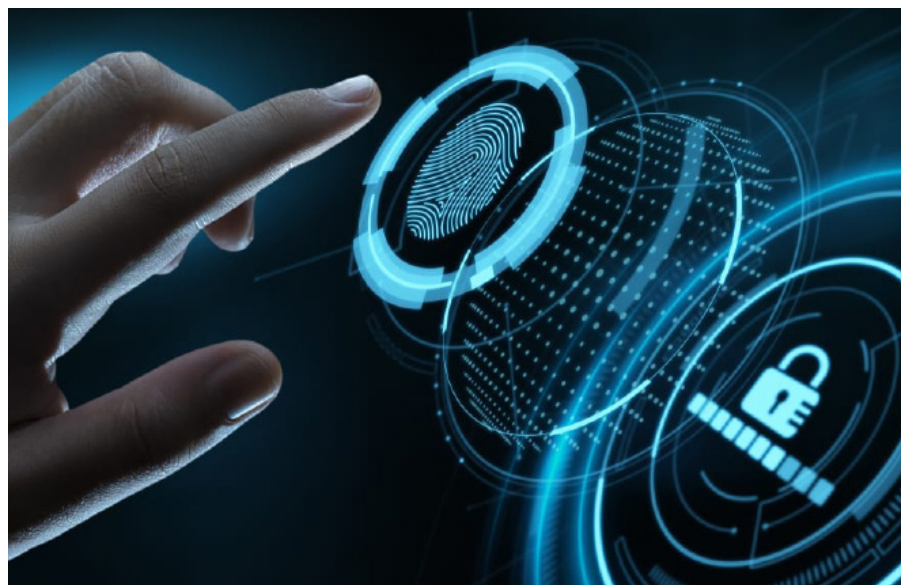


# R&D & Innovation Sector in SLOVAKIA

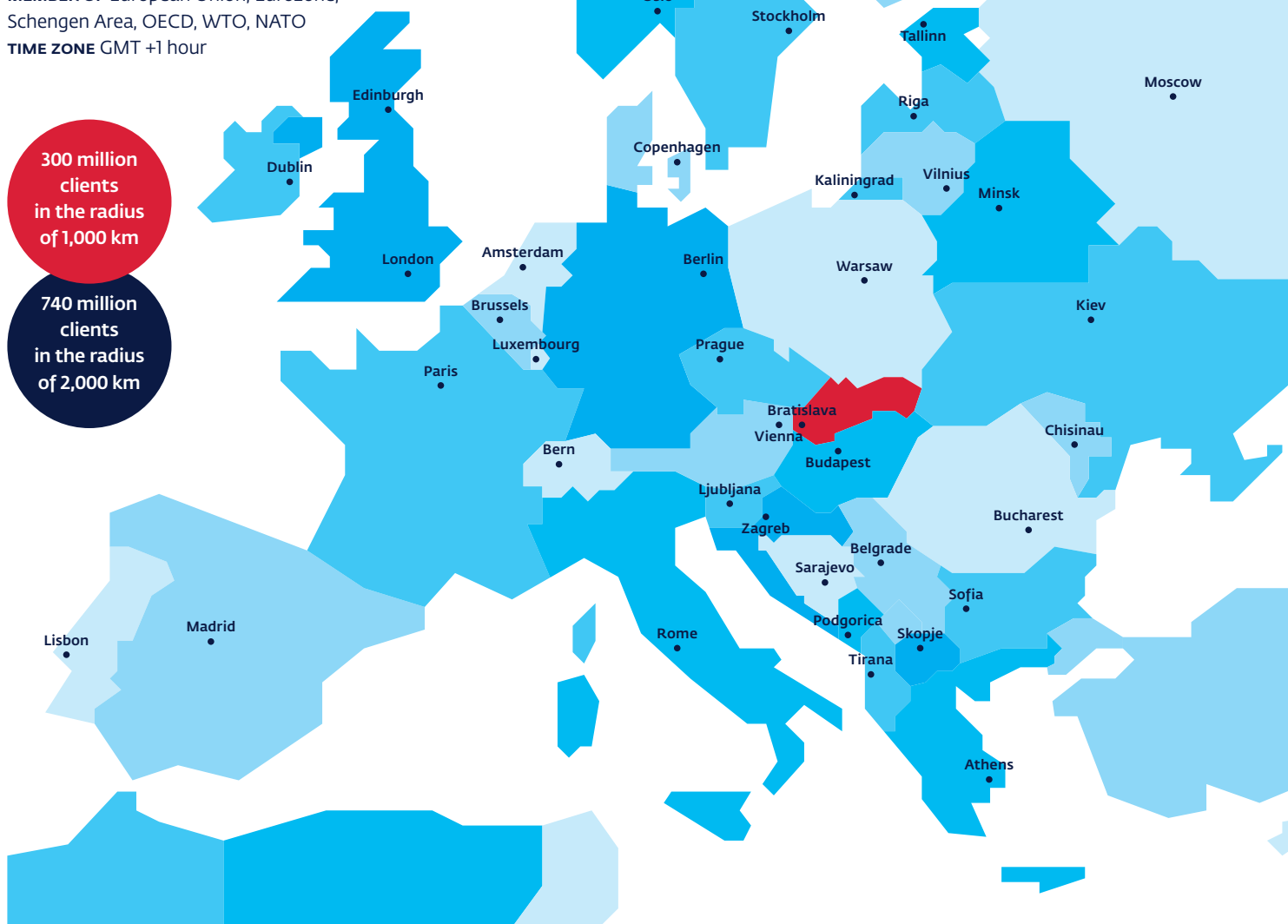


# R&D & Innovation Sector in Slovakia

Despite being viewed as a production powerhouse, Slovakia sees its future mainly in high value-added projects and investments, especially in R&D and innovative operations. This publication aims to introduce both existing as well as perspective areas of the Slovak R&D environment. Moreover, it highlights key advantages for investors why to locate their research facilities in Slovakia.



