HEALTHCARE
INVESTMENT
SECURITY

INDUSTRY & SCIENCE
START UP
CULTURE

CZECH STRATEGIC TECHNOLOGIES

SENATE
PARLIAMENT
OF THE CZECH REPUBLIC

Ministry of Foreign Affairs
of the Czech Republic

MINISTRY OF DEFENCE
OF THE CZECH REPUBLIC

CZECH CHAMBER OF COMMERCE

CZECH
REPUBLIC

CZECH
STRATEGIC
TECHNOLOGIES

In cooperation with

SENATE
PARLIAMENT
OF THE CZECH REPUBLIC

Ministry of Foreign Affairs
of the Czech Republic

MINISTRY OF DEFENCE
OF THE CZECH REPUBLIC

CZECH
CHAMBER
OF COMMERCE

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CZECH STRATEGIC TECHNOLOGIES

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SENATE
PARLIAMENT
OF THE CZECH REPUBLIC

Jan Horník

Vice-Chairman of the Senate
of the Parliament of the Czech Republic

Ladies and gentlemen,

Since its establishment, the Senate of the Czech Republic has been involved in the country's foreign policy, and an integral part of these activities is supporting Czech companies. Senators are often accompanied by business delegations on their trips abroad, opening doors for Czech companies and helping them to break into new markets more easily.

Business support is thus a natural and solid part of my foreign policy activities, especially in the area of priority assistance to Czech companies in deepening or acquiring new foreign markets.

The Czech economy is an open economy and it is in our interest to bring new opportunities and new initiatives, just as companies are looking for new locations, new solutions and new partners. The global pandemic has not stopped this process, but rather has exposed us to questions about whether the current set-up of global supply chains corresponds to reality, whether it is time for a new arrangement.

There are increasing pressures for digitalisation, robotics and high value-added businesses in general. This is the intended purpose of this catalogue: to provide an overview of companies with modern technologies and the most advanced technological knowledge, and companies operating in the most demanding and advanced global markets.

The Czech Republic has always been and still is a country of innovation. I am convinced that we will retain this position in the future and that Czech companies will play an important role in the coming years of new challenges and transformation of the global economy.

Ministry of Foreign Affairs
of the Czech Republic

Jan Lipavský

Minister of Foreign Affairs
of the Czech Republic

Ladies and gentlemen,

Security and prosperity are of key strategic interest to every country across the globe. There is no prosperity without security. Technological advancements, therefore, are crucial for maintaining and safeguarding our present and future. I am both pleased and delighted to present Czechia's advancements in the fields of defence, security, and health.

I can proudly say that Czechia qualifies to be one of the most industrially developed countries in today's world. We not only nurture highly qualified and technically skilled experts, but moreover, Czech companies have the all-important ability to effectively take their technical skills and apply them to ideas and innovations, scientific research, and first-class customer services. This altogether results in cutting-edge, competitive solutions.

The success of our companies abroad only proves the quality and high-tech nature of Czech products. Military aircraft, armoured vehicles and radiolocation systems, on the one hand, and hospital beds and intensive care unit equipment, on the other, are only a few examples of Czech products that could be found all over the world.

The technological development and prosperity we have experienced are unprecedented. However, we have also witnessed unexpected crises, undermining our certainties and stability. We have to prepare for further health and security threats. I believe that the Czech strategic technologies, which you can find on the pages of this catalogue, can help us face future challenges.

I highly value the ability of Czech medical technology companies to work together, and coordinate their efforts to offer a comprehensive portfolio of Czech products and services to foreign partners. An interactive catalogue in the form of a 3D hospital developed by companies, which are members of the Association of Manufacturers and Suppliers of Medical Devices, is an example of this excellent cooperation.

Each year, Czech defence and security companies showcase their new technology to foreign partners, even at the world's most important trade fairs. The leadership of the Ministry of Foreign Affairs, as well as top representatives of the Ministry of Defence, proudly accompany them to these events.

The Czech Foreign Ministry will continue to develop all economic diplomacy tools to support Czech companies abroad, because we vouch for the quality of their defence and medical products and services.

MINISTRY OF DEFENCE
OF THE CZECH REPUBLIC

Jana Černochová

Minister of Defence
of the Czech Republic

Ladies and gentlemen,

It is my great honour to introduce the Czech Strategic Technologies catalogue. The Czech Republic is and always has been a major industrial country full of creative and excellent entrepreneurs and researchers, who are capable of realizing their ideas for the benefit of everyone. I am proud to say that Czech companies produce cutting-edge products and technologies which define new standards in their respective fields and promote the good name of the Czech Republic globally.

The Czech defence and security industry certainly deserves to be called strategic for its role in providing vital supplies of goods and services to the Czech Armed Forces. The quality of its products and technologies is indisputable, as the companies are being increasingly involved in the supply chains of the world's leading defence industry and the products of Czech companies are being integrated by armed and special forces all around the world. The Ministry of Defence of the Czech Republic closely cooperates with the defence industry and encourages its participation in international projects and also provides all the necessary support on foreign markets to maintain the high competitiveness of our defence industry.

As we have seen recently, crises may also be of non-military nature. Therefore, many other sectors are vital in preparing and responding to the full spectrum of emergencies. Given the dynamic security environment and current disruptive technological change, strategic technologies and companies are fundamental for maintaining the security and prosperity of the Czech Republic. You will find the finest of them on the next pages.

I would like to ensure you that the Czech defence and security industry and the Czech industry as a whole will remain as globally competitive as it is right now, and I am certain that you will see even more Czech state-of-the-art products introduced worldwide in the upcoming years.

CZECH CHAMBER OF COMMERCE

Vladimír Dlouhý

President of the Czech
Chamber of Commerce

Ladies and Gentlemen,

Current challenges of the post-covid world highlight the importance of new technologies. Boosted by the pandemic, companies widen the use of communication and networking tools and some of them invent new solutions helping grasp the new opportunities. Due to its manufacturing tradition, the Czech Republic has joined various initiatives promoting the application of inventions, ideas and sophisticated technologies in companies' every-day life.

The Czech Republic is an open economy, actively participating in global supply chains, deeply anchored in the EU and its Single Market. In order to succeed on this highly competitive market, the products and services of Czech companies do include high added value. Thanks to creativeness and quality education, Czech companies may develop high technologies and apply them in their production processes as well as in the services they provide.

The Czech Chamber of Commerce has been opening doors for Czech exporters to various countries and territories as we believe it is absolutely necessary to diversify the portfolio of Czech international trade. The success on the EU market is not enough. We encourage the Czech companies to look beyond EU borders and access markets in the Americas, the Middle East, South East Asia, Africa as well as in Australia. It is mainly because of skills, competences, courage and high-tech that many Czech exporters have been successful even globally. The Czech Chamber of Commerce has organized hundreds of trade missions bringing Czech companies to near and far in order to present their inventions, products and services in foreign markets. We focus primarily on new technologies that attract the interest of partners in target countries and help establish new partnerships.

Czech companies offer sophisticated technologies in many sectors and they invite you to participate in their success. We are proud to present great examples of technologies in defence industry and security, civil aviation, healthcare, information technologies and other branches. Czech companies are looking for potential partners in various branches and they are ready to discuss any type of cooperation with you.

I believe, ladies and gentlemen, that you will find interesting opportunities to share Czech technologies and make them benefit the business community in your country.

Father of the nation

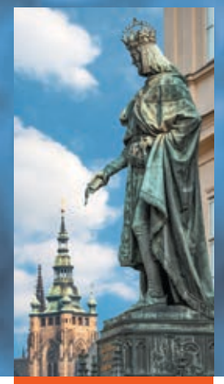
Charles IV

1316 - 1378

King of Bohemia
Holy Roman Emperor

Czech Crown of the King of Bohemia

Imperial Crown of the Holy Roman Emperor



The Czech crown of King Charles IV
and a double-tailed lion have been symbols
of the Czech country (Bohemia) for more than 700 years.

These symbols are in the state emblem,
in many logos of the Czech Republic`s state organizations.

Ministry of Foreign Affairs
of the Czech Republic

MINISTRY OF DEFENCE
OF THE CZECH REPUBLIC

CZECH CHAMBER OF COMMERCE

The symbols are on Czech coins
and Charles IV on the banknotes.

History and tradition

CZECH REPUBLIC also called **Czechia**

Duchy of Bohemia
c. 870

Kingdom of Bohemia
1198 - 1918

The Duchy of Bohemia was founded in the late 9th century under Great Moravia. It was formally recognized as an Imperial State of the Holy Roman Empire in 1002 and became a kingdom in 1198. Following the Battle of Mohács in 1526, the whole Crown of Bohemia was gradually integrated into the Habsburg monarchy.

The Protestant Bohemian Revolt led to the Thirty Years’ War. After the Battle of the White Mountain, the Habsburgs consolidated their rule. With the dissolution of the Holy Roman Empire in 1806, the Crown lands became part of the Austrian Empire.

