



ÚRAD PODPREDESEDU VLÁDY SR
PRE INVESTÍCIE
A INFORMATIZÁCIU



MINISTERSTVO
ŠKOLSTVA, VEDY,
VÝSKUMU A ŠPORTU
SLOVENSKEJ REPUBLIKY



MINISTERSTVO
HOSPODÁRSTVA
SLOVENSKEJ REPUBLIKY



ÚRAD VLÁDY
SLOVENSKEJ REPUBLIKY

IMPLEMENTATION PLAN

Research and Innovation Strategy for Smart Specialisation of the Slovak Republic



Table of Contents

1	Introduction and Purpose of the Implementation Plan	3
2	List of Abbreviations	Chyba! Záložka nie je definovaná.
3	Entrepreneurial Discovery Process.....	5
3.1	The process of narrowing and prioritisation of the areas of specialisation from the point of view of establishing links between RIS3 economic/prospective areas and available scientific and research capacities in 2012–2016	6
3.2	Prioritisation of the areas of smart specialisation	7
3.3	Proposal for smart specialisation domains	10
3.3.1	Domain 1: Vehicles for the 21st century	15
3.3.2	Domain 2: Industry for the 21st century	16
3.3.3	Domain 3: Digital Slovakia and creative industry	17
3.3.4	Domain 4: Population health and medical technologies.....	19
3.3.5	Domain 5: Healthy food and environment.....	19
4	Governance	21
4.1	Institutional framework and RIS management	21
5	RIS3 Planning Document	24
5.1	Selection criteria and selection process.....	24
5.2	Effective use of RD&I infrastructures	25
5.3	Financial framework for the RIS3 implementation	28
5.3.1	Expenditure from ESI Funds	29
5.3.2	RD&I expenditure from the state budget.....	30
5.3.3	RD&I expenditure from private funds	34
5.3.4	Reform of the RD&I financing system	34
5.4	Political measures.....	Chyba! Záložka nie je definovaná.
5.5	Implementation schedule	Chyba! Záložka nie je definovaná.
6	RIS3 Monitoring and Evaluation	44
6.1	RIS3 monitoring.....	44
6.1.1	Monitoring system.....	Chyba! Záložka nie je definovaná.
6.2	Arrangement of the monitoring process.....	46
6.2.1	RIS3 Coordination Point.....	46
6.2.2	Monitoring at the national level.....	46
6.2.3	Monitoring at the level of programmes financed from ESI Funds	47
6.2.4	Monitoring at the level of SK support instruments.....	47
6.2.5	Monitoring at the level EU support instruments	47
6.2.6	Monitoring of the RIS3 objectives	47
6.3	Implementation schedule	Chyba! Záložka nie je definovaná.
6.4	RIS3 evaluation	Chyba! Záložka nie je definovaná.
6.4.1	RIS3 evaluation system.....	50
6.4.2	Links between the RIS3 Evaluation Plan and OP R&I Evaluation Plan.....	51
7	Annexes.....	Chyba! Záložka nie je definovaná.

1 Introduction and Purpose of the Implementation Plan

The Implementation Plan of the Research and Innovation Strategy for Smart Specialisation of the Slovak Republic (“RIS3 IP”) details the actions and processes needed to fulfil the missing criteria related to ex-ante conditionality¹ 1.1 pre for thematic objective 1 Strengthening research, technological development and innovation² and the implementation of relevant investment priorities³ financed in the programming period 2014–2020, as well as the measures which the Slovak Republic undertook to implement under the Operational Programme Research and Innovation (“OP R&I”).

The RIS3 IP is prepared in line with the “Implementing Smart Specialisation Strategies: A Handbook⁴” and also reflects the comments of the European Commission presented in its letter Ref. Ares(2016)6284754 under the consultation process on the Strategic Document for the Fulfilment of Ex-Ante Conditionality 1.1 (hereinafter referred to as the “Strategic Document”) and the following requirements identified in letter Ref. Ares(2017)1703501 on the Strategic Document:

- Appointing a clear entity responsible for the RIS3 management with sufficient mandate for ensuring the RIS3 implementation – Governance section;
- Establishing a timetable for policy measures to be taken with the aim to meet the budgetary and legislative commitments related to the RIS3 – RIS3 Planning Document section;
- Establishing a timetable for the process of further specialisation – Entrepreneurial Discovery Process section;
- Setting up a clear mechanism for the monitoring of the activities – RIS3 Monitoring and Evaluation section;
- Providing an assurance about the ability to co-finance interventions from European Structural and Investment Funds (hereinafter referred to as “ESI Funds” or “ESIF”) under the RIS3 from national private or public sources – RIS3 Planning Document section;
- Presenting evidence on the completion of the assessment of the effective use of existing research infrastructures – RIS3 Planning Document section.

The IP RIS3 also reflects the tasks concerning the RIS3 implementation⁵. The tasks and commitments arising from the SK Government Manifesto 2016–2020⁶ and the National Reform Programme 2017⁷ require a holistic approach to the research and development (“R&D”) policy, since the set support of research, development and innovation (“RD&I”) is essential to the stimulation of the development potential of Slovakia, to the promotion of competitiveness, the concentration of resources to enhance the innovation performance of businesses, and to the development of the principles and culture of a new level of production relationships⁸.

¹ Article 19 and Annex XI to Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

² Article 9 of the General Regulation

³ Article 5(1)(a) and (b) of Regulation No 1301/2013 of the European Parliament and of the Council on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006

⁴ Giannele, C., D. Kyriakou, C. Cohen and M. Przeor (eds) (2016), *Implementing Smart Specialisation: A Handbook*, Brussels: European Commission, 2016, EUR 28053 EN, doi:10.2791/53569

⁵ p. 81, RIS3

⁶ p. 27, Government Manifesto 2016–2020

⁷ p. 27, National Reform Programme of the Slovak Republic 2017, approved by SK Government Resolution No. 204 of 26 April 2017

⁸ p. 10, Government Manifesto 2016–2020

2 List of Abbreviations

CGA	Central government authorities
EC	European Commission
EDP	Entrepreneurial Discovery Process
ERC	European Research Council
ESI Funds/ESIF	European Structural and Investment Funds
EU	European Union
GDP	Gross domestic product
GPRI	SK Government Office – Government Plenipotentiary for Research and Innovation
IP RIS3	Implementation Plan of the Research and Innovation Strategy for Smart Specialisation of the Slovak Republic
IS	Implementation schedule
ISCP	Inter-sectoral consultation procedure
MA	Managing Authority
MI	Measurable indicator
MI CCA	Methodological instruction of the Central Coordination Authority
MoE SR	Ministry of Economy of the Slovak Republic
MoESRS SR	Ministry of Education, Science, Research and Sports of the Slovak Republic
MoF SR	Ministry of Finance of the Slovak Republic
MR	Monitoring report
OP C&EG	Operational Programme Competitiveness and Economic Growth
OP R&D	Operational Programme Research and Development
OP R&I	Operational Programme Research and Innovation
OVP MII	Office of the Vice-Prime Minister for Investments and Informatisation
PCS3	Council Permanent Committee for RIS3 Implementation
R&D	Research and development
RCA	Random coefficient autoregressive
RD&I	Research, development and innovation
RIS3	Research and Innovation Strategy for Smart Specialisation of the Slovak Republic
SAS	Slovak Academy of Sciences
SB	State budget
SIEA	Slovak Innovation and Energy Agency
SK COFOG	Statistical classification of the functions of government
SMEs	Small and medium-sized enterprises
SO SR	Statistical Office of the Slovak Republic
SR	Slovak Republic
SRDA	Slovak Research and Development Agency
SRDP	State Research and Development Programmes
VEGA	Scientific grant agency of the Ministry of Education, Science, Research and Sports SR and of the SAS

3 Entrepreneurial Discovery Process

The fundamental principle of the smart specialisation process of each Member State is the definition of the RIS3 areas of specialisation under the entrepreneurial discovery process (“EDP”), i.e. the RD&I areas are defined on the basis of business opportunities and needs. The co-operation involves the representatives of the business sector (industrial associations), public research organisations, higher education institutions and universities, managing authorities for the relevant programmes in Slovakia, as well as central government authorities (the bearers of support through grant schemes).

The EDP thus entails collaboration between the various members and strategic partners of the triple/quadruple helix in order to grasp the RIS3 concept while taking into account the needs of the business sector in order to:

- identify and integrate the business ideas which appear to be potentially rich in innovation and are feasible;
- identify and set the space for an effective RIS3 implementation through programmes financed from the ESI Funds and national programmes (grant schemes);
- guide the RIS3 monitoring and evaluations;
- identify new opportunities (technological and market ones) and review the prioritisation of the RIS3 areas.

These areas of specialisation were approved under the RIS3 and their definition was based on available analyses, partial reference documents, as well as discussions with all stakeholder partners from different areas and sectors, and special emphasis was placed on discussions with the business sector within the EDP process.

In order to achieve a structural change in the Slovak economy towards growth based on increasing innovation capacity and excellence in RD&I for supporting a sustainable growth of employment and quality of life of the Slovak citizens, four strategic objectives and 14 milestones were defined as a policy mix⁹. **To fulfil these objectives, three basic areas¹⁰ of specialisation were identified and approved by the SK Government:**

- *Areas of economic specialisation¹¹* based on traditional embedded economic sectors with the potential to significantly influence the fulfilment of the RIS3 strategic objectives;
- *Prospective areas of specialisation¹²*, which are fast-growing and show a high potential for the development of the Slovak economy;
- *Areas of specialisation from the point of view of available scientific and research capacities¹³*.

⁹ pp. 63 to 77, Chapter 6 and 7 of RIS3

¹⁰ pp. 53 to 55, Chapter 4 of RIS3

¹¹ Automotive industry and mechanical engineering; consumer electronics and electrical equipment; information and communication products and services; production and processing of iron and steel;

¹² Automation, robotics and digital technology; Processing and increasing the value of light metals and their alloys; production and processing of polymers and progressive chemical substances (including smart fertilisations); creative industry; increasing the value of the domestic raw material base; support of smart technology in the processing of raw materials and waste in the region of their occurrence;

¹³ Research of materials and nanotechnology; information and communication technology; biotechnology and biomedicine; agriculture and environment, including modern chemical environment-friendly technology; sustainable energy sector and energy, including development trends, while the support of the priority areas identified is expected to have a positive effect on the addressing of topics of nationwide concern.

3.1 The process of narrowing and prioritisation of the areas of specialisation from the point of view of establishing links between RIS3 economic/prospective areas and available scientific and research capacities in 2012–2016

Since 2012, Slovakia has continuously worked on the process of elimination and narrowing of the areas of specialisation by applying the EDP.

The main legislative document for the state science and technology policy under Act No. 172/2005 Coll. on the Organisation of the State Support of Research and Development is its long-term plan. At the time of the preparation of the RIS3, the **“Long-Term Plan for the State Science and Technology Policy until 2015”** was in place, defining the R&D priority areas among other things. These were expected to be subject to priority financing from public funds. Twelve priorities were set, but these were too broad and their scope and number did not allow for an actual concentration of funds and their targeting on the areas in which Slovakia has the potential to exploit the R&D results for the development of key economic areas.

The areas of specialisation of the Slovak Republic were defined in three stages as follows:

Stage I (January 2012 – June 2012)

In stage I, the basic range of possible priorities for the areas of applied research and development were defined. Of the original 12 priorities, the following seven areas of applied R&D were chosen in the 1st half of 2012 as a basis for the definition of the areas of specialisation:

1. Materials research and nanotechnology;
2. Information and communication technology;
3. Biomedicine and biotechnology;
4. Industrial technology;
5. Sustainable energy sector and energy;
6. Agriculture and environment;
7. Selected areas of social sciences (having regard of the most burning social issues that mostly affect the Slovak society).

Stage II (September 2012 – November 2013)

The process of elimination and narrowing of the priorities continued from September 2012 on through working groups. These were set up and worked in line with the EDP principle as follows:

The working groups for the priorities of applied research and experimental development were set up by the Minister of Education, Science, Research and Sports SR in 2012. Seven working groups were established for the following areas:

1. Research of materials and nanotechnology;
2. Information and communication technology;
3. Biomedicine and biotechnology;
4. Industrial technology;
5. Sustainable energy sector and energy;
6. Agriculture and environment;
7. Selected areas of social sciences (having regard of the most burning social issues that mostly affect the Slovak society).

Each working group included the representatives of industrial associations and research institutions as members.

Stage III (December 2013 – December 2016) – process of definition of the links between the RIS3 areas of specialisation

Stage III entailed the definition of the priorities of Slovakia's areas of specialisation at the level of the links between the areas of specialisation from the point of view of available scientific and research capacities of the Slovak Republic and RIS3 economic/prospective areas of specialisation.

At this stage, the basic tasks of the continuous EDP were as follows:

- elaboration and definition of the links between the areas of research and economic specialisation/prospective areas of specialisation, resulting in the specification of the topics for the document “Long-Term Strategic Research and Development Programme”;
- participation in the drafting of the document “National Plan of Research Infrastructures Use and Development”.

The working groups worked strictly autonomously and the result of their work – five long-term strategic research and development programmes – is the result of the dialogue between all stakeholders. The definition of the research topics in each long-term strategic programme was also based on the identification of the links to RIS3 economic and/or prospective economic areas of specialisation. Matrixes representing the links between RIS3 economic, prospective areas and areas from the point of view of scientific and research capacities (research topics) are the result of this process.

In December 2015, the long-term strategic research and development programmes were submitted to the joint meeting of the Board of the Research Agency and Board of the Technology Agency. The programmes were discussed and approved at the joint meeting of both boards with comments from the representatives of the industrial associations.

3.2 Prioritisation of the areas of smart specialisation

In order to ensure the continuation of the EDP, the Manual for the identification of the focus of RD&I topics was prepared. The process of priorities setting consists of four stages proposed so as to enable the identification of the priorities and assess the risks to the support of the set areas, whereas each stage pursues the following aims:

- I. Definition of the detailed structure of the industrial sector;
- II. Identification of the areas of common interest of businesses and R&D organisations (with the broadest possible involvement of relevant entities);
- III. Setting of the priorities with the biggest potential of being accomplished and bringing economic benefits (validation of priorities).
- IV. Assessment of the feasibility of the infrastructures for the implementation and achievement of the objectives in the set areas within R&D organisations and enterprises.

Further to the last stage of the process of narrowing of the areas of specialisation, it was necessary to select these areas from the originally set areas of specialisation defined as links between RIS3 research and economic/prospective areas of specialisation. It was necessary to transform these areas into smart specialisation domains, which were proposed on the basis of economic, research and knowledge parameters in accordance with the principles of the Guide on Smart Specialisation Strategies¹⁴.

Methodology for the determination of the smart specialisation domains:

¹⁴ European Commission (2012): Guide on Research and Innovation Strategies for Smart Specialisation <http://s3platform.jrc.ec.europa.eu/s3-guide>

The domains were created on the basis of overlaps between the economic and research specialisation of the Slovak Republic and characterised on the basis of the following criteria:

- a) Share of added value within the sector in the total gross added value (Table 1);
- b) Share of the sector in total export of goods and services in 2010–2016 (%), (Table1);
- c) Support of corporate research and development projects under the Operational Programme “Research and Development” and “Competitiveness and Economic Growth” in 2007–2015 (177 projects in total, supported with an amount of €202.7 million) (Tables 1 and 5); all projects with enterprises as beneficiaries were analysed;
- d) Product specialisation and comparative advantage in specialisation on global markets (RCA coefficients) (Annex, Table 3)¹⁵; The comparative advantage coefficient are calculated for European Union markets into which the Slovak Republic exports 85% of its goods and services. With respect to the main items of the Slovak export, the RCAs are also calculated for the Czech Republic, Hungary, Austria and Slovenia. The coefficient thus enables the identification of the models of possible co-operation and Slovakia’s competition with other small open economies in the region. The RCAs are calculated as the average for the period 2010–2016.
- e) Corporate expenditure in research and development in €mil. on the basis of Eurostat data of 2010–2014 (Tables 1 and 4);
- f) Knowledge characteristics approximated by patent and trademark indicators (Table 2).

The basic economic, research and knowledge parameters of the domains are presented in Tables 1 and 2. The detailed characteristics of the specialisation in foreign trade and intellectual property rights (Tables 3, 4 and 6) are presented in the annex.

Scheme 1 Process of prioritisation of the areas of specialisation

¹⁵ The index of revealed comparative advantage (Balass index) is as follows: $RCA = (E_{ij} / E_{it}) / (E_{nj} / E_{nt})$, where E_{ij} is the export of country i (Slovakia) in commodity j , E_{it} is the total export of goods and services of Slovakia, E_{nj} is European Union export of commodity j and E_{nt} is total European Union export of goods and services.

SMART SPECIALISATION

PROSPECTIVE AREAS OF SPECIALISATION

support of the smart technologies in the field of raw materials and waste processing in regions of their occurrence.

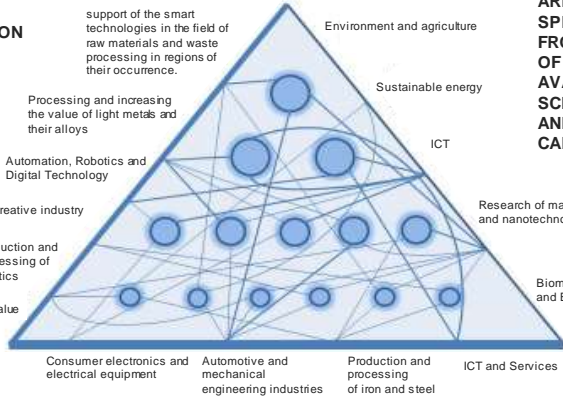
Processing and increasing the value of light metals and their alloys

Automation, Robotics and Digital Technology

Creative industry

Production and processing of plastics

Increasing the value of domestic raw material base



AREAS OF ECONOMIC SPECIALISATION

AREAS OF SPECIALISATION FROM THE POINT OF VIEW OF AVAILABLE SCIENTIFIC AND RESEARCH CAPACITIES

PROSPECTIVE AREAS OF SPECIALISATION

Support of the smart technologies in the field of raw materials and waste processing in regions of their occurrence.

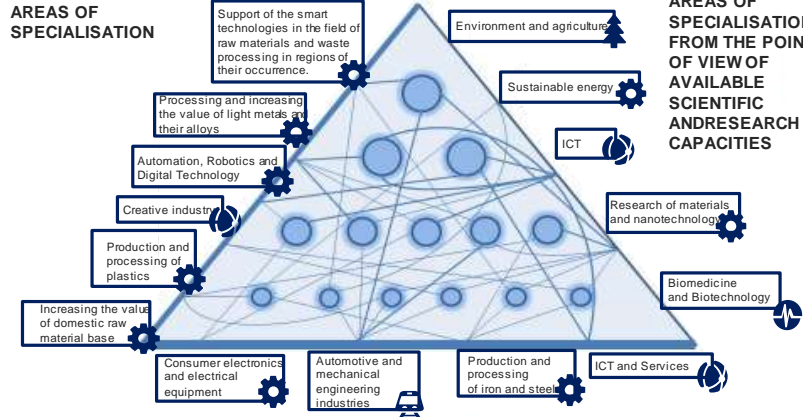
Processing and increasing the value of light metals and their alloys

Automation, Robotics and Digital Technology

Creative industry

Production and processing of plastics

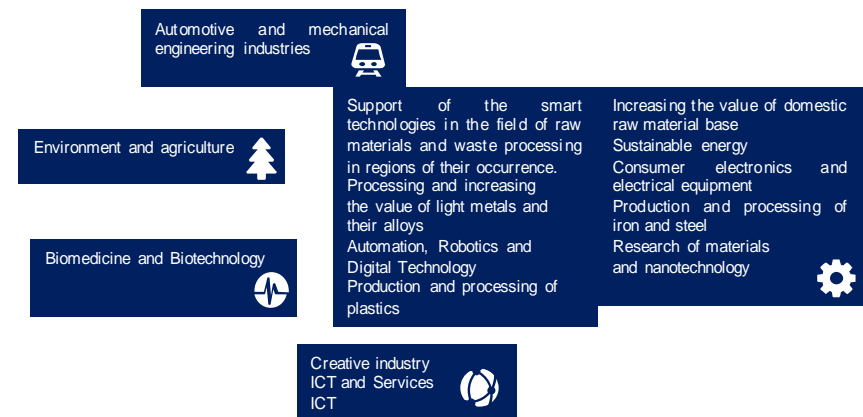
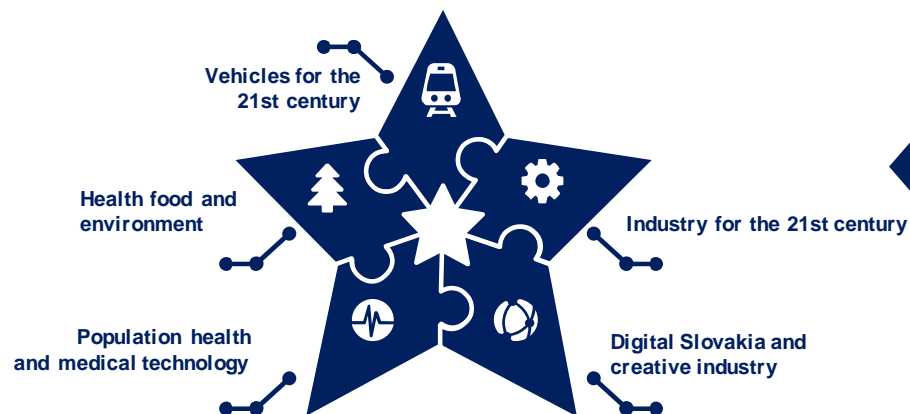
Increasing the value of domestic raw material base



AREAS OF ECONOMIC SPECIALISATION

AREAS OF SPECIALISATION FROM THE POINT OF VIEW OF AVAILABLE SCIENTIFIC AND RESEARCH CAPACITIES

Smart Specialisation Domains



3.3 Proposal for domains of smart specialisation

The proposed domains contain the relevant SK NACE of the sectors, as well as functional links to the main supplier and customer sectors. The functional links were identified in step 1 on the basis of inter-sectoral supply flows and the use of goods and services (input-output analysis¹⁶). Only intermediate consumption flows over €10 million were taken into account. The functional links were subsequently reduced in each domain based on expert evaluations by the representatives of business associations, researchers and staff of the key ministries during several working meetings. The definition of the specialisation preserves the principle according to which the subject of specialisation will be the products and services of key sectors and the products and services defined in the functional links between the key sectors and their main suppliers and customers¹⁷. Sectors belonging to key sectors of individual domains may act as supplier and customer industries between each other as well as within other domains. The functional links define sectors that can be supported only in relation with selected key sectors.

The further narrowing of the priorities and the identification of the specific activities at the level of the product line of research and economic specialisation will be carried out on the umbrella platform and in the working groups under the domain platforms. Further works on the prioritisation will be performed on the basis of the new platforms in July and August 2017 at the product line level. The umbrella function will be executed by the **Slovak Technology Leadership Platform (STLP, methodically steered and coordinated by PCS3)**, which will be responsible for objectivised prioritisation in the field of RD&I, while taking into account the needs of the practice. The activities within the platforms will be coordinated by the Office of the Vice-Prime Minister for Investments and Informatisation in co-operation with the key sectors and Government Plenipotentiary for Research and Innovation.

The STLP will consist of the following **working groups – domain platforms established for each smart specialisation domain**.

- **Vehicles for the 21st century**
- **Industry for the 21st century**
- **Digital Slovakia and creative industry**
- **Population health and medical technology**
- **Healthy food and environment**

Within the EDP process, the platform will identify the key activities and products for Slovakia's economic and research specialisation, while taking into account (a) the technology and research capacities of enterprises; (b) the existing research infrastructure in the public sector; (c) the research potential of top-level Slovak scientific teams; and (d) Slovakia's economic specialisation in foreign trade.

The role of the STLP and domain platforms will be as follows:

- Propose prospective topics in the field of RD&I;
- Specify the areas of possible links between practical needs and the focus of public R&D organisations;
- Identify technology gaps (infrastructure needs) in R&D organisations;
- Map the potential and interest in co-operation between businesses and R&D organisations;
- Assess the feasibility of the proposed solutions/topics.

¹⁶ Source: Eurostat (2017): *Use table at purchasers' prices* [naio_10_cp16]. The latest available data is for 2013.

¹⁷ The main functional links in the domains table are quantified in €mil.

