



The Visegrad Group and Central and Eastern European Chamber of Commerce (Singapore)

V4 INNOVATION & TECHNOLOGY

Focusing on smart cities and e-governance solutions

8TH DECEMBER 2021
3.00PM TO 5.40PM (SGT, CET +7)

Held under the Hungarian Presidency of the Visegrad Group,

Organised by the Embassy of Hungary together with Eastern European Chamber of Commerce (Singapore)

In collaboration with the Czech, Polish and Slovakian Embassies in Singapore and Jakarta

Supported by Smart Nation and Digital Government Group, Singapore



Embassy of the Czech Republic
in Singapore



EMBASSY OF HUNGARY
IN SINGAPORE



Embassy
of the Republic of Poland
in Singapore



EMBASSY
OF THE SLOVAK REPUBLIC
IN JAKARTA



Smart Nation
S I N G A P O R E

V4 Innovation & Technology webinar
Date: 8 of December (SGT, CET+7)
Webinar on Zoom Platform

The Visegrád Group, or V4, is a regional cooperation platform and alliance, reflecting the efforts of the countries of the Central European region (Czech Republic, Hungary, Poland and Slovakia) working together with a mutual objective to advance cooperation in a number of fields of common interest such as political, economic, technology, cultural and energy matters. Official website of the Hungarian Presidency 2021/22(<https://v4.mfa.gov.hu/>)

Agenda

3.00pm to 3.05pm **Opening Remarks** by **H.E Judit Pach**, Ambassador of Hungary to Singapore

3.05pm to 3.15pm **Keynote address** by **Mr. Chng Kai Fong**,
Second Permanent Secretary (Smart Nation & Digital Government)
Prime Minister's Office, Singapore

High Level Country presentations - *Best practices from V4 countries*

3.15pm to 3.30pm **Czech Republic: Mr. Petr KAISER**, Special Envoy for Science and Technology,
Ministry of Foreign Affairs

3.30pm to 3.45pm **Hungary: Mr. Laszlo GYÖRGY**, State Secretary for Economic Strategy and
Regulation, Ministry of Innovation and Technology

3.45pm to 4.00pm **Poland: Mr. Pawel Jabłoński**, Undersecretary of State for Economic and
Development Cooperation, Africa and the Middle East, Ministry of Foreign Affairs

4.00pm to 4.15pm **Slovakia: Ingrid BROCKOVÁ**, State Secretary of the Ministry of Foreign and
European Affairs of the Slovak Republic

V4 company showcase

4.15pm to 4.25pm Czech Republic 1. **City For The Future**
4.25pm to 4.35pm Czech Republic 2. **ICT Unie**

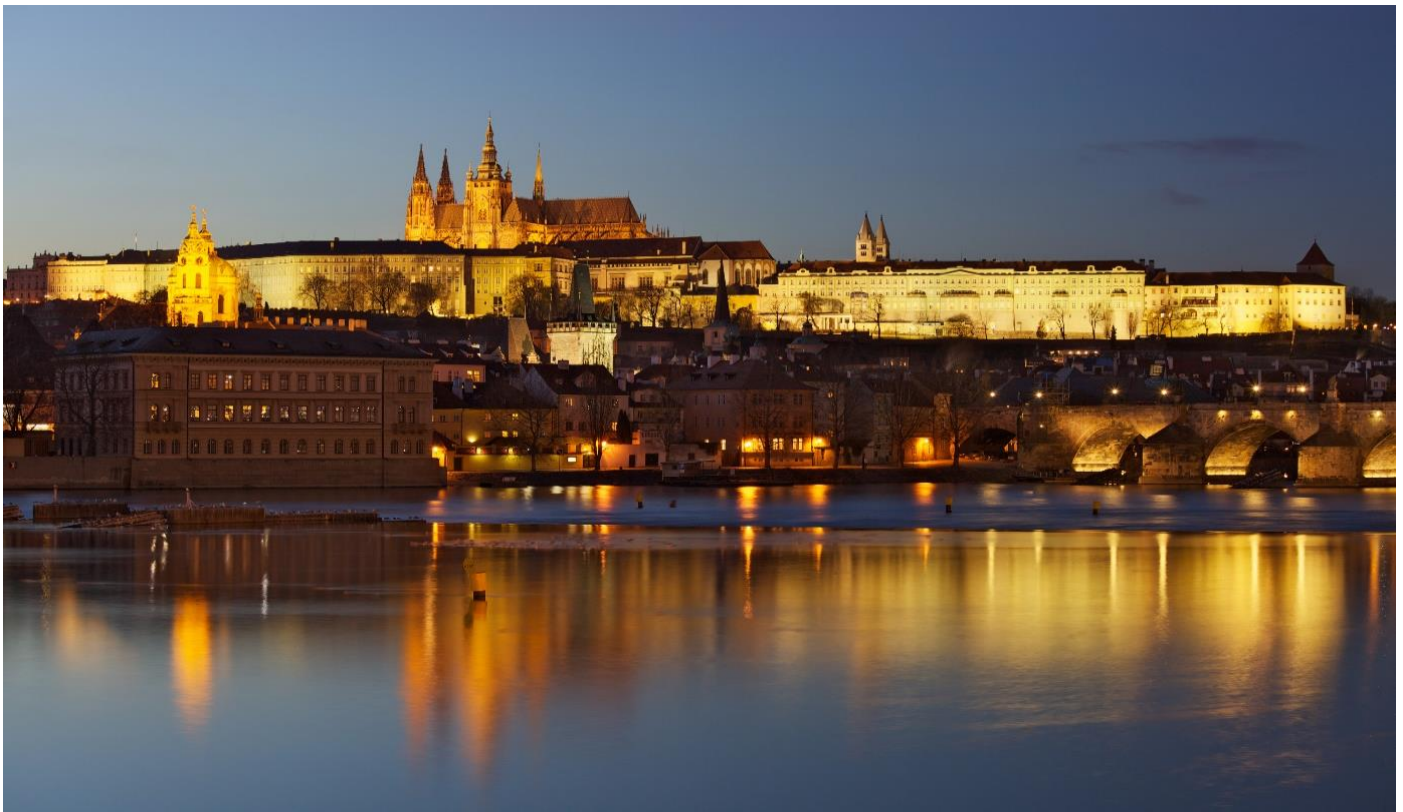
4.35pm to 4.45pm Hungary 1. **Datapolis**
4.45pm to 4.55pm Hungary 2. **GreeHill**