**TOTAL AREA** 49,035 km<sup>2</sup>  
**POPULATION** 5.4 million  
**CAPITAL CITY** Bratislava  
**MEMBER OF** European Union, Eurozone, Schengen Area, OECD, WTO, NATO  
**TIME ZONE** GMT +1 hour



# Overview of the R&D Sector in Slovakia

R&D is the fundamental precondition for increasing competitiveness and maintaining sustainable development. On top of that, it is inevitable for the long-term growth of knowledge economy in Slovakia. Slovak R&D has a long tradition and is capable of delivering internationally renowned cutting-edge solutions required in today's modern era.

7 years

Continual increase of gross domestic expenditure on R&D

824  
—  
676

824 R&D organisations and units in Slovakia, out of which 676 are from the private sector

41,000

People employed in the Slovak R&D sector

39%

Proportion of industrial companies carrying out innovative activities in Slovakia

47%

Percentage of employees working in high-tech manufacturing & knowledge intensive services of total employment

48%

Percentage of companies with innovative activities that have introduced a product innovation



## Top Reasons to Establish an R&D Centre in Slovakia

- 1 Additional 100% tax deduction for R&D expenses
- 2 Attractive investment incentives for R&D and technology centres
- 3 Clear vision for 2030 thanks to R&D&I National Strategy
- 4 Stable economic & political environment with Euro currency
- 5 Qualified & cost-effective human resources
- 6 Universities providing multidisciplinary talent pool of graduates & postgraduates
- 7 Historically strong tradition in engineering and industrial research
- 8 Extensive R&D & innovation infrastructure (centres of excellence, technological parks and university science parks)
- 9 Established cooperation between industry & academia
- 10 High quality of life in regional capitals - ideal for R&D operations

# When Innovation is Tradition

Slovakia's abundant R&D potential lies mainly in its people. In the past, local inventors pushed the technological boundaries within several fields and created knowledge-based preconditions for modern industrial development. Building on this tradition of industrial innovation, many Slovak companies are pioneering development of cutting edge technologies.



**AUREL STODOLA**  
steam and gas turbines,  
arm prosthetic



**SPINEA**  
actuators, positioners



**JOZEF K. HELL**  
water column pumping  
machines



**GA DRILLING**  
Plasmabit® milling  
and drilling



**JOZEF MURGAŠ**  
wireless telegraph



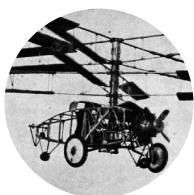
**ESET**  
antivirus protection



**JOZEF M. PETZVAL**  
achromatic lens



**PHOTONEO**  
3D technologies and  
robotic vision



**JÁN BAHÝĽ**  
helicopter, flying machines



**AIRCAR - KLEIN VISION**  
flying car





# Examples of Other Notable Slovak Innovations

## Design



**ECOCAPSULE**  
Self-sustainable  
microhomes



**WERKEMOTION**  
Transportation &  
industrial design  
R&D studio



**MATADOR**  
Mobility  
solutions

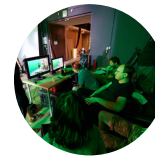
Design is an integral part of developing new products. Apart from technical aspects, many Slovak companies also focus on aesthetics.

Creativity and technology also come together in game design and development, a rising segment in which Slovak companies are beginning to play an important role.

## Game Development Industry



**PIXEL FEDERATION**  
Social media  
games/mobile &  
web-based games



**STUDIO 727**  
3D animations for  
movies and game  
development  
industry



**POWERPLAY  
STUDIO**  
Mobile and  
desktop games

## ICT



**INNOVATRICES**  
Biometrics



**SOITRON**  
Complex IT  
solutions



**SYGIC**  
Navigation  
systems

The core of Slovakia's technology potential comes from its firm base of home-grown IT companies, which are able to outrank their global competitors in several fields.

Much of Slovakia's programming potential is embedded in local businesses delivering solutions for modern cities.