The work of the domain platforms will determine, as the main result, the technology priorities at the level of concrete product groups with the potential of increasing their economic value, and bring proposals for the optimisation of the infrastructures of public R&D organisations.

In order to maximise the objectivisation of the proposals for prospective areas of development, the widest expert community possible will be involved in the process.

Working groups – domain platforms

The main result of the groups' work will be closer specification of the domains at the level of the relation between functional links and the product portfolio identified and subsequent determination of the priorities with the potential of increasing their economic value.

Expert working groups – domain platforms will be created to detail each domain. These working groups will consist of representatives of the business sector, the scientific and research sector, the academia and government authorities. They will meet at least twice a month and as needed, while the detailed specification of the specialisation and the main results of their work must be ensured at the latest by mid-September 2017. The meetings will be convoked and organised by the working group secretaries, who will prepare documents for the meetings and administer the whole course of works. The working group secretary will be appointed by the sponsor/co-sponsor of the domain.

The working groups will follow a single data collection and evaluation methodology created by the OVPMII and experts who are familiar with the process of creation of domains and functional links. The EDP process will also be ensured by means of a questionnaire survey conducted by working group members within the organisations they cover.

The working groups will have max. 7–10 members depending on the scope of the domain. The **working group chair** will be a representative of the sector responsible for the particular domain (e.g. state secretary or director general of the respective section).

Activities needed to launch the STLP work:

The following steps need to be taken for actual launch of the platform activities:

1. Mapping of actors

- a) Map the R&D infrastructures and capacities from the point of view of human resources in public R&D organisations;
- b) Map the enterprises working in the different fields.

2. Selection of experts for the platforms

- a) The experts from R&D organisations will be selected on the basis of their expert qualifications, considering the implementation of projects in co-operation with industrial partners, implementation of projects under the FP7/H2020, the Hirsch index, activities in the field of intellectual rights protection (patents, utility models, designs) and their practical application;
- b) The experts from the business sector will be selected on the basis of their expert qualifications, for instance considering activities in R&D, the implementation of R&D projects, co-operation with public R&D organisations, activities in the field of intellectual rights protection (patents, utility models, designs) and their practical application, as well as publishing and teaching activities.

3. Kick off meeting

The meeting will launch and define the tasks of the platform.

4. Visits to enterprises and R&D centres

The aim of the meetings to map the fields of interests in the RD&I area directly with potential beneficiaries of contributions (support) and ensure the involvement in the STLP activities (EDP) of as many actors as possible.

5. *Activities of SKS3 members*

The aim will be an activation of SKS3 members representing businesses, using their regional offices.

6. *Survey of needs*

- a) Mapping of the needs and interest in co-operation with business on the part of R&D organisations. The mapping will be carried out on the basis of expert interviews with selected entities at the level of scientists/scientific and research teams, with aim to find out the interest in co-operation by the scientific and research community. The result of the survey will be a database of the potential interest in scientific co-operation;
- b) Mapping of the interest and needs of business in co-operation with R&D organisations;
- c) Processing of the survey results by the SIEA which executes the duties of the Technology Agency, as defined in the RIS3.

7. *Regional workshops 2*

The aim of the meetings will be to involve as many actors as possible in the STLP (EDP) activities and the verification/optimisation of the electronic survey results.

8. *STLP meeting*

The first meeting will objectivise the results obtained through statistical analyses of surveys and mappings (electronic survey, meetingsetc.). The result of the meeting(s) will be a set of priorities for the different fields.

9. *Official presentation of the STLP results*

The platform work results will be announced to invited stakeholders at an official meeting with the participation of guests from all over Slovakia.

10. *Analytical support of the STLP activities*

Support of STLP activities by means of analyses and forecasts (including technology foresight).

STLP schedule:

Month		VI	VII	VIII	IX	X
1//	MAPPING OF ACTORS	■				
2//	SELECTION OF EXPERTS FOR THE PLATFORMS	■				
3//	KICKOFF MEETING		■			
4//	VISITS TO ENTERPRISES AND R&D CENTRES		■			
5//	ACTIVITIES OF SKS3 MEMBERS		■			
6//	SURVEY OF NEEDS		■			
7//	REGIONAL WORKSHOPS 2			■		
8//	STLP MEETING				■	
9//	OFFICIAL PRESENTATION OF THE STLP RESULTS				■	
10//	ANALYTICAL SUPPORT OF THE STLP ACTIVITIES				■	■

Communication and information:

The aim of the communication is to maximise EDP openness and support in Slovakia. The results of the expert groups work will therefore be published on the SIEA website (executing the duties of the Technology Agency, as defined in the RIS3) or on another website (e.g. OP R&I, RIS3 Coordination Point – OVPMII). In addition, the results and interim results of the working groups will be regularly communicated to relevant actors.

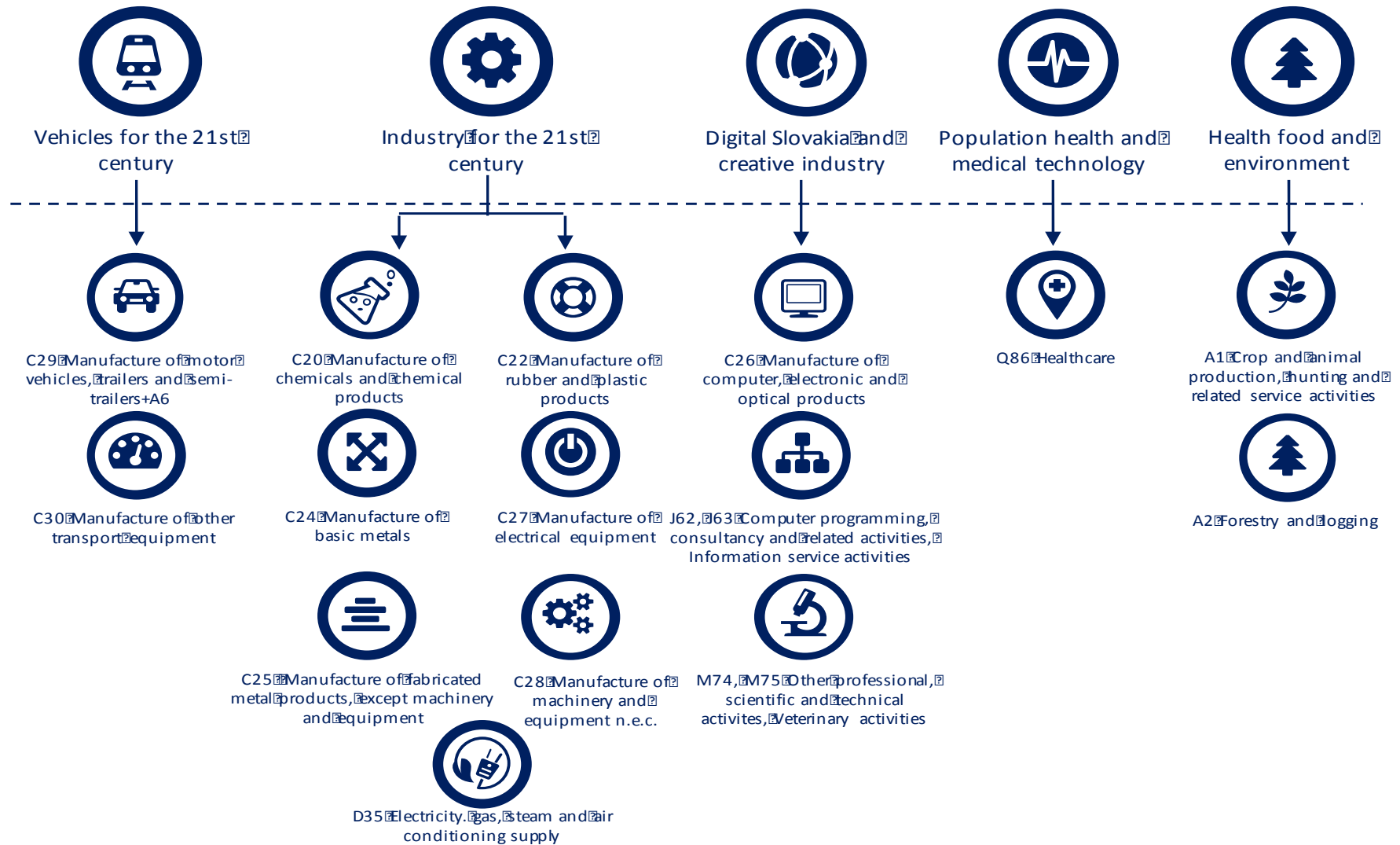
Other activities:

At the initial stage, each working group will meet every two weeks, and once in a quarter-year at later stages. The meetings will be convoked and organised by the secretaries of the STLP working groups, who will prepare documents for the meetings and administer the work process of the working groups.

Key factors of success:

- Activities performed in line with the methodology approved by the Commission;
- Involvement of as many actors as possible – min. several dozens for each working group;
- Ensuring high-quality outputs;
- Compliance with the schedule;
- Minimisation of lobbying.

Overview of the smart specialisation domains and main relevant SK NACE industries



3.3.1 Domain 1: Vehicles for the 21st century (This domain will cover Scientific research and development (M72) and Architectonic and engineering activities; technical testing and analyses (M71) in the following key industries and their functional links)

Main relevant SK NACE industries	Supplier / Customer industry	Functional links
C29 Manufacture of motor vehicles, trailers and semi-trailers+A6 C30 Manufacture of other transport equipment	C25 Manufacture of fabricated metal products, except machinery and equipment C22 Manufacture of rubber and plastic products C27 Manufacture of electrical equipment C24 Manufacture of basic metals C20 Manufacture of chemicals and chemical products C13, C14, C15 Manufacture of textiles, Manufacture of wearing apparel, Manufacture of leather and related products J62, J63 Computer programming, consultancy and related activities, Information service activities C26 Manufacture of computer, electronic and optical products C28 Manufacture of machinery and equipment n.e.c. C19 Manufacture of coke and refined petroleum products	

Domain description:

Automotive industry is the flagship of the Slovak economy. The domain “Vehicles for the 21st century” reports the highest shares in export and the highest values of the comparative advantage coefficient. The automotive industry shows the highest corporate expenditure in research and development in Slovakia. This industry also received a considerable part of the OP R&D and OP C&EG allocation (through the support of new and progressive materials and production technology).

3.3.2 Domain 2: Industry for the 21st century (This domain will cover Scientific research and development (M72) and Architectonic and engineering activities; technical testing and analyses (M71) in the following key industries and their functional links)

Main relevant SK NACE industries	Supplier / Customer industry Functional links
C20 Manufacture of chemicals and chemical products C22 Manufacture of rubber and plastic products C24 Manufacture of basic metals C25 Manufacture of fabricated metal products, except machinery and equipment C27 Manufacture of electrical equipment C28 Manufacture of machinery and equipment n.e.c. D35 Electricity, gas, steam and air conditioning supply	C23 Manufacture of other non-metallic mineral products C29 Manufacture of motor vehicles, trailers and semi-trailers C26 Manufacture of computer, electronic and optical products C19 Manufacture of coke and refined petroleum products C10, C11 Manufacture of food products, Manufacture of beverages C17 Manufacture of pulp, paper and paperboard J62, J63 Computer programming, consultancy and related activities, Information service activities C16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials C13, C14, C15 Manufacture of textiles, Manufacture of wearing apparel, Manufacture of leather and related products M74, M75 Other professional, scientific and technical activities, Veterinary activities C31, C32 Manufacture of furniture, Other manufacturing C30 Manufacture of other transport equipment C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations J62, J63 Computer programming, consultancy and related activities, Information service activities

Description of the domain:

Manufacture of basic metals, fabricated metal products, machinery, and manufacture of electrical equipment have been traditionally strong and competitive industries of Slovak value. From the point of view of economic specialisation, these industries show high share in export, as well as high values of comparative advantage coefficient compared to EU-28 countries and the neighbouring small and open economies. These industries report

high business expenditure on R&D in Slovakia and also received a considerable part of the OP R&D and OP C&EG allocation (through the support of new and progressive materials and production technology). This domain has the second largest number of patents and trademarks. In the field of nanotechnology, metallurgy and mechatronics, Slovakia has a comparative technology advantage on EU markets (Table 6).

3.3.3 Domain 3: Digital Slovakia and creative industry (This domain will cover Scientific research and development (M72) and Architectonic and engineering activities; technical testing and analyses (M71) in the following key industries and their functional links)

Main relevant SK NACE industries	Supplier / Customer industry Functional links
C26 Manufacture of computer, electronic and optical products J62, J63 Computer programming, consultancy and related activities, Information service activities M74, M75 Other professional, scientific and technical activities, Veterinary activities	C22 Manufacture of rubber and plastic products C27 Manufacture of electrical equipment C20 Manufacture of chemicals and chemical products C23 Manufacture of other non-metallic mineral products C24 Manufacture of basic metals C17 Manufacture of pulp, paper and paperboard C31, C32 Manufacture of furniture, Other manufacturing C29 Manufacture of motor vehicles, trailers and semi-trailers C28 Manufacture of machinery and equipment n.e.c. M69, M70 Legal and accounting activities, Activities of head offices; management consultancy activities J62, J63 Computer programming, consultancy and related activities, Information service activities J59 Motion picture, video and television programme production, sound recording and music publishing activities M73 Advertising and market research C25 Manufacture of fabricated metal products, except machinery and equipment

Description of the domain:

The domain “Digital Slovakia and creative industry” integrates Slovakia’s strong position in the manufacture and export of consumption electronics and in the production of ICT services (especially cybersecurity). These industries are the key platforms for the development of creative industry, which increasingly moves to the web environment. Thanks to consumption electronics manufacture, this domain has a strong comparative advantage on global markets. Domestic Slovak companies in the field of ICT services are well established on global markets. This domain reports a high number of patents and trademarks.

3.3.4 Domain 4: Population health and medical technology (This domain will cover Scientific research and development (M72) and Architectonic and engineering activities; technical testing and analyses (M71) in the following key industries and their functional links)

Main relevant SK NACE industries	Supplier / Customer industry	Funkčné väzby
Q86 Healthcare	C31, C32 Manufacture of furniture, Other manufacturing C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations C20 Manufacture of chemicals and chemical products	The main customers are hospitals, medical clinics, medical laboratories, treatment facilities (households)

Description of the domain:

The Slovak population is characterised by one of the fastest ageing rates in the EU. It is essential to create an effective system of public and private healthcare ensuring not only the health of the Slovak population, but also long-term fiscal sustainability of Slovakia. Healthcare is a non-tradable or little traded economic sector, which is the reason for not indicating the competitive advantage. The health and healthcare technology domain received most of the allocations under the OP R&D and OP C&EG in 2007–2015. Healthcare and biomedicine also report a large number of scientific articles and citations and represent one of the most successful parts of Slovak science and research. This domain concentrates the highest quality research capacities. Mainly private and public health facilities will be partners for public and private research.

3.3.5 Domain 5: Health food and environment (This domain will cover Scientific research and development (M72) and Architectonic and engineering activities; technical testing and analyses (M71) in the following key industries and their functional links)

Main relevant SK NACE industries	Supplier / Customer industry	Functional links
A1 Crop and animal production, hunting and related service activities A2 Forestry and logging	C20 Manufacture of chemicals and chemical products C10, C11 Manufacture of food products, Manufacture of beverages C19 Manufacture of coke and refined petroleum products D35 Electricity, gas, steam and air conditioning supply C28 Manufacture of machinery and equipment n.e.c.	

Supplier / Customer industry	
Main relevant SK NACE industries	Functional links
	C22 Manufacture of rubber and plastic products C16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials M74, M75 Other professional, scientific and technical activities, Veterinary activities C17 Manufacture of pulp, paper and paperboard C25 Manufacture of fabricated metal products, except machinery and equipment

Description of the domain:

The domain “Healthy food and environment” is important for food safety, safe supply of drinking water and Slovakia’s sustainable development. Agriculture and rural development, fisheries and aquaculture have separate subsidy schemes or programmes. This domain concentrates most trademarks. In the field of environmental technology, Slovakia has a comparative technological advantage on EU markets (Table 6). Slovakia has large drinking water reservoirs. Regarding safety, it is especially necessary to ensure for the Slovak population a sufficient amount and quality of this strategic raw material. At the same time, it is necessary to eliminate the negative impacts of industrial and agricultural activities on ground and surface sources of drinking water.

4 Governance

4.1 Institutional framework and RIS3 management

Research, development and innovation as inter-sectoral categories require inter-sectoral coordination to promote mutual links and co-operation between institutions working in this field, without any limitations based on the competences of all stakeholders. The form of this system has already been defined in the RIS3 by specifying the political, executive and implementation level of R&I professional management and coordination. The setting of RD&I management systems can either support the RIS3 implementation or make it impossible. It is therefore necessary to have clear rules in place for all actors and strive for the integration of the governance principles. In reality, many aspects of the implementation are influenced by the management, particularly by:

- the selection of projects financed from public funds;
- continuous EDP;
- the monitoring system.

The prerequisite for a successful implementation of the RIS3 in Slovakia is the adaptation and use of the existing institutional R&D management structures so that they can be integrated within an effective platform with the managing structures in the field of innovation. Pursuing this objective, the Slovak Government undertook in its Government Manifesto 2016 to carry out an audit of the entire RD&I system by a renowned international institution. The audit specifications are at the stage of preparation for the public procurement procedure. In order to overcome the common practice of exclusive competences of several sectoral ministries and the persisting institutional isolationism, the Government has adjusted the framework for the operation of the existing institutions and approved the creation of new inter-sectoral institutions targeting specifically the R&I field. In 2015–2017, the Government took several measures.

For the purposes of inter-sectoral coordination of R&I activities, the SK Government Office - Office of the Government Plenipotentiary for Research and Innovation was set up in 2015 with primary focus on the RIS3 implementation.

In 2015, the Research Agency (RA) was established by the MoESRS SR, and the Technology Agency (TA) by the MoE SR. The RA still operates without having clearly defined the necessary content concurrence with the Slovak Research and Development Agency (SRDA), which works on an autonomous basis. The aim is to achieve appropriate harmonisation and complementarity of the topics dealt with within all agencies in the fields where it is purposeful. Ultimately, the state programme scheme and the research and development incentives should not be left out of this harmonisation framework.

In 2016, the Deputy-Prime Minister's Office for Investments and Informatisation was set up, whose competences include supervision over the RIS3 implementation. Besides other competences, the Office decides on binding plans of the operational programmes, carries out supervision and coordination of calls and invitations launched under the operational programmes, performs crisis management of the operational programmes, executes the role of the Central Coordination Authority for the operational programmes, and ensures the implementation of the main strategic and conceptual plans and objectives of the Slovak Republic in connection with the allocation of European Union funds to all entities involved in this process.

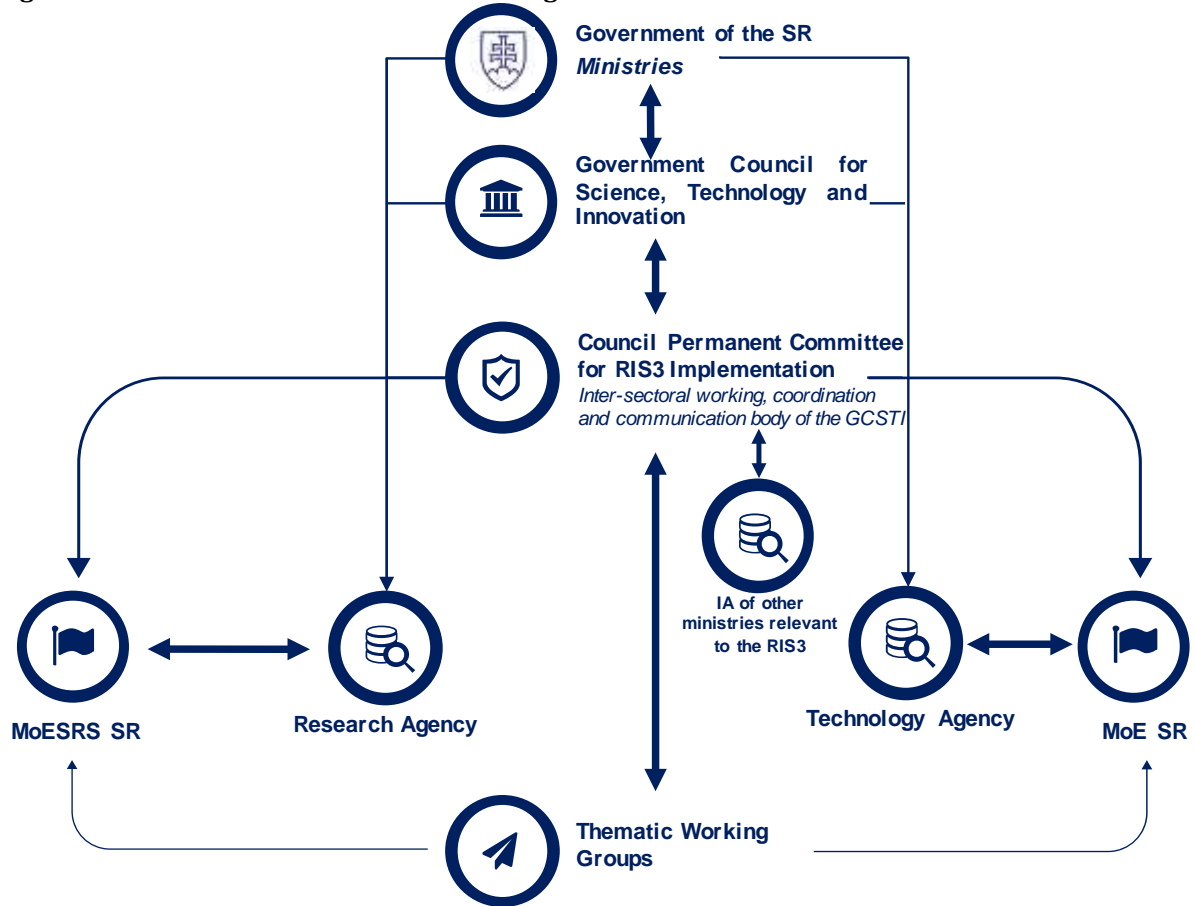
The Governance proposal (Fig. 1) builds on a more systematic and practical use of the Government Council for Science, Technology and Innovation (hereinafter referred to as the "Council"), which exists since 2013. By Government Resolution adopted at the end of 2016, the

Council was revitalised and its mission and competences were extended, which is reflected in its new Statute. The Council is now chaired by the Vice-Prime Minister for Investments and Informatisation, who also covers science, technology and innovation since 2017. One of the important Council tasks is its competence to submit to the Government for approval complex prioritisation of RD&I areas in Slovakia, as well as the corresponding financial coverage of the respective policies. The implementation of policies approved by the Government is ensured by the Council.

The following new executive items form the key elements of the Governance proposal:

- Increased importance of the Council Presidium with clear definition of its role as an active part of the Council in the formulation of the ideas on the content focus of RD&I policies. The task of the Presidium is to propose priority directions in the support of RD&I in line with the RIS3 and the corresponding systemic and financial measures.
- In 2017, the Council Permanent Committee for RIS3 Implementation (hereinafter referred to as the “PCS3”) was newly constituted. This Committee will prepare key documents and information concerning the process of planning, implementation and financing of mainly priority topics and related projects in the field of R&I, as well as implementing institutions, which will be reviewed by the Council Presidium and approved by the Council. The key imperative is mutual complementarity and the avoidance of duplication. These principles are reflected in the upgraded Council Statute, which will be submitted to SK Government for approval in June 2017. The new concept of the Council Statute has not only the ambition to effectively help the RIS3 implementation, but it has a wider purpose – become the element which will, from the long-term perspective, exercise the objectivising, stabilising and dynamising function in the RD&I system in Slovakia. The parity composition of the permanent Committee with members from CGAs, the academic sector and the representatives of business associations reflects the quadruple helix and, at the same time, creates the prerequisites for the adoption of effective and meaningful proposals. The mutual links between the Permanent Committee structures and its technical and organisational background, including the Coordination Point, is essential for the flexible, horizontal and inter-sectoral coordination of research and innovation policies pursuing the sustainability and the economic, social and environmental development of the Slovak Republic.

