



MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Large Infrastructures for Research, Experimental Development and Innovation in the years 2016 – 2022

Lukáš Levák
Ministry of Education, Youth and Sports



MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Contents

- 1. Large Infrastructures for Research, Experimental Development and Innovation**
- 2. International Evaluation of Research Infrastructures of the Czech Republic**
- 3. Large Infrastructures for Research, Experimental Development and Innovation Multiannual Financial Framework 2016 – 2022**
- 4. Large Infrastructures for Research, Experimental Development and Innovation Roadmap update 2018**
- 5. Operational Programme Research, Development and Education – ESIF for RDI in the years 2014 – 2020**
- 6. EU Framework Programme for Research and Innovation Horizon 2020 (2014 – 2020)**

1. Large Infrastructures for Research, Experimental Development and Innovation

- The **definition** of a Large Infrastructure for RDI is stipulated by the **Act No. 130/2002 Coll.** on Support of Research, Experimental Development and Innovation from Public Funds and on Amendments to Some Related Acts
- **“Large Infrastructure for Research, Experimental Development and Innovation”** = 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
- Common characteristics criteria
 - **Uniqueness**
 - **Nation-wide impact**
 - **International overlap**
 - **Open access to facilities**
 - **Excellence**



● **Uniqueness**

- Large infrastructure for RDI represents exceptional, extraordinary and unique facility and capacity for performing research, technological development and innovation in a scientific field or multidisciplinary area

● **Nation-wide impact**

- Large infrastructure for RDI has at least nation-wide importance and significance within the research and innovation ecosystem

● **International overlap**

- Large infrastructure for RDI is inter-linked with other research infrastructures within macro-regional, pan-European or global networks and has significant international overlap and impact

● **Open access to facilities**

- Large infrastructure for RDI is operated by a research organisation for use of other entities from RDI community and provides external users with services on the basis of tenders evaluated by experts

● **Excellence**

- results reached by using large infrastructure for RDI are high-quality and highly relevant from the “value for money” point of view