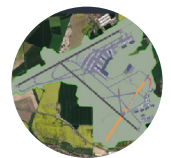
## Smart Cities



**SENSONEO**  
Waste  
management

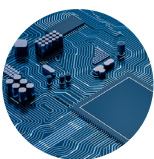


**AKULAR**  
VR/AR solutions  
for property  
technology



**SIMPLICITY**  
AI Travel Assistant

## Space, Medtech, Electronics & E-mobility



**TACHYUM**  
Universal  
processors



**SPACEMANIC**  
Satellite  
components



**MULTIPLEXDX**  
Cancer  
diagnostics

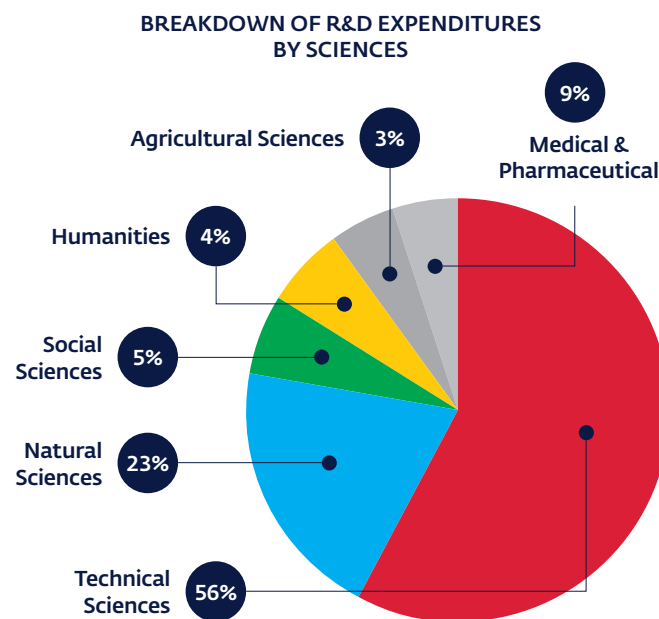
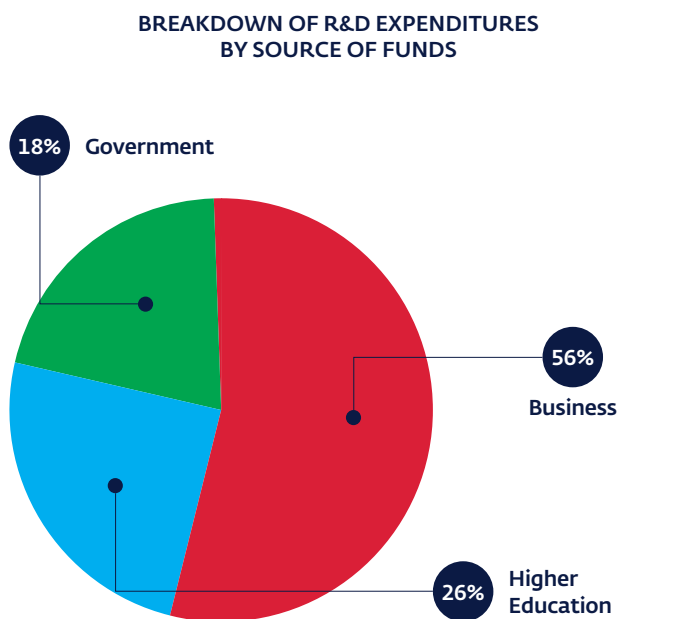
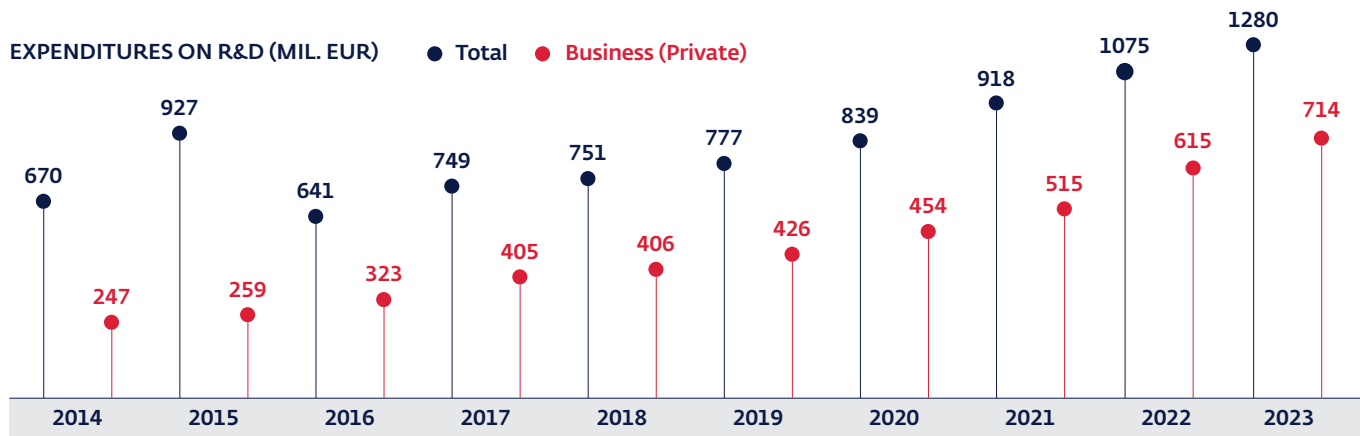


**INOBAT**  
Batteries for  
electric vehicles

There are other notable sectors in which Slovak companies manage to push the frontiers of technological advancement.

# Slovak R&D Sector in Figures

In the past decade, Slovak R&D has experienced a significant growth, establishing various centres of excellence, research and technology centres. The R&D expenditures in Slovakia are driven mainly by the business sector and technical sciences.



## AVERAGE GROSS MONTHLY SALARY LEVELS OF SELECTED R&D POSITIONS ACROSS SLOVAKIA

POSITION	WESTERN SLOVAKIA	CENTRAL SLOVAKIA	EASTERN SLOVAKIA
Robotics Engineer	1,700 – 2,800 €	1,400 – 1,800 €	1,400 – 2,000 €
Chemical Engineer	1,600 – 2,600 €	1,300 – 1,600 €	1,300 – 1,700 €
Hardware Engineer	2,000 – 3,500 €	1,700 – 2,000 €	1,700 – 2,400€
Test Engineer	1,600 – 2,400 €	1,600 – 2,200 €	1,400 – 2,100€
FEM Specialist	1,600 – 2,400 €	1,700 – 2,400 €	1,300 – 1,900 €
Electrical Design Engineer	1,700 – 2,800 €	1,700 – 2,200 €	1,400 – 2,200 €
Mechanical Design Engineer	1,700 – 3,000 €	1,700 – 2,100 €	1,400 – 1,700 €
Design Leader	2,200 – 3,300 €	2,200 – 2,900 €	1,800 – 2,200 €

Source: Statistical Office of the Slovak Republic: Yearbook of Science and Technology 2024 (data for 2023); Grafton (2024)

