respective jurisdiction.

Since 2008 the **EURAXESS Czech Republic Network,** set up by the Centre of Administration and Operations of the Czech Academy of Sciences, has been operated. The EURAXESS Czech Republic Network currently consists of 2 Service Centres (in Prague and in Brno) and 7 local contact points. The mission of EURAXESS Service Centres is to provide free and personalized assistance on challenges that are faced by researchers and their families when relocating. The EURAXESS Czech Republic cooperates intensely in the most effective manner with the Ministry of Education, Youth and Sports; Ministry of Interior; Ministry of Labour and Social Affairs; Ministry of Foreign Affairs; Czech Social Security Administration and other public authorities, to deal with requirements related to researchers' stay in the Czech Republic.

The EURAXESS Czech Republic operates the **Czech National EURAXESS Jobs Portal** linked to the international EURAXESS Jobs portal. This portal makes it possible for research organization to register for free, to fill in job vacancies and to search for researchers in the EU. Researchers may use the portal to upload their CVs and peruse research job offers. Although the awareness of this instrument in the Czech Republic has increased over the last years, its potential has not been fully utilised yet.

C. ENVISAGED GOALS

Main policy documents setting the priorities for further enhancement of R&D and innovation in the Czech Republic put a crucial emphasis (among others) on ensuring high-quality human resources. While the Czech research organisations shall keep on concentrating on creation of favourable environment for top-class researchers allowing them to perform excellent R&D in their institutions, public authorities shall put effort on further development of preconditions, which will stimulate institutional changes in research organisations (which are still to be done) and provide the research community with methodology instruments and financial incentives.

Human resources development strategy – developed in line with the European Charter for Researchers, Code of Conduct for Recruitment of Researchers and Human Resources Strategy for Researchers – shall form an integral part of research organisations´ management "culture" and its quality shall be subject to monitoring within the framework of the newly developed methodology for research organisations´ evaluation and institutional funding. Since this new evaluation methodology (to be implemented in the course of the period 2017+) shall take into consideration not solely the R&D and innovation performance, human resources development strategy shall belong among the assessed attributes of research organisations´ management.

Concurrently, public authorities will prepare, adopt and implement a comprehensive **Action Plan for Human Resources Development in R&D, including Gender Equality in R&D**.

Regarding measures to be applied in order to encourage open labour market for researchers, relevant public authorities will keep on supporting the operation of **EURAXESS Czech Republic Network**, including the **Czech National EURAXESS Jobs Portal**, and on promoting tenders for job vacancies on open, transparent, non-discriminatory and internationally recognized basis.

Particular efforts complemented with financial incentives will be devoted to development of favourable conditions and environment that will further stimulate the **integration of foreign researchers and managers in Czech R&D and innovation ecosystem, including re-integration of Czech researchers and managers with significant international experience**. At the same time, financial support will be provided to researchers (regardless of their country of origin and nationality), whose ERC project proposals were evaluated above threshold, but did not receive funding due to limited budget of the **European Research Council**. In this way the Czech Republic will not only encourage researchers to realize the ERC grants in the Czech research organisations, but also support the implementation of high-risk frontier projects widening the limits of human knowledge.

Specific financial instruments will be devoted also to encourage **development of managerial, strategy intelligence, knowledge transfer and business skills** of researchers as well as their **inter-sectorial and international mobility** (see also the *ERA Priority 5: Optimal Circulation and Transfer of Scientific Knowledge*).

Regarding doctoral training, the aspects of (1) research excellence; (2) attractive institutional environment; (3) internal quality assurance; (4) exposure to industry (and other employment sectors); (5) interdisciplinary research option; (6) international network; and (7) transferrable skills have been defined and approved as the **"Principles of Innovative Doctoral Training"** by the European Council for Education in 2011. Jointly with the „Salzburg II Recommendations" of the European University Association the principles have been involved in the "Bucharest Ministerial Communique" of the 48 Bologna signatory states in 2012 as an very important contribution for discussion on doctoral training. With the aim of improving and ensuring the quality of doctoral training the Czech Republic will alongside the Salzburg II Recommendations and EU activities reflect Innovative Doctoral Training principles in its strategy documents as well as in implementation methodology and financial tools.