Czechoslovakia
created in 28 October 1918, when it declared its independence from Austria-Hungary
1918 - 1939 / 1945 - 1993
1939 - 1945: Government-in-exile

Czech Republic
Czechoslovakia was dissolved on 1 January 1993, with its constituent states becoming the independent states of the Czech Republic and Slovakia
1993

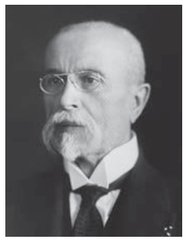
Historically known as **Bohemia**

Czechoslovakia

Czech Republic

Charles IV
King of Bohemia
1346 - 1378
Holy Roman Emperor
1355 - 1378

Tomáš Garrigue Masaryk
1st President
and co-founder
of Czechoslovakia



Velvet Revolution
In 17 November 1989, the Velvet Revolution ended communist rule in the country
1989

Václav Havel
1st President of the Czech Republic
Last president of Czechoslovakia
Leader of the Velvet Revolution

Pavel Šťastný DESIGN

Plechárna FACTORY

Pavel Šťastný

Publisher
of the Czech Strategic
Technologies catalog

Artist

Ladies and gentlemen,

Today, innovative technologies are rapidly permeating all industries. That is why we have created this multidisciplinary catalogue of Czech Strategic Technologies, to support and promote Czech ideas, inventions and innovations in the world.

We live in the robot age, but did you know that the word “Robot” was coined by a Czech In 1920?

Our people have historically given the world many inventions: the lightning rod, the screw-propeller, lump sugar, the Kaplan turbine, blood types, silon fiber, the jet loom, contact lenses, and Mach aerodynamic numbers, among others. Czechs founded the science of Genetics and the analytical method of Polarography. The founder of Porsche was also born in the Czechia.

We may be a small country in the heart of Europe, but historically we have many world firsts in innovation.

It is the same today, we are always inventing something new. This catalogue presents many of the best Czech strategic technologies. We have reached out to our leading institutions and companies, who helped us put it together. I want to thank them for all their help and support, without which this publication would not have been possible.

Of course, it was not possible to fit everything into the printed version of the catalogue, so we will be adding more up-to-date information about Czech innovations in the online version.

The printed catalogue is interactive. You can scan the QR codes to access videos and Augmented Reality.

This catalogue presents six different disciplines: healthcare, investment, security, industry and science, start-ups, and culture. At first glance, they are unrelated, but the truth is that they often cannot exist without each other and are very intertwined.

Culture connects nations and offers a gathering place for people from all disciplines who would not normally meet professionally.

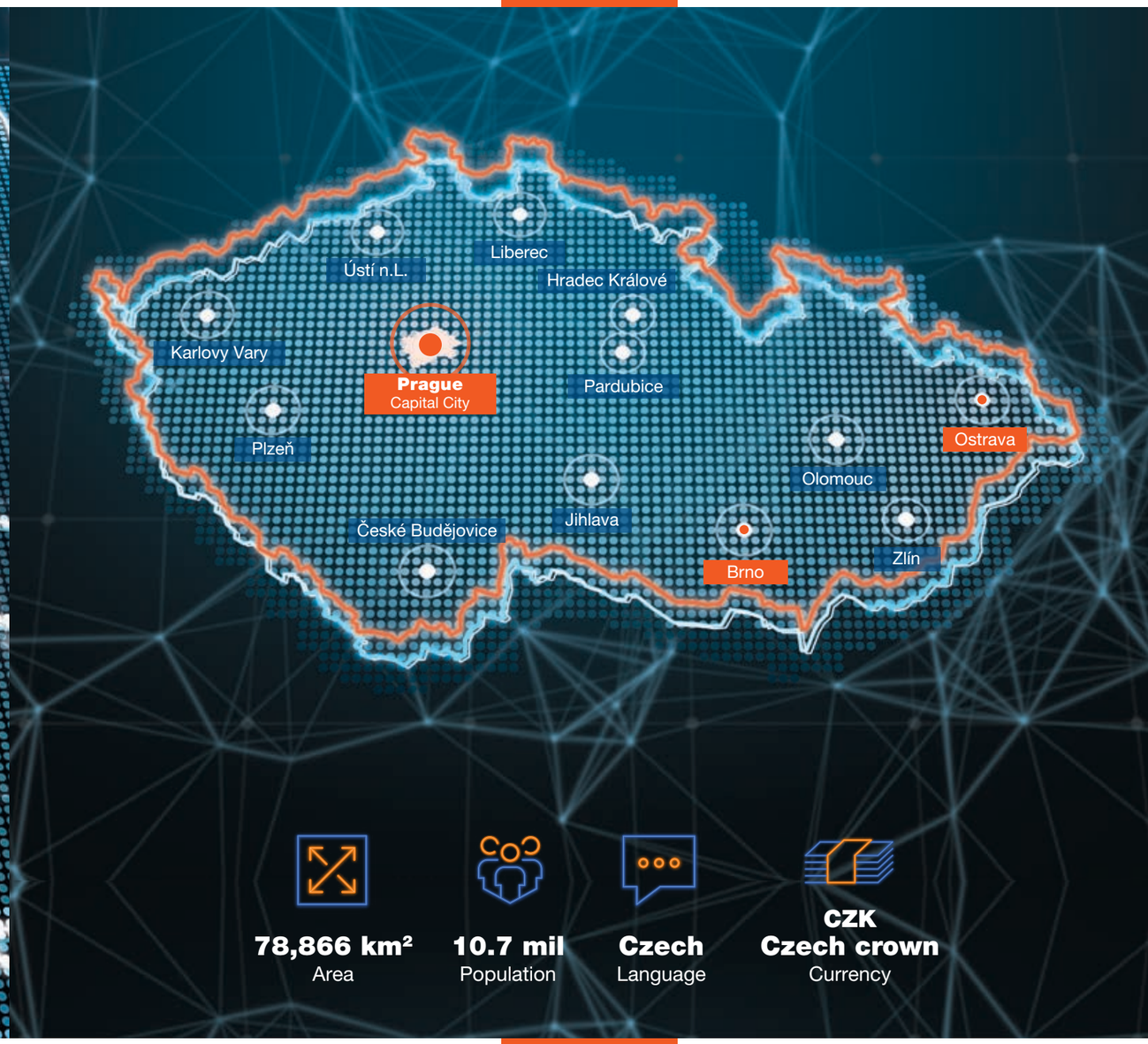
I am an artist and I follow the motto the Art of business.

Welcome to the Czech Republic and the world of its strategic technologies.

CZECH
STRATEGIC
TECHNOLOGIES

Their contribution to the World

CZECH
REPUBLIC



Country in the **heart of Europe**

CZECH
REPUBLIC

The Czech Republic is a member of these organisations

- United Nations
- European Union
- NATO
- Organisation for Economic Cooperation and Development
- World Trade Organisation
- International Monetary Fund
- World Bank
- Council of Europe
- Organisation for Security and Cooperation in Europe
- European Customs Union
- Schengen Agreement
- Visegrad Group

The country's most populous cities

1. **Prague** (Bohemia)
   1.3 milion inhabitants
2. **Brno** (Moravia)
   381,000 inhabitants
3. **Ostrava** (Silesia)
   288,000 inhabitants