# National Strategy for Research, Development and Innovation 2030

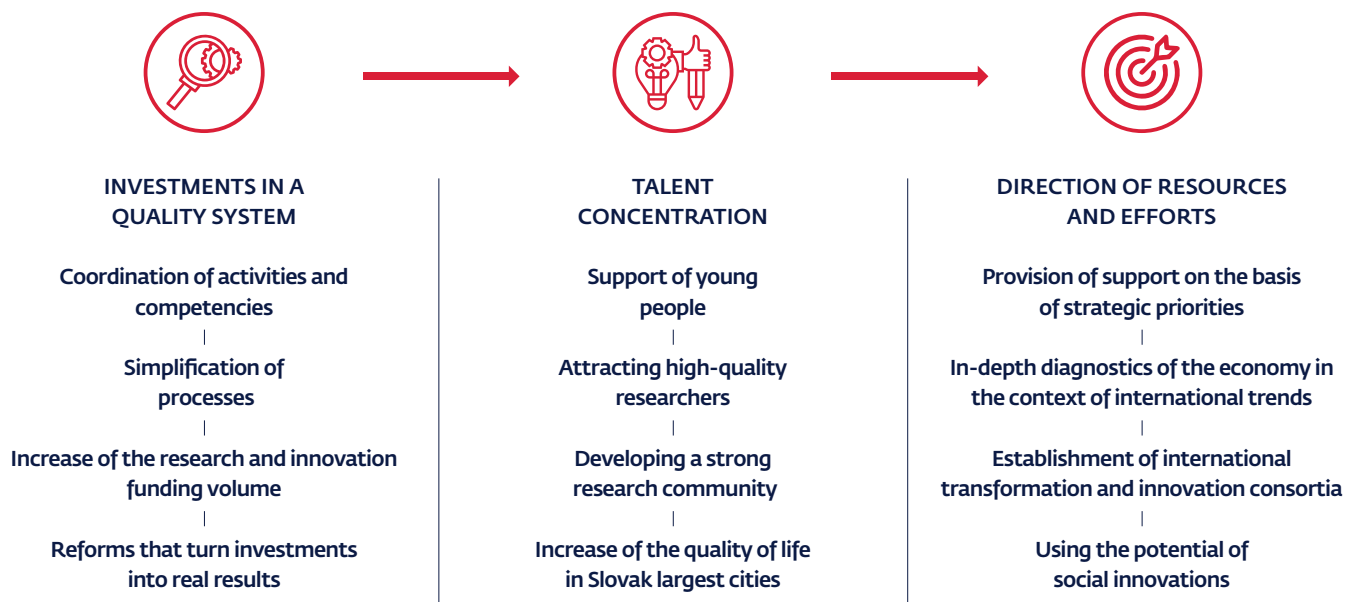
Slovakia has a clear plan to increase the competitiveness of its economy and quality of life by investments and reforms in the field of R&D&I. The national strategy, adopted by the Slovak Government in March 2023, presents a vision of how to make Slovakia a better place for research, development and innovation – and thus also a better place for life.

Thanks to complex reforms and new investments in research and innovation, Slovakia will transform its industry, accelerate economic growth and become again more attractive destination for highly qualified talent and companies creating high added value.

The strategy includes an action plan with a set of 91 measures to increase the innovation performance of Slovakia, which correspond to individual categories of the National Strategy.

## KEY AREAS:

- Predictable funding into a quality system allowing researchers and innovators to focus on promising projects
- Development, attraction and retention of talents from Slovakia and abroad
- Tools to prioritize areas of R&D in which Slovakia has the ambition and potential to excel