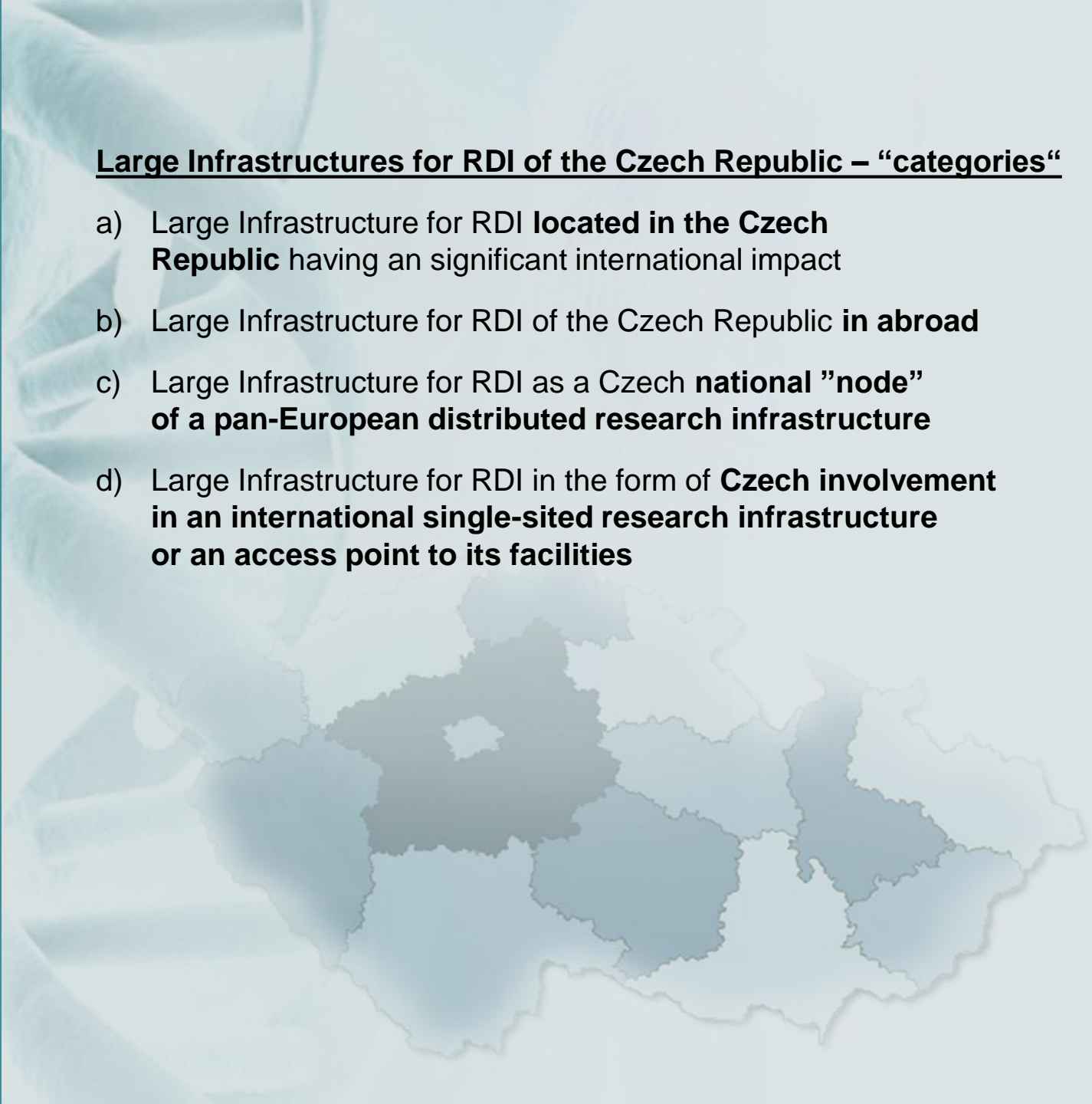




MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Large Infrastructures for RDI of the Czech Republic – “categories”

- a) Large Infrastructure for RDI **located in the Czech Republic** having an significant international impact
- b) Large Infrastructure for RDI of the Czech Republic **in abroad**
- c) Large Infrastructure for RDI as a Czech **national “node” of a pan-European distributed research infrastructure**
- d) Large Infrastructure for RDI in the form of **Czech involvement in an international single-sited research infrastructure or an access point to its facilities**



2. International Evaluation of Czech Research Infrastructures in ESFRI context

- **New methodology for research infrastructures evaluation prepared in 2013 – 2014 in line with ESFRI standards**
- **International Evaluation Committee chaired by Dr. Peter Fletcher** (UK Science and Technology Facilities Council) and composed of 6 Scientific Boards formed by leading foreign experts on research infrastructures, including ESFRI Member States delegates
- **The most up-to-date overview of Czech research infrastructures** regardless of their current life cycle phase (i.e. preparatory, implementation, operational, phase-out) after intervention of ERDF in the Czech Republic
- An expert basis for political **decision-making on funding the large infrastructures for RDI** during the forthcoming multiannual financial framework **2016 – 2022**
- An expert basis for political **decision-making on supporting research infrastructures applying for ESFRI Roadmap update**
- An expert basis for **updating the Roadmap of the Czech Republic of Large Infrastructures for Research, Experimental Development and Innovation**

Physical Sciences – High Priority

- **BNL** – Brookhaven National Laboratory
- **CERIC** – Central European Research Infrastructure Consortium
- **CERN** – European Organization for Nuclear Research
- **CTA** – Cherenkov Telescope Array
- **ESS** – European Spallation Source
- **FAIR** – Facility for Antiproton and Ion Research
- **Fermilab** – Fermi National Accelerator Laboratory
- **ILL** – Institut Laue-Langevin
- **LSM** – Laboratoire Souterrain de Modane
- **Pierre Auger Observatory**
- **SPIRAL** – Système de Production d'Ions Radioactifs Accélérés en Ligne
- **ThALES** – Three Axis Low Energy Spectrometer
- **Van de Graaff Accelerator Laboratory**



Physical Sciences – High Priority

- **CANAM** – Center of Accelerators and Nuclear Analytical Methods
- **CEITEC Nanotechnologies** – Central European Institute of Technology
- **ELI Beamlines** – Extreme Light Infrastructure
- **EU – ARC** – European ALMA Regional Centre
- **IPMINFRA** – Infrastructure for Study and Application of Advanced Materials

ICT / e-infrastructures – High Priority

- **CESNET** – Czech Education and Scientific Network
- **IT4Innovations** – National Supercomputing Centre