State **Symbols**

The Czech Flag

The Large State Emblem

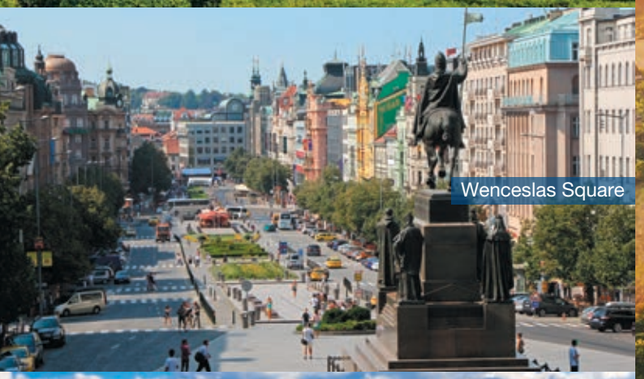
The Small State Emblem

CZECH REPUBLIC

Prague

Prague
Charles Bridge

National Museum


Wenceslas Square

Vltava river

Prague astronomical clock

CZECH
REPUBLIC
Green
Country

Pravčice gate

Český Krumlov

Karlovy Vary spa

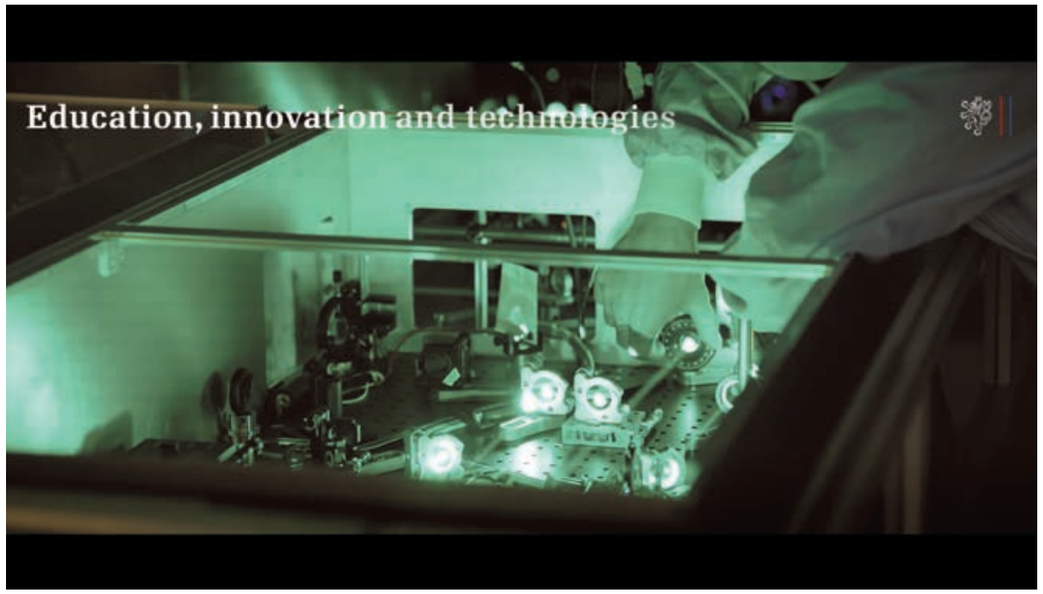
Karlovy Vary spa

Františkovy Lázně spa

Ministry of Foreign Affairs
of the Czech Republic

Videospot
www.mzv.cz

Czechia
Has Marvellous People

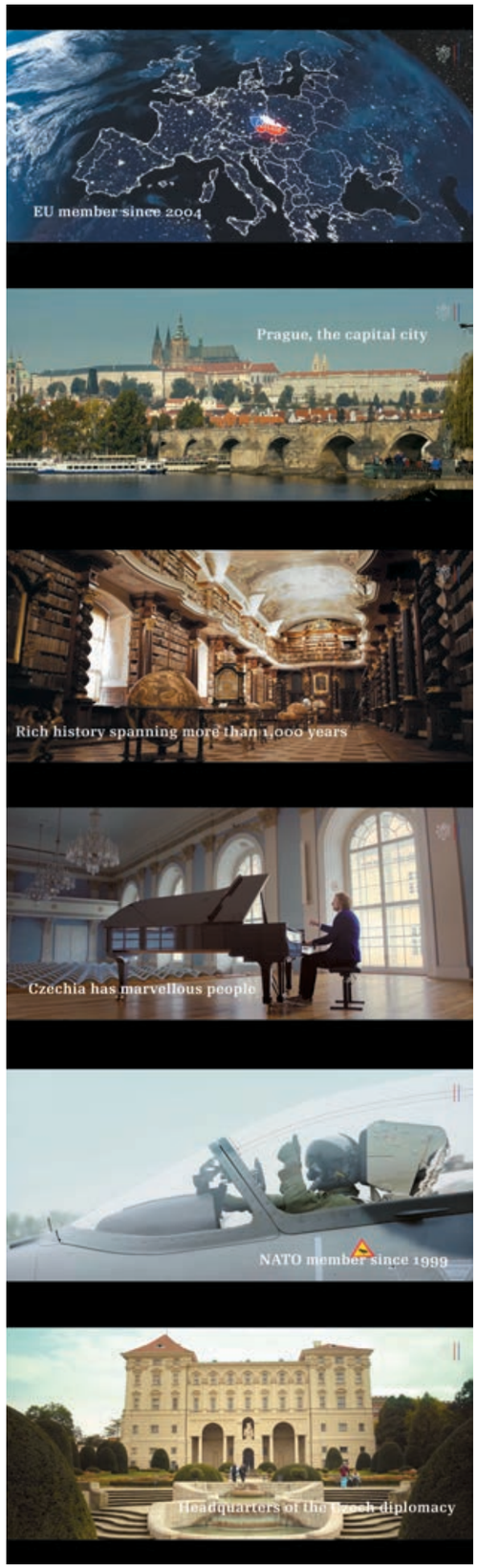


Rich history spanning more than 1,000 years

NATO member since 1999

EU member since 2004

CZECH
STRATEGIC
TECHNOLOGIES



Strategic Technologies to Secure Strategic Interests

Ministry of Foreign Affairs
of the Czech Republic

CZECH
STRATEGIC
TECHNOLOGIES

The world has just gone through two years that have fundamentally shaken the world economy and global trade. The pandemic has not only underscored and magnified existing weaknesses, but has also brought or accelerated new and emerging trends. Restrictions in international trade have grown and the great fragility of production, transport and logistics infrastructure has been revealed. As a result, companies have begun shortening their production chains and are realising they need to be closer to their customers. Governments now understand that having access to strategic goods and technologies in their country or region is crucial.

The pandemic suddenly changed supply on a global scale. New, previously often ignored sectors came to the fore, and these sectors experienced a gigantic boom. Healthcare and digitalization – the latter a field that underpins a host of other sectors, including the defence industry – come to mind first and foremost. We are also seeing changes in other sectors, especially those where countries see an opportunity to move away from being just a supplier of primary raw materials in the production chain. This means emphasis is also being placed on traditional sectors, such as logging, mining and agriculture.

Another external shock that affected mostly European economies occurred in 2022 after Russian military attacked Ukraine. The situation has led to wide range of sanctions and further limitations of global value chains, especially with raw materials, energy and agricultural commodities. One of the significant outcomes of the crisis in both short and long-term periods will be another reshuffle of world demand within sectors. It is expected that the strategic defence technologies together with its subordinated subsectors will be strengthened as well as the health and pharmaceutical industry.

The task of the Ministry of Foreign Affairs is to monitor, analyse and respond to these economic and business trends. In practice, this means we have to modify our economic diplomatic services for Czech companies in a way that allows these services to reflect the companies' current needs and increase their chances of success in foreign markets. Contributing to more active and effective promotion of Czech products, services and complex solutions abroad is thus a vital task for Czech economic diplomacy. The Czech Strategic Technologies catalogue you see before you is one of the tools for achieving this objective.

Martin Tlapa

Deputy Minister of Foreign Affairs
of the Czech Republic

www.mzv.cz

Strategic Technologies to Secure Strategic Interests

Ministry of Foreign Affairs
of the Czech Republic

Lesson from the pandemic for Czech economic diplomacy

During the pandemic, the way the whole of society functioned changed. Company management, and even diplomacy, had to adjust to daily changes and improvise greatly. Early in the pandemic, diplomacy focused on the repatriation of Czech citizens. The agenda gradually changed to facilitating services for companies that could no longer maintain personal contact with their foreign partners. The crisis underscored the need for dynamic diplomacy and its practicality. Economic diplomacy and development cooperation saw new tools: tied financial aid projects, local partners to assist companies and the transfer of negotiations to the online world.

What tasks for Czech diplomacy have arisen from the pandemic?

1. It is essential to understand which past solutions will no longer work going forward, what we need to change and what we need to do differently. Not for us to survive, but to succeed. To monitor key possibilities and opportunities and link them to the strategic direction of the Czech Republic.

2. Digitalization provides opportunities to transfer some communication to virtual space. It is also a sector that many countries will be investing in.

3. We must not succumb to economic nationalism. We must promote a fair and effective architecture for the world to function in. We must cooperate on the global level in the interests of our own country – from the rules of international trade to the mechanism of conflict resolution. A rational, fact-based policy is essential.

4. Assembling solutions. Let us put together and offer comprehensive, achievable solutions. Greater healthcare capacity and modern methods of monitoring the movement of goods and services for digital communication. Territorial defence projects are undoubtedly among them.

5. We will utilise the opportunities arising out of the pandemic only if companies from the Czech Republic have competitive export financing and insurance.

6. Diplomacy must act. Its actions and results reflect national interests, and they will be judged by its users. It will be good to transition from static collectives of state representatives to a dynamic national team abroad that moves through the global world based on new and tested opportunities reflecting the offer of our solutions and interests.

Global economic impacts of the pandemic

Greater role of the state, fewer company investments:	Structural changes in the economy:	Perspective sectors:
• Greater role of the state, more public contracts. • State aid for the socially most vulnerable. • State aid for selected sectors. • Fewer company investments. • Less direct foreign investment, outflow of capital (Africa). • Greater sovereign debt.	• Growth and acceleration of digitalization (in all respects). • Realisation of the need for diversification. • Emphasis on critical sectors (healthcare, ICT, food industry).	• Greater importance of new sectors: green technologies, energy storage, e-mobility, all-digital solutions for individuals and industry. • Concurrently, there is still support in the world for “traditional sectors”: mining, logging, classic energy. Emphasis on healthcare and infrastructure almost everywhere. • Security threats = greater demand in defence/security sector.
(Innovative) tools for supporting the economy:	**De-globalisation, regionalisation of production:**	**Change of conditions for company success in foreign markets:**
• State aid for building infrastructure, reinforcement of digitalization and automation for industry, in developed countries. • Acceleration of economic transformation to low-carbon technologies = transition to green economies. • Liberalisation and privatisation of state-owned companies (Africa).	• Downturn of the global economy, drop in trade and demand. • Reinforcement of protectionism in key sectors (healthcare, food industry). • Effort to support domestic/regional production in selected sectors. • Effort to shorten supply chains in almost all regions. • Effort toward food supply independence. • Need for permanent presence.	• Travel risks are the greatest obstacle to trade development. • Greater need for local representatives/partners/employees – problems finding new ones without the possibility to meet. • Classic protectionist measures are not being implemented to a large extent.

Ministry of Foreign Affairs
of the Czech Republic

Importance of strategic technologies

Importance of strategic technologies: preparedness as well as utilisation of business opportunities

Strategic technologies are not just those that increase a country's preparedness for and resistance against health threats, but they are also defence and security technologies that increase our security and ability to defend ourselves. We find ourselves in turbulent times, and security threats, both conventional and hybrid, continue to endanger us.

The strategic nature of the technologies presented in this catalogue is two-tiered. On the one hand, they are technologies that contribute to fulfilling the strategic interests of every country, chiefly security and stability. On the other hand, they are technologies that are seeing high demand globally. The strategic nature thus takes on a second, economic dimension that lies in taking advantage of opportunities and understanding new trends.

The defence, security and healthcare industries are among those sectors where the Czech Republic can provide comprehensive solutions. They are also sectors that are defined by high added value and high technological and industrial advancement. Moreover, the development of these sectors is conditioned by innovation and the ability to link production to science and research. The Czech Republic possesses all these qualities and skills.