Figure 1 Institutional structure of RIS3 management



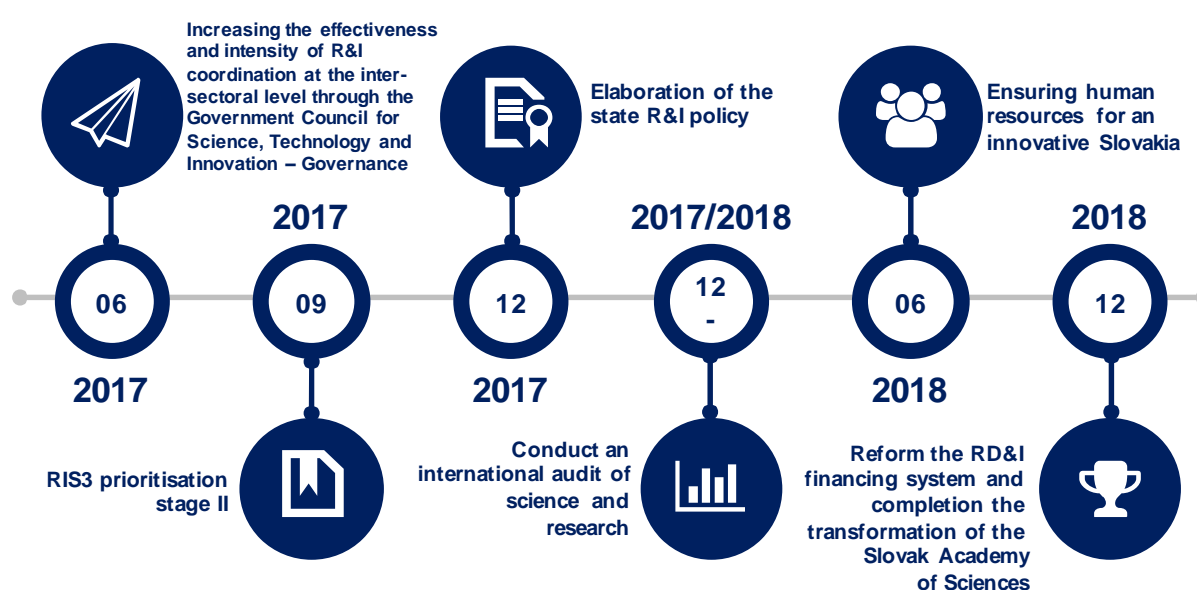
Another element in the institutional communication system is the RIS3 Coordination Point. Its tasks are primarily defined in sub-section 6.2.1, yet its position within the entire system is crucial. In addition to standard tasks and competences, predominantly process communication and support, it operates as a first alert tool for other governance elements “red flags”.

In order to narrow the scope of the priority RIS3 areas of specialisation (prioritisation of R&I areas and focus) in line with the RIS3, the Council will set up expert working group, STLP and thematic/domain platforms in line with the on-going EDP, while involving in this process the relevant ministries, other central government authorities and representatives of the business and the academic sector.

5 RIS3 Planning Document

The key element of the management will be the planning process with the following hierarchy: RIS3 PRIORITIES – programmes – projects – events, which will be mutually interlinked and balanced in terms of resources and time. This will be accompanied by a system of monitoring of the fulfilment of RIS3 objectives and priorities, detailed in the form of programmes and projects for the period 2014–2022 as a comprehensive planning document. This document will be further detailed through annual plans with a three-year perspective (1 + 3), and will flexibly respond, using the rolling forecasts, to the processes pursued in the fulfilment of the RIS3 objectives and priorities and to the changes arising from project implementation and changes in the external conditions¹⁸.

Figure 2 Overview of the most important measures of the Implementation Plan (systemic and legislative measures)



5.1 Selection criteria and the selection process

Competitive funding of R&I

Slovak Research and Development Agency

The budget of the Slovak Research and Development Agency (“SRDA”) is a relatively autonomous part of the MoESRS SR budget. In 2009, the SRDA annual budget was around €40 million; in the next years, however, this budget was reduced. The budget planned for the period 2017–2019 is around €36 mil./year¹⁹. The SRDA clearly separates the funds aimed for its own operation from the funds for projects allocated consistently in a competitive manner comparable to international practices. The SRDA, established by Act No. 172/2005 Coll. on the Organisation of State Support of R&D, is an open grant agency providing competitive funds to public and private research organisations, while applying the common, internationally used competitive method. The structure of expenditure of the winning projects in 2012–2014 was as follows:

- State organisations 9.3%

¹⁸ Page 62 of RIS3, Chapter 5.3 Procedural arrangements of institutional structure for RIS3 implementation

¹⁹ Public administration budget 2017 – the proposal for next years reflects basic systemic changes in R&D funding

- Slovak Academy of Sciences 31.8%
- Businesses 8.1%
- Public higher education institutions 49.0%
- Other organisations 1.6%.

The SRDA publishes only general calls. The average allocation per project under these calls was €70,000/year in 2015²⁰. It is necessary that the SRDA also applies the category of demand-driven calls in compliance with the RIS3.

VEGA

In the past years, the annual VEGA budget was more-or-less in the same amount of around €15 million. The summary VEGA budget is composed of MoESRS SR funds for higher education institutions and SAS funds for SAS institutes allocated from institutional resources. The amount of the funds allocated to projects implemented by higher education institutions and the SAS corresponds to the amount of the contributions by MoESRS SR and SAS. VEGA is a closed internal grant scheme ensuring a mutually coordinated process within a single system of research project selection and evaluation at higher education institutions and SAS departments. Under the scheme, the Minister of Education, Science, Research and Sports SR and the SAS President are proposed the amount of the subsidy to be provided for the implementation of selected new and on-going scientific projects from institutional funds. The average amount of the funds per VEGA project is only around €7,000/year. From this financial amount, it is not possible to expect, especially in experimental sciences, any results that would significantly and essentially influence the direction of scientific research or be internationally competitive.

R&D incentives

In 2016 and 2017 the funds allocated to incentives will reach an amount of €3.9 mil./year . The incentives are provided by the MoESRS SR to legal entities – entrepreneurs on the basis of an invitation and subsequent evaluation in compliance with Act No. 185/2009 Coll. on R&D Incentives. The system of evaluation and selection of financed projects is determined by MoESRS SR internal rules.

State Research and Development Programmes

The State R&D Programme is defined in Act No. 172/2005 Coll. Its role is to deal with key development issues and meet the needs of society. Over the past years, no funds were allocated to the State Programme. For the period 2018–2020, the MoESRS SR plans to allocate an average amount of €40 million/year to the State Programme. At present, the preparation of the programme topics is under way.

5.2 Effective use of the RD&I infrastructure

The MoESRS SR prepared the National Plan of Research Infrastructure Use and Development (SK Roadmap 2016), which identifies the strategic infrastructures of national importance (university science parks, research centres, competence centres, centres of excellence and R&D centres) and unique research infrastructures, the pending a qualified selection for the Roadmap. In this regard, the mapping of the infrastructures was carried out in connection with its efficient use and current capacity utilisation of the existing infrastructures. In addition to basic infrastructure mapping (passportisation), regardless of the sources of funding, it is necessary to set minimum infrastructure standards in line with the value for money principle. The passportation will also include thematic links between the infrastructures and RIS3 priorities. This should provide a prerequisite for the formulation of appropriate project funding rules, with an emphasis on the

²⁰ Internal data SRDA

sustainability of research and innovation priority programmes and the elimination of duplication.

Evaluation of investments in the building of Centres of Excellence (“CE”) under the OP R&D

CEs were built in the following areas:

- Biomedicine and biotechnology,
- Information and communication technology,
- Materials research and nanotechnology,
- Agriculture and environment,
- Industrial technology,
- Sustainable energy sector and energy,
- Selected fields of social sciences.

The investment expenditure from OP R&D funds in biomedicine and biotechnology reached a total amount of €43,422,893. A total of 1,478 researchers were involved in CE activities. Project management was performed by 157 staff members. The support provided in the field of biomedicine and biotechnology partly overlapped with information and communication technology (“ICT”).

The more extensive ICT field was supported under the OP R&D through the building of CEs in the total amount of €67,039,565. The activities of supported CEs were performed by a total of 3,378 researchers, and the management was ensured by 395 staff members. The supported projects partly overlap with industrial technology, materials research and nanotechnology, biomedicine and biotechnology, as well as agriculture and environment.

The building of CEs in the field of materials research and nanotechnology was supported with an amount of €16,935,346. The activities of supported CEs involved 857 researchers in total, and the operation (management) was ensured by 95 staff members. The supported CEs overlap with ICT, biomedicine and biotechnology, as well as industrial technology and sustainable energy sector.

The building of CEs in the field of agriculture and environment was supported with a total amount of €26,414,031 with 946 researchers involved in the activities of these centres and 98 staff members responsible for their operation. The focus of work of the supported centres partly overlap with ICT.

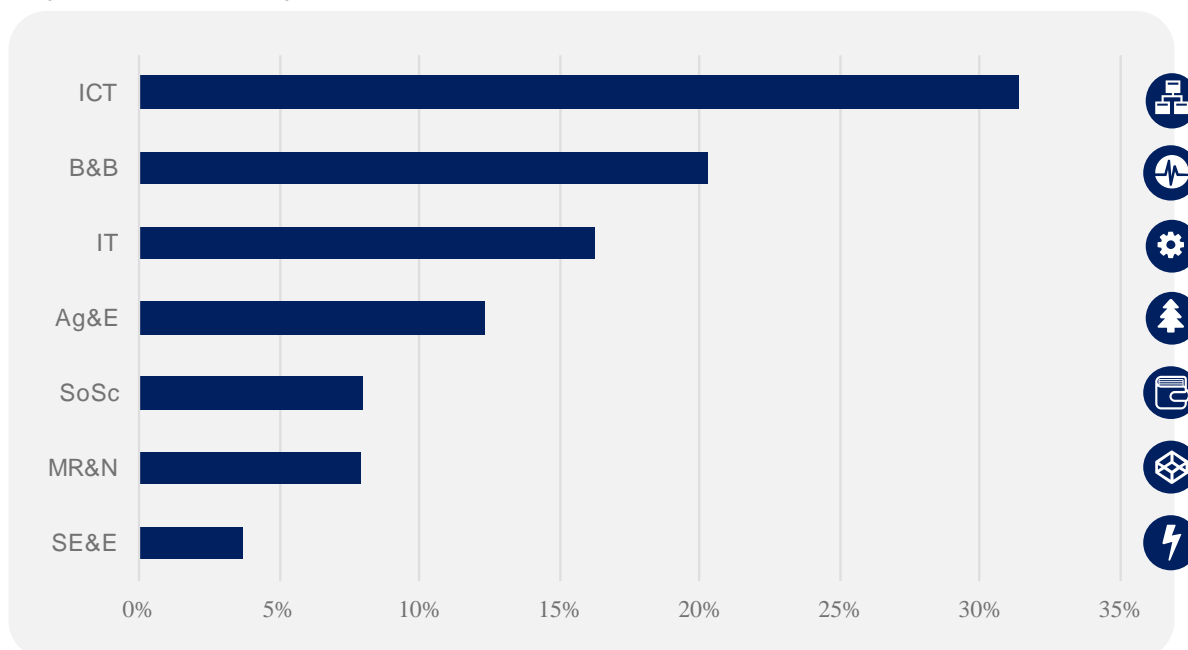
The creation of CEs in the prospective field of industrial technology was supported with an amount of €34,834,790. The activities of the supported infrastructures involved 2,072 researchers and 105 managing staff members. The supported CEs in the field of industrial technology declare partial overlap with materials research and nanotechnology, agriculture and environment.

The investment expenditure related to the building of CEs in the field of sustainable energy sector and energy reached €8,021,349. The CE activities involved 388 researchers and 21 managing staff members. This field does not declare any overlap with any other fields.

Support was also provided to the building of CEs in the field of social sciences. The expenditure from EU funds attained €17,096,785. The CE activities involved 981 researchers, and their operation was ensured by 77 staff members. The supported projects declare certain overlaps with ICT, as well as environment, biomedicine and biotechnology.

Investments in the building of Centres of Excellence

Representation of respective areas



Evaluation of investments in the building of large infrastructures under the OP R&D

Large infrastructure projects were supported in the following fields:

- Biotechnology and biomedicine,
- Information and communication technology,
- Materials research and nanotechnology,
- Agriculture and environment,
- Sustainable energy sector and energy.

The following projects were supported from EU funds:

- Medical University Science Park in Košice (MediPark, Košice)
- Biomedicine University Science Park Bratislava
- Martin Biomedicine Centre (BioMed Martin)
- Centre for the Research and Development of Immunobiologically Active Substances
- STU University Science Park Bratislava
- TECHNICOM University Science Park for Innovation Applications with the Support of Knowledge-Based Technology
- "CAMPUS MTF STU" University Science Park – CAMBO
- PROMATECH Research Centre of Progressive Materials and Technology for Current and Future Applications
- Centre for Applied Research of New Materials and Technology Transfer
- ALLEGRO Research Centre
- University Science Park of the University of Žilina
- Building of the AgroBioTech Research Centre
- Research Centre of the University of Žilina
- University Science Park of the Comenius University in Bratislava

The investments in biotechnology and biomedicine attained €129,974,440. The activities of the parks involved 1,263 researchers and 50 managing staff members. The supported projects declared specific overlap with environmental medicine.

The investment expenditure in the field of information and communication technology reached €62,165,078. The activities of the university science parks involved 1,685 researchers and their operation was ensured by 42 staff members. The supported projects declared overlap with biotechnology and sustainable energy sector and energy.

The support provided to materials research and nanotechnology attained €122,389,434. The activities of the university science parks involved 834 researchers and 57 managing staff members. The supported projects declared overlap with ICT.

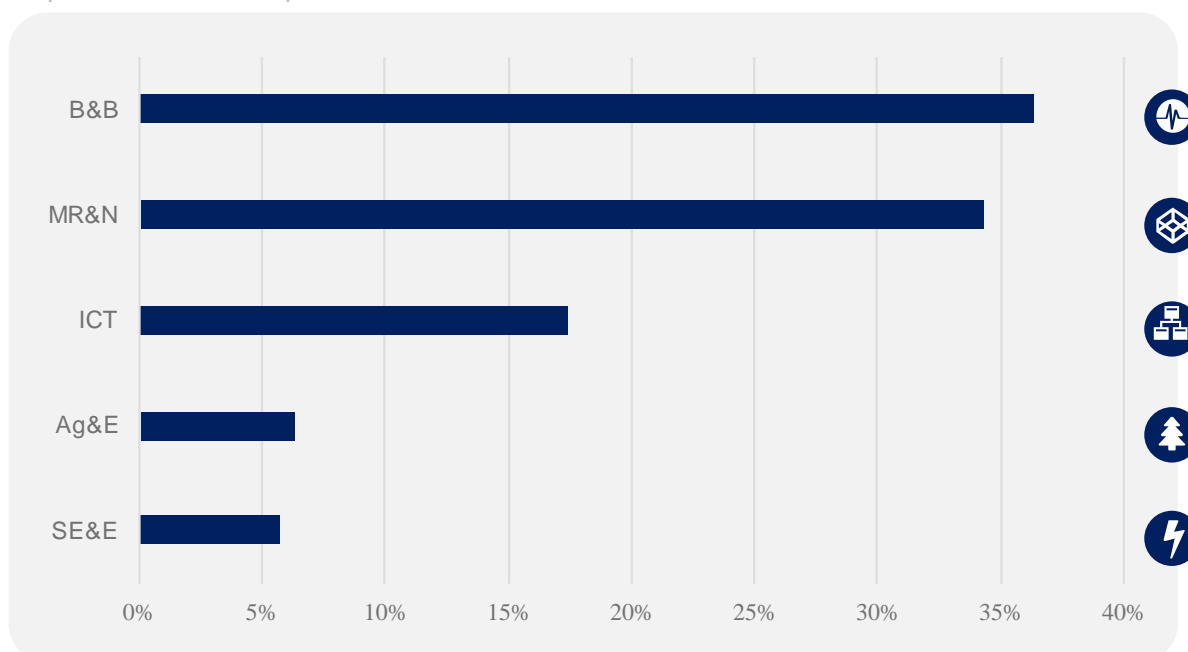
The support provided to agriculture and environment (Agriculture and environment, including modern environment-friendly chemical technology) reached €22,362,616. The activities involved 250 researchers and 46 managing staff members. Overlap with other fields, particularly with biotechnology, was formally declared.

In the framework of the support provided to the building of large infrastructures, the sustainable energy sector and energy was supported with €20,317,624. The activities involved 187 researchers and 7 staff members responsible for project management.

In respect of the infrastructure, it should be noted that the RIS3 priorities were taken into account just under the last OP R&D calls; nevertheless, the concentration of resources complies with the RIS3 S objectives. For more details by components see Tables 7 and 8 in the annex.

Investments in the building of large infrastructures

Representation of respective areas



5.3 Financial framework for the RIS3 implementation

For the development of competitiveness from a long-term perspective, it is crucial to immediately evaluate the effectiveness of the RD&I national system and its concrete contribution to Slovakia's competitiveness. It will subsequently be possible to propose measures for its improvement, including targeted increase of RD&I expenditure and implementation of synergetic support schemes for multi-source funding. The RD&I financing was based in the previous period on the Structural Funds in the form of a non-reimbursable financial contribution (grant) and, to a smaller extent, financial instruments.

In principle, R&I financing in Slovakia is ensured from public and private funds. Public funds consist mainly from state budget funds and EU funds:

- SK state budget
 - Institutional and project financing
 - ESIF co-financing from the SB
- EU funds
 - European Structural and Investment Funds
 - Other EU support instruments, such as Horizon 2020
- Private business sources
 - Domestic
 - Foreign

The table below shows the development of R&D expenditure in the previous programming period 2007–2015.

Overview of research and development expenditure from public and private sources in 2007–2015 (in €'000)

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total R&D expenditure in Slovakia	282,629	316,459	302,994	416,369	468,439	585,225	610,876	669,632	927,272
% GDP	0.45	0.46	0.47	0.62	0.66	0.8	0.82	0.88	1.18
Total R&D expenditure from public sources	164,161	178,368	166,714	238,697	284,729	327,999	318,522	389,574	629,099
% GDP	0.26	0.26	0.26	0.36	0.40	0.45	0.43	0.51	0.80
R&D expenditure from SK state budget	152,393	165,614	153,199	206,399	233,061	243,302	237,616	277,114	296,133
% GDP	0.24	0.24	0.24	0.31	0.33	0.33	0.32	0.36	0.38
Total R&D expenditure from private sources	118,468	138,091	136,280	177,672	183,710	257,227	292,354	280,059	298,173
% GDP	0.19	0.20	0.21	0.26	0.26	0.35	0.39	0.37	0.38
R&D expenditure from domestic private sources (€'000)	100,608	109,759	106,375	145,979	158,580	220,664	245,541	215,716	232,349
% GDP	0.16	0.16	0.17	0.22	0.22	0.30	0.33	0.28	0.30

Source: SO SR, Slovstat databases, DATAcube

- a) **Public sources** have a growing tendency. The growth of expenditure from the SK state budget as compared to the growth of the total public expenditure has smaller dynamics; the key factor is EU sources, especially ESI Funds;
- b) Even though **private sources** show a growing trend, it is insufficient in relation to the growth of public sources. The ratio between private and public sources is even more inappropriate.

With regard to national sources in the programming period 2014–2020, it is essential that investments into RD&I are more balanced, and there must be motivational tools in place for involving the business sphere in RD&I support to the largest extent possible.

5.3.1 Expenditure from ESI Funds

Expenditures from ESI Funds are based on the programmes approved by the Commission and on their current state of implementation, as well as spending plans for the next years. The main source of financing with regard to the fulfilment of the RIS3 objectives is the OP R&I as the basic RIS3 implementation instrument.

One of the prerequisites for successful RIS3 implementation is the allocation of adequate financial resources to the actions and activities defined in Chapter 7 Policy mix. The proposal for

the allocation of ESIF expenditures to the actions was prepared on the basis of expert assessment by the relevant ministries involved in RD&I support.

The methodology for the creation of the financial framework is as follows:

- In respect of the contribution, the OP R&I activities and the activities of other programmes of the Slovak Republic are tied to the RIS3 measures and activities, while the structure of the financial resources contributing to the RIS3 activities and measures is as follows: ESI Funds (reimbursable and non-reimbursable contribution), state budget (SB), other public and private resources. The reported spending by budget years should be seen as indicative and will be updated depending on the nature of the project, type of supported institutions (entities affecting the intensity of financing of the different sources), and the actual date of contracting of the projects;
- If one OP R&I activity contributes to several RIS3 activities, the allocation of the OP R&I was in most cases split proportionally between the RIS3 activities. Depending on the nature of the supported projects and their actual contribution to the RIS3 activities, it will be possible to update the allocation on the basis of regular monitoring and quantify the actual financial contribution to the fulfilment of the particular RIS3 measure and activity;
- The data concerning individual ministries represent just a data summary. The gross data need to be analysed and adjusted by removing data (financial allocations and measurable indicators) which do not contribute to the RIS3 activities, or adjust/reduce it in case the total value of the allocations or measurable indicators are double-counted under several RIS3 activities – the analysis will only be possible on the basis of factual implementation of projects under the schemes for the granting of contributions from the ESI Funds and national resources;
- The cross-border co-operation programmes must take into account that these funds will be invested not only in the Slovak territory, but also in neighbouring countries (while the amount of these funds cannot be quantified in advance); these therefore have a cross-border impact and contribute to the fulfilment of the RIS3 activities proportionally.

5.3.2 RD&I expenditure from the state budget

The aim of supporting the development of R&D and ensuring their contribution to the fulfilment of the RIS3 objectives requires an adjustment of the existing R&D funding philosophy in Slovakia and clear reporting of public R&D expenditures.

For transparent and clear reporting, it is necessary to develop a new methodology for the reporting of RD&I expenditures in co-operation with relevant institutions (Ministry of Finance SR, Ministry of Education, Science, Research and Sports SR, Ministry of Economy SR, Statistical Office of the Slovak Republic and others). The new methodology is also based on the findings and recommendations from the audit of the public administration budget expenditures on RD&I, which was conducted in 2015, and on the revision of expenditure proposed in 2016 and currently carried out by the Ministry of Finance SR ("MoF SR"). The audit and the revision of expenditure brought the following findings:

- R&D expenditure is gradually increasing, which will have a positive impact on enhancing Slovakia's economic activity;
- In international comparison, the share of R&D expenditure in GDP is still small;
- It is necessary to review the accreditation process in tertiary education and the way of financing and evaluation university science;
- The review of expenditure will ensure compliance of the ESIF programming activities with the priorities identified in R&D.

In order to improve R&D financing, the audit recommended, in respect of spending under the OP R&I, to create rules leading to faster implementation of R&D projects compared to the previous period. In addition to the grant instruments, financial instruments should be used increasingly to achieve the leverage effect of private resources. Collaboration with other partners in project financing, for example, with public higher education institutions or the private sector, can contribute to increased RD&I expenditure. The notice of the Statistical Office of the Slovak Republic ("SO SR") on issuing the statistical classification of public administration expenditure (SK COFOG) will also contribute to the transparency and comparison of R&D expenditure, while it is essential to consistently respect the new rules in this area. The Ministry of Finance recommended, in addition to the above mentioned changes in the Statistical Classification of Public Expenditures (SK COFOG), the SO SR in cooperation with the Ministry of Education, Science, Research and Sports SR, the Ministry of Economy SR and the Ministry of Finance SR to assess the possibilities and initiate the modification of the classification for the purposes of R&D expenditure monitoring, including innovation expenditure by means of SK COFOG further to Chapter 8. Data limitation.²¹

In the RIS3, the SK Government undertook to create conditions for increasing the RD&I contribution to stimulate economic growth. This commitment formed the basis for the strategic objective – to increase the share of total R&D expenditure to 1.2% GDP by 2020 (from 0.80% in 2012, 0.82% in 2013, 0.88% in 2014, and 1.18% in 2015²²). To achieve this objective, it is necessary to increase the amount of both domestic public and private resources against the current level and change the ratio of these two components for gradual growth of private resources. The achievement of the 1:2 ratio between public and private funds is a highly ambitious target. Specifically, this represents an increase in expenditure to 0.4% GDP from domestic public resources and to 0.8% GDP from private resources. When comparing Slovakia and V4 countries and the population of other European countries of similar size (Finland, Denmark, Norway), only Finland and Denmark achieved this ratio in 2012.