D. TOP ACTION PRIORITIES

- **In 2016 public authorities will prepare, adopt and start to implement an Action Plan for Human Resources Development and Gender Equality in R&D addressing issues of human resources and gender equality in R&D in a comprehensive manner.**

- **Human resources development strategy will be included among research organisations´ management attributes to be assessed within the framework of implementation of the new research organisations´ evaluation methodology (to be applied in the course of the period 2017+).**

- **Public authorities will keep on supporting the activities of the EURAXESS Czech Republic Network and other initiatives related to strengthening the open recruitment practices in Czech research organisations.**

- **Public authorities will promote the international mobility of Ph.D. students, post-docs, researchers, R&D managers, technicians and administrative (e.g. grant office) personnel of Czech research organisations and research infrastructures. The range of international mobility support actions will include also the integration of internationally experienced researchers into the Czech R&D and innovation ecosystem. Financial support is supposed to be devoted also to realisation of the Individual Fellowships within Marie Skłodowska-Curie Actions (MSCA), which could not be financed from the Horizon 2020 due to lack of budgetary resources on the European Commission side, but were positively evaluated. Funding of respective activities will be provided within the implementation framework of the OP RDE by using the ESIF.**

- **Public authorities will encourage the applicants for the European Research Council (ERC) grants by implementation of the ERC CZ programme dedicated to finance the ERC project proposals, which could not be financed by ERC due to lack of budgetary resources, but were evaluated above threshold. The ERC CZ grants will be financed regardless of the applicants´ country of origin and nationality in the course of the period 2016+.**

- **Public authorities will keep on supporting the enhancement of strategy intelligence, managerial, knowledge transfer and business skills in Czech research organisations. Funding of respective activities will be provided within the implementation framework of the OP RDE by using the ESIF.**

- **Public authorities will promote the "Principles of Innovative Doctoral Training" within the framework of Ph.D. study programmes. Funding of further development of research-oriented study programmes will be provided within the implementation framework of the OP RDE by using the ESIF.**

ERA PRIORITY 4
GENDER EQUALITY AND GENDER MAINSTREAMING

A. RATIONALE

Gender equality is a founding principle of the EU and gender mainstreaming has been adopted as the main instrument to achieve this goal. Gender equality in R&D and innovation has been a specific policy objective for the European Commission Directorate General for Research and Innovation since 1999. The **Communication of 17 July 2012** defines the following objectives for the implementation of ERA at the level of Member States:

- **To create a legal and policy environment** and provide incentives to: (a) remove legal and other barriers to the recruitment, retention and career progression of female researchers while fully complying with the EU law on gender equality; (b) address gender imbalances in decision making processes; (c) strengthen gender dimension in R&D programmes;

- To engage in partnerships with research funding / performing organisations to foster the **cultural and institutional change on gender** – charters, performance agreements, awards;

- To ensure that at least **40 % of under-represented gender** participate in the recruitment and/or career progression and in the preparation and evaluation of R&D programmes.

On 1 December 2015 the Competitiveness Council adopted **Council Conclusions on Advancing Gender Equality in the ERA**, which encourage Member States to set ambitious goals on gender equality, take appropriate actions to implement the ERA Roadmap by mid-2016 and make the institutional change a key element of national policy framework on gender equality in R&D.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

Despite growing proportion of women at all levels of education (including Ph.D. programmes), the proportion of women among researchers has been falling since 2012 and in 2014 was the lowest since 2001, when the sex disaggregated statistics became firstly available in the Czech Republic. The Czech R&D and innovation ecosystem demonstrates in-capacity to absorb highly skilled women into the research labour force despite the significant increases in the number of researchers in recent years, especially in the business sector. A large-scale targeted study is required to understand the barriers at the cultural, institutional and individual levels.