Defence and security industry

Technological developments and new trends are reflected not only in the nature of 21st century conflicts, but also in countries' demands for the most modern equipment of their armed forces. Digitalisation is also permeating the defence and security industry, where the newest technologies are applied. At the same time, new threats emerge and methods of waging armed conflicts are changing fundamentally.

Not even during the pandemic did countries reduce their defence budgets. In fact, China, India and Japan increased their defence spendings. And countries the world over will be increasing their military budgets in the coming years as well. Unstable and, in many parts of the world, volatile geopolitical situations and the related threat of armed conflict, as well as an increase in hybrid threats, are contributing to this. Therefore, in recent years, many countries on all continents have adopted ambitious plans to modernise their armed and security forces. This fact is clearly mirrored even in the analysis of prospective and strategic fields in foreign markets drawn up by Czech embassies abroad in the form of the 2021/2022 Strategic Opportunities Roadmap.

The security situation of each country then affects the amount invested in the defence and security sector and plans for modernising army weaponry and equipment. In the future, the demand for cyber security systems, communication, information and navigation systems and border and security infrastructure defence technologies will certainly grow. Defence and security technologies play a crucial role in protecting key industrial, infrastructure and other strategic objectives.

Czech defence companies have an excellent global reputation and first-class know-know in their field. The way is open to them not only in the realm of export: they also have considerable opportunities for developing strategic partnerships with other countries with traditionally strong arms and defence industry. We can work with our partners to gain access to complicated third markets, work on joint know-how transfer projects and cooperate in science, development and innovation. This can help Czech companies reaching a higher technological level and strengthening their competitiveness on a global scale.

CZECH
STRATEGIC
TECHNOLOGIES

Healthcare and pharmaceutical industry

For all countries, securing reserves of medical and protective devices and pharmaceuticals is also part of their efforts to fulfil their strategic interests. The pandemic has become a huge impulse to develop the healthcare and pharmaceutical industry. Countries have realised they need to strengthen and modernise their healthcare systems. Consumption of medical devices and services will undoubtedly continue to grow, as will the demand for specialised medical technologies.

Regardless of whether we are talking about the healthcare or pharmaceutical industry, Czech medical companies possess first-class know-how and cutting-edge technology. Additionally, Czech companies who are members of the Association of Manufacturers and Suppliers of Medical Devices are able to work together effectively, and together they offer comprehensive Czech solutions for healthcare, and they are seeing success in distant and demanding foreign markets. First-class services provided to their customers abroad form an integral part of this solution. Excellent PR is also contributing to their success because they present their technology in a modern, interactive catalogue in the form of a 3D hospital.

Digitalization and robotization trends are also permeating healthcare. E-health, i.e., IT technologies specialising in healthcare, is expected to continue to expand in the coming years. New start-ups are even developing a new branch called "telehealth" or "telemedicine", i.e., virtual healthcare, where medical care and consultations are provided to patients remotely.

Disaster medicine is another field where the Czech Republic has a lot to offer. The threat of armed conflicts is forcing countries to equip themselves not only with the most modern defence and security technologies, but also with biological defence systems, decontamination systems and devices for emergency medicine. Of course, all these systems are just as useful in dealing with natural disasters.

The path to fulfilling countries' strategic interests in the area of healthcare is not only by importing medical devices and drugs, but also by securing strategic domestic production of these products as well as by securing domestic research and development. Through these strategic plans, governments respond to the fragility of global supply chains and strive to reduce their dependence on imports from distant countries. What was discussed above concerning the defence and security industry also applies to the healthcare and pharmaceutical industry: opportunities for cooperation with other countries in science, research, innovation and know-how transfer are opening up for Czech companies. Joint projects with advanced countries contribute to their further technological development and provide added value to their products.

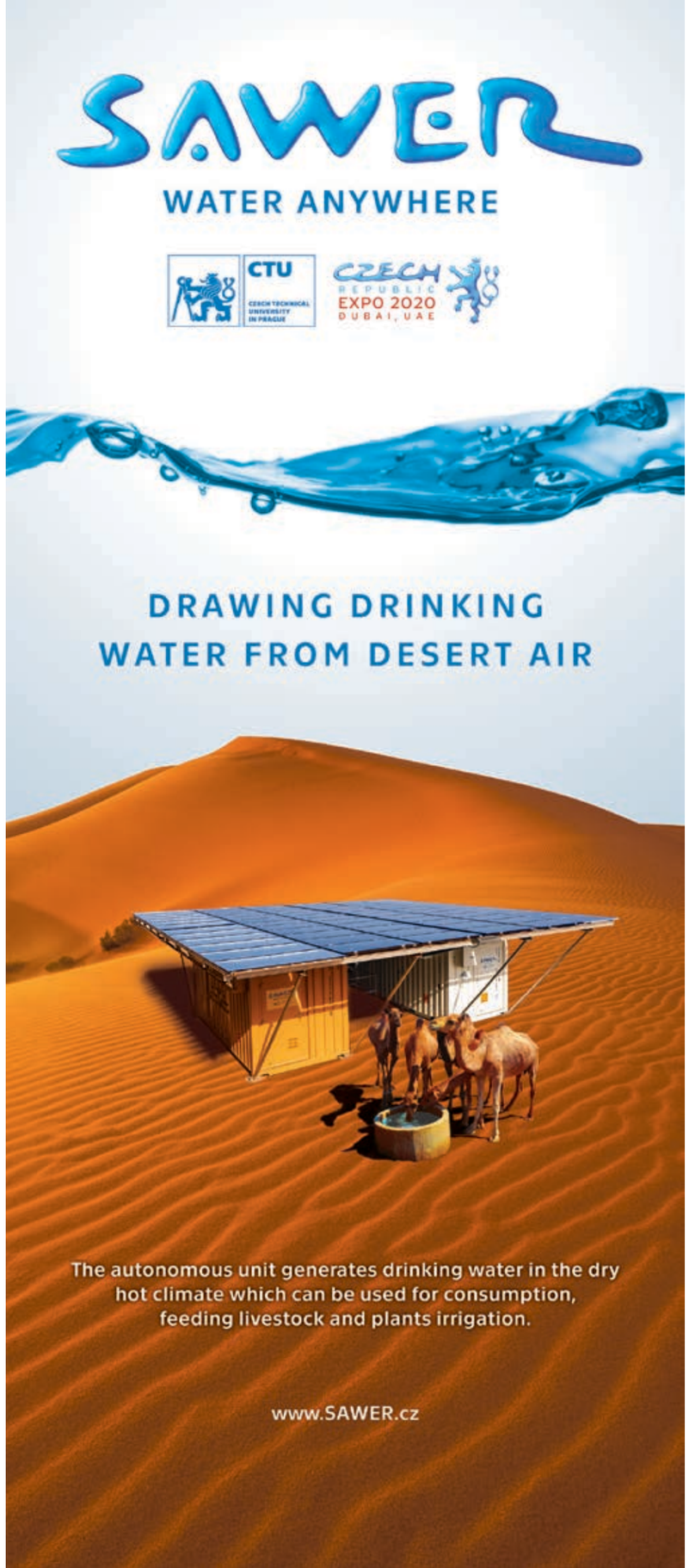
WATER ANYWHERE

BEST INNOVATION

The Czech Republic won the award for the best innovation at the EXPO in Dubai - for S.A.W.E.R.

The organizers of the General World Exposition awarded the Czech Republic the prize for "Best Innovation" for a technology that autonomously produces water from dry desert air using only solar energy.

The award was presented to the Czech pavilion by the Mohammed bin Rashid Al Maktum Center for Government Innovation, i.e. the ruler of Dubai and the Prime Minister of the United Arab Emirates. This Czech innovation established itself from among several thousand others, which were presented in Dubai by two hundred nations, and from among almost five hundred finalists of the competition.



SAWER

SOLAR
AIR
WATER
EARTH
RESOURCES

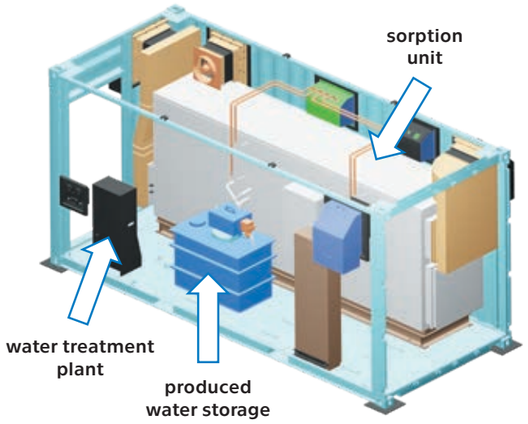
PRINCIPLE

The unit works using the principle of adsorption and desorption of air humidity. Its main part is the sorption unit with a desiccant exchanger that allows for dehumidification even of air with low content of water vapor that can be found in desert conditions. Extracted water molecules accumulated in desiccant are then released at high temperature to smaller amount of air to increase its humidity. High humidity from the air then condenses on the built-in cooler in the unit as liquid water. This way, it is also possible to get water in desert conditions where ordinary condensing coolers do not produce any.