4.55pm to 5.05pm Poland 1. **IS Wireless**
5.05pm to 5.15pm Poland 2. **Seedia**

5.15pm to 5.25pm Slovakia 1. **eParkio**
5.25pm to 5.35pm Slovakia 2. **Seak**

5.35pm to 5.40pm **Q&A and Closing remarks**

CZECHIA



Czechia (officially called Czech Republic) is a land-locked country. It is a multi-party bi-cameral parliamentary representative democracy, and a proud member of the European Union, United Nations, NATO, OECD, and many more international organizations.

Although its modern history began in 1993 with the separation of Czechoslovakia, Czechia's history spans millennia. Thanks to this, tourists can marvel at its historical wonders, such as over 2000 castles and chateaux (more than in any other country in Europe) or historic city centres (Prague city centre is inscribed in UNESCO World Heritage).

However, despite being the 86th country in the world by population and 122nd by area size, Czechia repeatedly features in prominent spots of many global indexes. For instance, in 2019, the country was listed in Global Peace Index among TOP10 safest countries and on the 24th place in Deloitte Quality of Life Index (higher than the USA). In 2021, it ranked as the 2nd most income-equal country by the World Bank and the best country in Europe and 5th in the world in the 2021 Global Manufacturing Risk Index. Most recently, Czechia moved up to #18 on the 2021 World Happiness Index.

Main industries are engineering (mainly automotive), chemical industry, food industry, metallurgical industry, energy industry and construction industry. Among the most famous Czech products are: cut glass and jewellery, beer (home of pilsen-style beer), porcelain, cars and trucks (especially Škoda, now part of VW group, and Tatra), hand guns and small weapon systems, and many others.

Czechia has historically been very strong in applied research and innovations. Just think about it:

- Charles University in Prague, founded in 1348, is the oldest university in Central Europe and among the 15 oldest in the world.
- Brno was the site of Gregor Mendel's groundbreaking genetic experiments in the 19th century.
- The word "robot" was created by the Czech artist Josef Čapek in 1920s.
- Many ordinary things and ideas are of Czech origin: lightning rod, soft contact lenses, Kaplan turbine, antiretroviral drugs against HIV and hepatitis B.



Czechia's vision is to be the country of the future, as per the Innovation Strategy of the Czech Republic 2019–2030. Innovation, research and development are to be pillars of Czechia's open and export-oriented economy, as documented by the 24th place in the Global Innovation Index of 131 world economies. To further this goal, government spending on R&D has increased from 0.95 % of GDP in 1995 to 2 % of GDP in 2019. EU-backed projects also play a big role in the Czech R&D infrastructure with 9 Centers of Excellence and the newly established EU Agency for Space Programme in Prague, which also operates Europe's Global Navigation Satellite System „Galileo“.

A related priority of Czechia is cybersecurity. Every year, the Czech government increases the spending on this strategic sector, which amounted to around 1,944 million EUR in 2017 according to a report by Eurostat. In 2018, the Economist Intelligence Unit ranked the Czech Republic among the 20 countries which spend the highest percentage of their GDP on technological innovations, including cyber-security services and e-government. The country also received the highest score among the Eastern European countries for technological preparedness.



Some sources define Smart City as a digital city. However, to create a sustainable world, we need to look beyond technologies. The ultimate goal is to turn urban areas into places where people thrive, feel at home and desire to spend their lives. With this notion we in the Czech Republic

created City For The Future. Technologies and services in our portfolio support sustainable urban development in accordance with the needs of inhabitants and with respect to nature.