There is no specific legislation in the Czech Republic dedicated to promoting gender equality in R&D and innovation. Nevertheless since 2004 – pursuant to the **Legislative Rules and Rules of Procedure of the Government of the Czech Republic** (Resolution of 3 November 2004 No. 1072) – all documents submitted for decision to be adopted by the Government of the Czech Republic should be gender mainstreamed. In 2010 an amendment was passed (Resolution of 11 January 2010 No. 36) that commits Members of the Government that documents entering meetings contain also "*an assessment of the current state and impact of proposed measures in relation to the equality of men and women provided that the main subject of the proposed legal measures is the position of physical persons; …*".

In 2013 the Ministry of Education, Youth and Sports adopted the document titled **"State of Gender Equality and Proposal for Mid-Term Strategic Plan in Gender Equality within Remit of the Ministry of Education, Youth and Sports"**, which contains also objectives for promoting the gender equality in R&D, including: (1) creation of a platform to implement gender equality in R&D; (2) implementation of a system of gender mainstreaming of strategic documents and policies; (3) modernization of research organizations through their cultural and institutional change; (4) and support of the development of specialized knowledge in the field of gender and science. To guide the implementation, the Ministry of Education, Youth and Sports adopts annual priorities and reports on the fulfilment to the main coordinating body – Office of the Government of the Czech Republic.

In 2001 the **National Contact Centre for Gender and Science** (formerly Women and Science) was established as an advisory body to the Ministry of Education, Youth and Sports on issues of gender equality in R&D and innovation at national and European levels. The Centre itself is a research and advocacy body and ensures the following activities: ensuring the membership in expert and advisory bodies established at the EU and Czech governmental levels; providing the policy advice and advocacy to the Czech R&D and innovation stakeholders; preparation of research studies and statistical analyses; supporting Czech participants in European R&D and innovation programmes as regards the gender equality (particular structural change projects); mentoring programmes for secondary school women students and early career researchers; communication and dissemination of activities; and mutual learning and best practices sharing within ERA and beyond.

In 2014 the Government of the Czech Republic adopted **"Governmental Strategy for Equality of Women and Men in the Czech Republic for the years 2014-2020"** that contains section 5 dedicated to equalising the position of women and men in R&D and innovation and focuses on gender balance in decision making processes, gender balance in careers through cultural and institutional change and combatting sexual harassment in education.

In 2015 the **Technology Agency of the Czech Republic** – organisation responsible for public funding of applied research and experimental development – **was the first public body in the Czech Republic that adopted a gender equality policy**. This policy addresses both the internal functioning of the agency (working conditions, gender balance in evaluation panels) as well as the external roles (gender dimension in R&D, impact on society etc.).

Since 2009 the Ministry of Education, Youth and Sports confers the **Milada Paulová Award** for women's lifelong achievements in science in order to acknowledge the women´s successes reached in R&D and innovation and to increase the attractiveness of research careers among young women.

C. ENVISAGED GOALS

The Czech Republic plans to continue in the already envisaged targets in the area of gender equality and gender mainstreaming and pursue the goals that are included in the strategy and policy making documents on R&D in line with the Council Conclusions of 1 December 2015.

D. TOP ACTION PRIORITIES

- **In 2016 an Action Plan for Human Resources Development and Gender Equality in R&D – dealing in a comprehensive manner with the issues of human resources development and gender equality and mainstreaming in R&D – will be prepared and adopted (in line with the "Governmental Strategy for Equality of Women and Men in the Czech Republic for the years 2014-2020").**

- **Public authorities will keep on funding the activities developed by the National Contact Centre for Gender and Science in order to ensure background for evidence-based policy making processes in the areas of gender equality and gender mainstreaming in R&D and innovation as well as for mutual learning within ERA and for active participation of the Czech Republic in the Helsinki Group on Gender in Research and Innovation.**