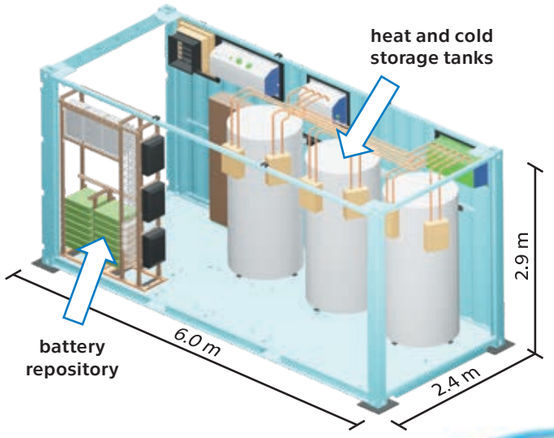
CONTAINER SOLUTION

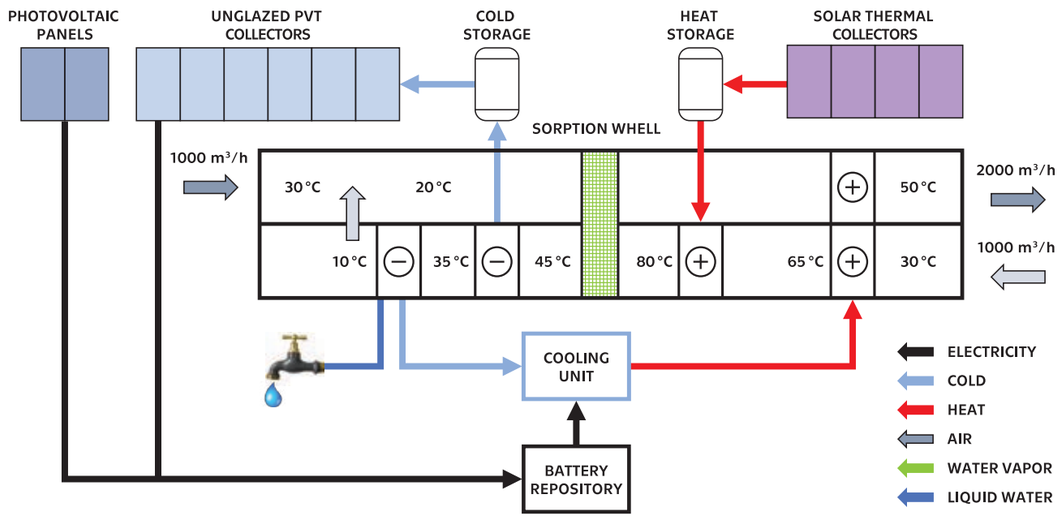
The S.A.W.E.R. autonomous unit consists of two containers – production and energy ones. The production container comprises the sorption unit, water reservoir, and a plant for treatment of the drinking water. Energy container comprises the battery repository, storage tanks for heat and cold. The solar roof is constructed over both containers. By connecting the roof with the containers, it is possible to produce and supply the drinking water autonomously without a connection to energy grid. The outside dimensions of the containers in the top view are 2.4 × 6.0 m and the height is 2.9 m.

PRODUCTION CONTAINER



ENERGY CONTAINER





AUTONOMOUS OPERATION

The S.A.W.E.R. unit can be operated in a totally autonomous way without the need of energy from external sources. The energy for its operation (electricity, heating, cooling) is taken from the local environment by solar roof. The energy is stored in the battery repository and the storage tanks of heat and cold.

Therefore, the S.A.W.E.R. unit is suitable for areas without any infrastructure at all. The technology is optimized for operation in hot and dry climates (deserts); however, the process can be also adapted for other areas.

SAWER
WATER ANYWHERE

200 employees
200 projects per year
80 partners
21 laboratories

CTU
UCEEB

University Centre for Energy Efficient Buildings CTU in Prague

Třinecká 1024, 273 43 Buštěhrad, Czech Republic
+420 224 356 701
info@uceeb.cz
www.uceeb.cz

CZECH REPUBLIC
EXPO 2020
DUBAI, UAE

CZECH OASIS AT THE EXPO 2020 IN DUBAI

The S.A.W.E.R. system for the pavilion representing the Czech Republic at the EXPO 2020 world fair in Dubai is a result of cooperation of the University Centre for Energy Efficient Buildings of the CTU in Prague and the Institute of Botany of the Czech Academy of Sciences. The unit with the production capacity of 500 liters of water per day that uses the same technology as the container version is designed as a part of the pavilion technology and it will irrigate the oasis growing from the sand around the pavilion. Getting water from air and cultivating the desert into fertile garden will be the central exhibition topic of the Czech pavilion.

Robot

The word

Robot is Czech

*1920

The word Robot was first introduced by the Czech writer **Karel Čapek** in 1920 in the science-fiction play **R.U.R. Rossum's Universal Robots.**

The word Robot was coined by his brother, painter **Josef Čapek.**

R.U.R. premiered in the theatre in January 1921.

Czech **Inventions**

Their contribution to the **World**

Lightning rod - Prokop Diviš - 1753

Litography - Alois Senefelder - 1796

Screw-propeller - Josef Ressel - 1827

Lump sugar - Jakub Kryštof Rad - 1841

Founder of Genetics - Gregor Mendel - 1866

Arc lamp - František Křižík - 1880

First car fender - Leopold Sviták - 1897

Kaplan turbine - Viktor Kaplan - 1912

Blood Types - Jan Jánský - 1917

Polarography - Jaroslav Heyrovský - 1922

Founder of Porsche - Ferdinand Porsche - 1931

Silon fiber - Otto Wicherle - 1940

Jet Loom - Vladimír Svatý - 1947

Semtex - Stanislav Brebera a Radim Fukátko - 1953

Contact lenses - Otto Wichterle - 1961

Mach aerodynamic number - Ernest Mach

INVISIBLE INTERACTIVE EXHIBITION

The Czech Innovation Expo represents the

100-year history

of the country in the fields

of research and science,

traditional world-recognized industrial brands, and also the emerging new generation of representatives of the scientific, innovative and entrepreneurial sphere.

The content of the exhibition is presented through state-of-the-art

Augmented and Virtual Reality technologies

CZECH CENTRES
ČESKÁ CENTRA

APP STORE

GOOGLE PLAY

WWW.CIEXPO.CZ

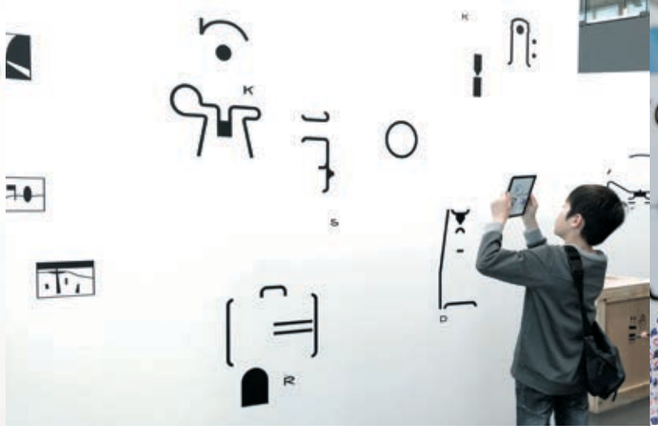
HOW TO DO IT?

DOWNLOAD INTERACTIVE APP.

DISCOVER CZECH INNOVATORS AND SCIENTISTS.

AIM YOUR SMARTPHONE'S CAMERA AT THE BLACK MARKS ON THE PAGES.

CLICK ON THE „MORE INFO" BUTTON FOR DETAILED INFORMATION.



The Czech Republic is the home of many prominent scientists, thinkers and innovators whose essential discoveries and inventions in many areas of human research and knowledge have influenced the lives of people around the world.

The Czech Innovation Expo is based on the interconnection of interactive and audiovisual art, design and new trends in innovative areas of Czech society. The content of the exhibition is presented through state-of-the-art augmented and virtual reality technologies.

The Czech Innovation Expo represents the 100-year history of the country in the fields of research and science, traditional world-recognized industrial brands, and also the emerging new generation of representatives of the scientific, innovative and entrepreneurial sphere.

On the occasion of the 100th anniversary of Czechoslovak statehood, the Czech Centers organized this interactive exhibition, which was presented in dozens of countries and cities around the world.

CZECH INNOVATION EXPO

APP STORE

GOOGLE PLAY

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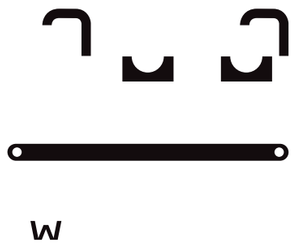
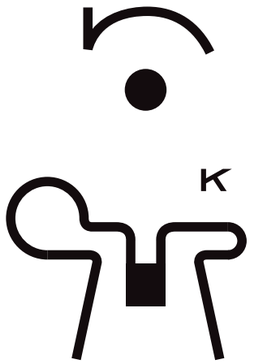
PAST INVENTORS

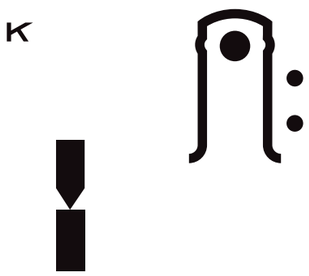
OTTO WICHTERLE



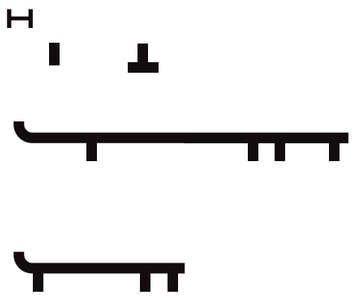
VIKTOR KAPLAN



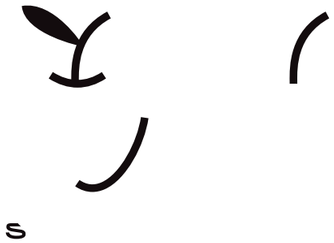
FRANTIŠEK KŘIŽÍK



ANTONÍN HOLÝ



JAROSLAV HEYROVSKÝ



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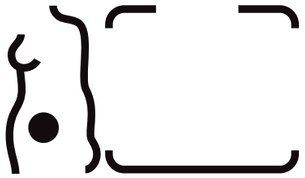
PRESENT INVENTORS