We held a pilot presentation in Budapest in September 2021. We created a digital twin exhibition, which is available at www.cityforthefuture.com. An organically expanding catalog of smart city solutions is also available on these sites. The presentation of Czech companies was jointly organised by Czech Trade Promotion Agency CzechTrade, the Ministry of Foreign Affairs of the Czech Republic and the Ministry of Industry and Trade of the Czech Republic. The project partner is the Ministry for Regional Development of the Czech Republic, the guarantor of the development of Smart Cities in Czechia.

Czechia has a high number of innovative companies whose technologies create cities that are safer and more pleasant to live in, and where social and technological solutions facilitate lives of inhabitants and contribute to sustainable economic growth. For example, you can find in our portfolio solutions for water and wastewater treatment, electromobility, energy storage systems, ticketing systems for public transport, innovative street furniture, further solutions for buildings management, for traffic analysis and management, smart lighting, next generation emergency calling and many others.

CzechTrade is the guarantor of the newly established export alliance Elements for Smart City. With its offer, it is aimed mainly at small and medium-sized settlements. The alliance was founded by 15 members in October this year.



ICT UNIE is a professional association of companies active in the field of information technology and electronic communication, as well as other areas such as business and education.

Its goal is to increase the awareness of the importance of adopting and making use of modern information technology in our society. This includes creating an optimal setting for the development of public electronic communication networks in the Czech Republic, as the networks' development is a necessary step towards establishing an information society. The association defines, represents, supports and asserts the common and rightful interests of its members. Its goal is to create a suitable business environment that will, through respecting ethical principles of business, lead to the information society's long-term development.

The specific aim of ICT Unie is the support and protection of the fair and open market of information technology and electronic communication in the Czech Republic. ICT Unie undertakes an array of specialized projects and organizes various social conventions, symposiums and workshops. It also prepares and releases strategic documents, as well as standpoints and commentary on the drafts of legislative norms.

Goals and Priorities

ICTU's objective is to significantly contribute to the development of the Czech Republic's economy so that it can gain a competitive edge by building an innovative knowledge society. As a professional association of companies active in the field of information and communication technology, ICTU represents the Czech Republic's ICT industry. ICTU asserts the effective use of ICT in all areas of life in the Czech Republic because it sees it as a necessary step towards building an innovative knowledge society. ICTU is a co-creator of drafts of fundamental reforms and legislative and key decisions regarding the development of ICT in the Czech Republic. ICTU is a partner of the state regulatory agencies.

ICTU is a pragmatic and effective association. It presents objective and practical concepts beneficial to not only the ICT industry. ICTU by no means lobbies for its members' individual interests or influences public tenders. More: <http://www.ictu.cz/>

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HUNGARY



Innovation and R&D landscape in Hungary

Targets and Arrows

Hungary is an open European economy with a strong industry sector in which foreign investment and technology play a significant role. It has a longstanding tradition in scientific research. Hungary's innovation, research and development policy is the cornerstone of the Hungarian National Economic Strategy. The Hungarian government targets to reshape the national innovation ecosystem with the aim to be more reflexive, sustainable and competitive. The stakeholders from universities, research centres and enterprises have to redefine their roles and cooperate on a mutually beneficial basis. A redefined innovation ecosystem is planned to develop according to the Quintuple Helix, which is not only a theoretical model but a functioning system. The government is steadily increasing RDI spending, which exceeds 2 billion euros, over twice as much as in 2010. This year, government support totals 0,5 billion euros for RDI tenders. Notwithstanding the coronavirus pandemic, Hungary was among ten European countries that improved on the World Intellectual Property Organisation's (WIPO) rankings, based on around 80 indicators. Hungary aims to be in the top third of major European innovators by 2030 through government R&D support schemes.

Institutional background

The Hungarian government established the Ministry for Innovation and Technology (MIT) in 2018, with the aim of elevating Hungary's innovation performance to the level of countries with significant innovation output. The most important professional state organization operating under the MIT is the National Research, Development and Innovation Office (NRDI Office) fully supporting this goal. The NRDI Office created a uniform system for competitive tendering to coordinate and ensure resourceful and value-creating utilization of both EU development funds and innovation taxes paid by companies. The Office also recommends using the Quintuple Helix model as the basis of the innovation system's reform since this model considers a much broader collaboration system as a base requirement, in order to enable companies to contribute more and adapt better to the new ecosystem.

International R&D&I Cooperation

Hungary's participation in internationally outstanding research infrastructures creates a number of opportunities for domestic researchers to shape and enhance their professional development, supports their

affiliation with international research networks and encourages the formation of multidisciplinary collaborations. In order to widen and enhance co-operation on all levels, the National Research, Development and Innovation Office (NRDIO) has joined a number of international research infrastructures in recent years, thus providing direct access for local professionals in research and development to the circulation of international science and innovation.