- **A large-scale study on understanding the gender barriers and challenges at the cultural, institutional and individual levels will be performed in the course of the period 2017+.**

- **Particular challenges related to the gender equality, gender mainstreaming in R&D and innovation and increasing the attractiveness of research careers and STEM programmes among young women will be addressed by using the ESIF raised within the framework of the OP RDE. Attention will be paid to adopting the institutional change approach as the key policy framework for promoting the gender equality in R&D and innovation.**

- **Public authorities will keep on conferring the Milada Paulová Award to acknowledge the women's lifelong achievement in science and to make research careers more attractive for young women.**

ERA PRIORITY 5
OPTIMAL CIRCULATION AND TRANSFER OF SCIENTIFIC KNOWLEDGE

A. RATIONALE

Optimal circulation of scientific knowledge and its efficient transfer into products and services applicable on the market is determined by a number of factors. First of all, provided that only highly innovative ideas may result in development of marketable technologies and services of a high added value, the elementary precondition for efficient knowledge transfer (hereinafter referred to as "KT") is the existence of valuable knowledge itself. Only if research organisations create sufficiently stimulating environment, R&D teams are motivated to create knowledge, which is usable in practice and in collaboration with the application sectors. While the inter-sectorial mobility – carried out within the framework of long-term and strategy public-private partnership – makes it easier to create applicable R&D outputs, services provided by research organisations´ KT centres facilitate the KT itself, including proper management of intellectual property (hereinafter referred to as "IP"). Thus, internal R&D and commercialisation strategy is an indispensable part of a research organisation´s management as it creates environment determining KT success of a research organisation´s R&D teams. The broad range of measures supporting optimal circulation of scientific knowledge shall be complemented by appropriate Open Access (hereinafter referred to as "OA") instruments facilitating free of charge sharing of scientific information resulting from public funding.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

(a) Knowledge transfer

Various complementary measures have been adopted within the Czech R&D and innovation ecosystem in the recent years to deal with KT and IP management challenges and to further enhance science-industry linkages in the Czech Republic. Use of the EU cohesion policy tools – **Operational Programme Research and Development for Innovation** (*implemented by the Ministry of Education, Youth and Sports*) and **Operational Programme Entrepreneurship and Innovation** (*managed by the Ministry of Industry and Trade*) – was highly instrumental in this regard in the past programming period. Particular financial support was devoted to setting up a **network of KT centres** in public research organizations; development of a comprehensive seven volume set of **guidelines for effective KT** covering the vast majority of areas related to IP and KT management; implementation of **proof-of-concept** projects and development of the prototypes and/or strengthening the public-private cooperation within **technology platforms**. Long-term science-industry partnerships have been also supported by the Technology Agency of the Czech Republic within the framework of the **Centres of Competence** R&D programme. Besides acknowledging the need for a proper KT and IP management, the KT "mission" has become also a significant part of policy making documents, which introduce more effective transfer and circulation of knowledge as one of its targets.

(b) Open Access

There has been a number of initiatives commenced recently in the Czech Republic aiming at supporting the OA to scientific information either at national or institutional level. In 2014 the **Recommendation on OA** was adopted by the Research, Development and Innovation Council (= advisory body to the Government of the Czech Republic), which recommended adoption of a national OA strategy, asked the research performing organisations to support publishing in any of OA ways as well as to deal with open research data and suggested to research funding organizations to promote and to require OA publishing within their funding schemes. Based on these recommendations debates with relevant stakeholders were initiated. Meanwhile the OA measures have been included in the OP RDE and will focus also on the promotion of OA to scientific publications, including the repositories´ creation and/or transformation.

Regarding the OA support measures developed at institutional levels, the largest Czech **higher education institutions and the Czech Academy of Sciences signed the "Berlin Declaration on OA to Knowledge in the Sciences and Humanities"** and demonstrated thus their willingness to promote OA. A couple of research organisations have also established **institutional funds to promote Gold OA publishing**. Some of research organisations adopted internal OA policy and included OA principles into internal rules on knowledge management.