The RIS3 IP presents a draft budget revising the proposal submitted to the Commission in December 2016 as part of the Strategic Document. The draft budget indicated in Table 1 counts with an increase of expenditure from the state budget from €305 million in 2017 to €366 million in 2019.

The draft budget reflects the basic system changes in R&I financing. It is forward-looking, including for the year 2020, and is based on the following assumptions:

- 1) The amount of state budget expenditure for institutional and project funding will be set as a **binding indicator** defined as a percentage of this expenditure in GDP;
- 2) The percentage of the state budget expenditure will gradually grow in 2018–2020 until reaching the target of 0.4% GDP in 2020.
- 3) The growing expenditure/funds will be used primarily in project financing systems based on standard **competitive methods** common in the EU, such as Horizon 2020. This will specifically concern SRDA and VEGA projects, as well as State R&D Programmes. Against the 2017 expenditure, the annual increase in 2018, 2019 and 2020 will be as follows:
 - 2018 against 2017: €25.8 mil.
 - 2019 against 2017: €61.2 mil.
 - 2020 target against 2017: €98.0 mil.

²¹ Page 14, Audit of research and innovation expenditures of the public administration budget in the Slovak Republic.

²² The 2015 data is not representative, as it does not cover the last year of the programming period 2007–2013 marked by massive spending of available resources from Structural Funds under the OP R&D.

- 4) To improve the success rate of Slovak entities in obtaining funds from the European Research Area²³, it will be necessary to introduce in the SRDA and VEGA agencies programmes supporting excellent research. Competitive parameters similar to the ERC project scheme will be used in the selection of projects for funding.

The amounts in 2017–2019 will be as follows:

- Average annual planned amount of state budget funds (outside ESIF schemes) for the funding of higher education institutions, SAS, SRDA and sectoral science: approx. €334 mil./year;
- Average annual co-funding of ESIF from state budget funds: approx. €27 mil./year;
- Total average annual expenditure from the state budget: approx. €361 mil./year;
- Average annual contribution from EU public funds (ESI Funds) to the R&I system: €269 mil./year.

The total average annual amount of public funds for the Slovak R&I system will be approx. €630 mil./year.

²³ Slovakia, just like Estonia, obtained a financial contribution of 0.3% under Horizon 2020, while other countries with similar or smaller population size were more successful: Denmark – 2.4%, Finland – 2.1%, Norway – 1.8%, Ireland – 1.8%, Slovenia – 0.6%. Source: E-CORDA (extraction date: 2017/02/28)

Indicative plan of R&I funding from public resources in 2017–2020

Funding sources (in €'000)	2016 ²⁴	2017 ²⁴	2018	2019	2020
GDP forecast, b. c. (€'000) ²⁵	81,011,130	84,580,352	89,351,000	95,073,069	100,729,837
State budget expenditure (%GDP)	0.364	0.360	0.370	0.385	0.400
State budget expenditure on institutional and project R&I funding I, whereof:	271,251	281,147	309,693	348,213	380,395
A. National Science and Technology Development Programme (MoESRS SR budget chapter)	34,581	34,581	61,461	96,617	113,000
Slovak Research and Development Agency (project funding)	27,964	27,964	34,844	45,000	51,000
State research and development programme	0	0	20,000	45,000	55,000
Research and development incentives	3,895	3,895	3,895	3,895	4,000
Coordination of cross-sectoral activities (co-financing of projects of international R&D initiatives, science and technology services, CERN project, R&T popularisation, etc.)	2,722	2,722	2,722	2,722	3,000
B. Membership fees to international R&D organisations	9,097	9,097	9,097	9,097	9,097
C. University science and technology (including teaching staff cost for research) (MoESRS SR budget chapter)²⁶	145,454	151,588	152,650	153,650	164,650
whereof VEGA	9,400	10,400	12,000	13,000	16,000
D. Slovak Academy of Sciences²⁷	56,494	59,161	61,000	62,000	64,000
whereof VEGA	4,517	4,600	5,500	6,000	8,000
VEGA – universities and SAS – total	13,917	15,000	17,500	19,000	24,000
E. MoE SR expenditure	21,611	22,884	19,060	17,186	18,000
F. Other sectoral science and technology	23,249	23,279	23,085	23,236	28,919
MoESRS SR (VUDPaP, MLC, SHÚR, SRDA, KEGA, SCSTI)	8,823	8,936	9,542	9,542	9,542
Ministry of Agriculture and Rural Development SR (NLC, NPPC)	5,775	5,342	5,342	5,342	5,000
Ministry of Defence SR	3,896	4,818	5,270	5,619	7,000
Ministry of Culture SR	1,497	1,041	1,078	1,080	1,700
Other ministries (Ministry of Foreign and European Affairs, Ministry of Environment; Ministry of Labour, Social Affairs and Family; Ministry of Transport and Construction, ÚGKaK SR, SO SR, Nuclear Regulatory Authority, Ministry of Economy) ²⁸	5,634	6,583	4,253	5,266	6,406
OP R&I expenditure, whereof:	270,167	282,404	295,495	309,514	317,118
OP R&I expenditure (EU source) ²⁹	245,277	256,379	268,264	280,991	287,894
OP R&I expenditure (co-financing from SB) ²⁹	24,890	26,025	27,231	28,523	29,224
Public R&D expenditure – Total	541,418	563,551	605,188	657,727	697,513

Source: compiled by MoESRS SR, SVVVI, 2017

²⁴ The data is from the government draft of the 2017 State Budget Act

²⁵ MoF SR: Macroeconomic Prognosis of 06 February 2017; available at http://www.finance.gov.sk/Components/CategoryDocuments/s_LoadDocument.aspx?categoryId=11353&documentId=15411

²⁶ The budget of the expenditure on university science and technology is approved (the adjusted budget is €160,522,000).

²⁷ Science and technology expenditure of the SAS budget chapter, including expenditure on the Office of the SAS Presidium (the budget for 2016 is approved – the adjusted budget is €62,282 ('000)).

²⁸ Under „Other ministries“ are R&D expenditures of MoE in the amount of €700,000 in 2016 and in the amount of €1,600,000 in 2017

²⁹ The data does not reflect the reduced national package for Coherence Policy 2017–2020 in the total amount of €35,744,055.

In summary, in 2017–2019, the amounts of domestic and EU public funds will be relatively balanced with slight prevalence of domestic funds. This situation, however, cannot represent a permanent solution for resources in the financing system, especially after 2023. Since upon completion of the current programming period neither the form nor the amount of the potential EU contribution to the national R&D systems is clear, in Slovakia it is necessary:

- Stabilise the system of R&I support mainly through national resources and strengthen it progressively so that Slovakia gets closer to the EU average from the middle-term perspective;
- Keep within the R&I system the resources in the form of ESIF co-financing from the state budget in the amount of approx. €27 million/year³⁰;
- Gradually activate private business resources to ensure further sustainability of the Slovak R&I system.

5.3.3 RD&I expenditure from private funds

In order to reach R&D expenditures of 1.2% GDP in Slovakia in 2020, it will also be necessary to ensure an **increase in the share of private funds in RD&I support**. Given the current low share of private investments in RD&I, it is necessary, in addition to part-funding of RD&I projects (state budget – off-budget funds), to implement indirect support instruments as incentive factors for private sector investment in RD&I.

Business investment in R&D activities should increase from 0.31% of GDP in 2012 to 0.8% of GDP in 2020. To this end, it will be necessary to implement direct financial instruments such as innovation vouchers, loan programmes and venture capital, Innovation Fund activities, as well as indirect financial instruments, such as tax relief for businesses that have the potential to positively influence business investment in RD&I³¹.

Business investment in innovation should also be stimulated by reducing the administrative burden in obtaining aid, providing sufficient information on state support possibilities, creating a database for partner search for collaboration (public and private R&D institutions, innovating enterprises), organising conferences and workshops for the establishment of contacts, taking a common approach to addressing innovation issues in a comprehensive way, and by implementing joint innovation projects.

In April 2017, the SK Government undertook in the National Reform Programme 2017 to support investments in R&D by significantly increasing the tax advantage on R&D expenditure in enterprises. The preparation of further measures to strengthen R&D financing by the business sector will require mutual co-operation between the state executive bodies and employers' representatives. In this context, it will be essential to complete the analysis by the Ministry of Finance to enhance tax incentives for R&D support and the analysis of private investment stimulation as a result of the consultation process with the business sector.

5.3.4 Reform of the RD&I financing system

³⁰ an average amount for years 2016-2020

³¹ Article 30 of Act No. 333/2014 Coll. on changes and amendments to Act No. 595/2003 Coll. on Income Tax, as amended, and on changes and amendments to some other acts, established the possibility to deduct R&D expenditure from the income tax base, as detailed in the Guidance on the Deduction of R&D expenditure (cost):

https://www.financnasprava.sk/img/pfsedit/Dokumenty/PFS/Profesionalna_zona/Dane/Metodicke_pokyny/Priame_dane/2016/2016.04.19_MP_par30c.pdf. At present, the Act on SMEs is in the process of preparation, aimed to defined the forms and ways of providing support and the competence of the Ministry of Economy SR in the field of direct support and better regulation (the act is planned to enter into effect on 01 January 2017).

The structure of the financial plan and the budgeting of R&D expenditure will be subject to adjustments following the planned activities and tasks set out in the **RIS3 Planning Document** for the relevant years. The reform of the RD&I financing system is a systematic and continuous process due to which further tasks targeting major changes in RD&I financing will be specified in the **RIS3 Planning Document**.

For an effective fulfilment of the RIS3 objectives and proposed measures, it is essential to reform the RD&I financing system in Slovakia, which is accompanied by the following measures:

- Creation of a comprehensive system of instruments for the support of RD&I;
- Introduction of a binding indicator to increase RD&I expenditure in line with the review of R&D expenditure;
- Definition of research priorities oriented on economy, especially on the support of industry and future commercialisation for new key technology, materials and production process in line with the RIS3³²;
- Support focusing on RD&I areas of RIS3 specialisation priorities by using and increasing the amount of competitive grant/project financing of RD&I in line with one of the principal objectives of the RIS3 – change of the proportion of financing of basic and applied research to 30% : 70%;
- Implementation of indirect RD&I support instruments and adjustment of the existing ones, accompanied by an analysis of the possibility to increase the amount of deductible R&D cost from the taxable corporate income;
- Stimulation of the involvement in research activities financed from off-budget resources with a focus on involvement in international and European programmes (e.g. EU framework programmes);
- Concentration of RD&I expenditure from all sources on RIS3 measures.

The RD&I financing must respect the innovation cycle, and the proposed instruments within the financing system must be interlinked so that to allow for effective support at each state of the cycle.

5.4 Policy measures

For the purposes of an effective implementation of the RIS3, the measures are based on the discussion between the MoESRS SR, the MoE SR, OVPMII and relevant ministries which contribute to the RIS3 implementation in a complementary manner.

Three basic groups were identified in the process of preparing the plan of measures and tasks:

- **systemic** – with direct impact on changing the system of R&I management, support, stimulation and development in Slovakia by implementing new principles, rules, frameworks, schemes, platforms and other measures;
- **legislative** – contributing to the change of the legal framework of R&I support and evaluation in Slovakia in connection with the RIS3 implementation;
- **implementation** – calls, invitations, schemes and other financial and non-financial stimuli providing direct or indirect financial support to the performance of the activities based on strategies, concepts, ESIF programmes, systemic measures, etc.

The planned measures also reflect the order of steps to ensure ex-ante conditionality 1.1 and the Plan of RIS3 Crisis measures approved by the Council Presidium.

³² Page 30, sub-section 8.2 Research oriented on smart industry, Smart Industry Concept.

5.5 Implementation schedule

Table 1: System measures

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
1.	Increasing the effectiveness and intensity of R&I coordination at the inter-sectoral level through the Government Council for Science, Technology and Innovation – Governance	<p>Intensify and increase the effectiveness of coordination of R&I areas through the Council at the inter-sectoral level. This will be implemented in two ways:</p> <ul style="list-style-type: none"> a.) regular Council meetings on the basis of the annual plan of Council tasks and related thematic programme of the Council meetings; b.) immediate preparation and approval of the annual plan of tasks and documents to be discussed by the Council and their consistent implementation. <p>The main purpose is to ensure an effective and dynamic management of the Council meetings and an effective feedback on the implementation of the Council recommendations within the ministries and in the application practice.</p> <p>Preparation of a proposal for changes and amendments to the Council Statute to extend its competences in the field of RIS3 implementation management, appointment of a Permanent Committee, creation of expert working groups for RIS3 prioritisation;</p> <p>Submission of the proposal for changes and amendments to the Council Statute to the inter-ministerial consultation procedure and subsequently to the SK Government meeting.</p>	OVPMII	June 2017
2.	Completion of the optimisation of agency structures to support research and development and promote innovation and investment development	Completion of the transformation process of the agencies operating in the relevant field in line with the principles of the Smart Specialisation Strategy	MoESRS SR, MoE SR	December 2017
3.	Elaboration of the state R&I policy	The state R&I policy will be prepared on the basis of the immediate complex inter-sectoral audit of the R&I system in Slovakia by means of an international institution specialised in R&I. The state policy will include a description of sustainable financing after 2020, including institutional financing, state programmes and related policies. Account will be taken of the use of the existing and effectively created infrastructure potential. The document will be submitted to the Council meeting.	MoESRS SR	December 2017
4.	Creation of a research infrastructure mapping system	<p>Creation of a research infrastructure mapping system composed of the following stages:</p> <p>Stage 1 – passportisation of the existing R&I infrastructure in Slovakia,</p>	MoESRS SR in co-operation with other	December 2017

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
		<p>including the setting of minimum standards in relation to applying the “value for money” principle and thematic linking of the infrastructure and the RIS3;</p> <p>Stage 2– set-up of a central register of research infrastructures – set-up of an information system serving for the provision of information on available research infrastructure with the aim to ensure its effective use by research institutions from all sectors, build co-operation between these sectors and ensure further development of the research infrastructure and for the purposes of supporting projects under the Operational Programme Research and Innovation. The central register will be based on the passportisation of the existing infrastructure and will be continuously updated on the basis of investments in new research infrastructures.</p> <p>Stage 3 – update of the National Plan for Research Infrastructure Use and Development (SK Roadmap 2016) – the update will be based on the fulfilment of the tasks defined in the SK Roadmap 2016³³, which include Strategic Evaluation of the Research Infrastructure, and on passportisation by 30 December 2017 and subsequently as needed.</p> <p>The creation of this system will contribute to ensuring the targeting of investments <i>“exclusively in infrastructures guaranteeing their sustainability and links to the key industries and dynamising the creation and growth of a critical mass of research and innovation teams”</i>³⁴.</p>	ministries	
5.	Complete the transformation of the Slovak Academy of Sciences	<p>The completion of the SAS transformation is linked to the elaboration and submission of the draft SAS transformation plan to the Council meeting, which will take into account the conclusions of the SAS audit. The content of this proposal will focus on:</p> <ul style="list-style-type: none"> • the background of transformation of the SAS as a whole and of its organisations; • system of management of the Academy and of the activities of its self-governing bodies; • the evaluation of the results of research and development activities and the Academy’s key development projects. <p>This task relates to the preparation of the legislative intent and draft of the new Act on the SAS.</p>	MoESRS SR SAS	2018

³³ Page 76, Table 7 Strategic tasks, National Plan for Research Infrastructure Use and Development (SK Roadmap 2016)

³⁴ Page 9, Section 4, Task 9 Proposal for Increasing the Effectiveness and Performance of the Research and Innovation System

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
6.	Conduct an international audit of science and research	<p>The basic task of the international quality audit of the period 2007–2015 is to assess the entire R&I system in Slovakia and its key actors and processes with a focus on the identification of its main problems and a proposal of measures to improve it. The audit is expected to address four key issues:</p> <ol style="list-style-type: none"> 1. Improving the system of management of public research and innovation institutions, universities, as well as related agencies or government organisations; 2. Optimisation and simplification of the management system with the aim of: <ul style="list-style-type: none"> increasing private investments into R&I; enhanced co-operation between research institutions, businesses and other users of the research results; addressing “societal challenges”; harmonisation of national and European policies, strategies and programmes; rating of the most important R&I actors; increasing the effectiveness of R&D knowledge transfer; 3. Effective use of the state budget and ESIF Funds for R&I through good balance between grant-based and institutional financing; 4. Identification of top actors of Slovak scientific research. <p>The task to conduct the audit arises from the SK Government Manifesto 2016–2020 and is linked to task B.9 of the Council Resolution of 16 March 2017; the date for completing the proposal for the international qualitative audit of science and research in Slovakia is 30 May 2017.</p>	MoESRS SR GPRI, OVPMII	December 2017 – the start of audi; completion of audit during 2018
7.	Reform the RD&I financing system	<p>The reform of the RD&I financing system will consist of several tasks/measures:</p> <ul style="list-style-type: none"> Introduce R&D expenditure from the state budget as a binding indicator for defining the percentage of research expenditure in the GDP. This indicator will ensure the coordination of state budget funds allocated to R&D under individual budgetary chapter (all public institutions – ministries, central government authorities, SAS, higher education institutions); Review the existing system of institutional funding of R&D, including specification of the minimum share of institutional funding of academic, university and sectoral research; Increase the share of competitive funding mainly through SRDA and VEGA projects; Prepare new methodology for the reporting of RD&I expenditure – 	Council, OVPMII MoESRS SR, MoH SR and other relevant ministries SO SR	December 2018

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
		<p>creation of rules for faster implementation of RD&I projects using grants and financial instruments (leverage effect of private funds). Assessment of the possibilities and initiation of adjustments in the classification of public administration expenditure (SK COFOG) (SO SR) with the aim to monitor expenditure on R&D and innovation. The methodology will be based mainly on the conclusions and recommendations from the analysis of the method of reporting RD&I expenditure and of the possibilities of its adjustment – analyses from the RIS3 Implementation Evaluation Plan;</p> <ul style="list-style-type: none"> • Review the current scheme of R&D expenditure (cost) deduction under Article 30c of Act No. 595/2003 Coll. on Income Tax and propose a more effective and administratively less demanding system; • Carry out an analysis of research and innovation financing and its stimulation from private funds. 		
8.	RIS3 prioritisation	<p>RIS3 prioritisation leading to reducing the number of R&I specialisation areas to be financed from ESI Funds, national resources and other EU support instruments. The prioritisation process will entail the following steps, some of them time-overlapping:</p> <ul style="list-style-type: none"> • Set-up of an expert working group under Article 7 of the Council Statute to set the priorities for the funding of RIS3 areas of specialisation in line with task B.5 of Council Regulation of 16 March 2017³⁵; • Specification of the methodology for defining the areas of specialisation; • Mapping of the grant applications received so far and of their links to the areas of specialisation in order to identify the absorption capacity and the focus of the long-term strategic research priorities; • Mapping of the grant applications received so far and of their links to the areas of specialisation with regard to the calls launched by the MoE SR; • Sectoral analyses by the MoE SR for the purposes of the prioritisation of RIS3 financing areas; • Setting of the priorities for the financing of the areas of specialisation by the Permanent Committee in line with the Council Resolution on the document <i>“Proposal for Increasing the Effectiveness and Performance of the Research and Innovation System in the Slovak Republic”</i> of 16 March 2017, task B.5. Propose 	MoESRS SR, MoE SR, OVPMII and other relevant ministries	<p>June 2017 (stage I)</p> <p>September 2017 (stage II)</p>

³⁵ Propose measures for the targeting of R&I investments in infrastructures guaranteeing their sustainability and links to key industries.

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
		measures for the targeting of R&I investments in infrastructures guaranteeing their sustainability and links to key industries by defining the domains for RIS3 support under RD&I.		
9.	Implementation of a new system for the evaluation of creative activities of higher education institutions³⁶	The measure is designed in the context of strengthening competitive financing to the detriment of the current institutional financing of higher education institutions by strengthening the evaluation indicators focused mainly on their creative activities.	MoESRS SR	December 2018
10.	Preparation of draft State R&D Programmes 2017–2022 and its approval by the SK Government	<p>Preparation of draft State R&D Programmes for the period 2017–2022 (“SRDP”) with a perspective until 2030 in compliance with Act No. 172/2005 Coll. on the basis of the partnership principle and their submission to the SK Government by the end of 2017.</p> <p>SRDPs will be prepared within the scope of the RIS3 priorities and on the basis of the joint outputs of the Council’s working group. The SRDP topics will reflect the following needs:</p> <ul style="list-style-type: none"> • co-operation of businesses with the academic sector; • existing industrial R&D capacities; • the addressing of societal problems and challenges. <p>Creation of bodies for the State R&D Programmes, preparation of a matrix of calls for the SRDPs for launch in 2018. Thematic calls for SRDP projects will be gradually and continuously launched from 2018 to 2022 in line with the matrix of SRDP calls. 70% of the state programme funds will be invested in the support of applied research.</p>	MoESRS SR in co-operation with partners	September 2017
11.	Preparation of a system package of pro-growth measures in the form of R&D stimuli and submission of the stimuli scheme to the SK Government	The system package of pro-growth measures in the form of R&D Incentives will include concrete proposals for topics of applied research and experimental development projects with concrete outputs with direct application in practice and their parametrisation in terms of their factual and economic aspects, as well as parametrisation of the target outputs. The aim of the projects is the initiation of R&D in the business sector, support for the building of new R&D capacities in businesses, development of the existing R&D capacities, and overall increase in private R&D expenditure, as well as support of co-operation between businesses	MoESRS SR MoF SR	June 2018

³⁶ **Creative activity** means educational, research, development, art or other creative activity.