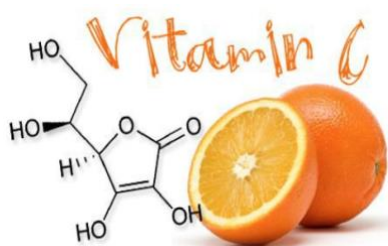
The NRDIO Office spends more than 10 million euro annually on membership fees associated with our participation in international research infrastructures and organizations. While improving excellence in science is our main goal, an equally important aspect and aim of our contribution is to enhance the economic advantages of our membership by increasing the share of in-kind contributions. In addition, Hungary participates in several non-ESFRI related research infrastructures (e.g. CERN, EMBL, ICGEB, etc.) where Hungarian researchers can also benefit from our membership. Among the ESFRI RIs, the Extreme Light Infrastructure (ELI) project has a significant importance for us, since the ELI-Attosecond Light Pulse Source (ELI-ALPS) next generation laser facility, has been built in Hungary and it is an integral part of the pan-European RI landscape. The Hungarian startup and technology ecosystem is rapidly growing. There are many matured tech companies, probably the most well-known Hungary-born scale-ups are Prezi, Ustream, and LogMeIn, but there are many more. There is also a growing number of tech companies securing funding from world-class investors. Some of the most successful companies raised equity and opened headquarters in the US or Asia, but they keep most of their R&D activities and tech teams in Hungary. In recent years, some of the fastest-growing international tech companies such as Cloudera, WISE (formerly known as TransferWise) or Blackrock opened large development offices in Hungary.

Well-known Hungarian inventions and discoveries

Historically, Hungary has performed rather well in terms of inventions and patents. To name a few, the most well-known Hungarian inventions and discoveries recognised worldwide include: • Segner wheel, water turbine – János András Segner (1750) • Transformer – Ottó Bláthy, Miksa Déri, Károly Zipernowsky (1884) • Dynamo – Ányos Jedlik (1861) • Telephone exchange – Tivadar Puskás (1877) • Carburettor – Donát Bánki, János Csonka (1893) • Vitamin C: Albert Szentgyörgyi (1931) • Nuclear chain reaction – Leó Szilárd (1933) • Ball point pen – László József Bíró (1938) • Colour Television – Péter Károly Goldmark (1940) • Digital computer – János Neumann (1945) • Holography – Gábor Dénes (1947) • Basic Programming language – János Kemény (1964) • Rubik's Cube – Ernő Rubik (1974)

Why invest in Hungary?

• Wide range of R&D grants • High level of scientific research, significant results in the areas of physics, mathematics, biology, chemistry, clinical medicine and engineering • Established knowledge centres • Long standing tradition of innovation • Very open economy • Supportive legal system • favorable taxation environment (9% corporate tax rate) • Dual education system (cooperation of companies and educational institutes) • Skilled labor force. For more information on available R&D&I related investment incentives please visit the website of Hungarian investment Promotion Agency <https://hipa.hu/main>



DATAPOLIS

Datapolis is a location intelligence and scenario planning platform that supports decision-making on finding the best matching locations for businesses and portfolio reassessments using large-scale urban data combined with AI and data science. As the volume of city-related data is skyrocketing, the majority of governments, real-estate investors, business stakeholders and brokerages started to support their decision-making process by using previously untapped sources of information. Following the expansion of AI-backed tools, governments, businesses and investors managed to improve the quality of life in various urban areas and increase their profits. Datapolis showcases benchmark projects and provides information on different cities around the globe. As a result, Datapolis provides novel insights, comprehensive reports, interactive visualizations, and scenario planning about relevant urban features at different granularities from the scale of entire cities to the level of individual streets. Datapolis has just opened its office in Singapore this year. More: <https://datapolis.io/>



Greehill revolutionizes the way cities view, value, and manage their urban forests and plan for a greener future. Since 2017, we have created an innovative system to map and monitor urban trees and to drive smarter decisions. With offices in Europe, Asia, and soon the Americas, our data and platform enable cities around the world to enhance the ecological and economic benefits of their urban trees and the well-being of their citizens. We survey your entire urban forest, and supply your city with more information in less time and at lower costs than existing methods. Since 2017, Greehill has powered digital urban forest management for the National Parks Board of Singapore (NParks). Our platform helps their arborists conduct first-level inspections remotely, so they can spend more time on site proactively caring for their trees. Greehill gathers data and images using a combination of high-resolution cameras, mobile laser scanning (MLS), terrestrial laser scanning (TLS), and airborne laser scanning (ALS). From street trees to park trees, our hybrid approach allows us to excel in any urban environment. More: <https://www.greehill.com/>



HungaroControl - National Air Traffic Service Provider (ANSP) HungaroControl provides air navigation services in Hungarian airspace and - on a NATO assignment – in the upper airspace over Kosovo, trains air traffic control personnel and conducts air navigation research and development. They have made ground-breaking efforts in supporting innovation to improve flight safety, increase capacity, reduce airline costs, and enhance environmental protection Implementing Hungarian Free-Route Airspace, Controller Pilot Data-Link Communication, a unique Remote Tower solution and providing ATC services are just some of our key achievements. With the intention to build the world's most advanced aerodrome, Civil Aviation Authority of Singapore (CAAS) explored leading applications of technology across different domains including air traffic management. After visiting HungaroControl's remote tower facility, CAAS decided it should become a role model for the development. The project aimed to prototype digital tower technology as an alternative solution to a conventional tower to

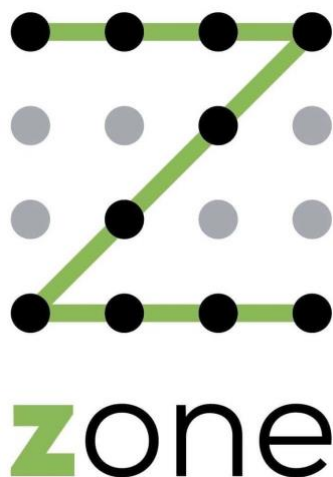
- Deliver greater extensibility by removing the need to utilise a physical tower asset
- Enhance business continuity by supplanting visual surveillance with a high-fidelity distributed camera
- Future-proof tower services by adopting new innovative technologies.