In addition to the above mentioned the Czech Republic has followed legislative trends related to OA such as copyright reforms and text and data mining and is ready to deal with them as soon as these are agreed upon at the EU level.

C. ENVISAGED GOALS

(a) Knowledge transfer

As a follow-up to the latest development in the field of KT capacities and capabilities building in the Czech Republic, **further enhancement of KT centres** is one of the main policy measures foreseen for strengthening transfer of scientific knowledge into marketable goods. Financial support will be dedicated to increase the quality of services provided by already operated KT centres, to further professionalize their KT and IP management as well as to found and develop new KT centres and suitable KT support mechanisms.

In order to raise the level of collaborative research between public research organisations and private enterprises and to intensify science-industry linkages the **inter-sectorial mobility** will be supported in the forthcoming period. Specific tools will be intended to support activities as short-term and long-term internships of master and Ph.D. students in the private enterprises, cooperation on formulation of graduate thesis topics with industrial companies or training of students in entrepreneurship skills and corporate culture. Simultaneously, attention will be paid to enhancement of long-term strategy **public-private partnerships**.

(b) Open Access

Regarding the OA, both Research, Development and Innovation Council´s Recommendation on OA adopted at the central level as well as research organisations policies on OA adopted

at the institutional level support OA publishing. In general there is preference of neither Gold nor Green OA publishing route and it is highly unlikely that the Czech Republic would promote only Gold OA or only Green OA route in the near future. A platform for discussing OA trends and needs among relevant stakeholders was set up in 2015 and will keep on meeting in future to exchange views and most up-to-date information regarding OA, resulting in **development of a national OA strategy of the Czech Republic**.

Establishment of new and/or transformation of existing institutional repositories allowing proper depositing and opening up scientific articles and self-archiving will be stimulated and facilitated by particularly dedicated financial tools.

D. TOP ACTION PRIORITIES

(a) Knowledge transfer

- **Public authorities will support the capacities and capabilities building in the field of KT, including further development of already operated KT centres and establishment of new ones. Measures intended to intensify the KT will be based also on supporting the inter-sectorial mobility and enhancement of science-industry linkages by means of long-term public-private partnerships. Funding of respective activities will be provided within the implementation framework of the OP RDE by using the ESIF and within the framework of R&D programmes implemented by the Technology Agency of the Czech Republic.**

(b) Open Access

- **Public authorities will keep on discussing the OA trends, resulting in definition, adoption and implementation of a national OA strategy of the Czech Republic in 2016+. Dedicated financial tools to establish new and/or to transform existing institutional repositories – being the basic precondition of an OA strategy implementation – will be prepared within the implementation framework of the OP RDE by using the ESIF.**

ERA PRIORITY 6
INTERNATIONAL COOPERATION

A. RATIONALE

As a follow-up to the ERA Roadmap priority 2a focused on jointly addressing grand challenges, the ERA Roadmap priority 6 complements the respective measures – aimed at finding joint solutions to common European and global socio-economic challenges – by a set of tools, which by the definition of international cooperation go beyond the European borders.

Deepening of the globalisation extends not only the pool of challenges and/or threats Europe is facing, but also broadens the opportunities of how to cope with them. Thus, development of international cooperation in R&D and innovation with non-European countries belongs to main preconditions for successful addressing grand challenges as they continue to show more and more macro-regional dimension. In this respect **more coordinated approach of European countries towards the cooperation with non-European partners may lead to more synergy in cost-sharing, complementarity in use of capacities and capabilities in line with different specialisation of each involved partner** and – in consequence – to find desired solutions with reduced costs and without duplication of efforts. The win-win situation should be the leitmotif as well as the ultimate effect of the international cooperation.