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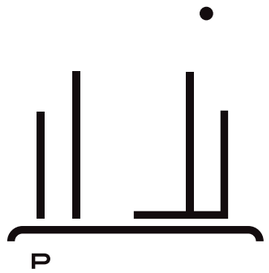

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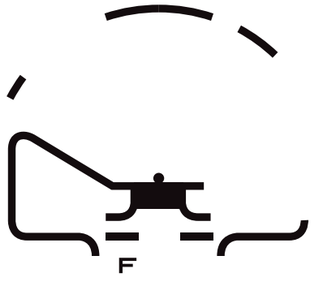
CZECH INNOVATION EXPO

APP STORE

GOOGLE PLAY



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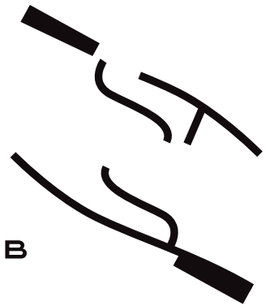
WWW.CIEXPO.CZ

ICONIC BRANDS



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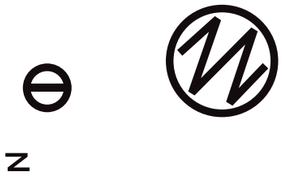

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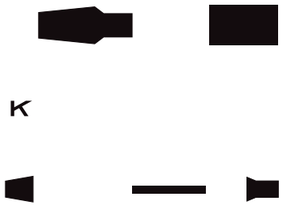

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VR_MUSASHI

Czech Innovation Expo
VR & AR Technology by VR_MUSASHI

Creative tech lab

Virtual + Augmented Reality
360° immersive experiences

www.vrmusashi.com

STRENGTH | RESPECT | INDEPENDENCE

CZECH CHAMBER OF COMMERCE

www.komora.cz/en

CZECH CHAMBER OF COMMERCE

Our Definition

Strenght:

We are not afraid of obstacles. Our strength lies in numbers and in unity. We are everywhere and there are thousands of us. We stick together. We **never give up**. The Czech Chamber of Commerce is the most representative and largest mass association of entrepreneurs, the **loudest defender** of business interests in our country. Together with our chamber partners, we **connect companies from all over the world**. And this is our real strength, generating a future for business.

Respect:

Nothing gets done without us! We are a **respected negotiating partner** at all levels. According to the law and integral to our core purpose, the Czech Chamber of Commerce represents the interests of business and is a **consultation point for legislation**. By dint of the many consulted legislative bills and law amendments, the high quality of our position papers, and our sheer professionalism, the chamber receives its due respect from public administration. And through the events we professionally organize, respect is also earned abroad.

Independence:

The state does not pay us – we are not its employees. Our power is **independent of the state**. Today, we still continue to shape our own capacities, opportunities, and the conditions of our own existence. We did in the same way in the past, it is genetically programmed into **our tradition** as a chamber movement. This is true independence.

16,000 members

About Us

The Czech Chamber of Commerce is the most important representative of the business community in the Czech Republic. It brings together more than 16,000 members organized in 60 chambers across the regions and in 127 sectoral associations.

The Czech Chamber of Commerce is the **only statutory representative of entrepreneurs** in the Czech Republic. Its activity is governed by a special law. The Chamber defends the interests of businesses across **all sectors and all regions**, except for agriculture, food processing, and forestry (these activities are covered by the Agrarian Chamber of the Czech Republic). Membership in the Czech Chamber of Commerce is non-compulsory. The main mission of the Chamber is to **create opportunities for doing business**, and to promote and support measures that contribute to the development of entrepreneurship in Czechia, and thus to the overall economic stability of the country. An important factor in this stability is foreign trade. That is why we strive to develop relationships with foreign partners, particularly with chambers of commerce and other business organizations.

Today's Czech Chamber of Commerce follows in the footsteps not only of young **Czechoslovakia's chambers of commerce**, which represented trade, industry, and the self-employed, tradesmen's associations, craft associations, and other self-governing entities for entrepreneurs, but has links that go back even further – to the **chambers of commerce of Austria-Hungary** in the 19th century. Already at that time, the first guilds were being established to represent the interests of each profession. Bricklayers, stonemasons, tailors, shoemakers, cartwrights and potters all had their own guilds. It is the protection and representation of the interests of craft enterprises that connects erstwhile guilds with the contemporary Czech Chamber of Commerce.

In the regions, the Czech Chamber of Commerce is represented by a **network of regional and local chambers**. Entrepreneurs can therefore find the Czech Chamber of Commerce in every region, and indeed in more than 70 cities of Czechia. Chambers in the regions provide support to businesses especially through consulting and advisory services on topics related to the relevant business activity, but also by issuing the documents of selected state information systems. They also provide support in the field of education and vocational on-the-job training in factories, recruitment of work force from selected countries, and support when entering foreign markets, etc.

16,000 MEMBERS, 127 ASSOCIATIONS

The Czech Chamber of Commerce is the largest representative of entrepreneurs in the country, currently associating more than 16,000 self-employed people, SMEs, and large enterprises, strategically important for the domestic economy. Entrepreneurs are organized in **60 regional chambers** and in **127 professional unions, associations, clusters and craft guilds**.

350 EMPLOYEES

The Chamber has **the densest network of regional centres**. A chamber office is located in almost all district towns in the Czech Republic. Every day, over 350 qualified employees are ready to assist entrepreneurs in the regional or professional network.

We Facilitate Foreign Trade for Entrepreneurs

The Czech Chamber of Commerce operates a network of 45 contact points in the regions, offering entrepreneurs a wide range of services focused on foreign trade.

Czech Chamber of Commerce in the World

The Czech Chamber of Commerce represents the interests of its members at the international and European levels through membership in Eurochambres, the European Economic and Social Committee, and the National Committee of the International Chamber of Commerce (ICC). The Czech Chamber of Commerce is represented in Brussels through its CEBRE office.

120 COUNTRIES

The Chamber promotes the economic interests of the Czech Republic. It is part of the **European and global network of chambers of commerce and industry**, cooperating with chambers in 120 countries. It has a wealth of contacts abroad, thanks to which it successfully organizes business missions, often accompanying the President, Prime Minister, Ministers and their Deputies on official and working visits. In cooperation with partners it also operates six assistance offices abroad – in Ukraine, Belarus, Kazakhstan, Moldova, Mongolia, and Serbia.

CZECH CHAMBER OF COMMERCE

www.komora.cz/en

OVER THE LAST 6 YEARS WE HAVE SUCCEEDED IN: >>

Organizing **100 business missions to 111 countries** of the world, with 1,648 participating entrepreneurs concluding more than 250 contracts on site.

Holding **46 business forums** and B2B meetings in cooperation with foreign partners during visits of foreign delegations to Czechia, with the participation of 2,068 companies.

Organizing **68 roundtables**, territory-focused seminars and conferences for a total of 2,797 participants.

Holding **31 regional educational events** focused on foreign trade, with the participation of 711 exporters.

Welcoming **168 representatives of foreign partner organizations** and providing them with up-to-date information on Czechia's economy, conditions for doing business, and on activities and support provided by the Czech Chamber of Commerce.

Healthcare

Healthcare

C2ECH
STRATEGIC
TECHNOLOGIES

THE MAGIC OF VISUAL PRESENTATION

Coronavirus pandemic has influenced markets, global business, our work and lives significantly. However, it has brought also many innovations which have become a firm part of our daily lives. This concerns both mobile applications for search and making new contacts and video conference calls with our business partners.

Every crisis means an impulse to seek new solutions, the need to be more flexible, more creative and to move on. Through the Czech Development Agency's programme we have managed to create a unique 3D virtual hospital, which offers a comprehensive solution in the field of healthcare and supplies of medical products, technologies and services to the Czech healthcare sector.

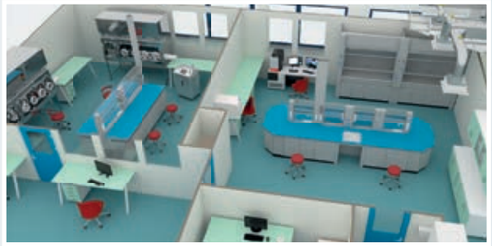
The Czech Republic should profile itself as a country with the ability to offer medical technologies. This commitment can be met, among other things, by the 3D hospital, the implementation of which presents the possibilities of the Czech medical industry in an interactive form.

The 3D Hospital presents products of Czech medical companies in 4 languages - English, French, Spanish and Russian.

The 3D hospital, clear and innovative offer

Forget flipping through a 200-page catalogue and take a tour through our hospital. We will demonstrate to you the comprehensive offers of the particular departments in the eight floors of the hospital. Each of the twenty

ASSOCIATION OF MANUFACTURERS AND SUPPLIERS OF MEDICAL DEVICES



departments is fully equipped. The range of products also includes equipment designed for field conditions. The Mobile Hospital Station is one of such units. It is a fully equipped set of tents that are used as mobile workplaces in crisis situations. The tents include, of course, a biobox isolation/hospitalization chamber; there is a vacuum created inside the chamber to prevent a highly contagious disease from spreading to the surrounding area if a patient with such a disease is placed there.

"We have become a trusted partner for the supply of complete complexes not only to the countries of the developing world, and consider this a great success", says Petr Foit, Vice-Chairman of the Board of Directors of the Association of Manufacturers and Suppliers of Medical Devices and Linet's Commercial Director for Export.