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
		<p>and the academic sector. A matrix for the publishing of calls for R&D incentives applications by means of public tenders will be prepared for the purposes of the implementation of the package.</p> <p>The thematic focus will take into account the RIS3 priorities and objectives and the interest of support in line with Act No. 185/2009 Coll. with implementation in the next periods.</p> <p>Provision of indirect financial aid within the implementation of the R&I Incentive scheme pursuant to Article 3(b) of Act No. 185/2009 Coll. in the form of income tax reliefs. This task was carried out by publishing the Notice of the Ministry of Education, Science, Research and Sports of the SR on the Submission of Applications for R&D Incentives.</p> <p>This task was preceded by the approval by the SK Government of the financial allocation and topics for incentives under Act No. 185/2009 Coll.</p> <p>70% of the incentive funds will be invested in the support of applied research. An estimate for the years 2019 and 2020 with an interim evaluation in 2020, result in 2019.</p>		
12.	Preparation of a planning document with objectives and priorities for the period 2017–2022	The planning document will set the objectives and priorities in line with the RIS3, these being further detailed in programmes and projects for the period 2017–2022	All ministries and CGAs	September 2017
13.	Ensuring human resources for an innovative Slovakia	In order to increase the employability of graduates of secondary schools and higher education institutions, it is essential to immediately launch the reform of education in Slovakia based on labour market requirements and demographic developments. As a key measure, we propose an immediate change in the funding system for secondary schools and higher education institutions based mainly on the success rate indicators for graduate employment in their respective fields.	All ministries and CGAs	June 2018
14.	Set-up of a technology transfer system	Creating conditions for the efficient use of public facilities for technology transfer into practice, and for institutional and commercial financing of the operation of the public research infrastructure workplaces that were ensured from ESI Funds in particular, connected with economic practice, under clear conditions accentuating State aid principles; ensuring increased protection and commercialisation of intellectual property	MoESRS+MoE+OVPMII+SAS	2018

Table 2: Legislative and implementation measures

Ref. no.	Measure	Description of the measure	Responsible	Deadline
1.	Amendment to Act No. 172/2005 Coll. on the Organisation of State Support of Research and Development	The amendment aims to clarify the relationships in that part of the R&I environment which is financed exclusively from the state budget with respect to both the institutional-organisational and financial aspects. The organisational and financial stabilisation of the SRDA seems to be the most effective model. In the future, its competences should consist mainly from the management of general calls, demand-driven calls, state R&D programmes and possibly incorporation of the budgets under other R&I schemes. The key indicator of the sustainability of R&I expenditure from the state budget requires the definition of the % rate of state budget spending to GDP.	MoESRS SR	June 2018
2.	Amendment to Act No. 595/2003 Coll. as amended by Act No. 333/2014 Coll. on Income Tax	The aim is to review the current scheme of the “super-deduction” of tax expenditure on R&D in order to increase the % rate of the super-deduction and simplify the administrative requirements for the mechanism of the deduction of R&I expenditure.	MoF SR	January 2018
3.	Amendment to Act No. 182/2009 on Research and Development Stimuli	The amendment to Act No. 182/2009 on R&I stimuli will introduce an effective prioritisation of funds by RIS3 areas and objectives and will adjust the share between private financing of project intents and projects financed through the legal scheme.	MoESRS SR	June 2018
4.	Draft Act on Public Research Institution, including amendment to Act on the Slovak Academy of Sciences	The proposed legislative measures aims to enhance co-operation between the public research, academic research and private research sector so that public and academic research institutions can enter business and property relationships concerning R&I with full protection of intellectual property rights and financial profitability.	MoESRS SR	March 2018
5.	Amendment to Act No. 131/2002 Coll. on Higher Education Institutions	Change of the parameters of the higher education institutions financing system, focus on support based mainly on the graduates’ success rate in finding a job in their field, creation of systemic legislative conditions for content management according to practical needs and development forecast.	MoESRS SR	June 2018
6.	Draft Act on Ensuring the Quality of Tertiary Education	Systemic modification of the quality assessment system of the outputs of universities’ scientific and research activities with the aim to extend the key evaluation criteria (citations, publications) in line with the objectives oriented on practical application of R&D results, as well as balanced and quantified results of applied research and development	MoESRS SR	June 2018
7.	Increasing the objectivity of the evaluation process within agencies ensuring competition financing of R&I	This measure will ensure mandatory wider representation of the business sphere and international research experts in the evaluation committees approving funds of competitive nature.	MoESRS SR MoE SR	September 2017

Ref. no.	Measure	Description of the measure	Responsible	Deadline
8.	Draft Act on State Administration in the School System and on School Self-Government	Ensure human resources for an innovative Slovakia and increase the influence of CGA, in particular the MoESRS SR, on the content focus and organisation of the school system, ensure compliance of human resources requirements with RIS3 priorities and stimulation of the self-government	MoESRS SR	2018
9.	Draft Act No. 523/2004 Coll. on the Budgetary Rules in Public Administration	Creation of the conditions for ensuring multi-source financing possibilities	MoF SR	2018
10.	Draft Act No. 583/2004 Coll. on the Budgetary Rules in Territorial Self-Government	Creation of the conditions for ensuring multi-source financing possibilities	MoF SR	2018
11.	New Act on Life-Long Learning	Setting of an effective system of monitoring and forecasting of labour market needs, bringing continuing education in compliance with labour market needs, specification of the processes to ensure quality of continuing education; creation of a single system of career counselling in co-operation with the MoLSAF SR.	MoESRS+ MoLSAF	2018

6 RIS3 Monitoring and Evaluation

The management of the RIS3 implementation includes as its inseparable part an analytical approach and the implementation of RD&I policies based on actual data and facts (evidence-based policy). The setting of effective and targeted RD&I support is based on a functioning and transparent system of monitoring and evaluation of RD&I support from all available sources. The RIS3 monitoring and evaluation system is key to the monitoring and evaluation of the fulfilment of the RIS3 objectives, the Europe 2020 strategy and the targets of the National Reform Programme of the Slovak Republic, and to the setting of concrete RD&I instruments, programmes and initiatives and in connection with the achievement or insufficient achievement of the set objectives, thus ensuring early adjustment of these RD&I support instruments.

6.1 RIS3 monitoring

The key part of the functioning of the entire RD&I ecosystem is continuous control of the fulfilment of the objectives through specific measures currently covering the period 2017–2019 based on the RIS3 IP and the assessment of the setting and effectiveness. For the success of the planned measures and in view of the RIS3 focus, it is necessary to ensure links between organisation, sources and time, while taking into account the RIS3 monitoring and implementation system through its multi-level structure.

6.1.1 Monitoring system

The basic framework and the monitoring system principles were defined in the RIS3 itself³⁷, and this document further details the various monitoring aspects. In order to define the responsibilities for the different monitoring areas, and to obtain, process and evaluate source data, it is necessary to detail the coordination of the individual processes within the monitoring system as follows:

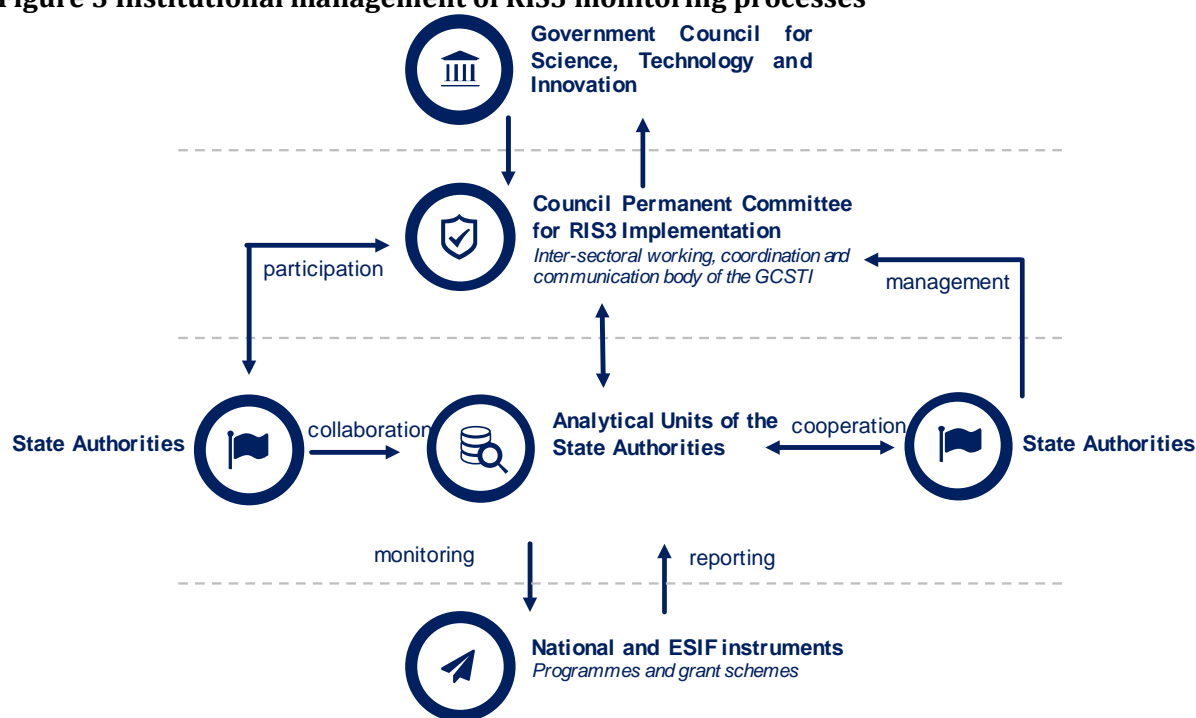
- The Council is responsible for RIS3 monitoring and evaluation;
- The basic document for the RIS3 implementation is the “RIS3 Planning Document”. The PCS3 is responsible for the elaboration of the RIS3 Planning Document, for the setting of the policy measures to ensure the implementation of the RIS3 activities with links to the objectives and priorities at the level of the domains to be carried out under the programmes and projects for the period 2017–2022, including proposals for review of legislation. The RIS3 Planning Document linked to the domains is prepared by the RIS3 Coordination Point in co-operation with the Research Agency, Technology Agency, relevant managing authorities of the programmes, relevant central state authorities, organisations within the founding competence of central government authorities and other central government authorities. The RIS3 Planning Document contains information from the indicative schedules of planned calls under programmes identified with respect to the RIS3, grant schemes of ministries and other support instruments of the Slovak Republic and planned calls under EU support instruments;
- Under the Statute of the Council, the PCS3 is responsible for the methodological activity and for the preparation of methodological documents representing the horizontal framework for the RIS3 implementation. The RIS3 Coordination Point carries out methodological activities and prepares methodological documents for the relevant domains and the RIS3 Implementation Report;
- The PCS3 is responsible for the monitoring of the RIS3 implementation and for the fulfilment of the RIS3 implementation plans in the relevant domains, while using the available capacities of the central government authorities, such as the analytical units;

³⁷ Page 79 and further, Section 8 Monitoring and Evaluation, RIS3

- Regular Summary Monitoring Reports – reports from the monitoring of the programmes and grant schemes – to be presented by the analytical units to the RIS3 Coordination Point. Once approved by the RIS3 Coordination Point, the Monitoring Reports are submitted to the PCS3 for review and to the Council for approval;
- Regarding programmes of the Slovak Republic financed from the ESI Funds, the monitoring system is based on project monitoring reports and ITMS2014+ data presented through analytical units;
- Regarding ministry grant schemes, the monitoring system will be based on the monitoring reports and data presented by the analytical units;
- This process includes the RIS3 Implementation Report (hereinafter referred to as the “Report”) evaluating the contribution of the measures to the accomplishment of the RIS3 objectives and the contribution to the fulfilment of the SK Partnership Agreement 2014–2020 and to the targets of the National Reform Programme of the Slovak Republic, the preparation of which falls within the responsibility of the PCS3. The report is produced by the RIS3 Coordination Point;
- The PCS3 is responsible for ensuring the preparation of the Reports;
- The PCS3 is responsible for the evaluation of the RIS3 implementation by means of monitoring reports and proposals for measures to improve the RIS3 implementation in the specific domains. The PCS3 submits the approved evaluation to the Council meeting.

The following scheme shows the proposed institutional management of the RIS3 monitoring and evaluation:

Figure 3 Institutional management of RIS3 monitoring processes



6.2 Monitoring process

6.2.1 RIS3 Coordination Point

The institutional communication within the RIS3 implementation includes the RIS3 Coordination Point. The management processes are coordinated by a OVPMII department that acts as PCS3 secretariat as well. The basic duties of the coordinator are as follows:

- Preparation of summary information for the meeting of the PCS3, ensuring the topicality and correctness of the information stated in the summary monitoring reports presented by the analytical units;
- Preparation of the Report, including proposals for measures for improvements;
- Ensuring the STLP work regarding the proposals for adjusting the priorities in the areas of specialisation and their submission to the PCS3;
- Co-operation with analytical units with regard to the evaluation of the smart specialisation domains;
- Co-operation with the Technology Agency and Research Agency, the MA and central government authorities in the preparation of the RIS3 Planning Document regarding the calls targeting the RIS3 areas;
- Co-operation with expert working groups for the purposes of EDP coordination and prioritisation of the RIS3 areas.

6.2.2 Monitoring at the national level

The analytical units as representatives of the central state authorities are the contact points for data collection and evaluation in co-operation with the RIS3 Coordination Point.

At present, the following analytical units are involved in the data monitoring process for the RIS3 at the level of central state authorities:

- Institute for Strategies and Analyses, SK Government Office;
- Strategy Institute, Ministry of Transport and Construction SR;
- Health Policy Institute, Ministry of Healthcare SR;
- Department of Economic Instruments and Analyses, Ministry of Environment SR;
- Analytical Centre, Ministry of Labour, Social Affairs and Family SR;
- Education Policy Institute, MoESRS SR;
- Centre for Economic Issues, MoE SR;
- Analytical and Methodological Unit, Ministry of the Interior SR;
- Analytical Centre, Ministry of Justice SR.

The Council for Budgetary Responsibility, established under Constitutional Act No. 493/2011 Coll. on Budgetary Responsibility, has a special position among the analytical units. This Constitutional Act aims to ensure long-term sustainability of the Slovak economy, effective use of public funds, and enhance transparency.

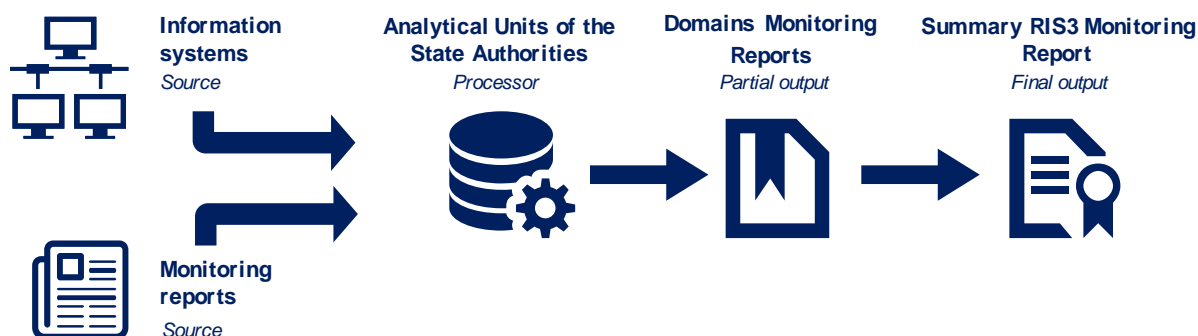
The prerequisite for an effective functioning of the analytical units is to ensure regular and unlimited access to relevant source data. It is essential that access to source data is ensured in a coordinated way and that the analytical units are provided concurrence by the managing authorities ("MA") responsible for the implementation of the programmes and by the competent units responsible for the implementation of grant schemes for RD&I funding. The analytical units will submit to the RIS3 Coordination Point summary data concerning the measurable indicators (MI) and financial fulfilment as part of the Monitoring Reports for the relevant programmes and grant schemes. The RIS3 Coordination Point will evaluate this data, propose measures to improve the RIS3 implementation, and present these measures at the PCS3 meeting.

The analytical units are required to submit to the RIS3 Coordination Point and subsequently to the PCS3 the Monitoring Report data for the purposes of preparing the regular Annual Report by 31 March in order to ensure the drawing up of the final Report by 30 May of the year following

the reference period and by the same day of every next year until 2023, and by 30 June for the Report to be produced in 2019.

The Report for the respective year describes the current state of fulfilment of the RIS3 objectives, measures and activities and the proposal for recommendations for the next year regarding the instruments, programmes and activities in the field of RD&I support, while identifying the future development potential within RD&I support.

Figure 4 Sources and output of the Monitoring process



6.2.3 Monitoring at the level of programmes financed from ESI Funds

The monitoring of the RIS3 specific and strategic objectives will be based on the monitoring of the projects of relevant programmes under the calls at the level of programmes. The MI data will contain data based on Project Monitoring Reports. The project MIs will be subsequently aggregated in the Monitoring Report at the programme level. The Monitoring Reports are presented to the analytical units within the scope and by the deadlines set in the Methodological Guidelines of the Central Coordination Authority (“MG CCA”) no. 15, MG CCA No. 26 on project sustainability and project changes, and Monitoring Report Templates No. 25 and 27.

6.2.4 Monitoring at the level of SK support instruments

The monitoring of the RIS3 specific and strategic objectives will be based on the monitoring of the projects of relevant grant schemes of ministries and agencies for the support of the RIS3 objectives. Given the fact that the grant schemes do not specify the process of monitoring and evaluation of these schemes, the Monitoring Report Template from the programmes financed from the ESI Funds should be used to the necessary extent. The MIs of these schemes are usually linked to the MIs of the budget chapter of the relevant ministry. The Monitoring Reports must have a single format at the level of the programmes financed from the ESI Funds and link them to the MIs of the budget chapter.

6.2.5 Monitoring at the level of EU support instruments

The national contact points provide concurrence in the provision of data on projects supported under other EU programmes and initiatives. The MIs of these programmes and initiatives and the project data are linked to the implementation of the Strategy 2020 and can be transformed at the level of the RIS3 objectives. The Monitoring Reports must have a single format at the level of the programmes financed from the ESI Funds.

6.2.6 Monitoring of the RIS3 objectives

The key part of the RIS3 monitoring is the MI system composed of the following set:

- context MIs linked to RIS3 strategic objectives;
- result MIs taking into account the RIS3 strategic objectives;
- output MIs based on the proposed RIS3 measures and activities.

The selection of the MI set for the RIS3 is based on available data monitored at the level of the national statistics and at the level of the monitoring systems of the programmes financed from the ESI Funds which will contribute through their interventions to the fulfilment of the RIS3

objectives and measures. The output MI set is grouped by thematic areas³⁸ according to the relevant RIS3 measures. Such MI set, however, should take into account the sectoral MIs, which are linked to sectoral (ministerial) budget items. This MI system reflects the strategic priorities of public policies which form part of the RIS3 strategic and specific objectives. The MI set will have to be linked to the domains, and it will be therefore necessary to review it and extend it by MIs from other EU support instruments.

In order to obtain complex data on the MIs and the relationship between the activities and the financial implementation of the project, the interventions are monitored by means of Monitoring Reports prepared by the analytical units on an annual basis within the deadlines stated in sub-section 6.2.2.

The Monitoring Report produced by the analytical units contains the following elements in particular:

- The links between the project activities and MIs with regard to the RIS3 strategic and specific objectives;
- The links between the project activities and financial implementation with regard to the RIS3 strategic and specific objectives;
- An overview of spending by programmes financed from the ESI Funds and grant schemes financed from the state budget or other EU support instruments;
- Problems and risks identified, as well as other information related to the implementation of the projects with regard to the RIS3 strategic and specific objectives;
- Overview of interventions split by RIS3 strategic and specific objectives and measures, indicating the amount of the funds;
- Project sustainability with regard to the RIS3 strategic and specific objectives;
- Information on the course of implementation of the RIS3 using evaluation reports, analytical studies prepared by the analytical units with possible recommendations for corrective and preventative measures with regard to the RIS3 objectives.

In the process of preparation of the Monitoring Reports, the analytical units closely co-operate with the managing authorities of the programmes and the competent bodies managing the provision of finance from ESI Funds, grant schemes and national contact points for the implementation of the EU support instruments.

³⁸ The thematic areas reflect the nature of the indicators, and this split is based on the thematic categorisation of the general indicators under the ESI Funds monitoring system – „Guidance Document on Monitoring and Evaluation – Concepts and recommendation“.

6.3 Implementation timetable

From the point of view of timing, the first essential step within the Implementation Timetable (IT) is to set up the “Monitoring Platform”. The IT is prepared on the basis of the need to take the necessary steps for correct and effective monitoring, as identified in the text.

Ref. no.	Measure	Description of the measure	Responsibility	Deadline
1.	STLP set-up	Set-up of the Slovak Technology Leadership Platform based on the “learning by doing” principle; objective consistent and long-term continuation of the EDP process, identification of key activities and products for Slovakia’s economic and research specialisation	OVPMMI+MoE SR+ MoESRS SR	June 2017
2.	Set-up of the Monitoring Platform	Set-up of the Monitoring Platform (principally from the analytical units of relevant ministries) with the purpose of making the actors familiar with the RIS3 monitoring concept and the tasks of the actors within the monitoring process	OVPMMI	July 2017
3.	Draft RIS3 Monitoring Report	The Monitoring Report will serve for the collection of data on financial resources and measurable indicators from relevant projects with regard to the RIS3 specific and strategic objectives.	OVPMMI	December 2017
4.	Draft Summary RIS3 Monitoring Report	The Summary Monitoring Report will serve for the purposes of aggregated data on financial resources and measurable indicators with regard to the RIS3 specific and strategic objectives with links to RIS3 domains	OVPMMI	December 2017
5.	Preparation of the methodology for the preparation of the RIS3 Implementation Report	The methodology for the preparation of the Report will include the utilisation of the S3 on-line platform instruments. The data in the Report will cover the period from 2014.	OVPMMI	December 2017
6.	Establishment of measurable indicators at the level of Slovakia’s support tools	Establishment of measurable indicators of grant schemes in relation to strategic and specific objectives of RIS3	OVPMMI + CGAs	December 2017

6.4 RIS3 Evaluation

6.4.1 RIS3 Evaluation System

The basic requirements for the RIS3 evaluation are covered in a separate scheme planning the general and trend analyses of selected areas or behaviour (RIS3 Implementation Evaluation Plan). The RIS3 evaluation system is based on the evaluation of the RD&I support instruments enabling the identification and understanding of the effects of the activities through which the programmes and schemes (national and ESI funds) contribute to the creation of a critical base on the RD&I policy. The evaluation of the contribution to the RIS3 will form part of the evaluation activities of the different support instruments.

For the purposes of an effective RIS3 evaluation system, the following types of evaluations will be carried out:

- 1. Continuous evaluation of the RIS3 implementation and of the fulfilment of its objectives** – focusing on the overall assessment of the institutional and content aspects of the RD&I support system and on the RIS3 implementation in relation to the objectives, relevance, effectiveness and efficiency of the set RD&I support instruments, as well as the potential for further development and prioritisation/revision of the RIS3 areas of specialisation. The aim will be to verify progress in the programme implementation and propose changes and improve the quality, effectiveness and overall functioning of RD&I management by identifying specific recommendations. Such assessment, including comprehensive evaluation of the implementation of the strategic and partial objectives, will be implemented once – in 2020.
- 2. Thematic evaluations** – to be conducted with the aim to assess the qualitative aspects of the implementation and procedure related to specific topics and instruments which form part of or entail the entire RD&I support and management system or are related to the areas of specialisation.
- 3. Evaluation of the impacts of the RIS3 implementation** – aimed to evaluate the RD&I support in connection with the fulfilment of the RIS3 objectives, the achievement of smart, sustainable and inclusive growth, and to increasing employment, productivity and social coherence with the national priorities. The impacts evaluation will focus on assessing the strategic aspects – for example, what was the contribution of the RIS3 investments and tools to achieving the objectives of the Europe 2020 strategy; the macro-economic impacts of the aid in line with the smart specialisation concept/principles; the impacts of the aid on increasing the RD&I expenditure; the impacts of the aid on enhancing the participation of Slovak organisations in the European Research Area. The impacts assessment can focus on specific topics which are strategically important to achieve the RIS3 objectives. The impacts assessment must also be based on data from other sources, such as monitoring systems (e.g. social security, unemployment records or tax records). The RIS3 contribution to the fulfilment of the objectives at the level of partial objectives will be evaluated through impacts assessment in the framework of continuous and final evaluation until 2023.

In order to ensure effective management of RD&I support, ad-hoc evaluations and analytical studies mapping the baseline and current situation will be carried out in the individual areas of specialisation, including forecasting of the future possible state, applying standard technology foresight methods and peer-reviews with the involvement of experienced experts in these fields. Evaluations conducted under the implementation of the OP R&I and other relevant programmes with a contribution to the RIS3 implementation will form an inseparable part of the RIS3 evaluation system.

6.4.2 Links between the RIS3 Evaluation Plan and OP R&I Evaluation Plan

Several programmes contribute to the RIS3 in the programming period 2014–2020, the OP R&I being its key instrument. The importance of OP R&I evaluations for the entire RIS3 evaluation system is mainly due to the provision of relevant data and inputs for the modification of activities and measures contributing to an effective and efficient implementation of the RIS3 measures and to the fulfilment of its objectives.

6.4.2.1 Operational evaluation

The evaluation of the OP R&I setting, activities and MI fulfilment will also entail the assessment of the physical progress in the fulfilment of the RIS3 objectives. The RIS3 indicators were designed so as to capture the influence and full-scale effects of the implementation and the success and performance of the national strategy, and to enable to determine the state of fulfilment of relevant RIS3 measures through different instruments (programmes). The links between the strategy and the activities performed under specific programmes (output indicators) enables continuous measurement and monitoring of the RIS3 performance and changes to be encouraged in Slovakia's innovation performance, while disposing of the means for the control and early programme adjustments at the level of the programmes in case its objectives and results are not being achieved.

Period	Preliminary evaluation schedule	
	RIS3 (evaluation)	OP R&I (evaluation)
2017–2018	1. Analysis of available data for the completion/revision of the RIS3 indicators set with regard to the fulfilment of the milestones defined in the RIS3 Timetable: 2017	5. Continuous evaluation of the OP R&I process setting Scheduled: 2018 Duration: 6 months 6. Continuous evaluation of the entire OP Scheduled: 2018 Duration: 8 months
Assessment of the correct setting of the RIS3 measurable indicators (context, result, output), and check whether the existing output MU sets –with regard to programmes and schemes – sufficiently and properly cover the RIS3 objectives. The OP will measure the physical progress in the fulfilment of the MIs relevant to the RIS3.		