B. CURRENT STATE OF PLAY IN THE CZECH REPUBLIC

Over the past years the Czech Republic developed bilateral cooperation in R&D and innovation with a number of non-European countries. The most important ones have been those with the United States (including the activities of the Fulbright Commission in the Czech Republic), Israel, Russia, China, Japan and South Korea while the other ones with Taiwan, India or South Africa are promising in mid-term and long-term outlook. These relationships are usually based on **bilateral governmental agreements concluded on science and technology cooperation**, which implementation is subsequently coordinated by joint committees formed by relevant stakeholders from partner states (including setting the priority areas of common interest).

So far the bilateral cooperation of the Czech Republic has been focused mainly on the support of **mobility, networks, short-term and/or long-term internships, activities aimed at creation of joint R&D teams and development of joint project proposals to be financed from other funding resources, including the EU Framework Programmes**. While the majority of bilateral relations have been focused on support of international cooperation of research organisations in fundamental and/or applied scientific fields, some of them have already put emphasis also on cooperation of private enterprises and/or public-private partnerships.

As for the European perspective, the Strategic Forum for International Science and Technology Cooperation (SFIC) is considered as an essential platform for development of activities aimed at enhancement and alignment of different European countries´ national approaches towards the international cooperation in R&D and innovation in the areas of pan-European interest. SFIC opinions and recommendations resulting from respective consultations are viewed as an essential basis for implementing the common European priorities. A consultation mechanism

established between the Member States, Associated countries and European Commission for formulation of Multi-Annual Roadmaps for International Cooperation – documents providing the framework and current state-of-play of cooperation with third countries – contributes to further development of efficient international cooperation of EU in R&D and innovation with pan-European priority-setting approach.

C. ENVISAGED GOALS

The Czech Republic will keep on developing international cooperation in R&D and innovation with non-European countries of high strategic, economic and geo-political relevance. Forms of cooperation will be focused on international mobility leading to intensified networking and development of joint R&D teams. Apart from these activities particular funding instruments will be aimed also at the establishment of inter-institutional partnerships leading to long-term strategy cooperation resulting in large-scale R&D projects. International cooperation will be supported also at the level of private enterprises, including the public-private-partnerships. When defining the priorities for international cooperation developed by the Czech Republic in bi- and/or multi-lateral relations, priorities of pan-European interest listed in the Multi-Annual Roadmaps for International Cooperation and/or Horizon 2020 priority areas will be taken into consideration.

D. TOP ACTION PRIORITIES

- **Public authorities will prepare, adopt and implement an Action Plan for International Cooperation of the Czech Republic in R&D and Innovation and Internationalisation of the Czech R&D and Innovation Ecosystem. The Action Plan will include also the priorities for international cooperation in R&D and innovation with non-European countries.**

- **The international cooperation of the Czech Republic in R&D and innovation with non-European countries will be developed with a strategy approach derived from the Czech scientific, economic and geo-political priorities, taking into consideration also common European priorities agreed at relevant stakeholders' platforms (such as SFIC).**

- **The respective funding tool enabling participation of the Czech research organisations and/or private enterprises in international cooperation in R&D and innovation with non-European countries will be based in the framework of the "Inter-Excellence" programme to be prepared, adopted and implemented since 2016.**

CONCLUSIONS

The first National ERA Roadmap of the Czech Republic detects the Czech R&D and innovation ecosystem from the perspective of **a limited number of key priority areas** upon which the Member States agreed with respect to the advancement of ERA in the future years. It gives a coherent picture of strong points of the Czech national R&D and innovation ecosystem such as a well set-up network of high-quality research infrastructures and a methodology of their evaluation as well as recognized weak points such as low participation of research performing organisations in the Joint Programming Process (both Joint Programming Initiatives and ERA-NETs) or lack of use of internationally recognized standards within the evaluation of research organisations and project-based R&D and innovation programmes.