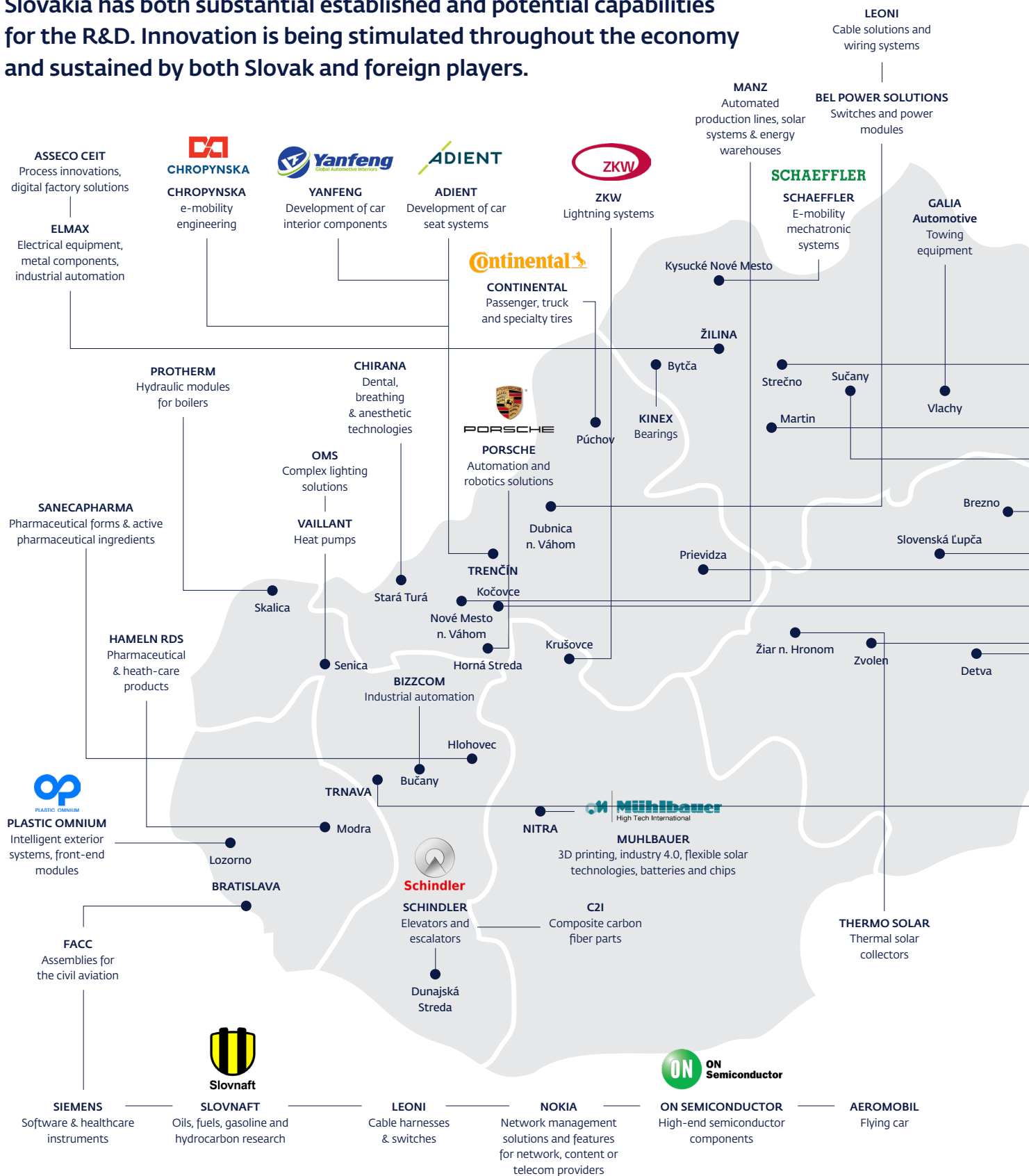


## The strategy's success will be evaluated based on following indicators:

- Improvement of Slovakia's position in the European Innovation Scoreboard ranking by 10 places (from 24th to 14th)
- Increase investments in R&D to 2% of GDP (of which 1.2% from private sector)
- Attract 25,000 highly qualified people from abroad

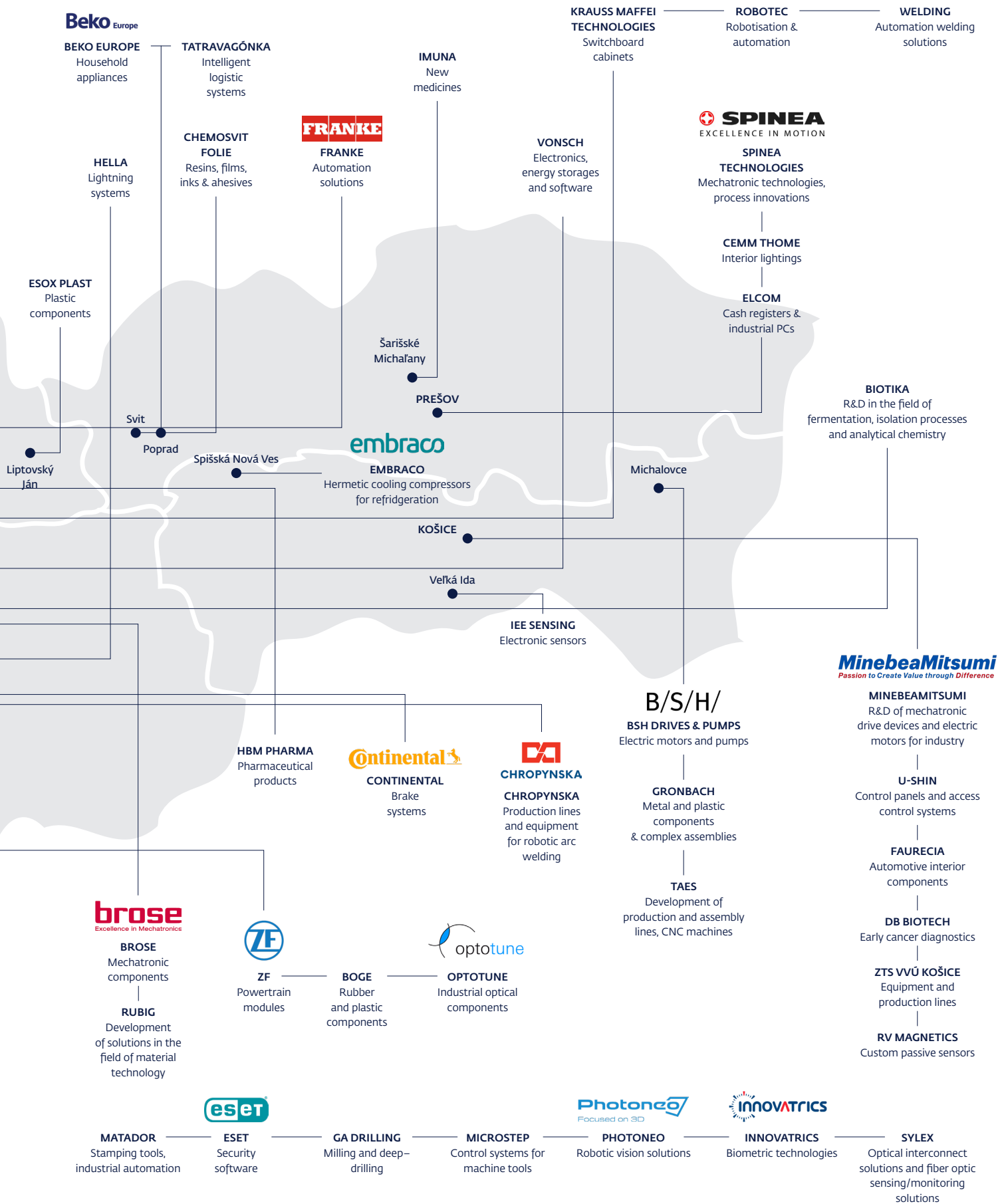
# Network of Private R&D Operations in Slovakia

Slovakia has both substantial established and potential capabilities for the R&D. Innovation is being stimulated throughout the economy and sustained by both Slovak and foreign players.