Environmental Sciences – High Priority

- **ACTRIS** – Aerosol, Clouds and Trace Gases Research Infrastructure
- **CzeCOS** – Integrated Carbon Observation System (CZ – ICOS)
- **NanoEnviCz** – Nanomaterials and Nanotechnologies for Environmental Protection and Sustainable Future
- **RECETOX** – Research Centre for Environmental Chemistry and Eco-toxicology
- **SoWa** – National Infrastructure for Comprehensive Monitoring of Soil and Water Ecosystems in the Context of Sustainable Use of Landscape





MINISTRY OF EDUCATION,
YOUTH AND SPORTS

3. Large Infrastructures for Research, Experimental Development and Innovation Multiannual Financial Framework 2016 – 2022

- **7-year multiannual financial framework** 2016 – 2022 ensuring long-term, stable and predictable funding enabling technological upgrade and further sustainable development
- Total budgetary allocation of the MEYS for large infrastructures for RDI over 2 billion CZK per year ≈ **over 70 million EUR per year**
- **Interim assessment** performed by an international evaluation committee, **including on-site visits**, foreseen for 2017 and 2019
- **Complementary and synergic use of the state budget expenditures and European Structural and Investment Funds (ESIF)**
 - Large infrastructures for RDI support programme operated by the Ministry of Education, Youth and Sports
 - Operational Program „Research, Development and Education“ operated by the Ministry of Education, Youth and Sports



● Large Infrastructures for RDI support programme

- **Operational costs** – materials, energy, services (public tenders), international mobility costs, overhead costs (flat rate / full-cost)
- **Personal costs** – costs of researchers and technicians devoted to the operation of a large infrastructure for RDI and „open access“ services
- **Membership fees** for participation in pan-European and worldwide research infrastructures networks (except for ERIC membership fees to be covered by the Ministry of Education, Youth and Sports)
- Large infrastructure for RDI is operated as a service for RDI community → **“in-house research”** itself performed by the host institution or / and by the user community **is not an eligible cost**
- **“In-house research”** costs are to be covered by the user of large infrastructure for RDI from other financial resources (i.e. institutional funding of research organisation, national and international RDI support programmes etc.)
- **Operational costs of large infrastructures for RDI will be covered from state budget expenditures for RDI**





MINISTRY OF EDUCATION,
YOUTH AND SPORTS

● Operational Programme “Research, Development and Education”

- Funding of technological upgrade of large infrastructures for RDI
→ **investment costs to be covered from ESIF**
- “Soft money” for “**in-house research**” performed by the host institution or / and user community of a large infrastructure for RDI **to be covered from ESIF**
- Supplementary call to be launched in the 1st quarter of 2016

● National Sustainability Programmes I and II

- Approximately 1/4 of large infrastructures for RDI to be financially supported in 2016 – 2022 have been built by using European Regional and Development Funds (ERDF) in 2007 – 2015
- Additional operating costs reaching over the scope of large infrastructures for RDI programme and defined in framework of “5-year obligatory sustainability” will be covered by
 - **National Sustainability Programme I**
(facilities with investments up to 50 mil. EUR)
 - **National Sustainability Programme II**
(facilities with investment over 50 mil. EUR)



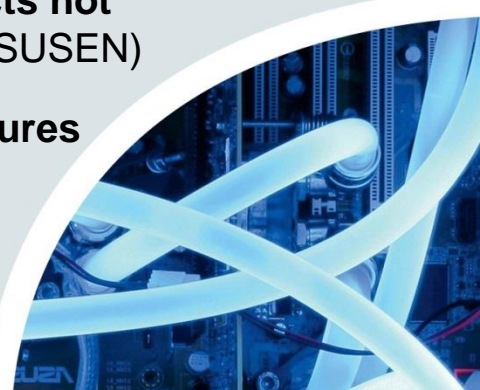
4. Large Infrastructures for Research, Experimental Development and Innovation Roadmap update 2018

- In general compliance with **ESFRI Roadmap update 2018**
- Announcement of the call in the **1st half of 2017**
- Possible space for **6 – 8 new large infrastructures for RDI**
- **Eligible proposals**
 - **Medium priority large infrastructures for RDI included in the National Roadmap** since 2015 and financially supported in a significantly reduced way in 2016 – 2017 → opportunity for getting higher funding rate
 - **Low priority large infrastructures for RDI included in the National Roadmap** since 2015 with no financial support in 2016 – 2017 → opportunity to being funded
 - **Large infrastructures for RDI not included in the National Roadmap** since 2015 **due to insufficient readiness and maturity** → opportunity to being funded