This exercise is a valuable contribution to already existing evaluations of the Czech R&D and innovation ecosystem perceived from a slightly different point of view, which should feed into the future policy documents and strategies and improve the input of the Czech Republic in the forthcoming ERA Progress Report 2016.

As well as the European ERA Roadmap this document should be seen as a **"living document"**, which will develop in time according to new trends and needs of the European and national R&D and innovation environment, new socio-economic challenges and new policy areas. It is **a start to a continuous assessment of the Czech contribution to ERA**.

ANNEX to the National ERA Roadmap of the Czech Republic for the years 2016-2020

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
1: Effective national research systems	**To reform evaluation and public funding of R&D and innovation in the Czech Republic** by introducing the internationally recognized assessment procedures and by focusing on the ability to achieve excellence and to respond to socio-economic challenges and needs	Preparation, adoption and implementation of **new methodology for evaluation of research organisations and their institutional funding**	2017+
		Preparation, adoption and implementation of **new methodology for evaluation of project-based R&D and innovation programmes**	2017+
		Interim evaluation of large infrastructures for research, experimental development and innovation approved for public funding by the Government of the Czech Republic	2017 2019
		Preparation, adoption and implementation of **new methodology for evaluation of benefits of membership of the Czech Republic in international R&D organisations**	2016 2019
	To strengthen role of professional platforms and strategy information within the R&D and innovation policy making processes enabling identification of emerging socio-economic challenges and needs	Development of **smart specialisation and technology foresight activities** and their implementation within public funding of R&D and innovation in the Czech Republic	2016+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
2a: Jointly addressing grand challenges	**To strengthen cross-border and international cooperation of the Czech Republic in R&D and innovation** and to deepen internationalisation of the Czech R&D and innovation ecosystem	Preparation, adoption and implementation of an **Action Plan for International Cooperation of the Czech Republic in R&D and Innovation and Internationalisation of the Czech R&D and Innovation Ecosystem**	2016+
	To increase participation of Czech research organisations and private enterprises in European R&D and innovation initiatives and programmes, particularly in the Joint Programming Initiatives, ERA-NET, ERA-NET Co-fund schemes and the TFEU Article 185 programmes	Preparation, adoption and implementation of the **"Inter-Excellence" programme and** preserving of **other complementary funding instruments enabling participation** of Czech research organisations and private enterprises **in the COST, EUREKA, EUROSTARS, EMPIR and ECSEL programmes** (that the Czech Republic is already a Member State of)	2016+
		Development of concrete set of coordination and **funding measures enabling involvement** of Czech research organisations and private enterprises **in European R&D and innovation initiatives and programmes** (that the Czech Republic has not been a Member State of)	2017+
	To encourage development of long-term international strategy partnerships of Czech research organisations with their foreign partners on the basis of the Horizon 2020 "Teaming" instrument	Providing funding to cover the investment costs related to Horizon 2020 "Teaming" projects with Czech participants **within the implementation framework of the OP RDE by using the ESIF**	2016+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
2b: Make optimal use of public investments in research infrastructures	**To consolidate research infrastructures´ policy approaches** in order to create a legally stable and budgetary predictable environment that enables implementation and long-term operation of research infrastructures and their involvement in international networks and participation in international research infrastructures´ legal structures	**Interim evaluation of large infrastructures for research, experimental development and innovation** approved for public funding by the Government of the Czech Republic in the course of the period 2016+	2017 2019
		Announcement of a **supplementary call for research infrastructures proposals** for the purpose of update of the Czech national research infrastructures roadmap	2016/2017 2018/2019
		Regular update of the "Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation for the years 2016-2022"	2018 2020
		Ensuring the **membership of the Czech Republic in ERIC** and other research infrastructures´ legal frameworks	continuously
	To make use of the European Structural and Investment Funds to finance the research infrastructures´ construction phase and/or technological upgrades	Providing funding to cover the investment costs of research infrastructures **within the implementation framework of the OP RDE by using the ESIF**	2016+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