Under the NATS-led consortium, HungaroControl brought its extensive experience in digitalising tower operations within high-complexity environments to support concept development, design and human factors assessment. More: <https://en.hungarocontrol.hu/>



IFKA Public Benefit Non-profit Limited Company for the Development of the Industry has been playing an active role in the economic, technical and innovation life of Hungary since 1990, bringing together the fields of logistics, quality assurance and environmental protection. From 2018, the company is supervised by the Ministry of Innovation and Technology. Vali.hu is a unique service of IFKA: with only one registration and three clicks on the

website, any private company can have access to all relevant business development tools the government agencies, banks and non-profit financial organizations can offer. The service integrates the public company database (showing the basic data of the company, like yearly revenue, number of employees, address and activities, etc.), and the website lists the available EU-tenders, grants, incentives and special industry development programs like the ‘Green Champions’, the ‘Hungarian Multi Programme’, and many others. The Hungarian Development Bank and the Eximbank of Hungary have joined this e-government project, along with the Hungarian Chamber of Commerce and Industry. Vali.hu started on the 13th April, 2021, and has more than 5000 registered users in November. More: Vali.hu e-gov. services for business enterprises.



ZalaZONE autonomous driving proving ground. In May 2016, the Government of Hungary decided to implement an automotive proving ground in Zalaegerszeg with the aim of contributing to the research and development capacities of the Hungarian automotive industry. The Zalaegerszeg proving ground - ZalaZONE - is unique in the sense that traditional proving ground functions focusing on driveability and driving stability are implemented together with the elements of the research and development infrastructure focused on the vehicles of the future; in the form of an overlapping, multi-level validation system. The uniqueness of the proving ground is that it not only allows the performance of conventional vehicle dynamics tests, but also allows the validation of autonomous (self-driving) as well as automated, coupled and electric vehicles. The ZalaZONE proving ground opened its doors in 2019 with 3 test modules (dynamic interface, handling track, first part of the smart city

zone), and since the beginning of 2020 the brake test interface has also been operational. Further constructions will be finished in 2022 including additional modules. Zalaegerszeg Track and Science-park will be the first in the world to provide a testing environment for automated vehicles and even drones, as well as for conventional vehicles. More: <https://zalazone.hu/>

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EMBASSY OF HUNGARY
 IN SINGAPORE



MINISTRY FOR
 INNOVATION AND TECHNOLOGY



INNOVATION AT WORK

POLAND



Warsaw. Source: Ministry of Foreign Affairs, Poland

With 60% of Poland's 38 mln population living in the urban areas, cities and municipalities are at the forefront of the digital revolution. Smart city projects embrace a wide range of information and communication technologies (ICT) to increase the interactivity and efficiency of urban infrastructure and ultimately improve the quality of life of the residents. 'Smart' translates into more green and sustainable, human-centered, secure and cost effective approach.

According to the 2020 Most Intelligent Cities in the World, Warsaw and Wrocław have already been ranked among top 100 globally. In Poland smart cities solutions range from supporting communication between citizens and administration - widely known as e-government - and civic participation, to public transportation, logistics, public health care, managing utilities and integrating renewable energy resources.

By 2027 Poland intends to build a new transportation hub in Europe, located south of Warsaw, with a brand new airport city surrounding it. The Aerotropolis with 50k inhabitants, built from scratch, will be entirely designed according to the smart city concept.

While Poland continues its smart transition, the digitization efforts are expected to gain additional momentum in the years to come, following the European Green Deal that encourages all sectors of the economy to reduce the carbon footprint. What's unique in the all-encompassing approach, is a successful integration of history, nature, culture and tradition into the smart cities concept.

Central and Eastern Europe (CEE) has for years enjoyed the reputation and the benefits of being an outstanding, globally recognized IT/tech talent pool, attracting most ambitious and trend setting players. With the biggest number of developers in CEE region (400k), and almost 15k ICT graduates annually, it is ranked 3rd globally in terms of developers' skills, taking 1st place in Java programming and 2nd place in Algorithms.

Poland's innovation ecosystem is home to almost 5k startups of which 60% are the IT companies and 22% specialize in AI and machine learning. As many as 260 Polish companies providing AI solutions have a global reach. Innovative and reliable Polish smart solutions come with built in cybersecurity features providing resistance against external risks.