5. Operational Programme Research, Development and Education – ESIF for RDI in the years 2014 – 2020

- European Commission approval awaited in the **3rd / 4th quarter of 2015**
- Total allocation for research and development activities over 39 billion CZK ≈ **1.4 billion EUR**
- Activities primarily focused on research organisations and research infrastructures **capacities** and **capabilities building** and upgrade of technological equipment → over 20 billion CZK ≈ **over 700 million EUR**
- **Besides general calls** for research organisations and research infrastructures capacities and capabilities building, specific calls are foreseen for the years 2015 and 2016
 - **Large Infrastructures for RDI** (investments for further upgrade)
 - **2nd phase of 2007 – 2015 investment projects not accomplished by 2015** (e.g. ELI Beamlines, SUSEN)
 - **In-kind contribution to research infrastructures situated abroad with involvement of the Czech Republic – European Spallation Source** (subject to the approval of the European Commission)

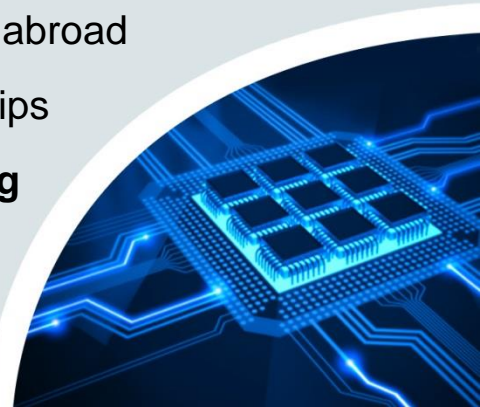


● Teaming and twinning

- Specific **co-fund action** for the Czech research organisations, which might be eventually **successful in the 2nd round of Horizon 2020**
Teaming call evaluation (approved)
- Specific call for “Teaming” project proposals that **have passed through the 1st evaluation round** of the European Commission, **but did not succeed in the 2nd round** – subject to willingness of the foreign partner to implement the “Teaming” project even without being co-funded from Horizon 2020 (under consideration)
- Specific call for “Teaming” project proposals in cooperation with **high-priority partner states** subject to willingness of the partner state to fund its national partner (under consideration)

● International mobility

- Grants for **Czech R&D personnel** for internships in abroad
- Grants for **foreign R&D personnel** for internships in the Czech Republic
- **Reintegration** of the Czech researchers from abroad
- **Researchers and technical experts** fellowships
- International **grant offices** employees **training**
- **R&D management training**



6. EU Framework Programme for Research and Innovation Horizon 2020 (2014 – 2020)

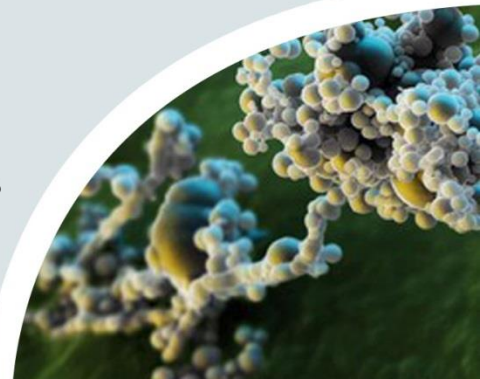
- An increased budget for research infrastructures, from 1.7 billion EUR (FP7) to **2.4 billion EUR** (Horizon 2020)

Open calls in Horizon 2020 with deadline on 21st April 2015

- Developing new world-class research infrastructures
 - **INFRADEV-2-2015** Preparatory Phase of ESFRI projects (allocation 6 mil. EUR)
- Support to innovation, human resources, policy and international cooperation
 - **INFRA supp-2-2015** Innovative procurement pilot action in the field of scientific instrumentation (allocation 14 mil. EUR)

Work programme 2016 – 2017

- Adoption estimated by the end of September 2015 + publication of the respective calls
- International cooperation of research infrastructures
- Integration with other parts of Horizon 2020, in particular Societal Challenges





MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Thank you for your attention!

Mr. Lukáš Levák

Director, Department of Research and Development

Ministry of Education, Youth and Sports

Karmelitská 7, 118 12 Prague 1

Czech Republic

Tel.: +420 234 811 511

E-mail: lukas.levak@msmt.cz