6.4.2.2 Common thematic elements of the evaluations

The programme context allows for the determination of a certain group of thematic areas the positive development of which (result of the programme support) will have direct or indirect effects on increasing Slovakia's innovation performance (RIS3 objectives):

- A. Infrastructure basis
- B. Technology transfer
- C. International co-operation in research, development and innovation
- D. Innovation performance
- E. Protection of intellectual property rights
- F. SME support

A. Infrastructure basis

The research and development infrastructure is the key condition for increasing the technology and innovation level of the economy³⁹, due to which large-scale support from the Structural Funds was provided to its development and modernisation in the programming period 2007–2013. Stage I was characterised by the mitigation of the existing technology gap (building of different types of centres and science parks, modernisation of equipment and apparatus) and by the support of excellent research, while increasing the requirements for its quality. One of the benefits of the broad range of measures was the crystallisation of the institutions consortia and

³⁹ p. 38, RIS3

of strong R&D thematic areas⁴⁰. The activities in the programming period 2014–2020 will continue to support the quality of the research and development infrastructure (stage II – consolidation, optimisation, integration, and necessary completion of the existing infrastructure). The basic aim of the support 2014–2020 will be to consolidate the use of the existing infrastructures and their modernisation, and to support the activities of interdisciplinary excellent research teams to achieve maximum added effect for society and the economic practice.

In order to evaluate the infrastructure basis, it is planned to carry out OP R&I evaluations (including on an ad-hoc basis), the findings of which will contribute mainly to RIS3 measure 2.2.

Period	Preliminary evaluation schedule	
	RIS3 (measure)	OP R&I (evaluation)
2018-2023	2.2. Development of excellent research while ensuring the necessary infrastructure for research and development The measure supports building R&D infrastructure in order to create a knowledge base and to train human resources oriented towards the needs of industry and societal practice in the areas of thematic priorities (knowledge diffusion), as well as the construction of infrastructures for ESFRI	1. Evaluation of Slovakia's RD&I potential – public procurement for external evaluator is currently underway Scheduled: 2018 Duration: 12 months 17. Contribution of the OP R&I to Slovakia's RD&I potential Scheduled: 2022 Duration: 18 months
	Use for the RIS3 intervention strategy based on actual data and facts – more effective use of public resources in the support of research infrastructure in 2017–2023, passportisation of the existing research infrastructure and identification of deficiencies (evaluation no. 17) in the RD&I system (infrastructure, publishing, international co-operation) as new challenges for the period beyond 2020.	

B. Technology transfer

The transfer of technology into practice is one of the basic pillars of a well-working innovation system, which can bring, by establishing links between the academia and the industrial sector, a whole range of benefits to the different actors and to the economy and society, as well⁴¹. For its application in the programming period 2007–2013, various activities were carried out – mainly through the operational programmes aimed to remove the existing barriers in the implementation of innovations and technology transfers. In the programming period 2007–2013, the industrial sector and services could build on developing links between R&D organisations and users, and from the stimulation of knowledge transfer into the commercial sphere. At the same time, new innovative forms were implemented in the field of products, processes and technology, or technical modernisation of machinery, devices and equipment, thanks to which the OP C&EG contributed to the creation of an environment that encourages the innovation and competition potential of existing enterprises stimulating employment growth in Slovakia⁴². Production and practical implementation of R&D results was also supported under the OP R&D, mainly through the building of professional technology transfer centres within important universities, the Slovak Academy of Sciences and the National Centre for the Support of Technology Transfer exercising the coordination role, or through the support of co-operation between the main actors of the knowledge-based economy (research organisations and enterprises; state authorities). Support will be provided to the transfer of knowledge and technology into practice also in the programming period 2014–2020. The evaluation of the effectiveness and efficiency of the technology transfer systems, and the mitigation and removal

⁴⁰ p. 40, RIS3

⁴¹ Kačírková, M.: Motivácia akademického sektora k využitiu poznatkov výskumu v Slovenskej republike, pp. 4, 33-36. Source: http://www.ekonom.sav.sk/uploads/journals/251_wp_c_62.pdf

⁴² pp. 114-115, Annual Implementation Report of the Operational Programme Competitiveness and Economic Growth 2014 (2015)

of different barriers⁴³ on the side of the academic or business sector should result in maximising the technology transfer effects on the innovation progress of the Slovak economy.

The impacts assessments will examine the positive trends and persisting problems in the field of technology transfer (protection of intellectual property rights) through activities of the national infrastructure for the support of technology transfer as **one of the tools** for supporting the implementation of innovations identified in the RIS3 under strategic objective 3 Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living. Developments in the field of technology transfer are planned to be evaluated under the RIS3 Evaluation Plan and as part of the evaluations which will take place during the OP R&I implementation. These evaluations are expected to contribute with their findings to the planning and implementation of the activities linked to RIS3 measure 3.5.

Period	Preliminary evaluation schedule	
	RIS3 (measure)	OP R&I (evaluation)
2017-2022	3.5. Supporting dynamic business environment favorable to innovation The measure aims to create conditions for achieving sustainable economic growth as a basic precondition for business development and for increasing competitiveness of the Slovak Republic on the international scale through financial engineering tools, support for start-ups and spin-off companies and tools supporting the implementation of innovations.	2. Ex-post evaluation of the OP R&D national project: National Infrastructure for the Support of Technology Transfer (NITT) – external evaluator will be selected in July 2017 Scheduled: 2017 Duration: 9 months 15. Evaluation of the NITT national project's contribution Scheduled: 2021 Duration: 9 months
Impacts of the measures taken (2007–2013) and the measures being taken (2014–2020) in the framework of long-term support of the technology transfer process, the assessment of which will be used for the purposes of the RIS3 intervention strategy – identification of calls within IP RIS3 for years 2017 – 2022.		

C. International co-operation in research, development and innovation

The integration of Slovak researchers into European structures will enhance the excellence of Slovak research, increase the quality of human resources and make the Slovak research system more attractive with positive impacts not only on the scientific community, but also on employment and economic growth.

The increased involvement of national research representatives (from the public and the private sectors) in international research or innovation structures will be assessed through the evaluation of the programme's contribution to strategic objective 2 Increased contribution of research to the economic growth via global excellence and local relevance and strategic objective 3 Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living.

Period	Preliminary evaluation schedule	
	RIS3 (measure)	OP R&I (evaluation)
2018-2023	2.1. Fostering excellence of research The measure supports the integration into the European research area via fostering international excellence and co-operation 2.4. Systematic support and stimulation of international cooperation in science and technology This will be done by strengthening national support, activities of national institutions as well as by motivational funding and co-funding of	1. Evaluation of Slovakia's RD&I potential – public procurement for external evaluator is currently underway Scheduled: 2018 Duration: 12 months 3. Continuous evaluation of international R&D co-operation of Slovak institutions Scheduled: 2019 Duration: 6 months

⁴³ The brief evaluation is based on the report: Kačírková, M.: Motivácia akademického sektora k využitiu poznatkov výskumu v Slovenskej republike, pp. 33-36. Source: http://www.ekonom.sav.sk/uploads/journals/251_wp_c_62.pdf

international activities. 3.5. Supporting dynamic business environment favorable to innovation This measure will be implemented, among other things, through the internationalisation of enterprises and the stimulation of business engagement in European RD&I programmes.	18. Evaluation of the OP R&I contribution to international R&D co-operation of Slovak institutions Scheduled: 2022 Duration: 10 months
Strengthening the international profile of Slovak RD&I and utilising its potential in the domains of intelligent specialisation – crystallisation of the areas of excellent research, innovation, definition of models and new possibilities of support of international co-operation for further orientation of the RIS3 strategy, as well as strategic and potential links between Slovak and foreign RD&I organisations from the public as well as the private sector	

D. Innovation performance

The implementation of systemic public policy measures during the programming period 2007–2013, complementary to the different elements of the research and development environment, was reflected in the general increase of the Slovak innovation performance, though marked by fluctuations. However, from the point of view of the EU average, Slovakia continues to record below-average performance in almost all areas critical to innovation performance (except for human capital). The OP R&I and its intervention strategy will also contribute to increasing the innovative performance of the economy, requiring continuous, systematic coordination in the programming period 2014–2020, by focusing on some of the means stimulating the innovation process (intellectual property, business activities or open and excellent research system⁴⁴) with economic and social impacts.

Increased share of SMEs in innovation and technology progress (investing in own innovation activities) is one of the OP measures for realising the RIS3 vision to ensure the competitiveness and growth of the business sector. The benefits of these measures are covered by the thematic evaluations at the level of the OP with relevance to strategic objectives 1 Deepening integration and embeddedness of key major industries increasing local value added through the co-operation of the local supply chains and turning local supply chains into embedded clusters, 3 Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living and 4 Improving the quality of human resources for an innovative Slovakia.

Period	Preliminary evaluation schedule	
	RIS3 (measure)	OP R&I (evaluation)
2018-2021	Strategic objective 1: Deepening integration and embeddedness of key major industries increasing local value added through the co-operation of the local supply chains and turning local supply chains into embedded clusters (measures 1.1 to 1.4) Strategic objective 3: Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living (measures 3.1 to 3.3, 3.5 and 3.6) Strategic objective 4 Improving the quality of human resources for an innovative Slovakia (measures 4.1 to 4.6)	1. Evaluation of Slovakia's RD&I potential – public procurement for external evaluator is currently underway Scheduled: 2018 Duration: 12 months 4. Evaluation of innovation capacities in industry and services Scheduled: 2019 Duration: 12 months 7. Evaluation of the national project: Increasing the innovation performance of the Slovak economy (NP) Scheduled: 2019 Duration: 10 months
Evaluation of the effectiveness and performance of the instruments used to activate enterprises and firms (evaluation no. 7) and identification of the most progressive areas of innovations (evaluation no. 4)		

E. Protection of Intellectual Property Rights

⁴⁴ Page 73, European Innovation Scoreboard 2016

One of the main challenges in increasing the RD&I system performance is the addressing of the long-term worrying situation in the field of intellectual property (patent activity, commercialisation or protection of rights). In order to mobilise the patent and licence activity of domestic RD&I as one of the RIS3 purposes, systematic activities will be carried out under the OP R&I in the programming period 2014–2020 leading to raising the so-far poor utilisation of the instruments for intellectual property rights and overall awareness of their protection⁴⁵.

The achievements in the protection of intellectual property rights will be reported in the impacts evaluation under the OP R&I, assessing the Operational Programme's contribution to implementing strategic objective 3 Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living.

Period	Preliminary evaluation schedule	
	RIS3 (measure)	OP R&I (evaluation)
2017-2022	3.6. Protection and utilisation of intellectual property The measure is aimed to contribute to the protection and utilisation of intellectual property and technological transfer as well as to an increase in the awareness about their protection and commercialisation, including the change of legislation regarding the practical needs and past experience.	2. Ex-post evaluation of the OP R&D national project: National Infrastructure for the Support of Technology Transfer (NITT) – external evaluator will be selected in July 2017 Scheduled: 2017 Duration: 9 months
		8. Evaluation of the national project: Increasing the use of intellectual property rights Scheduled: 2020 Duration: 4 months
		15. Evaluation of the NITT national project's contribution Timetable: 2021 Duration: 9 months
Evaluation of the development potential and trends in the application of intellectual property rights – identification of existing barriers to the adjustment of the system setting.		

F. SME support

The creation of the conditions for SME business and the support of their development or internationalisation can be of special importance for the economy characterised by the dominance of SMEs. At present, the share of SMEs in added value creation and in the revenues and profits represents over 50% in Slovakia. The group of planned measures will therefore focus on the elimination of the negative trends of their fragmentation or the high dissolution rate, which are significant, yet not the only obstacles to a major development of innovations in this category of enterprises⁴⁶.

The thematic section therefore seeks to bring understanding of the impacts of the wide group of complementary interventions evaluated at the OP R&I level, without which the achieving of the growth in SME competitiveness can be non-productive. The mutual links between interventions is expressed in the thematic diversity of the evaluations contributing not to a single RIS3 strategic objective, but to its general vision. The evaluations conducted under the OP R&I will contribute to assessing the fulfilment of strategic objective 1 Deepening integration and embeddedness of key major industries increasing local value added through the co-operation of the local supply chains and turning local supply chains into embedded clusters and 3 Creating a dynamic, open and inclusive innovative society as one of the preconditions for an increase in the standard of living in the field of SME support.

⁴⁵ Programme document Operational Programme Research and Innovation for the Programming Period 2014–2020 (2014)

⁴⁶ Pages 13-14, programme document Operational Programme Research and Innovation for the Programming Period 2014–2020 (2014)

Period	Preliminary evaluation schedule	
2019-2024	RIS3 SK (measures)	OP R&I (evaluation)
	<p>1.1. Development of innovative capacities through cooperation between enterprises and research institutions in key sectors of the Slovak economy The measure aims to support the creation of consortia for solving multidisciplinary problems and embedding sectors through clusters and other forms of networking in order to develop innovation capacities.</p> <p>3.1. Stimulating KIBS, knowledge-oriented services and creative industry The measure will be oriented towards the support and development of KIBS as well as knowledge-oriented services in order to increase their share in total production of business sector</p> <p>3.4. Supporting an open and inclusive society The measure will support an inclusion of marginalised communities by increasing their employment and by the improvement of conditions in the business sector for their employment and integration in the labour market</p> <p>3.5. Supporting dynamic business environment favorable to innovation The measure aims to create conditions for achieving sustainable economic growth as a basic precondition for business development and for increasing competitiveness of the Slovak Republic on the international scale through financial engineering tools, support for start-ups and spin-off companies and tools supporting the implementation of innovations.</p>	<p>Several evaluations offer a partial picture of the various critical aspects of the business environment:</p> <p>9. Evaluation of the national projects: “National Project NBC in the Regions” and “National Project NBC II – BA Region” Scheduled: 2019 Duration: 7 months</p> <p>12. Evaluation of SME development in the Bratislava Region Scheduled: 2020 Duration: 12 months</p> <p>13. Evaluation of the effectiveness of social innovations Scheduled: 2020 Duration: 9 months</p> <p>14. Evaluation of the support of business and SME competitiveness Scheduled: 2022 Duration: 14 months</p>
<p>Mapping of the state (evaluation no. 14) of effects of the various instruments designed to support SMEs and Slovakia's innovation performance:</p> <ul style="list-style-type: none"> Solutions supporting the creation and development of profit-making and competitive SMEs, including start-ups and spin-offs, access to finance and venture capital (loan programme, venture capital fund for new enterprises, grants) (evaluation no. 12, 13); Development of new industries (creative industry) (evaluation no. 12); SMEs and export (evaluation no. 14); Establishment of one-stop-shop support centre for SMEs with a wide portfolio of services (evaluation no. 9) provided throughout the SME life-cycle;⁴⁷ 		

⁴⁷ Cited from the Draft national project (intent) (no. 5) by the Slovak Business Agency: „National Project NBC II – BA Region“, presented at the 2nd meeting of the OP R&I Monitoring Committee on 26 June 2015. Source: <https://www.opvai.sk/monitorovaci-vybor/zasadnutia-my-op-vai/2-zasadnutie/>

7 Annexes

Table 1 Basic economic and research parameters of domains

Domain	Share in export (%), average 2010–2016 ⁽¹⁾	Share in total gross added value (%), average 2010–2015	Business expenditure on R&D, € mil., average 2010–2014	OP R&D and OP C&EG investments 1.3, €mil., total 2007–2015 ^(2,3)
Vehicles for the 21st century	23*	3.69	51.31	33.77
Industry for the 21st century	20.9	6.88	37.07	33.77
Digital Slovakia and creative industry	24.2**	4.73	29.01	30.02
Population health and health technology	n/a***	3.03	n. a.	47.30
Healthy food and environment	1.2	5.14	1.00	12.08

Notes: (1) Architectural, engineering, scientific, and other technical services were used as industry 71 in the balance of services (its share in ZO is 0.36%) **The services in this domain consist of the items of the balance of services Other business services except Architectural, engineering, scientific, and other technical services (i.e. a share of 1.6%) and Computer programming and advisory (62 +63 NACE with a share of 0.46%) *** The healthcare sector is internationally non-tradable, and the pharmaceutical industry (NACE 21) share in ZO is only 1.17%. (2) Total in €mil. for projects where the beneficiaries were enterprises, period 2007–2015. (3) The projects targeting new and progressive materials and production technology could not be split into automotive industry and other industry. The estimated allocation is 50 : 50.

Table 2 Basic knowledge-based parameters of domains

Domain	Patents (total 2007–2016)	Trademarks in the EU (total 2007–2016)
Vehicles for the 21st century	32*	261*
Industry for the 21st century	149	799
Digital Slovakia and creative industry	106	621
Population health and medical technology	42	199
Healthy food and environment	49	912

Source: WIPO (2017): PCT publications by technology; European Union trade mark (EUTM) applications by class (Nice classification) [ipr_ta_cl] * including other means of transport

Table 3 Foreign trade product structure at HS 4 level

HS 4 code	Commodity of the harmonised system classification at the level of 4 digits	Share in foreign trade SK (%)	RCA coefficient (over 1 means an advantage on EU markets)					
	Commodity description		SK	CZ	AT	HU	SI	EU28
8703	Motor cars and other motor vehicles; principally designed for the transport of persons	15.76	3.34	2.18	0.41	1.24	1.94	1.00
8528	Monitors and projectors, not incorporating reception apparatus for television	8.13	19.07	3.65	0.30	7.05	0.45	1.00
8708	Motor vehicles; parts and accessories, of heading no. 8701 to 8705	4.16	1.93	3.42	1.00	1.88	1.15	1.00
8517	Telephone sets	3.81	3.00	2.08	1.52	4.32	0.52	1.00
2710	Petroleum oils, oils from bituminous minerals, not crude	3.43	1.11	0.25	0.27	0.47	0.83	1.00
8707	Bodies; (including cabs) for the motor vehicles of heading no. 8701 to 8705	2.11	25.24	1.43	1.21	0.44	0.13	1.00
4011	New pneumatic tyres, of rubber	1.85	4.52	3.40	0.17	3.03	3.06	1.00
8544	Insulated wire, cable, optical fibre cables	1.57	3.15	3.40	1.07	3.80	0.84	1.00
7208	Iron or non-alloy steel; flat-rolled products	1.24	5.47	1.24	1.65	1.75	0.92	1.00
8471	Automatic data processing machines and units thereof	1.18	1.19	5.93	0.55	2.49	0.20	1.00
8483	Transmission shafts and cranks; bearing housings and plain shaft bearings	1.18	3.36	1.14	1.04	0.80	1.36	1.00
7210	Iron or non-alloy steel; flat-rolled products	1.17	4.89	0.26	1.83	0.42	2.11	1.00
8529	Parts suitable for use principally with the apparatus of heading no. 8525 to 8528	0.94	6.75	1.37	0.70	5.02	5.44	1.00
8482	Ball or roller bearings	0.92	4.56	0.62	1.50	0.74	0.44	1.00
2711	Petroleum gases and other gaseous hydrocarbons	0.89	2.90	1.76	0.03	0.87	0.66	1.00
8414	Air or vacuum pumps, compressors and fans	0.84	2.05	1.57	0.76	2.41	2.58	1.00
9401	Seats (not those of heading no. 9402), convertible into beds	0.77	2.18	4.07	0.60	2.20	5.73	1.00
8403	Central heating boilers; excluding those of heading no. 8402	0.73	9.59	1.26	3.31	0.57	0.52	1.00
8504	Electric transformers, static converters	0.71	1.91	1.21	2.12	1.61	1.41	1.00
8512	Lighting or visual signalling equipment, windscreen wipers	0.70	4.30	6.87	2.07	2.42	8.98	1.00
6403	Footwear; with outer soles of rubber, plastics, leather	0.70	2.10	0.47	0.79	0.68	0.86	1.00

HS 4 code	Commodity of the harmonised system classification at the level of 4 digits	Share in foreign trade SK (%)	RCA coefficient (over 1 means an advantage on EU markets)					
	Commodity description		SK	CZ	AT	HU	SI	EU28
3926	Articles of plastics and articles of other materials	0.69	1.97	2.40	1.44	1.68	1.41	1.00
9403	Other furniture and parts thereof	0.64	1.44	1.06	1.12	0.54	2.10	1.00
7326	Other articles of iron or steel	0.62	2.21	3.52	1.65	1.03	1.50	1.00
4802	Uncoated paper and paperboard, used for writing, printing	0.56	3.54	0.39	2.72	0.07	1.50	1.00
8431	Machinery parts; used principally with the machinery	0.55	1.58	2.16	1.31	1.03	2.53	1.00
3004	Medicaments consisting of mixed or unmixed products	0.54	0.17	0.30	0.82	0.99	2.34	1.00
8525	Transmission apparatus for radio-broadcasting or television	0.51	3.81	1.25	0.54	1.83	0.45	1.00
7601	Aluminium (unwrought)	0.50	3.08	0.64	1.28	0.47	4.32	1.00
8450	Household or laundry-type washing machines; including machines which both wash and dry	0.48	6.95	1.34	0.20	0.33	6.20	1.00
8443	Printing machinery; used for printing by means of plates, cylinders and other printing components	0.47	1.04	1.78	0.56	0.43	0.30	1.00
8408	Compression-ignition internal combustion piston engines	0.46	1.11	0.14	2.93	5.37	0.02	1.00
8302	Base metal mountings, fittings and similar articles	0.45	2.61	1.68	4.58	0.90	2.44	1.00
8501	Electric motors and generators (excluding generating sets)	0.45	1.84	3.22	1.72	1.67	3.04	1.00
8407	Reciprocating or rotary internal combustion piston engines	0.45	1.86	1.17	4.51	12.75	0.02	1.00
3902	Polymers of propylene or of other olefins, in primary forms	0.42	1.91	0.86	1.69	1.23	0.32	1.00
8537	Boards, panels, consoles, desks, cabinets, bases for electricity control	0.41	1.38	2.67	1.04	3.80	0.49	1.00
7209	Iron or non-alloy steel; flat-rolled products	0.39	5.35	0.25	2.60	1.69	1.53	1.00
7308	Structures of iron or steel and parts thereof	0.38	1.33	2.73	1.90	1.11	1.76	1.00
4016	Other articles of vulcanised rubber other than hard rubber	0.37	2.33	2.18	0.80	1.27	1.78	1.00
8415	Air conditioning machines; comprising a motor driven fan	0.36	2.58	7.25	0.86	2.13	0.79	1.00
6402	Footwear; with outer soles and uppers of rubber or plastics	0.35	4.09	1.17	1.05	0.71	1.33	1.00
7402	Other items of iron or steel	0.34	12.72	0.02	0.09	0.00	0.01	1.00
3102	Fertilizers; mineral or chemical, nitrogenous	0.34	3.78	1.00	0.23	1.33	0.58	1.00
7217	Wire of iron or non-alloy steel	0.34	8.44	4.51	1.45	0.16	0.43	1.00
8521	Video recording or reproducing apparatus	0.32	12.41	5.27	0.23	2.74	0.31	1.00
3920	Plastic plates, sheets, film, foil and strip	0.31	1.06	0.88	0.97	0.75	1.09	1.00

HS 4 code	Commodity of the harmonised system classification at the level of 4 digits	Share in foreign trade SK (%)	RCA coefficient (over 1 means an advantage on EU markets)					
	Commodity description		SK	CZ	AT	HU	SI	EU28
4818	Toilet paper and similar paper, cellulose wadding	0.31	3.05	1.01	0.87	1.19	2.92	1.00
8477	Machinery; for working rubber or plastics	0.30	1.85	0.93	2.36	0.23	1.16	1.00
9405	Lamps, light fittings	0.30	1.69	1.29	2.69	1.75	1.52	1.00
7304	Tubes, pipes and hollow profiles, seamless, of iron or steel	0.28	1.87	2.72	2.50	0.11	0.30	1.00
3306	Oral or dental hygiene preparations; including fixative pastes	0.28	7.53	0.68	0.31	0.90	2.74	1.00
8428	Other lifting, handling, loading or unloading machinery	0.27	1.47	0.91	2.34	0.27	0.90	1.00
3923	Plastic articles for the conveyance or packing of goods; stoppers,	0.27	1.04	1.29	1.54	1.62	1.71	1.00
4407	Wood sawn or chipped lengthwise, sliced or peeled,	0.27	1.48	1.43	3.73	0.43	5.81	1.00
8433	Harvesting and threshing machinery,	0.27	1.82	1.18	1.31	2.29	0.69	1.00
3901	Polymers of ethylene, in primary forms	0.27	0.86	0.90	1.06	1.58	0.91	1.00
7207	Iron or non-alloy steel; semi-finished products thereof	0.27	4.20	1.09	0.64	0.15	0.21	1.00
8523	Discs, tapes, solid-state non-volatile storage devices	0.26	1.01	3.08	2.38	0.51	0.37	1.00
8301	Padlocks and locks (key, combination, electrically operated)	0.26	4.39	6.15	1.00	0.83	1.17	1.00
8606	Railway or tramway goods vans and wagons	0.26	24.86	3.82	0.36	1.05	0.20	1.00
1806	Chocolate and other food preparations containing cocoa	0.25	1.15	0.83	0.96	0.55	0.24	1.00
1701	Cane or beet sugar and chemically pure sucrose, in solid form	0.25	3.59	1.82	0.86	1.85	2.03	1.00

Table 4 Business expenditure on research and development according to NACE, €mil.