Complexity above all

Comprehensive solutions are nowadays required from suppliers in international development cooperation and, together with a consolidated marketing presentation, they are a prerequisite for success in the field of development cooperation abroad. Offering comprehensive solutions also helps companies to deepen their business cooperation in foreign markets significantly, and facilitates their penetration into new markets abroad. However, the basic idea of the 3D hospital project remains the same, and namely that it is meant as a showcase for the products of companies, not the companies themselves.

A number of member companies of the Association of Medical Device Manufacturers and Healthcare Products and Technologies Suppliers has joined the 3D Hospital project. The hospital beds of Linet, one of the world's leading manufacturers of hospital beds, exporting them to more than 100 countries worldwide form an important part of the offer. Dozens of companies have their products included in the project, including the TSE company, which has been developing, designing, manufacturing, installing and servicing medical equipment for neonatology for more than 30 years. EGO Zlín, a major manufacturer and supplier of complex biological protection systems, logistics and decontamination systems and equipment for emergency medicine and long-term care, offered its tents. Other involved companies include, for example, Block, which specialises in the supply of complex clean room facilities and manufactures also its own systems for their implementation.... And there are dozens of other great companies. After all, come and have a look, we invite you to take a tour:

https://avdzp.cz/vrcatalogue/

WE ARE 3D

https://avdzp.cz/vrcatalogue/

Export of Czech medical solutions should not end with the delivery itself. "We would like to accompany our customers through the whole process from installation, training of staff down to servicing, and possible provision of human resources to make the project functional and sustainable. This is still not the usual standard in other countries", says Petr Foit, the Vice-Chairman of the Association of Manufacturers and Suppliers of Medical Devices.

How did the initial idea of creating a 3D hospital come about?

The markets were fundamentally affected by the coronavirus pandemic. We needed to be more flexible and creative. In addition, we at the Association have a long-standing policy of presenting products and their integrated solutions. The combination of these two impulses has resulted in a complete offer of Czech healthcare solutions in the form of a 3D hospital.

3D hospital will celebrate its anniversary ... What is the response to this idea?

The response has been great. The 3D hospital has been well received particularly in our dealings with representatives of countries targeting at health capacity building and strengthening. The virtual catalogue works as a great tool for presenting Czech medical products in a comprehensive and simple way. At the same time, it is also a very effective way for other healthcare facilities to make contacts with quality suppliers. The fact that a group of Czech companies participating in the project is equipping basically the entire hospital in this set-up makes it easier for the prospective customer to deal with, for example, the follow-up service, too.

What will be further steps in the development of the hospital?

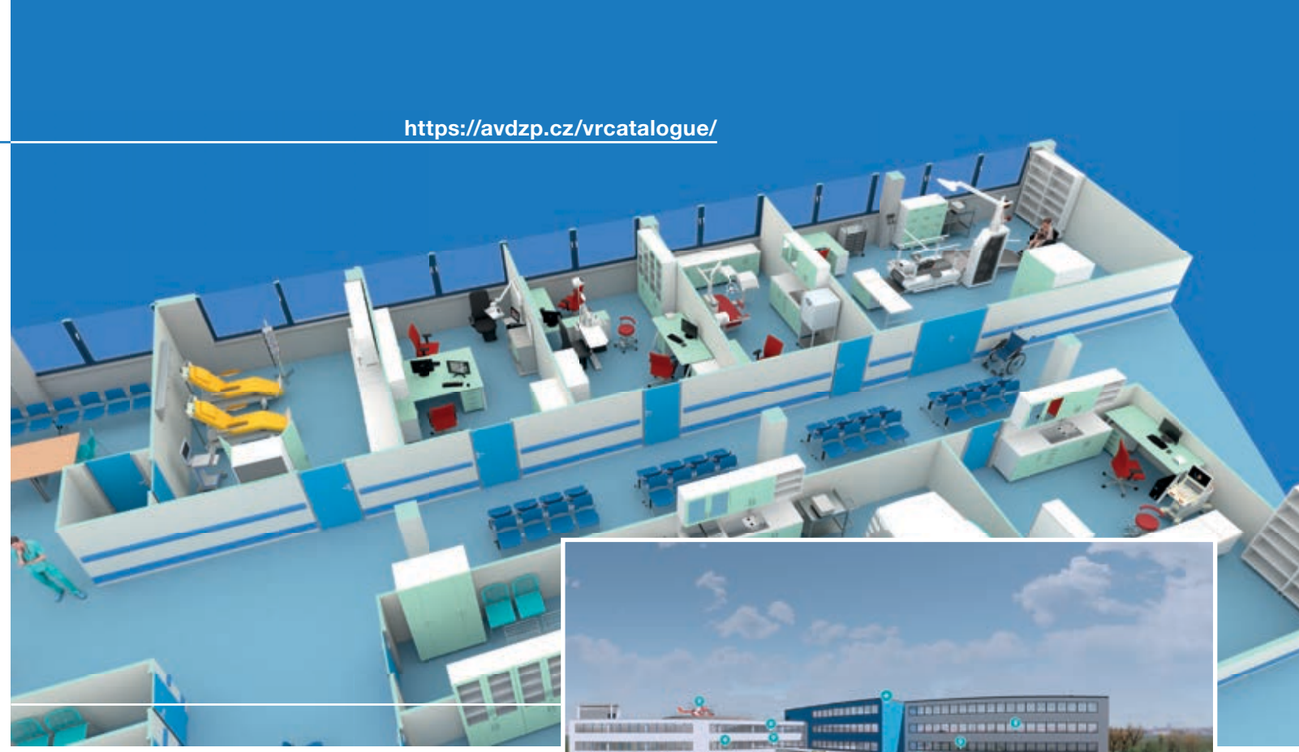
We have made some progress in the development of the hospital right from the beginning of the year. We have expanded our offer with the Mobile Hospital Station unit - i.e. a field hospital, we have also added equipment for technical rooms, a rehabilitation room called Lokohelp, which is fully equipped for the locomotion therapy. And above all, we have created other language versions ofthe hospital. So currently it is presented in 4 languages - English, French, Spanish and Russian.

We are committed to promote a good name of the Czech Republic. After all, it will help other exporters too, not only those exporting medical devices. In today's world, references are very important as they allow us to reach markets that were previously closed to us. Of course, there are also possibilities to expand cooperation and invite other companies interesting in terms of their portfolio to join the project.

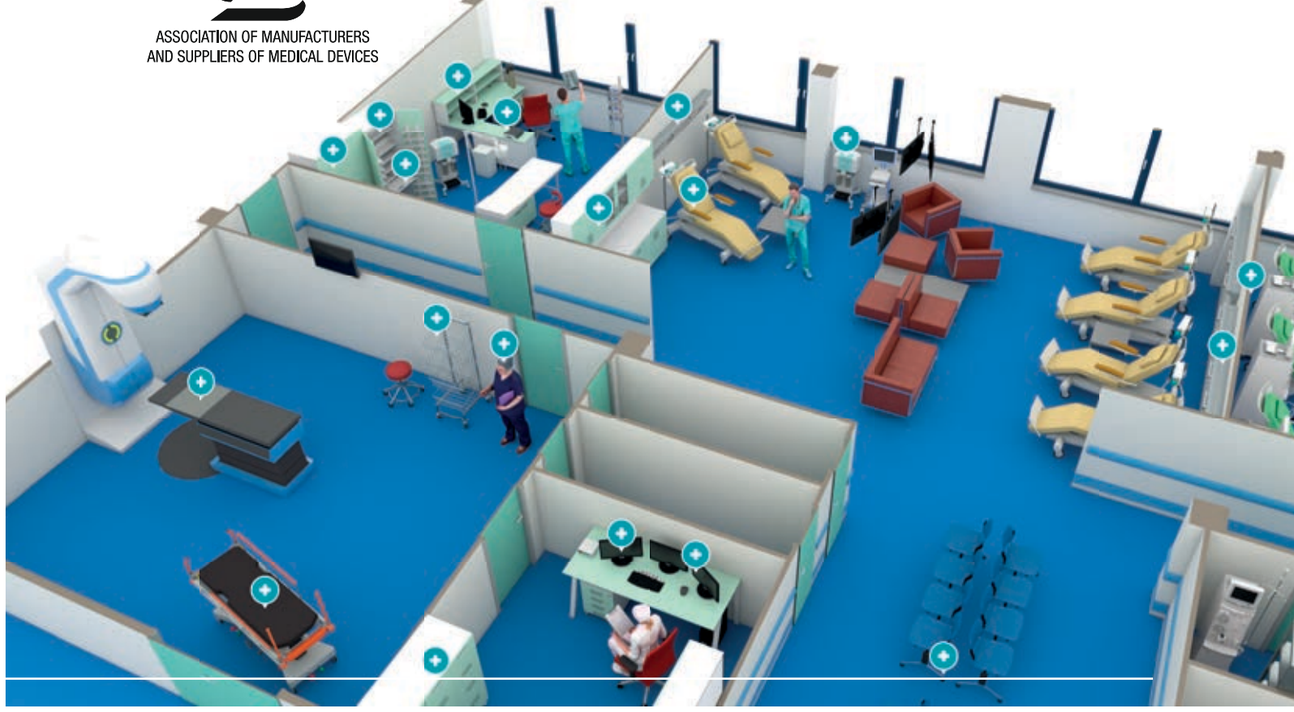
Petr Foit
Vice-chairman of the board of directors responsible for export and trade support at Association of Manufacturers and Suppliers of Medical Devices
Global export sales director at Linet

Imagine me being a foreign client interested in purchasing a complete operating room equipment. What would follow?