Source: Webpages of respective companies (2024)



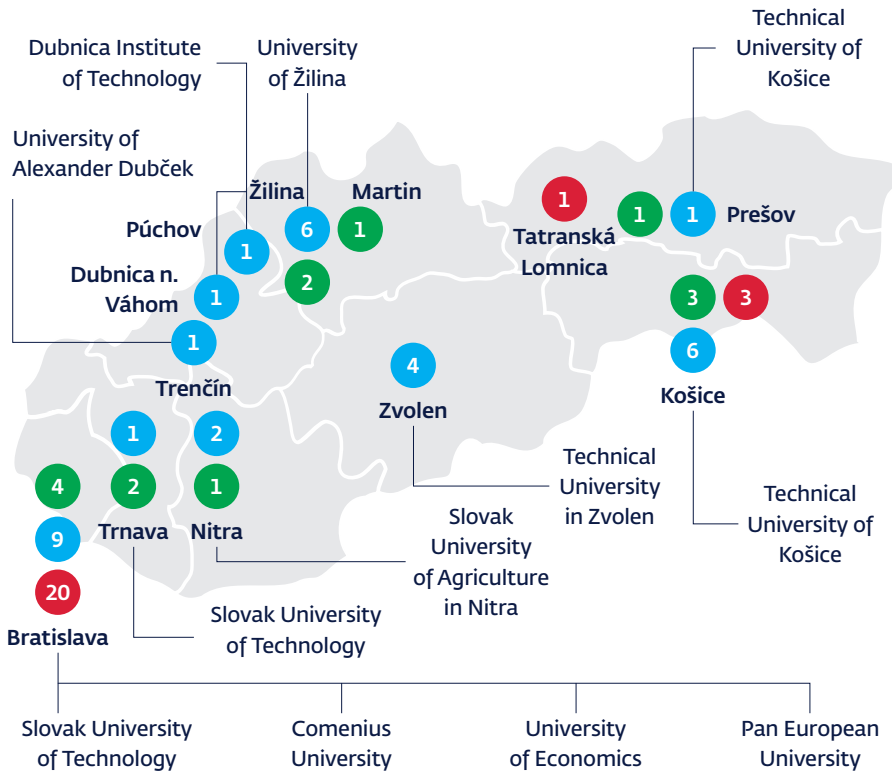


# Favourable Public R&D & Innovation Infrastructure

The public R&D infrastructure in Slovakia consists of highly competitive technical faculties at universities located all around the country, as well as of a wide network of institutes of the Slovak Academy of Sciences. Strong cooperation partnerships of both local and foreign companies, universities and research institutions is characteristic for Slovak R&D ecosystem.

## PUBLIC R&D NETWORK

Numbers in the map correspond with the number of technical/ICT faculties, university science parks & technical research institutes of the Slovak Academy of Sciences in respective cities.



24

technical institutes of the Slovak Academy of Sciences

7

technical universities

32

technical & ICT faculties

14

science parks

28 ths

students in technical & IT programmes

6+ ths

graduates in technical & IT programmes

## Slovak Academy of Sciences

Slovak Academy of Sciences (SAS) is a public research institution established in 1942. It consists of 48 organisations where more than 2,000 scientists & nearly 500 PhD students conduct their research in a wide range of fields.

### Institute of Materials and Machine Mechanics (Bratislava)

- advanced metallic materials R&D
- Partners & International Cooperation
- European Space Agency, Hyundai Motor Europe

### Institute of Electrical Engineering (Bratislava)

- semiconductors
- microelectronic sensors & detectors
- applied superconductivity
- Partners & International Cooperation
- CERN, Victoria University

### Institute of Informatics (Bratislava)

- ICT
- nano- & micro-structures
- robotics
- artificial intelligence

#### Partners & International Cooperation

- IEEE and ESFRI

### Institute of Experimental Physics (Košice)

- applied physics
- chemical sciences
- biological sciences
- nanotechnology

#### Partners & International Cooperation

- CERN, European Space Agency



Source: Slovak Centre of Scientific & Technical Information for the academic year 2023/2024; Slovak Academy of Sciences, SARIO (2024)

# R&D Specialisation at the Largest Slovak Universities



## SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA

### Faculty of Electrical Engineering and IT

- National Centre of Robotics
- National Centre for Space Engineering
- Partners & International Cooperation**
- Siemens, Matador, Volkswagen

### Faculty of Mechanical Engineering

- manufacturing technologies
- recycling of materials for the purpose of composite production
- Partners & International Cooperation**
- Volkswagen, Schaeffler, Brose

### Faculty of Informatics & Information Technologies

- data analysis and information processing
- artificial intelligence
- cybersecurity
- Partners & International Cooperation**
- ESET (a specialised IT research centre in cooperation with the Faculty of Mathematics, Physics & Informatics of Comenius University)

### Faculty of Material Sciences and Technology in Trnava

- SlovakION, one of the CEE's leading research centres for ion beam & plasma technologies in materials engineering & nanotechnology
- Partners & International Cooperation**
- Johnson Controls, Bosch

### Faculty of Chemical and Food Technology

- biotechnology
- chemical and biological protection of environment
- Partners & International Cooperation**
- Volkswagen, Mondi, Matador

### University Science Park STU, Bratislava

- ICT, electrical, chemical & civil engineering
- industrial biotechnology



## COMENIUS UNIVERSITY IN BRATISLAVA

### Faculty of Mathematics, Physics & Informatics

- applied mathematics & physics
- computer sciences
- Partners & International Cooperation**
- PwC, Accenture

### Faculty of Natural Sciences

- chemistry & chemical technology
- biotechnology & life sciences

### Comenius University Science Park, Bratislava

- biotechnology, biomedicine



TECHNICAL UNIVERSITY  
OF KOŠICE

## TECHNICAL UNIVERSITY IN KOŠICE

### Faculty of Electrical Engineering and Informatics

- cybernetics and artificial intelligence
- electronics & electrical engineering
- Partners & International Cooperation**
- MAGNA, Ness, VW, Embraco, Deutsche Telekom IT Solutions

### Faculty of Mechanical Engineering

- manufacturing technologies
- green & alternative fuel mobility
- automation, mechatronics, robotics and production technology
- Partners & International Cooperation**
- Garrett Motion, Embraco, Faurecia, Magna PT, Mondi SCP, Siemens, MinebeaMitsumi

### Faculty of Manufacturing Technologies with a seat in Prešov

- advanced technologies
- automobile and manufacturing technologies
- manufacturing and process engineering
- Partners & International Cooperation**
- Lear Corporation, Continental, Spinea