	Business enterprise R&D expenditure (BERD)	2010	2011	2012	2013	2014	2010-15
Total	Total - all NACE activities	175.25	174.15	241.98	282.61	246.68	224.13
A	Agriculture, forestry and fishing	1.19	1.48	0.96	0.76	0.63	1.00
C	Manufacturing	121.22	106.32	130.01	162.30	166.15	137.20
C10-C12	Manufacture of food products; beverages	1.69	1.16	1.17	0.69	0.91	1.12
C13-C15	Manufacture of textiles, wearing apparel, leather	:	:	1.26	0.46	0.26	0.66
C19	Manufacture of coke and refined petroleum products	:	:	:	3.33	3.03	3.18
C20	Manufacture of chemicals and chemical products	3.63	3.57	2.91	4.85	2.95	3.58
C21	Manufacture of basic pharmaceutical products	11.19	12.81	9.38	2.07	4.22	7.94
C22	Manufacture of rubber and plastic products	8.13	5.79	10.24	13.91	15.96	10.80
C23	Manufacture of other non-metallic mineral products	0.87	1.08	1.23	0.40	1.57	1.03
C24	Manufacture of basic metals	3.75	3.64	3.66	:	2.91	3.49
C25	Manufacture of fabricated metal products,	9.26	3.41	5.12	2.22	2.05	4.42
C26	Manufacture of computer, electronic and optical products	2.30	2.78	3.61	3.82	3.50	3.20
C265	Manufacture of instruments and appliances	1.33	1.70	2.20	2.33	1.83	1.88
C27	Manufacture of electrical equipment	17.21	17.89	17.39	11.66	17.33	16.29
C28	Manufacture of machinery and equipment n.e.c.	10.40	12.97	15.17	14.43	15.16	13.63
C29	Manufacture of motor vehicles, trailers and semi-trailers	32.99	24.12	40.08	85.20	74.16	51.31
C30	Manufacture of other transport equipment	7.27	4.88	6.19	8.63	14.85	8.36
G	Wholesale and retail trade; repair of motor vehicles	1.10	1.26	0.30	5.04	3.43	2.22
G465	Wholesale of information and communication equipment	:	:	:	0.42	0.78	0.60
J	Information and communication	5.37	5.95	30.89	31.82	31.72	21.15
J62	Computer programming, consultancy and related activities	4.58	4.87	29.87	30.44	31.14	20.18
M	Professional, scientific and technical activities	41.79	34.65	38.94	41.07	39.70	39.23
M72	Scientific research and development	35.30	25.86	26.94	25.63	25.31	27.81
N	Administrative and support service activities	1.65	2.11	1.67	:	:	1.81

Source: Eurostat (2017) Business enterprise R&D expenditure (BERD) by economic activity (NACE Rev. 2) [rd_e_berdindr2]. Note: (:) = data not available

Table 5 Share of selected OP R&D and OP C&EG allocations on research specialisation*

Prospective area of specialisation	mil. EUR	(%)	(%)
New construction materials for use in industry and the energy sector	15.77	7.8	16.5
Progressive materials, structures and nanotechnology	13.96	6.9	
Organic and polymere materials	3.02	1.5	
Extraction and processing of raw materials	0.77	0.4	
Data, information and knowledge space and the use thereof	9.89	4.9	14.8
Information security	4.84	2.4	
Technology and communication infrastructure of the digital space (cyber space)	3.52	1.7	
Interdisciplinary ICT application	11.77	5.8	
Industrial biotechnology	0.59	0.3	22.8
Environmental biotechnology	1.03	0.5	
Agrobiotechnology	5.36	2.6	
Pharmaceutical biotechnology	13.79	6.8	
Oncological diseases	11.22	5.5	
Cardiovascular diseases	3.86	1.9	
Diseases of the central nervous system	3.78	1.9	
Regenerative and transplant medicine	1.59	0.8	
Infectious diseases	3.09	1.5	
Endocrine and metabolic diseases	1.89	0.9	2.2
Sustainable and ecological system for the use, protection and restoration of agricultural landscape, effective plant and animal production, manufacture of quality food and non-food raw materials from soil	3.15	1.6	
Research, innovation and support of the competitiveness of forestry and wood processing sectors	0.84	0.4	
Innovation and modern processes for the manufacture and control of quality and safe food from domestic resources	0.00	0.0	
Extraction and processing of raw materials	0.50	0.2	
Power plants of the future and renewable energy resources	12.60	6.2	15.5
Electricity system	5.03	2.5	
Effective use of energy resources	9.79	4.8	
Smart grid	4.00	2.0	

Other (especially robotics, machine engineering, auto-moto)	13.36	6.6	28.1
Other (especially transport and logistics)	8.29	4.1	
Other (especially waste)	1.20	0.6	
Other (especially light equipment)	1.83	0.9	
Other (especially production technology)	23.86	11.8	
Other (especially medical technology)	8.08	4.0	
Other (R&D infrastructure)	0.40	0.2	
TOTAL	202.66	100.0	100.0

The sample consists of 177 projects in the total amount of €202 mil. of spent funds (EU+SK): 105 completed OP R&D projects in which enterprises were the beneficiaries, and 77 OP C&EG projects, measure 1.3 – Supporting innovation activities in enterprises. On the basis of the project description, the projects were assigned, upon completion, to one or more research specialisations. If a project was assigned to several specialisation, the allocation was divided proportionately.

Table 6 Slovakia's relative technological benefit index in the field of patents (2000–2014)

Selected technological areas (according to OECD)

	SK	EU	SK in %	EU in %	RTB index
Biotechnology	29.63	42,758.71	4.59	6.18	0.74
ICT	139.10	206,537.94	21.54	29.87	0.72
Nanotechnology	6.40	5,772.34	0.99	0.83	1.19
Medical technology	17.84	48,163.23	2.76	6.97	0.40
Pharmaceuticals	36.85	48,543.93	5.71	7.02	0.81
Selected environment-related technologies	67.69	61,998.95	10.48	8.97	1.17
Total for all patents	645.69	691,443.58			

Source: OECD statistical database; note: the sum of patents in selected technological areas does not make up 100% of patents

Patent classification section

	SK	EU	SK in %	EU in %	RTB index
IPC A: Human Necessities	80.60	121,368.05	12.48	17.55	0.71
IPC B: Performing Operations; Transporting	123.64	127,081.36	19.15	18.38	1.04
IPC C: Chemistry; Metallurgy	109.73	96,559.14	16.99	13.96	1.22
IPC D: Textiles; Paper	7.66	106,43.79	1.19	1.54	0.77
IPC E: Fixed Constructions	42.94	24,061.33	6.65	3.48	1.91
IPC F: Mechanical Engineering; Lighting; Heating;	106.31	77,519.37	16.46	11.21	1.47
IPC G: Physics	86.71	112,267.75	13.43	16.24	0.83
IPC H: Electricity	88.11	121,942.79	13.65	17.64	0.77
Total	645.69	691,443.58	100	100	

Methodological note: PCT patent applications (sum 2000–2014), Reference country: Inventors' country(ies) of residence, Reference date: Priority date
RTB – relative technological benefit index

Table 7: Overview of investments within centres of excellence

Ref. no.	ITMS	Project title	Beneficiary	Contracted expenditure under Grant Contracts	HEADCOUNT (physical persons regardless of full or part-time employment in the 2009-2015 period)		RIS3 area	SPENDING (to 31/12/2015)				
					Resear chers	Manageme nt (FTE)		Constru ction works	Devices and equipmen t	Research activities (internal salaries, external services)	Populari sation (posters, leaflets, jigsaw puzzles, project sign, website intended for project publicity , etc.)	Other (domesti c business trips, rental of premises for carrying out activities , etc.)
				Total expenditure EU funds (€)	n° of employ ees	n° of empl oyees		EU fund (€)	EU fund (€)	EU fund (€)	EU fund (€)	EU fund (€)
1	26220120001	Centre of Excellence for the Research of Digestive Tract Physiology – CEFT	Institute of Animal Physiology SAS Šoltésovej 4-6 040 01 Košice - Juh	1,020,824.34	42	13	Biomedicine and biotechnology	0.00	853,550.03	82,776.20	68.27	0.00
2	26220120002	INFEKTZOOM - Centre of Excellence for Animal Infections and Zoonoses	University of Veterinary Medicine and Pharmacy Košice Komneského 73 041 81 Košice	1,099,126.36	127	9	Biomedicine and biotechnology	87,740.10	927,536.99	34,365.94	0.00	14,933.11

3	26220120 003	Centre of Excellence for Electric Power Systems and Materials for Their Components	University of Žilina Univerzitná 8215/1 010 26 Žilina	1,180,020. 31	44	9	Materials research and nanotechnology, Industrial technology, Sustainable energy sector and energy	0.00	756,763.6 5	263,575.5 7	2,993.43	12,328.00
4	26220120 004	Centre of Experimental and Clinical Respiriology	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	1,168,614. 10	133	13	Biomedicine and biotechnology	0.00	941,580.8 2	166,459.9 5	3,260.12	17,724.98
5	26220120 005	Extrem – Centre of Advanced Physical Study of Materials in Extreme Conditions	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	1,187,608. 70	125	16	Materials research and nanotechnology	102,097. 12	807,790.6 6	234,213.6 8	1,189.58	4,755.76
6	26220120 006	Centre of Excellence: Adaptive Forest Eco- Systems	Technical University in Zvolen T. G. Masaryka 24 960 53 Zvolen	1,060,939. 49	320	176	Information and communication technology, Agriculture and environment	0.00	466,713.4 7	237,114.6 6	1,215.84	66,666.57
7	26220120 007	CaKS- Centre of Excellence for Informatics and Knowledge-Based Systems	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	1,030,248. 22	38	6	Industrial technology	0.00	750,616.9 5	146,148.1 4	1,606.66	7,184.76
8	26220120 008	Centre of Excellence for Biological Methods of Forest Protection	National Forest Centre T. G. Masaryka 22 960 92 Zvolen	1,092,048. 52	28	8		0.00	762,897.6 8	161,667.1 5	0.00	2,567.34
9	26220120 009	Space Research Centre: Space Weather Impacts	University of Astronomy SAS Tatranská Lomnica 18 059 60 Vysoké Tatry	1,118,510. 83	50	9	Selected fields of social sciences	0.00	907,600.2 5	56,591.83	2,778.93	136,843.9 7
1 0	26220120 010	Centre of Excellence with a focus on the research of national and international security issues	Matej Bel University in Banská Bystrica Národná 12 974 01 Banská Bystrica	281,081.5 1	50	7	Information and communication technology	0.00	55,105.00	33,902.37	266.77	88,368.11
1 1	26220120 070 (2622012 0051)	Laboratory of Breeding, Computational Genetics and Research	National Agricultural and Food Centre Hlohovecká 2 951 41 Lužianky	1,076,240. 30	11	10	Biomedicine and biotechnology	9,775.91	848,363.0 5	56,774.98	0.00	1.59

		of Genetic Animal Sources										
1 2	26220120 071 (2622012 0052)	Biological- Experimental Laboratory for Quality, Utilisation and Safety of Nutrition Sources in Animal Production	National Agricultural and Food Centre Hlohovecká 2 951 41 Lužianky	1,113,814. 64	15	3	Agriculture and environment	42,253.0 2	925,752.2 7	50,095.66	280.50	82.58
1 3	26220120 013	Centre of Excellence for 5-Axis Machining	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,186,154. 42	110	3	Industrial technology	0.00	1,059,170. 30	12,257.99	1,087.89	1.68
1 4	26220120 014	Centre for the Development and Application of Progressive Diagnostic Methods in the Processing of Metal and Non-Metal Materials	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,187,083. 56	135	2	Industrial technology	0.00	1,100,146. 59	0.00	1,125.85	1,505.72
1 5	26220120 015	Centre of Excellence for Agrobiodiversity Protection and Use	Slovak University of Agriculture Trieda Andreja Hlinku 2 949 76 Nitra	944,070.7 7	50	6	Agriculture and environment Environment Agriculture	0.00	532,609.6 1	108,719.0 6	139.23	261,401.9 3
1 6	26220120 016	Centre of Excellence for Research in Perinatology	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava - Staré Mesto	1,177,959. 39	101	33	Information and communication technology	0.00	968,831.0 6	173,088.2 2	2,763.84	12,245.82
1 7	26220120 017	Centre of Excellent Research of the Extraction and Processing of Earth Resources	Technical University in Košice Letná 9 042 00 Košice	1,089,497. 90	70	17	Information and communication technology, 4. Industrial technology	0.00	956,010.1 1	62,421.60	1,719.58	274.14
1 8	26220120 018	Support of the Centre of Excellent Integrated Research of Progressive Building Structures, Materials and Technology	Technical University in Košice Letná 9 042 00 Košice	1,158,895. 97	87	17	Information and communication technology	0.00	941,372.6 6	77,734.33	1,430.64	1,523.52

1 9	26220120 019	Centre of Excellence for Progressive Materials with Nano/Submicrone Structure	Institute of Materials Research SAS Watsonova 47 040 01 Košice	1,128,579. 14	90	19	Materials research and nanotechnology	26,508.6 6	860,741.3 9	191,091.9 3	2,113.28	5,888.44
2 0	26220120 020	Centre of Information and Communication Technology for Knowledge-Based Systems	Technical University in Košice Letná 9 042 00 Košice	1,120,217. 04	140	2	Information and communication technology	0.00	864,159.4 0	136,711.3 6	3,006.95	12,079.02
2 1	26220120 021	Cooperative Phenomena and Phase Transition in Nano Systems with Prospective Use in Nano- and Bio- Technology	Institute of Experimental Physics SAS Watsonova 47 040 01 Košice	985,805.0 4	67	3	Materials research and nanotechnology	0.00	815,378.0 4	82,800.60	8,187.81	43,256.28
2 2	26220120 022	Centre of Excellence for Parasitology	Institute of Parasitology SAS Hlinkova 3 040 01 Košice	1,117,742. 25	15	3	Biomedicine and biotechnology	145,594. 03	374,607.8 6	4,532.70	2,820.31	525,158.0 8
2 3	26220120 023	Centre of Excellence for Animal and Human Ecology	University of Prešov 17. novembra 15 080 01 Prešov	1,174,103. 83	49	8	Biomedicine and biotechnology	96,537.0 8	986,554.3 4	14,730.80	8,049.21	5,019.85
2 4	26220120 024	Network of Centres of Excellence for Oncology (SEPO)	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	1,172,360. 76	105	8	Biomedicine and biotechnology	37,301.8 7	1,018,578. 48	43,589.55	1,722.47	2,582.35
2 5	26220120 025	Centre of Excellence for the Research of Atherosclerosis and Related Complications of Heart Attacks and Strokes (CEVA)	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	763,882.2 8	101	5	Industrial technology	0.00	603,194.3 0	34,585.59	864.25	39,151.70
2 6	26220120 026	Construction of the Centre for Linguistics, Culturology, Translation and Interpreting	University of Prešov 17. novembra 15 080 01 Prešov	518,057.7 5	35	8	Information and communication technology	20,905.9 4	263,619.9 6	49,951.31	562.76	148,989.0 0

2 7	26220120 027	Centre of Excellence for Transport Engineering	University of Žilina Univerzitná 8215/1 010 26 Žilina	1,173,223. 29	79	6	Industrial technology	0.00	716,991.9 2	164,285.1 3	2,864.81	37,392.82
2 8	26220120 028	Centre of Excellence for Smart Traffic Systems and Services	University of Žilina Univerzitná 8215/1 010 26 Žilina	1,187,374. 83	127	19	Industrial technology	0.00	587,870.6 3	381,078.9 1	2,701.84	0.00
2 9	26220120 029	Centre for Space Research: Space Weather Impacts – Stage II	Institute of Astronomy SAS Tatranská Lomnica 18 059 60 Vysoké Tatry	2,242,086. 82	60	20	Selected fields of social sciences	0.00	1,848,973. 67	77,047.16	12,064.9 0	200,264.4 0
3 0	26220120 030	Development of the Centre for Information and Communication Technology for Knowledge-Based Systems	Technical University in Košice Letná 9 042 00 Košice	2,356,447. 82	140	7	Information and communication technology	0.00	191,067.1 7	47,606.42	10,017.7 4	1,876,467 .25
3 1	26220120 031	Support of Research and Development in the Centre of Excellence for Transport Engineering	University of Žilina Univerzitná 8215/1 010 26 Žilina	1,918,469. 91	85	4	Industrial technology	0.00	1,247,316. 39	217,901.9 7	1,657.57	21,462.21
3 2	26220120 032	PLus Centre of Excellence for Agrobiodiversity Protection and Use	Slovak University of Agriculture Trieda Andreja Hlinku 2 949 76 Nitra	1,900,281. 05	77	6	Information and communication technology, Agriculture and environment	0.00	1,431,088. 22	204,411.1 9	1,397.30	107,815.2 1
3 3	26220120 033	Completion of the Centre for Cooperative Phenomena and Phase Transition in Nano Systems with Prospective Use in Nano- and Bio- Technology	Institute of Experimental Physics SAS Watsonova 47 040 01 Košice	2,152,513. 65	61	5	Materials research and nanotechnology	0.00	1,848,898. 75	150,829.8 3	650.09	2,946.47
3 4	26220120 034	Completion of the Centre of Experimental and Clinical Respiriology (CEKR II)	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	2,329,687. 56	171	67	Information and communication technology	0.00	1,666,688. 42	347,460.6 8	1,864.39	218,453.0 0

3 5	26220120 035	Construction of infrastructures for the Centre of Excellence for Progressive Materials with Nano/Submicrone Structure	Institute of Materials Research SAS Watsonova 47 040 01 Košice	2,252,468. 55	64	11	Information and communication technology, Materials research and nanotechnology	0.00	1,998,192. 19	1,178.24		2,456.62	
3 6	26220120 036	Completion of the Centre of Excellence for Research in Perinatology (CEPV II)	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	2,367,312. 61	104	53		Information and communication technology	221,335. 45	1,239,856. 37	318,560.9 9	1,043.46	464,289.8 2
3 7	26220120 037	Centre of Excellent Research of Progressive Building Structures, Materials and Technology	Technical University in Košice Letná 9 042 00 Košice	2,265,537. 30	87	17		Materials research and nanotechnology, 2. Information and communication technology	0.00	2,049,837. 90	82,190.44	2,198.10	-7,171.85
3 8	26220120 038	Centre of Excellent Research of the Extraction and Processing of Earth Resources – Stage II	Technical University in Košice Letná 9 042 00 Košice	2,371,415. 00	57	6			Information and communication technology, Agriculture and environment	0.00	1,914,838. 32	233,841.7 7	5,610.00
3 9	26220120 039	Infrastructure construction in the SEPO-11 Centre of Excellence	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	2,358,932. 41	113	9	Information and communication technology	118,008. 23	219,241.4 6	49,662.75	8,283.77	1,840,464 .15	
4 0	26220120 040	Centre of Excellence for the Research of Atherosclerosis (CEVA)	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	2,364,407. 57	155	5	Agriculture and environment	0.00	2,003,508. 45	134,068.5 9	7,112.20	87,451.89	
4 1	26220120 041	Completion of the Centre of Excellence for Animal and Human Ecology with an Emphasis on Improving Scientific Research – Stage II	University of Prešov 17. novembra 15 080 01 Prešov	2,357,516. 24	49	9	Biomedicine and biotechnology	255,696. 98	1,667,959. 95	33,275.44	7,634.64	280,520.8 7	
4 2	26220120 073 (2622012 0042)	Centre of Excellence for the Research of Genetic Animal Resources	National Agricultural and Food Centre Hlohovecká 2 951 41 Lužianky	2,180,463. 01	24	6	Agriculture and environment	303,334. 94	942,458.9 2	145,478.4 9	39,103.5 4	154,012.4 3	

4 3	26220120 043	Development of the Centre of Excellence for the Research of Digestive Tract Physiology – CEFT Stage 2	Institute of Animal Physiology SAS Šoltésovej 4-6 040 01 Košice - Juh	1,926,272. 01	39	7	Biomedicine and biotechnology	0.00	1,703,083. 61	30,335.74	2,158.52	178.23
4 4	26220120 044	Upgrading and extension of the Centre for Linguistics, Culturology, Translation and Interpreting	University of Prešov 17. novembra 15 080 01 Prešov	2,346,955. 77	446	10	Selected fields of social sciences Information and communication technology	192,715. 61	1,150,647. 60	189,579.0 4	4,236.76	681,010.5 1
4 5	26220120 045	Centre of Excellence for 5-Axis Machining – experimental basis for high-tech research	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	2,355,701. 39	95	7	Industrial technology	0.00	1,999,498. 61	4,106.46	1,156.53	2,022.06
4 6	26220120 046	Centre of Excellence for electronic power systems and materials for related components II	University of Žilina Univerzitná 8215/1 010 26 Žilina	2,365,124. 69	44	8	Information and communication technology	0.00	1,583,744. 25	393,976.3 2	5,977.96	-965.84
4 7	26220120 047	Extrem – Completion of the Centre of Advanced Physical Study of Materials under Extreme Conditions	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	2,316,456. 17	134	4	Industrial technology	182,895. 79	1,753,661. 27	242,605.1 5	10,614.1 2	6,088.48
4 8	26220120 048	Centre of Excellence for the development and application of diagnostic methods in the processing of metallic and non- metallic materials	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	2,366,375. 31	120	0	Industrial technology	0.00	2,341,953. 75	0.00	1,287.06	4,156.31
4 9	26220120 049	Completion of the Centre of Excellence: Adaptive Forest Ecosystems ekosystémy	Technical University Zvolen T. G. Masaryka 24 960 53 Zvolen	2,242,950. 42	320	14	Information and communication technology, Agriculture and environment	0.00	1,276,544. 82	345,904.1 0	2,017.53	149,621.4 8

5 0	26220120 050	Centre of Excellence for Smart Traffic Systems and Services II	University of Žilina Univerzitná 8215/1 010 26 Žilina	2,008,080. 12	240	7	Information and communication technology	0.00	1,104,352. 80	453,622.4 0	2,199.36	160,194.0 7
5 1	26220120 053	Centre of Excellence for Research in Personalised Therapy (CEVYPET)	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	3,558,612. 38	152	5	Biomedicine and biotechnology	5,609.63	59,623.38	463,063.8 0	1,667.70	2,988,669 .62
5 2	26220120 054	Centre of Excellence for White-Green Biotechnology	Institute of Chemistry SAS Dúbravská cesta 9 845 38 Bratislava	3,373,742. 74	19	7	Biomedicine and biotechnology	0.00	169,747.6 2	87,588.44	303.45	2,979,113 .14
5 3	26220120 055	Centre of Excellence for Integrated Research and Use of Progressive Materials and Technology in Automotive Electronics	Technical University in Košice Letná 9 042 00 Košice	3,496,641. 63	91	13	Industrial technology, Materials research and nanotechnology	0.00	2,333,083. 99	746,533.4 6	4,888.35	174,320.9 7
5 4	26220120 056	Centre of Excellence for Ceramics, Glass and Silicate Materials	Institute of Inorganic Chemistry SAS Dúbravská cesta 9 845 36 Bratislava	3,380,365. 17	52	15	Information and communication technology	0.00	3,083,875. 60	132,785.9 4	2,965.77	44,736.34
5 5	26220120 057	Centre of Excellence for Socio-History and Culture-History Research	University of Prešov 17. novembra 15 080 01 Prešov	3,431,053. 45	50	7	Information and communication technology	0.00	17,941.60	30,111.78	80.51	3,131,800 .25
5 6	26220120 058	Centre of Excellence for the Research of Health-Affecting Factors with a Focus on the Category of Marginalised and Immunocompromised Persons	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	3,042,317. 87	118	7	Biomedicine and biotechnology	0.00	2,675,422. 50	148,419.9 1	3,033.99	1,370.76
5 7	26220120 059	Centre for the Research of the Earliest History of the Central Danube Region	Institute of Archaeology SAS Akademická 2 949 21 Nitra	3,336,862. 64	31	7	Agriculture and environment, Environment, Agriculture	280,754. 86	1,206,793. 24	1,200,946 .32	5,996.87	1,775.51