As a strong and growing ICT hub, with 50k software companies of different sizes, the country built a vibrant ecosystem of tech companies supporting authorities in pursuing the smart cities and e-government concepts in various areas. The potential of engaging the market has translated into an increased presence of vetted commercial players in the GovTech sector, where small and medium size enterprises secure optimal solutions for the public sector in the challenge-driven approach. Public tenders for ICT solutions – over 2k per year,

among over 140k of public tenders annually – contribute to stimulating the economy and driving the 4th industrial revolution.

Polish innovative solutions successfully find their ways in the international markets. This presentation aims at increasing the understanding of the digital players market in Poland and other V4 countries, including companies considering expansion in Asia and the Pacific.

We are pleased to introduce just a few of them, including: IS Wireles (provider of 5G infrastructure), Synerise (AI/Big data processing), Seedia (smart solar city solutions), SunRoof (solar roofs and e-mobility) and DroneHub (drone solutions), eager to collaborate with Singaporean partners and strengthening their exposure in Asia and the Pacific.

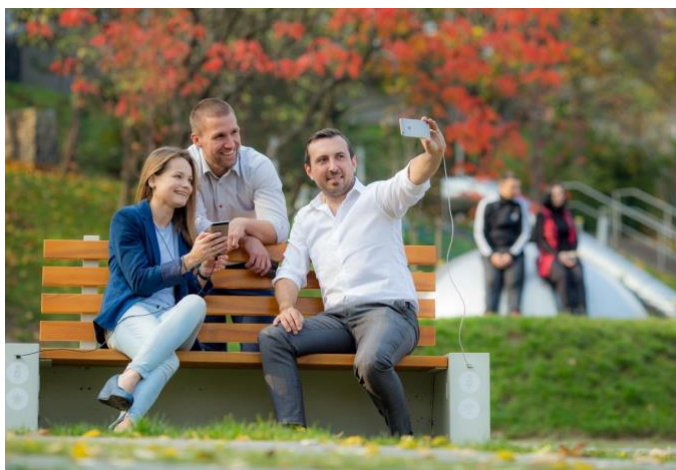
On the international stage Poland has been actively supporting information exchange and sharing good practices. Among Visegrad countries, who have been at the forefront of developing state-of-the art IT/smart technologies, the 2019 Agreement on cooperation in the smart cities concept serves as a point of reference for G2G collaboration.



Warsaw University ecogarden. Source: Polish Tourism Organization

In recognition of Poland’s digitalisation efforts and smart transition, Poland was chosen to host two important international conferences focused on IT and cities development organized under the auspices of the United Nations. The 16th edition of the UN [Internet Governance Forum](#) (IGF) will take place in Katowice on 6-10 December 2021 and will gather representatives of five environments (business, political, scientific, non-governmental and technical). The 11th edition of [World Urban Forum](#) (WUF), the most important global event concerning municipal policies, transformation and development, is scheduled for 26-30 June 2022, also in Katowice.

At the same time cooperation on planning, implementation and execution of particular projects remains a domain of the municipal authorities. The largest platform bringing together local governments, business representatives and other smart city-related stakeholders, including overseas partners and experts from around the world, is the [Smart City Forum](#), organized annually in Warsaw. Dr Liu Thai Ker represented Singapore at the 11th edition of the conference in 2020. In addition, [Smart City Expo](#) – the biggest annual industry trade fair in Poland – provides a unique opportunity to meet producers and distributors of intelligent city solutions under one roof.



Smart bench. Source: Seedia

regulations in the field of digital products and services, as well engaging in digital economy partnerships in the years to come.



In partnership with: dealroom.co, InnEnergy, MARKET ONE CAPITAL

Last Updated: June 2020

Source: [Urban Impact Agency, 2020](https://urbanimpact.agency)



Dronehub is a European leader in comprehensive drone-in-a-box solutions, which include drones, drone infrastructure and AI-powered software. It is the only manufacturer in the world that offers monitoring, inspection and measurement system, cargo transport system and mobile ground infrastructure. It is also the world's first and Europe's only producer of a docking station with automatic battery replacement in a drone. Thanks to this innovative solution, drones can perform missions 24/7 without human intervention. In the context of smart cities, the Dronehub system (drone, hub, software) is perfect for real-time monitoring from the air, for transporting medical parcels (AED defibrillators, blood samples) or for making a series of orthophotos. The Dronehub system can also be used to monitor and analyze city traffic, safety, noise and pollution levels, along with identifying their sources. More: <https://dronehub.ai/>



IS-Wireless is a provider of mobile networks of the future, including standard-compliant software and hardware necessary for building 4G and 5G networks in the scope of both RAN and Core. IS-Wireless is a proponent of Open RAN model network development. It is the only Polish company participating in 5G research in the scope of European research programs since 2012. The company cooperates with top national and global research facilities. IS-Wireless is a team of more than 50 world-class specialists in the field of RAN and Core networks, virtualization, and software engineering, including veterans of developing mobile networks in Poland and authors of pioneer research work in the field of radio systems. The enterprise is a member of international groups working on network standardizing: ORAN Alliance and TIP. More: <https://www.is-wireless.com/>