### University Science Park TECHNICOM, Košice

- ICT, electrical, mechanical, civil & environmental engineering



## UNIVERSITY OF ŽILINA

### Faculty of Electrical Engineering and Information Technology

- ICT applied in transport and industry
- electronic systems & networks
- Partners & International Cooperation**
- Schaeffler, Siemens, Onsemi, Semikron

### Faculty of Mechanical Engineering

- mechanical engineering
- materials engineering
- machines and equipment design
- automation of production systems
- Partners & International Cooperation**
- Siemens Healthineers, Whirlpool, VW, KIA, Continental, Brain IT

### University Science Park, Žilina

- ICT, smart industrial & transportation systems, progressive materials

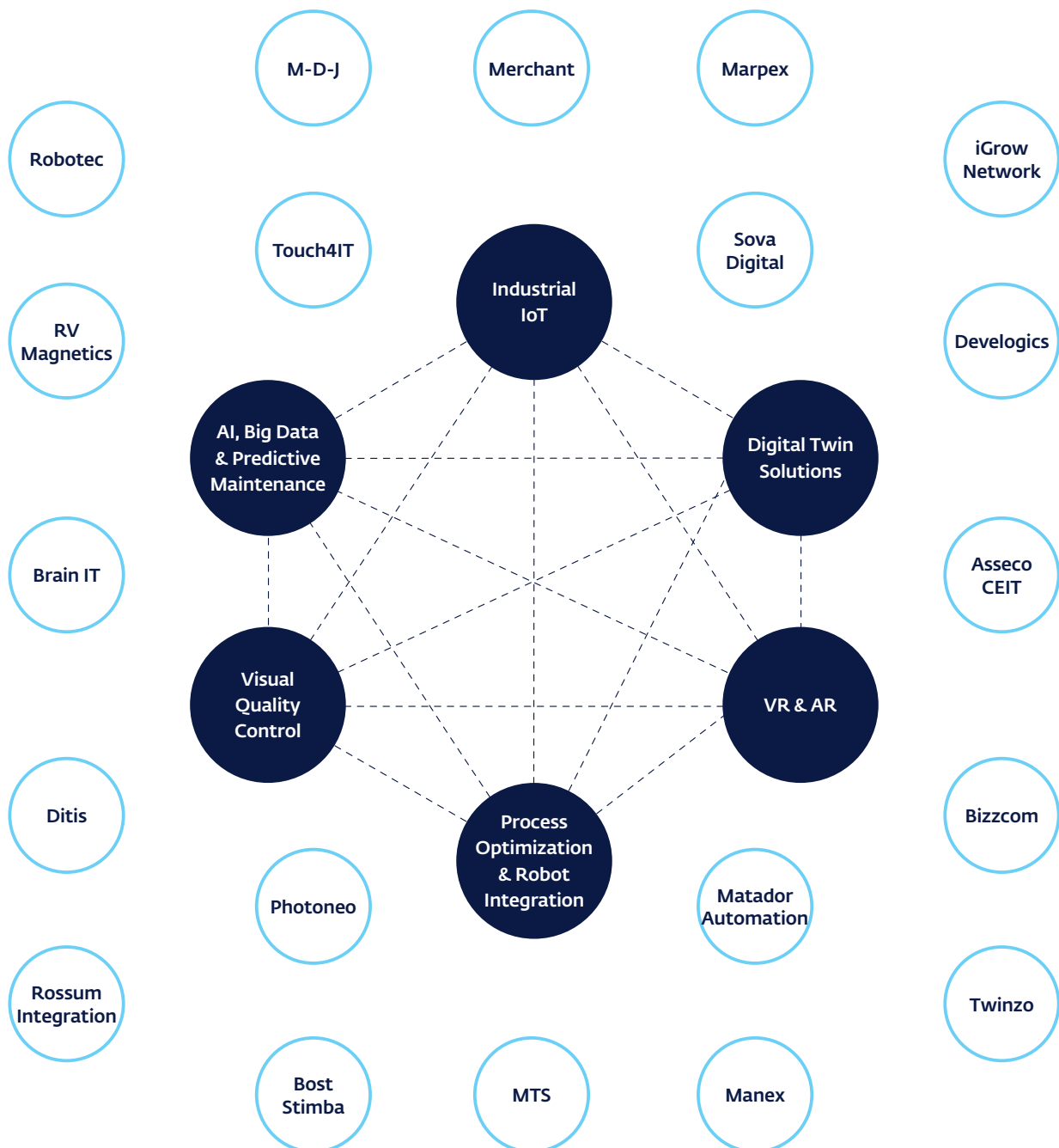
Source: Web pages of respective universities (2024)

# Process Innovation Developed & Made in Slovakia

Apart from product development, Slovakia's strong industrial heritage has also created an ecosystem of local companies active in the field of production process optimisation.

As the implementation of Industry 4.0 is a necessity for all industrial facilities that want to maintain their competitive advantage. From our experience, the Slovak Industry 4.0 competences focus mainly on areas highlighted below, the mentioned companies are just examples of local providers capable of delivering state of the art solutions:

## Sample of the Slovak Industry 4.0 Ecosystem



Sources: SARIO (2024)

# SARIO Industry 4.0 Sourcing Elevate your business with technological solutions Made in Slovakia!



**SARIO Industry 4.0 Sourcing — a platform of the Slovak Investment and Trade Development Agency (SARIO) matching the needs of its major clients — large investors established in Slovakia — with competencies of Slovak tech companies providing mainly Industry 4.0 and advanced IT solutions.**

SARIO organises tailor-made workshops, which on one side serve as a business development channel for Slovak solution providers, on the other are aimed to innovate technological processes of its major clients. These services are not limited to the borders of Slovakia and they sometimes focus also on venture capital.