58	26220120060	Centre for the Research of Technical, Environmental and Human Risk Management for Sustainable Development of Production and Machinery Products	Technical University in Košice Letná 9 042 00 Košice	3,307,511.50	121	5	Industrial technology	0.00	2,203,730.02	646,361.70	17,531.19	54,435.82
59	26220120061	The Memory of Slovakia – National Centre of Excellence for the Research, Protection and Dissemination of Cultural and Scientific Heritage	University of Žilina Univerzitná 8215/1 010 26 Žilina	3,425,010.70	90	12	Selected fields of social sciences	0.00	2,851,618.77	128,451.03	1,504.50	100,647.10
60	26220120062	Centre of Excellence for Integrated Management of River Basins under Changing Environmental Conditions	Institute of Hydrology SAS Račianska 75 831 02 Bratislava	2,821,163.60	40	6	Agriculture and environment	0.00	2,278,254.27	173,656.53	3,286.95	78,957.72
61	26220120063	Centre of Excellence for Neuroregenerative Research	Institute of Neurobiology SAS Šoltésovej 4-6 040 01 Košice	3,243,322.08	49	5	Information and communication technology	0.00	2,900,866.40	147,842.00	53.55	142,370.14
62	26220120064	Centre of Excellence for Integrated Research of the Earth's Geosphere	Earth Science Institute SAS Dúbravská cesta 9 840 05 Bratislava	3,378,783.66	48	11	Agriculture and environment, Environment, Agriculture	0.00	2,913,860.69	319,757.91	2,026.74	15,789.10
63	26220120065	Centre of Excellence for Aviation	University of Žilina Univerzitná 8215/1 010 26 Žilina	3,514,024.26	23	7	Industrial technology	0.00	3,356,322.07	68,923.13	4,582.90	808.30
64	26220120066	Centre of Excellence for Biomedical Technology	Pavol Jozef Šafárik University in Košice Šrobárova 2 041 80 Košice	3,159,645.50	65	8	Biomedicine and biotechnology	0.00	2,543,056.80	63,798.37	850.00	163,866.63
65	26220120067	Centre of Excellence for Electromagnetic Fields in Medicine	Pavol Jozef Šafárik University in Košice Šrobárova 2	3,404,624.00	144	6	Biomedicine and biotechnology	0.00	3,148,167.16	116,615.21	1,987.30	1,599.98

		CEEPM	041 80 Košice									
6 6	26220120 068	Centre of Excellence – Set-up of a Comprehensive Strategy for International Crisis Management in International Relations	Matej Bel University in Banská Bystrica Národná 12 974 01 Banská Bystrica	1,766,485. 69	71	1	Selected fields of social sciences, Information and communication technology	0.00	1,278,894. 39	1,189.32	0.00	299,324.3 6
6 7	26220120 069	Centre of Excellence for the Support of Decision-Making in Forest and Landscape	Technical University in Zvolen T. G. Masaryka 24 960 53 Zvolen	3,502,477. 36	276	9	Information and communication technology	0.00	2,146,292. 81	668,370.1 7	7,225.00	112,913.4 4
6 8	26240120 001	Centre of Excellence for Green Chemistry Methods and Processes	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	1,185,900. 42	205	10	Agriculture and environment	0.00	893,784.1 0	107,675.3 2	184.95	8,151.84
6 9	26240120 002	Centre for the Development of Knowledge-Based Economy Settlement Infrastructure	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,023,345. 29	220	9	Environment, Agriculture	0.00	368,482.0 1	10,914.48	154.70	490.84
7 0	26240120 003	Centre of Excellence for the Use of Information Biomacromolecules in the Prevention of Diseases and for Improving the Quality of Life	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava - Staré Mesto	1,182,618. 44	191	12	Biomedicine and biotechnology, Information and communication technology	0.00	452,561.0 8	84,539.86	185.10	420,420.8 2
7 1	26240120 004	Centre of Excellence for Integral Anti-Flood Land Protection	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,184,497. 54	145	5	Environment, Agriculture	,	972,931.6 2	7,720.30	3,273.08	818.14
7 2	26240120 005	Support for the Construction of a Centre of Excellence for Smart Technology,	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,186,085. 76	93	2	Industrial technology	0.00	1,041,470. 51	24,404.06	393.58	4,280.15

		Systems and Services										
7 3	26240120 006	Creation of a Centre of Excellence for the research and development of construction composites for machine, construction and medical applications	Institute of Materials and Machine Mechanics Račianska 75 831 02 Bratislava – Nové Mesto	1,125,708. 93	29	5	Materials research and nanotechnology, Biomedicine and biotechnology	0.00	147,632.1 8	59,022.58	1,156.67	830,193.7 3
7 4	26240120 007	Centre for Materials, Layers and Systems for Applications and Chemical Processes under Extreme Conditions	Institute of Inorganic Chemistry SAS Dúbravská cesta 9 845 36 Bratislava	1,128,575. 46	190	4	Industrial technology	1,406.27	99,141.54	95,421.00	3,505.57	892,197.9 4
7 5	26240120 043 (2624012 0008)	Centre of Excellence for Translational Research in Molecular Medicine (TRANSMED)	Biomedical Research Centre SAS Dúbravská cesta 9 845 05 Bratislava	1,127,577. 50	115	7	Information and communication technology, Materials research and nanotechnology	0.00	103,837.1 0	105,414.8 2	0.00	785,756.5 3
7 6	26240120 009	QUTE – Centre of Excellence for Quantum Technology	Institute of Physics SAS Dúbravská cesta 9 845 11 Bratislava	1,100,984. 99	23	4	Industrial technology	0.00	780,094.0 6	117,632.5 4	0.00	64,100.07
7 7	26240120 010	Centre of Excellence for the Design, Preparation and Diagnostics of Nanostructures for Electronic and Photonics (NanoNet)	International Laser Centre Ilkovičova 3 841 04 Bratislava	1,125,451. 24	49	7	Materials research and nanotechnology, Information and communication technology	0.00	1,068,260. 85	22,787.89	1,097.60	175.39
7 8	26240120 011	Centre of Excellence for New Technology in Electrical Engineering	Institute of Electrical Engineering Dúbravská cesta 9 841 04 Bratislava	1,118,048. 01	213	5	Industrial technology	0.00	1,062,138. 86	21,452.55	1,229.62	3,057.52
7 9	26240120 012	Centre of Excellence for the Physics of Complex Systems	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava –	1,187,844. 38	145	2	Materials research and nanotechnology, Information and communication	0.00	1,144,807. 23	19,127.09	1,198.81	10.15

			Staré Mesto				technology					
80	26240120041 (26240120013)	Construction of a "HiTech" centre for the research of the origin, elimination and assessment of the presence of contaminants in food	National Agricultural and Food Centre Hlohovecká 2 951 41 Lužianky	627,684.06	36	5	Information and communication technology	0.00	590,125.39	12,180.27	1,336.36	15,770.10
81	26240120014	Centre of Excellence for the protection and use of landscape and biodiversity	Institute of Landscape Ecology Štefánikova 3 814 99 Bratislava	1,128,593.24	25	2	Agriculture and environment, Environment, Information and communication technology	0.00	728,652.20	18,345.12	0.00	24,515.88
82	26240120015	Construction of a Centre of Excellence for Cerebrovascular Accidents at the Faculty of Medicine of the Comenius University in Bratislava	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	1,178,468.88	73	5	Biomedicine and biotechnology	0.00	1,025,452.10	49,452.47	1,421.74	6,148.46
83	26240120016	National Centre for the Research and Application of Renewable Energy Sources	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,186,759.89	118	3	Sustainable energy sector and energy	0.00	898,415.61	79,601.93	8,915.24	1,304.92
84	26240120017	Global and Local Processes in Slovakia: Development of Social Innovations in the Context of European Union Internationalisation	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	1,112,631.66	107	4	Selected fields of social sciences	0.00	245,929.33	420,462.08	530.37	76,543.08
85	26240120018	Centre of Excellence for the Design, Preparation and Diagnostics of Nanostructures for Electronics, and	International Laser Centre Ilkovičova 3 841 04 Bratislava	2,232,781.84	15	9	Materials research and nanotechnology, Information and communication technology	0.00	1,822,793.21	221,702.53	346.80	1,279.29

		Photonics 2 (NanoNet 2)										
86	26240120019	Construction of a Centre of Excellence for New Technology in Electrical Engineering – Stage II	Institute of Electrical Engineering SAS Dúbravská cesta 9 841 04 Bratislava	2,243,589.55	111	5	Sustainable energy sector and energy	0.00	2,005,909.45	62,614.07	0.00	96,266.10
87	26240120020	Construction of a Centre of Excellence for the research and development of construction composites – Stage II	Institute of Materials and Machine Mechanics SAS Račianska 75 831 02 Bratislava - Nové Mesto	2,251,327.18	79	6	Information and communication technology	0.00	219,342.33	136,091.17	7,180.15	1,865,305.32
88	26240120021	Centre for Materials, Layers and Systems for Chemical Processes under Extreme Conditions – Stage II	Institute of Inorganic Chemistry SAS Dúbravská cesta 9 845 36 Bratislava	2,252,455.80	235	5	Industrial technology, Agriculture and environment, Environment, Agriculture	0.00	2,051,560.00	150,478.90	3,315.00	15,418.89
89	26240120022	meta-QUTE: Centre of Excellence for Quantum Technology	Institute of Physics SAS Dúbravská cesta 9 845 11 Bratislava	2,245,493.45	59	4	Industrial technology	0.00	1,852,519.08	242,686.65	0.00	38,973.56
90	26240120023	Completion of the Centre of Excellence for Cerebrovascular accidents at the Faculty of Medicine of the Comenius University in Bratislava	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava - Staré Mesto	2,364,623.50	73	5	Biomedicine and biotechnology	0.00	2,147,149.98	52,118.81	951.66	7,792.33
91	26240120042 (26240120024)	Centre of Excellence for Contaminants and Microorganisms in Food	National Agricultural and Food Centre Hlohovecká 2 951 41 Lužianky	2,252,376.54	43	5	Biomedicine and biotechnology	0.00	0.00	77,069.17	1,840.52	9,933.44
92	26240120025	Completion of the Centre of Excellence for Green Chemistry Methods and Processes (CEGreenII)	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	2,342,587.79	97	11	Information and communication technology, Agriculture and environment	0.00	1,802,424.43	387,465.30	150.71	21,602.39

9 3	26240120 026	Completion of the Centre of Excellence for the Physics of Complex Systems	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	2,363,496. 18	145	3	Materials research and nanotechnology, Information and communication technology	226,328. 41	1,940,550. 00	153,808.5 6	819.06	2,867.37
9 4	26240120 027	Development of the Centre of Excellence for the Use of Information Biomacromolecules to Improve the Quality of Life	Comenius University in Bratislava Šafárikovo námestie 6 818 06 Bratislava – Staré Mesto	2,370,069. 45	131	10	Selected fields of social sciences Information and communication technology, Environment, Biomedicine and biotechnology	0.00	1,637,931. 30	317,015.3 7	150.71	21,867.32
9 5	26240120 028	Completion of the National Centre for the Research and Application of Renewable Energy Sources	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	2,041,027. 67	129	7	Sustainable energy sector and energy	195,790. 54	1,430,298. 96	302,173.6 0	4,518.27	4,000.81
9 6	26240120 029	Support for the Building of the Centre of Excellence for Smart Technology, Systems and Services II	Slovak University of Technology in Bratislava Vazovova 5 812 43 Bratislava	1,882,548. 92	93	1	Agriculture and environment	0.00	1,479,580. 03	97,065.61	2,266.86	13,420.82
9 7	26240120 044 (2624012 0030)	Centre of Excellence for Translational Research in Molecular Medicine (TRANSMED 2)	Biomedical Research Centre SAS Dúbravská cesta 9 845 05 Bratislava	2,248,812. 70	89	7	Information and communication technology, Biomedicine and biotechnology	0.00	1,975,403. 91	79,626.46	0.00	78,051.17
9 8	26240120 031	Centre of Excellence for Glycomics	Institute of Chemistry SAS Dúbravská cesta 9 845 38 Bratislava	3,381,278. 75	22	7	Information and communication technology, Biomedicine and biotechnology	184,746. 97	2,873,029. 98	31,723.18	675.68	152,346.9 5
9 9	26240120 032	Creation of Centre of Excellence for Economic Research for Addressing the Civilisational Challenges in the 21 st Century	University of Economics in Bratislava Dolnozemska cesta 1 852 35 Bratislava	2,306,355. 33	133	7	Information and communication technology	0.00	1,772,289. 95	185,589.6 7	0.00	5,065.52

1 0 0	26240120 033	Centre of Excellence for Environmental Health	Slovak Medical University in Bratislava Limbová 12 833 03 Bratislava	2,777,532. 25	108	10	Environment, Agriculture	105,716. 04	1,926,537. 76	371,308.6 6	9,320.49	210.56
1 0 1	26240120 034	Centre of Excellence for Research on Security	Police Force Academy in Bratislava Sklabinská 1 835 17 Bratislava	3,373,470. 65	88	9	Information and communication technology, Biomedicine and biotechnology	0.00	2,501,720. 99	191,137.3 7	1,190.00	318,172.7 6
1 0 2	26240120 035	European Dimensions of Slovakia's Art Culture	Institute of Art History SAS Dúbravská cesta 9 841 04 Bratislava	2,715,034. 28	26	11	Selected fields of social sciences	0.00	1,563,319. 29	514,899.7 1	2,036.43	315,340.8 3
1 0 3	26240120 036	Centre of Excellence for High-Productive Plasma Processing of Materials and Additive Creation of Structures	GA Drilling. a. s. Piešťanská 3 917 01 Trnava	2,549,972. 51	30	6	Sustainable energy sector and energy	0.00	1,652,572. 84	770,782.6 3	0.00	73,238.48
1 0 4	26240120 037	Establishment of a Research Centre for Data Analysis and Protection	IBM International Services Centre s. r. o. Apollo II. Mlynské Nivy 49 821 09 Bratislava	4,286,556. 67	32	4	Information and communication technology	0.00	2,294,303. 00	532,612.1 8	0.00	1,302,394 .69
1 0 5	26240120 038	Centre for the Research of Severe Diseases and Their Complications	Novartis Slovakia. s. r. o. Galvaniho 15/A. 821 04 Bratislava – Nové Mesto	4,275,603. 44	24	11	Biomedicine and biotechnology	0.00	1,604,464. 41	1,820,857 .47	0,00	474,309.9 2
1 0 6	26240120 039	International Centre of Excellence for the Research of Smart and Safe Information and Communication Technology and Systems	Atos IT Solutions and Services s. r. o. Dúbravská cesta 4/1714. 841 04 Bratislava	2,577,347. 55	127	8	Information and communication technology Biomedicine and biotechnology	0.00	147,645.0 0	1,837,983 .04	606.20	446,953.3 5
1 0 7	26240120 040	Fundamental Study of the Immunomodulatory Activity of Cytokines at Various Stages of Psoriasis	SHIMADZU SLOVAKIA. organizačná zložka Röntgenova 28. 851 01 Bratislava	3,517,460. 01	12	6		0.00	2,370,813. 88	254,938.8 3	0.00	338 426.3 9

Centres of excellence - Total	213,764,7 62.85	10,319	932		2,843,0 53.45	140,700,9 47.22	22,133,3 43.67	302,221. 32	26,765,4 22.24

Table 8: Overview of investments within large infrastructures

R ef. n o.	ITMS	Project title	Beneficiary	Contracted expenditure under Grant Contracts	Headcount		RIS3 area (see sheet " RIS3 Focus")	SPENDING				
					Research ers	Man agem ent		Building works	Devices and equipme nt	Research activities (internal salaries, external services)	Populari sation	Other (wage managem ent, etc..)
				Total expenditure EU funds (€)	Number	Num ber		EU funds (€)	EU funds (€)	EU funds (€)	EU funds (€)	EU funds (€)
1	2622022 0095	National infrastructure for supporting technology transfer in Slovakia – NITT SK	SCSTI	4,081,675.17	1,723	9	Information and communication technology – transfer of knowledge gained through research and development into economic and social practice	0.00	416,589.1 7	1,881,937 .43	315,738.9 3	199,365.4 0
2	2624022 0043	National infrastructure for supporting technology transfer in Slovakia – NITT SK in Bratislava region	SCSTI	2,917,710.32	1,230	6	Information and communication technology – transfer of knowledge gained through research and development into economic and social practice	0.00	296,177.0 8	1,342,238 .24	225,117.3 2	166,592.3 7
3	2621012 0002	Slovak Infrastructure for High-Performance Computing	Computing Centre of the SAS	11,288,637.50	41	4	Information and communication technology	84,221.77	9,794,536 .07	70,690.08	12,685.43	62,743.16
4	2623012 0002	Slovak Infrastructure for High-Performance Computing Bratislava	Computing Centre of the SAS	10,781,612.50	9	2	Information and communication technology	151,036.4 2	9,632,015 .40	73,386.25	7,359.71	44,607.16

5	2621012 0001	Infrastructure for research and development – Research and Development Data Centre	SCSTI	16,965,928.93	36,983	6	Information and communication technology	0.00	15,401,28 3.52	164,597.1 8	58,239.13	55,453.83
6	2623012 0001	Infrastructure for research and development – Research and Development Data Centre Bratislava	SCSTI	11,197,940.11			Information and communication technology	0.00	10,165,25 6.17	149,091.9 6	38,308.93	36,597.40
7	2622022 0001	National Information System for Support of Research and Development in Slovakia – access to electronic information	SCSTI	8,522,731.94	33,289	25	Information and communication technology	0.00	0.00	7,860,247 .31	93,756.05	225,916.4 0
8	2622022 0178	National Information System for Support of Research and Development in Slovakia – access to electronic information II (NISPEZ II)	SCSTI	3,484.017.87			Information and communication technology	0.00	2,128.23	3,300,543 .12	9,463.97	73,675.70
9	2622022 0199	National Information System for Support of Research and Development in Slovakia – access to electronic information III (NISPEZ III)	SCSTI	1,273,935.80			Information and communication technology	0.00	0.00	1,173,211 .81	0.00	3,131.03
10	2624022 0001	National Information System for Support of Research and Development in Slovakia – access to electronic information Bratislava	SCSTI	8,376,692.84	24,847		Information and communication technology	0.00	9,669.94	7,396,808 .73	91,692.71	245,578.2 9
11	2624022 0083	National Information System for Support of Research and Development in Slovakia – access to electronic information II (NISPEZ	SCSTI	3,478,203.97			Information and communication technology	0.00	2,125.17	3,292,503 .52	9,450.35	73,366.39

		II) Bratislava										
12	2624022 0095	National Information System for Support of Research and Development in Slovakia – access to electronic information III (NISPEZ III) Bratislava	SCSTI	1,091,817.56			Information and communication technology	0.00	0.00	999,683.1 3	0.00	3,131.03
13	2622022 0181	PopVaT – Popularisation of Science and Technology in Slovakia	SCSTI	9,621,275.45	266	1	Information and communication technology	0.00	1,955,402 .93	0.00	3,872,204 .29	860,385.8 6
14	2624022 0085	PopVaT – Popularisation of Science and Technology in Slovakia Bratislava	SCSTI	3,085,636.31			Information and communication technology	0.00	627,115.5 5	0.00	1,241,883 .97	331,471.5 4
15	2624022 0092	Support of Establishment and Development of National Business centre – stage I	SCSTI	8,491,162.43	125	6	Information and communication technology	42,428.63	2,958,267 .90	1,418,025 .70	51,027.88	242,905.2 9
16	2621012 0040	National Telepresence Infrastructure for Support of Research, Development and Technology Transfer	SCSTI	12,701,724.42	41,216	2	Information and communication technology	0.00	9,679,545 .00	0.00	63,700.79	2,657,137. 5
17	2623012 0003	National Telepresence Infrastructure for Support of Research, Development and Technology Transfer Bratislava	SCSTI	4,250,000.00	30,879		Information and communication technology	0.00	3,226,515 .00	0.00	21,233.60	890,270.2 4
TOTAL NP							-					

18	2622022 0195	Research and development accelerator centres for applied oncological research and industrial use (VUCOP)	SCSTI	0.00	0	0	Materials research and nanotechnology	0.00	0.00	0.00	0.00	0.00
19	2622022 0179	UNIVERSITY SCIENCE PARK „ CAMPUS MTF STU “ - CAMBO	Slovak University of Technology Bratislava	35,783,673.67	215	2	Materials research and nanotechnology	19,205,45 6.27	15,548,27 4.73	382,667.5 6	7,318.16	150,172.8 1
20	2624022 0084	University Science Park STU Bratislava	Slovak University of Technology Bratislava	32,381,774.37	1,100	13	Information and communication technology / Biotechnology	16,418,14 3.61	13,833,98 8.8	721,825.2 8	35,243.15	757,569.7 3
21	2622022 0182	TECHNICOM University Science Park for innovation applications with the support of knowledge-based technology	Technical University in Košice	29,783,304.4	585	29	Information and communication technology / Sustainable energy sector and energy	6,590,587 .59	17,972,83 0.42	2,744,782 .13	24,009.52	722,518.2 2
22	2624022 0086	University Science Park of the Comenius University in Bratislava	Comenius University in Bratislava	33,567,773.24	389	10	Research in molecular and environmental medicine and biotechnology	16,804,21 8.03	12,209,08 6.5	3,424,073 .70	20,109.45	402,084.1 4
23	2622022 0180	Building of the “AgroBioTech” research centre	Slovak University of Agriculture Nitra	22,362,616.26	250	46	Agriculture and environment, incl. modern environment- friendly chemical technology	4,723,654 .08	12,339,34 8.5	997,561.5 8	8,143.99	3,298,615, 4
24	2622022 0183	Research Centre of the University of Žilina	University of Žilina Žilina	20,317,624.86	187	7	Sustainable energy sector and energy	2,212,934 .46	14,693,03 5.0	3,075,557 .65	4,280.29	287,231.6 0
25	2622022 0184	University Science Park of the University of Žilina	University of Žilina Žilina	32,812,498.69	192	6	Materials research and nanotechnology / Information and communication technology	3,081,015 .15	25,929,23 7.8	2,803,931 .82	14,935.71	197,771.2 0
26	2622022 0185	Medical University Science Park in Košice (MediPark, Košice)	P. J. Šafárik University Košice	19,183,636.57	584	34	Biotechnology and biomedicine	9,099,091 .37	9,019,309 .82	343,182.5 6	22,410.78	73,926.20
27	2624022 0087	Biomedicine University Science Park, Bratislava	SAS	33,608,729.44	45	14	Biotechnology and biomedicine	22,712,82 0.42	10,064,88 5.23	295,995.5 2	3,870.54	155,348.8 7

28	2622022 0186	PROMATECH Research Centre of Progressive Materials and Technology for Current and Future Applications	SAS	18,863,238.39	68	26	Materials research and nanotechnology	8,777,927 .66	9,147,586 .04	398,285.4 6	6,390.52	151,360.7 4
29	2624022 0088	Centre for Applied Research of New Materials and Technology Transfer	SAS	21,147,518.68	70	12	Materials research and nanotechnology	7,707,735 .37	12,679,57 8.07	425,540.0 5	4,407.14	110,290.9 9
30	2622022 0187	Martin Centre of Biomedicine (BioMed Martin)	Comenius University in Bratislava, Jessenius Medical Faculty in Martin	22,367,945.19	232	5	Biotechnology and biomedicine	9,355,218 .30	10,858,60 3.78	827,866.9 9	1,231.57	111,412.0 6
31	2622022 0188	Centre for the Research and Development of Immunologically Active Substances	SAS	21,246,356.46	13	5	Biotechnology and biomedicine	16,211,66 6.77	4,333,775 .99	145,194.3 8	2,794.08	243,623.5 0
32	2622022 0198.00	ALLEGRO Research Centre	SAS,	13,782,504.81	133	12	Materials research and nanotechnology	0.00	8,400,349 .66	3,916,468 .81	6,779.18	90,130.74
Total DDP (USP and RC)				357,209,195.0 5	4,063	221		142,900, 469.08	177,029, 890.86	20,502,9 33.49	161,924. 08	6,752,056 .25
TOTAL ALL PROJECTS				478,819,898.1 7	174,671	282		143,178, 155.90	241,196, 517.99	49,625,8 97.95	6,273,78 7.14	12,924,38 4.89