SEEDiA

SEEDiA is a Polish tech company and world leader in building innovative ecological solar furniture, storing electricity from renewable energy sources. Our team consists of experienced professionals with engineering background who are passionate about ecology and the chances that renewable energy sources bring to the world. Our goal is to make public spaces smartest and citizen-friendly, delivering real-time information about the city, free energy, and free internet. We are a company with the mission of changing the world for a better place. The company's main focus is providing smart city solutions, building intelligent infrastructure that allows to optimize city services and reduce operating costs by up to 43%. It is fully energy-autonomous and ecological - by collecting solar energy with photovoltaic panels. The use of innovative technology contributes to a decrease in the use of electricity and thus in the emission of CO2 to the atmosphere. More: <https://seedia.city/>



SunRoof – the startup building the largest, smartest network of connected solar homes in the world. The company creates beautiful, 2-in-1 solar roofs and innovative façades that produce power from the sun, and innovative energy management technologies. Without the need to install solar panels on top of a classic roof – this integrated solution offers efficiency, the lowest carbon footprint, uncompromising elegance. SunRoof's Carport with integrated photovoltaic roofing requires no external power supply. It includes an integrated photovoltaic installation containing from 10 to 27 solar modules with 3,7 - 10 kWp total nominal power. More: <https://sunroof.se/>

SYNERISE

Synerise reinvented behavioral data processing & put it into work using AI & automation API first, headless, customizable & scalable, real-time interaction management, low code platform driven by science with data orchestration and pragmatic business scenarios execution. Synerise platform is able to track every event, across every channel: whether it's mobile, it's web, physical presence. All of that is signal that's being continuously collected, processed, and then in turn AI is being applied, workflows are being applied to drive the experience. More: <https://synerise.com/>



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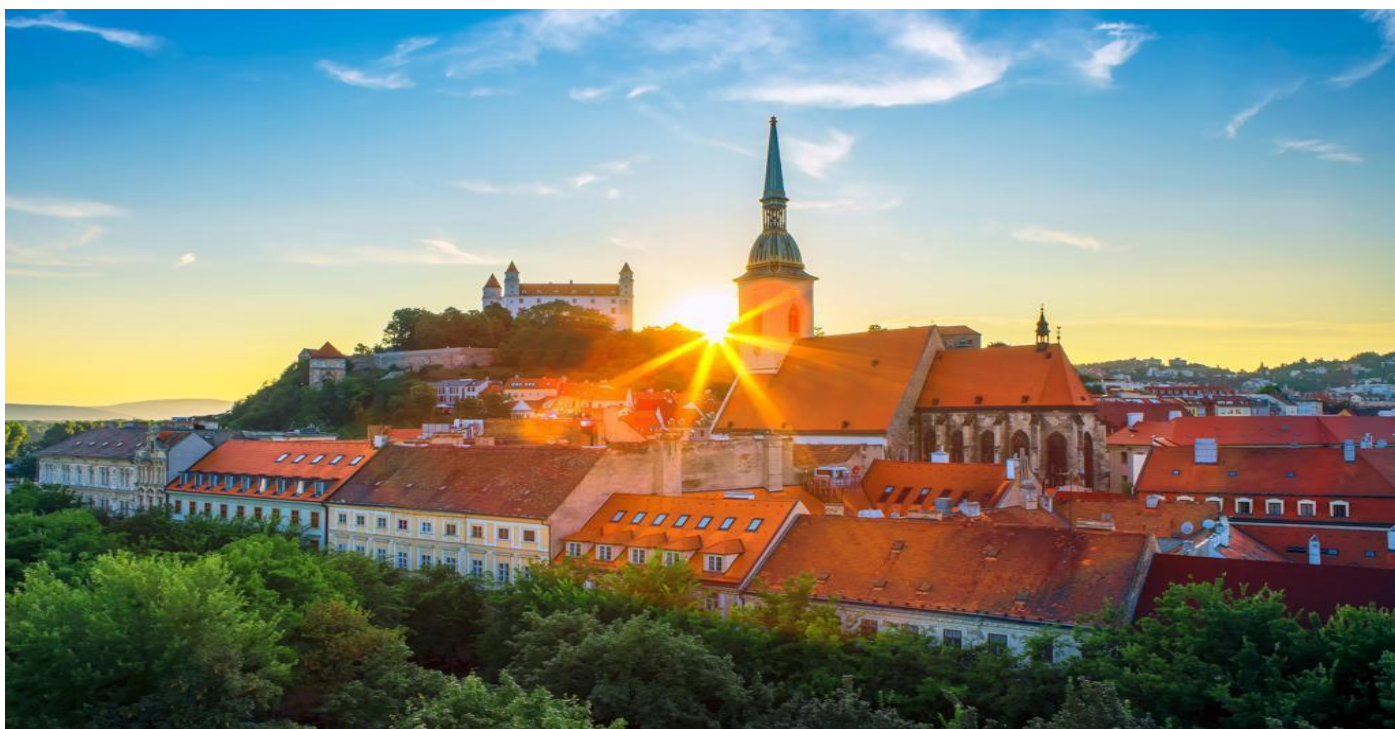


Polish Investment
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SLOVAKIA



Individual elements creating concepts of intelligent solutions of smart city concept have been implemented by the Slovak cities for the last couple of years. At the national level, however, the Smart City concept was introduced during the preparation of the action plan for the 2014-2020 period, which included the adoption of the "Strategy for Support of Innovative Solutions in Slovak Cities". This document describes the key aspects of the implementation of intelligent solutions with an emphasis of doing so through private businesses. At the same time, it provides financial mechanisms for businesses and cities and funding opportunities for Smart City activities at regional, national, interregional and international levels.