#### **SARIO INDUSTRY 4.0 SERVICES FOCUS ON, BUT ARE NOT LIMITED TO**

- **Industry** — automation, predictive maintenance, quality control, digital factory solutions
- **Product development** — design, prototyping, testing, tooling
- **Services sector** — software automation, outsourcing, cybersecurity, big data & AI

#### **OUR TRACK RECORD (SELECTED EVENTS)**

- **PSA/Stellantis Innovation Day** — 5 workshops, Trnava (Slovakia)
- **VW/Audi Innovation Sourcing Day** — product innovation, Budapest, (Hungary)
- **Jaguar Land Rover Innovation Workshop** — process innovation, Nitra (Slovakia)
- **Integr8 Conference** — process innovation, Detroit (USA)
- **BROSE Innovation Day** — process innovation, Prievidza (Slovakia)
- **OSRAM Innovation Workshop** — process innovation, Bratislava (Slovakia)



“Slovak tech firms can bring innovation to global companies on the Slovak market, and even abroad. During last years, industry 4.0 sourcing platform has become an integral part of SARIO services for new as well as established investors, including the largest players.”

**Marek Kopanický,**  
Senior Consultant, SARIO



“Our vision is to help transform Slovakia into a technological & innovative hub and become the partner of choice for companies considering to invest in Central Europe.”

**Róbert Šimončíč,** CEO SARIO



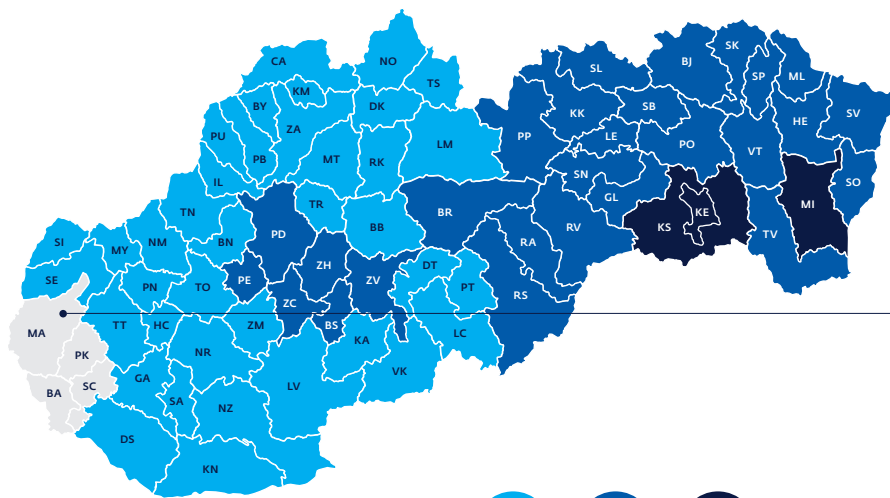
# Schemes Designed for Supporting R&D in Slovakia

## MAXIMUM REGIONAL INVESTMENT AID INTENSITY

The primary goal of the investment incentives is to motivate investors to place their new projects in regions with higher unemployment and to attract projects with higher added value.



Districts in Bratislava region are excluded from the investment aid scheme



+10% additional incentives for medium-sized enterprises

+20% additional incentives for small and micro-sized enterprises

+10% additional incentives for projects related to critical technologies

### ELIGIBLE COSTS

- Costs of land acquisition
- Costs of buildings acquisition & construction
- Costs of new technological equipment and machinery acquisition
- Intangible long-term assets — licences, patents, etc.
- Rent of new land/building

### OR

- Total wage costs of all new employees calculated over a period of 2 years

### FORMS OF INVESTMENT INCENTIVES

- Corporate income tax relief
- Cash grant
- Contributions for the newly created jobs
- Rent/Sale of real estate for a discounted price

### SUPERDEDUCTION

- is automatically claimable in tax return form
- is not subject to any application procedures nor subject to an approval by any state authority
- all sectors are eligible
- is applicable throughout Slovakia
- if the claim cannot be applied in the given tax period, it is transferable to up to 5 consecutive tax periods

### EXAMPLES OF DEDUCTIBLE COSTS

- Wages and related contributions
- Material and inventory
- Power and utility supplies
- Tax depreciation of long-term assets
- Certification expenses
- Specialised software licence, etc.

Sources: SARIO (2024)



## AIM INVESTMENT AWARDS UAE 2022

CEE & TURKEY REGION  
Best Investment Promotion Agency in 2022



# SARIO Profile

Slovak Investment and Trade Development Agency (SARIO) is a governmental investment and trade promotion agency of the Slovak Republic. The agency was established in 2001 and it operates under the Ministry of Economy of the Slovak Republic.

## 01 INVESTMENT SERVICES

### FOR POTENTIAL INVESTORS

- investment environment overview
- organization of the investor´s visits of Slovakia
- starting a business consultancy
- sector and regional analyses
- investment incentives consultancy
- site location & suitable real estate consultancy

### FOR ESTABLISHED INVESTORS

- identification of local suppliers, service providers
- assistance with expansion preparation and execution
- assistance with Industry 4.0 solutions and R&D implementation

## 02 FOREIGN TRADE SERVICES

### IF YOU ARE LOOKING FOR

- Slovak supplier or sub-contractor
- information about Slovak export/trade environment
- sourcing opportunities
- forming a joint venture, production cooperation or other forms of partnership with a Slovak partner

### SERVICES FOR EXPORTERS

- information on foreign territories
- customized search for foreign partners
- online database of business opportunities
- export Training Centre
- subcontracting assistance

## 03 SLOVAK SPACE OFFICE

### FOR SLOVAK ENTITIES

- tailor-made sector entry consultancy
- startup creation through hackathons and incubation programs
- cooperation opportunities through matchmaking events
- internationalization of the Slovak space companies and research institutions

### FOR FOREIGN PARTNERS

- customized search for local partners
- assistance with establishing branch in Slovakia
- cooperation on space industry events

**SARIO IS YOUR ONE STOP SHOP FOR INVESTMENT & TRADE IN SLOVAKIA.  
TALK TO US TODAY!**

SARIO | Slovak Investment and Trade Development Agency

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