3: An open labour market for researchers	**To develop comprehensive strategy approach to human resources development and gender equality in R&D**, which will provide research organisations with methodology instruments to develop their internal strategies	Preparation, adoption and implementation of an **Action Plan for Human Resources Development and Gender Equality in R&D**	2016+
	To encourage research organisations to adopt human resources development strategies – in line with the European Charter for Researchers and Code of Conduct for Recruitment of Researchers – with the aim of obtaining the "HR Excellence in Research" award	Inclusion of **human resources development strategy among the indicators to be monitored** within the new system of research organisations evaluation and institutional funding	2017+
	To promote open recruitment practices in research organisations and to invite tenders for job vacancies on fully transparent and non-discriminatory principles	Ensuring public funding of the **EURAXESS Czech Republic Network** activities, including the **Czech National EURAXESS Jobs Portal**	2016+
	To enhance development of strategy intelligence, managerial, knowledge transfer and business skills in research organisations and research infrastructures	Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF**	2016+
	To strengthen international mobility of Ph.D. students, post-docs, researchers, R&D managers, technicians and administrative (e.g. grant office) personnel of research organisations and research infrastructures	Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF**	2016+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
	To integrate foreign researchers and/or to reintegrate Czech researchers with significant international experience into the Czech R&D and innovation ecosystem	Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF** Implementation of the **ERC CZ programme**	2016+
	To promote the Principles of Innovative Doctoral Training within the framework of Ph.D. study programmes	Providing funding dedicated to improvement of research-oriented study programmes **within the implementation framework of the OP RDE by using the ESIF**	2016+
4: Gender equality and gender mainstreaming	**To develop evidence-based policy making processes in the area of gender equality and gender mainstreaming in R&D** founded on comprehensive scientific findings and gender monitoring mechanisms	Ensuring public funding of the **National Contact Centre for Gender and Science** Preparation of a **large-scale study on understanding the gender barriers** and challenges at cultural, institutional and individual levels	2016+ 2017+
	To develop comprehensive strategy approach to human resources development and gender equality in R&D, which will provide research organisations with methodology instruments to develop their internal strategies	Preparation, adoption and implementation of an **Action Plan for Human Resources Development and Gender Equality in R&D** Providing funding dedicated to improvement of gender equality through institutional change policy framework **within the implementation framework of the OP RDE by using the ESIF**	2016+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
	To acknowledge the women's lifelong achievement in science and to increase attractiveness of research careers and STEM programmes among young women	Preservation of the **Milada Paulová Award** within the portfolio of awards conferred in the Czech Republic for R&D and innovation Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF**	2016+
5: Optimal circulation and transfer of scientific knowledge	**To enhance development of knowledge transfer centres** in research organisations	Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF**	2016+
	To support inter-sectorial mobility between public research sector and private enterprises in order to enhance strong science-industry cooperation and linkages	Providing funding for respective activities **within the implementation framework of the OP RDE by using the ESIF and within R&D programmes implemented by the Technology Agency of the Czech Republic**	2016+
	To promote open access to scientific publications resulting from public funding	Preparation, adoption and implementation of the **National Open Access Strategy of the Czech Republic**	2016+
		Providing funding for activities related to the establishment of new and/or transformation of existing institutional repositories **within the implementation framework of the OP RDE by using the ESIF**	2017+

PRIORITY	ENVISAGED GOAL	TOP ACTION PRIORITY	TIMELINE
6: International cooperation	**To strengthen cross-border and international cooperation of the Czech Republic in R&D and innovation** and to deepen internationalisation of the Czech R&D and innovation ecosystem	Preparation, adoption and implementation of an **Action Plan for International Cooperation of the Czech Republic in R&D and Innovation and Internationalisation of the Czech R&D and Innovation Ecosystem**	2016+
		Preparation, adoption and implementation of the **"Inter-Excellence" programme** enabling participation of Czech research organisations and private enterprises in international cooperation in R&D with non-European countries	2016+