At the same time, individual cities began to adopt their own smart solution strategies. The Slovak leader in the implementation of intelligent solutions is the capital city of Bratislava. It is followed by the cities of Banská Bystrica, Nitra and Košice, which have joined the official initiative of the European Approach to Smart Cities. Their strategies focus mostly on the areas of energy efficiency, efficient use of space, safe and environmentally friendly transport, access to better public services, mobilization of creative potential and quality of the life with an emphasis on the environment. The general trend in Slovakia is the rapid progress in adoption of smart city solutions in the regions, whose important source of income is tourism.

An important element of implementation of intelligent solutions is the involvement of local business entities and scientific institutions to the identification of community needs and the development of the necessary technologies. In Bratislava, for example, has been created the Smart City Hub - a co-working space where freelancers from several areas share the experience and ideas. The goal is to accelerate smart solutions and build a network of business unions aimed on the community life improvement. Some cities establish their own national Smart City clusters, where local companies cooperate with the authorities on comprehensive Smart City concept strategies on the early phase of the project preparation.

The great ambition of the Slovak Republic is the introduction of hydrogen technologies. To this end, the Hydrogen Technology Research Center was established at the Technical University of Košice. The Center focuses on research and development in the field of hydrogen technologies throughout the whole cycle, as well as the application of the knowledge to the industries. In this regard, the Ministry of Economy of the Slovak Republic introduced the goal to implement the hydrogen powered mass transportation at least in one of the Slovak cities till the end of 2024. The Slovak companies Rosero and Matador Group together with the

Technical University of Košice, have already produced prototypes of a hydrogen bus and a hydrogen car. Both specimens are exhibited at this year's EXPO World Exhibition in Dubai.

In addition to solutions developed directly in Slovakia, our cities draw on experience from abroad. For this purpose, a Slovak Smart City Club was established in 2016. It is an informal platform used to exchange experiences with foreign partners. Through these activities, the club managed to gain experience from leading smart city countries (especially from Scandinavia), as well as to promote many Slovak smart city companies beyond our borders, which is a necessity for the Slovak business due to the small domestic market.



AgeVolt company has developed a revolutionary solution that is changing the future of electromobility. AgeVolt is a comprehensive charging system that can be shared with the public, provides an overview of the consumption of the entire building, can be connected to the finance or occupancy management system, used for marketing purposes, included into the business strategies, connected to photovoltaics, and more ... The vision of the company is to become a global shared ecosystem. We want to build large charging infrastructure in which active users will be able to ultimately benefit from charging at no cost. More: www.agevolt.com

• AKULAR •

AKULAR is a global leader in 3D/AR/VR/MR and a Digital Twins cloud platform that provides a comprehensive set of software solutions and applications to create, run and display real time 2D/3D content for mobile devices, PC's and headsets. AKULAR drives technological innovation and workflow digitization supporting private companies from various industry sectors, and governments. More: <https://akular.com>



eParkio is a smart city platform focused on solving parking challenges of municipalities. We help municipalities and corporations to implement, manage and enforce parking rules (policies). Municipalities afterwards have total control, bigger "tax" income and citizens are satisfied. Advantage are additional modules for energy efficiency management, traffic monitoring, and environmental control. eParkio connects whole parking market, that means On Street (smartcities), Off Street (hotels, business centers, hospitals, schools, ...) and shared parking (utilizing private/business parking spaces while they are not used). Whole platform serves as industrial internet of things cloud, allowing to integrate any third-party solutions, including newest applications and also old industrial grade systems as parking payment machines, sensors, and so on. If you want seamless parking and truly smart cities contact us on michal.matus@parkio.eu, +421 908 942 801.

SEAK

In **SEAK** we develop and manufacture electronic components and software for smart city lighting and EV charging, using our original, patented powerline communication method. This brings significant energy savings to cities as well as commercial and industrial buildings, where the same technology is used. SEAK exports this technology to 15+ countries in Europe and Asia, working on further geographical expansion. More: SEAK s.r.o., Slanská 11934/92, 08006 Prešov www.seakenergetics.com info@seakenergetics.com

((SENSONEO))

Sensoneo is a global enterprise-grade smart waste management solutions provider that enables cities and businesses to manage their waste efficiently, lower their environmental footprint, and improve the quality of services. Sensoneo helps to cope with the biggest challenges in today's world of waste management – lack of efficiency and transparency. As an outcome, the solution enables the customers

to achieve a 30 % – 63 % reduction of waste collection routes and 97 % accuracy on actual waste production. Sensoneo has been installed in over 60 countries through its reseller partners. Sensoneo hardware & software is the result of in-house R&D. More: <https://sensoneo.com>

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