The benefit is that we strive to ensure that the cooperation does not end with the delivery of the equipment itself. This applies to all projects carried out under the patronage of the Association and the Czech Healthcare Solutions. We would like to accompany our customers through the whole process from installation, training of staff down to servicing, and possible provision of human resources to make the project functional and sustainable. This is still not the usual standard in other countries.



ASSOCIATION OF MANUFACTURERS AND SUPPLIERS OF MEDICAL DEVICES



DARKOV *Spa*

Rehabilitation Clinic

MODERN HEALTH REHABILITATION RESORT WITH PROFESSIONAL STAFF AND STATE OF THE ART MEDICAL EQUIPMENT.

Darkov Spa is a leading Czech spa consisting of a historical facility for relaxation and mind regeneration and a sanatorium for intensive rehabilitation with robotic treatment.

Darkov Spa specializes in the rehabilitation of the locomotive and nervous systems, especially traumatic and postoperative conditions, the sequels of stroke and many other diseases.

We have more than 150 years of tradition providing care with the wealth of our natural spring water with high content of iodine, our professional staff and the latest medical technology, including robotic devices.

We offer our clients a pleasant place to stay and a wide range of services to heal them.

BRUSNO *Spa*

MODERN PROFESSIONAL HEALTH REHABILITATION RESORT

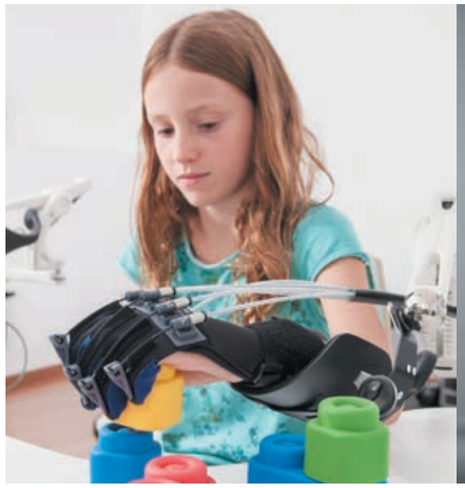
WITH QUALIFIED STAFF IN A CLEAN AND QUIET ENVIRONMENT

WITH SEVERAL SPRINGS OF NATURAL HEALING WATER

SPECIALIZATION

CARDIOVASCULAR DISEASES
GASTROENTEROLOGY DISEASES
MILD MOVEMENT DISORDERS

LUNA EMG



GLOREHA PROFESSIONAL 2

EKSO NR

REOAMBULATOR

Robotic rehabilitation

Robotic rehabilitation significantly improves and strengthens the effect of classical rehabilitation methods. A special form of exercises with robot assistance is a great benefit for patients, who achieve significantly better results.

We use a number of top robotic devices, such as:

REOAMBULATOR
GLOREHA PROFESSIONAL 2
LUNA EMG
EKSO NR

www.darkovspa.eu

Darkov Spa in EXPO 2020

Darkov Spa is the only spa from the Czech Republic in EXPO 2020. Our presentation consists of a “story” in virtual reality of the rehabilitation of a guest. You take a tour of the facilities, immersing yourself in the atmosphere of the spa and trying procedures such as bathing in the natural healing waters (a iodide-bromide brine), walks in the park, individual therapy, or rehabilitation of a hand in space.

Member of Darkov spa group. Brusno Spa green oasis in the heart of Slovak Mountains.

Investment

Investment

CZECH
STRATEGIC
TECHNOLOGIES

MONEY & IT

Traditional printing and digitisation

The State Printing Works of Securities is more than 90 years old. From printing banknotes and securities and producing personal documents, the enterprise has made its way to providing digital services.

How has the traditional polygraphic security printing works gradually moved into the world of IT?

The world is changing whether we like it or not. The cybernetic world is finding its way into almost every area of our lives, and we have to respond to it. Even though traditional polygraphic printing still accounts for most of our production, we won't be able to entirely rely on this in the future. We see an opportunity in digital products. Young people don't want to carry banknotes in their wallet, nor want it full of various ID cards. All they want with them is their mobile phone. How about offering them a mobile ID document, something like a twin of a physical ID card? You could use your phone as proof of ID, for example, during a roadside check, as well as in routine situations like collecting a parcel from the post office, etc. We've developed a prototype of the eDokladovka mobile app, including a demo version. We understand that coming up with an idea is not enough. We also have to design a working solution, and we have done that. Unfortunately, current Czech legislation doesn't allow us to further develop this project, but we believe that it will soon change.

We want to move the Track&Trace and other products forward. We have been more than successful where tobacco products are concerned. We were the first EU country to generate unique codes for tobacco products. At present, we're trying to introduce Track&Trace for other products with new features and added value for consumers, who could verify the origin of the purchased goods. We are working on a new app that will verify the authenticity of documents, as well as other selected goods that are often subject to counterfeiting. I believe that digitising products is a way for us to be successful in the future. Traditional polygraphic security printing remains in our interest, of course. The combination of traditional printing and digitisation can be clearly seen in another of our specific products, namely lottery tickets.

Tomáš Hebelka, CEO of STC

Can you tell us more...?

STC offers unique printing facilities and expertise in printing banknotes, documents and other securities. We are now putting this experience and know-how to use in scratch cards. It's not just about the production itself. We also want to attract potential customers with security designs. Our production possibilities are highly flexible. The production of lottery tickets includes graphic design, generation of winning combinations thanks to our own software, printing and digital checks to ensure that the entire process has been done correctly. We can produce small editions for the needs of customised lottery tickets, as well as large-scale editions for lottery companies. The quality of our lottery ticket production has been verified by an authorised expert and complies with the highest product standards required in the Czech Republic.

This year, the town of Ivančice gave us the opportunity to produce a limited edition of lottery postcards. The main motif of the postcards is the previously unpublished "The Three Ages" triptych by Alfons Mucha – The Age of Love, The Age of Reason and The Age of Wisdom. This unfinished triptych was intended to be a message from Mucha to humanity, but as yet it has not been published. By buying these cards, the owners will obtain a unique collectible specimen and an opportunity to win an interesting prize. At the same time, they will

STATE PRINTING WORKS OF SECURITIES,
state enterprise

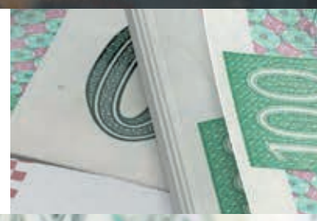
contribute to the reconstruction of the Alfons Mucha Museum in his native Ivančice. This contract started a new era of support projects for companies and institutions that can use the proceeds from these games to finance charity events, save cultural landmarks or support other public benefit projects.

But that wasn't the only project for the town...

That's right, it wasn't. The scratch-off postcards build on two earlier successful projects. We reprinted CZK 100 and CZK 500 banknotes for Ivančice according to a design by Alfons Mucha, a native of Ivančice and the creator of the first banknotes of the independent Czechoslovakia. The town used the proceeds from the sale of these securities for its own urban improvement projects. We recently implemented a similar project together with Prague Zoo. We printed and issued a collection of three commemorative banknotes with symbolic values of 100, 500 and 1,000 Troy tolars to mark the 90th anniversary of Prague Zoo. The obverse sides of the individual commemorative banknotes depict iconic animals of the zoo. Part of the sale proceeds will be returned to Prague Zoo for its projects to save endangered animal species. The entire collection is available for purchase in the STC e-shop.

In addition to this collection, you will also find other collectible printed securities such as commemorative banknotes designed in collaboration with students of the Academy of Arts, Architecture and Design in Prague, or the recently issued series of commemorative banknotes featuring a portrait of Václav Havel to honour the first post-revolution president of Czecho-slovakia on the occasion of 10th anniversary of his death and 85th birthday, which he didn't live to see. You will also find the aforementioned "Three Ages" scratch-off postcards in our e-shop.

www.stc.cz



CZECH STRATEGIC TECHNOLOGIES

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PLATON LIFE
CREATE THE FUTURE

About Platon Life

Platon Life is an international fintech startup whose main idea is to introduce digital currencies to businesses and the general public by providing user-friendly and secure solutions developed based on blockchain technology, using the PlatonCoin digital token together with strong partners such as Microsoft, Broadcom and others.

Platon Life thus connects the world of the latest digital technologies with businesses and users in an online environment using PlatonCoin (PLTC), the digital currency on which the unique ecosystem of the same name, Platon Life, operates.

Platon Wallet

Platon Wallet by Platon Life is the heart of the ecosystem. It is an all-in-one app that includes unique insurance from a reputable European insurance company of up to €1 million, with all data secured by software security company Broadcom, all in a user-friendly interface and with access to buying, selling, trading, betting and more. The digital wallet already meets all KYC and AML requirements and offers the most popular digital currencies: BTC, ETH, PLTC, BCH, XLM, USDT, UNI, LINK.

PLTC

PlatonCoin is a next-generation semi-decentralized cryptocurrency that provides the benefits of decentralised blockchain technology combined with the security guarantees of strong partners such as Broadcom and Tatum, an insured wallet and customer service. The goal of this cooperation is to bring security to PlatonCoin users and protect their assets and the company's assets and know-how.

Platon Life has issued a total of 300,000,000 PLTC (three hundred million PlatonCoins).

Price development PLTC chart

PLTC value from 2019 to the end of 2021

PlatonCoin is in a long-term growth channel. In 2019, when the foundations of the ecosystem were laid, the main range in which PlatonCoin traded was EUR 0.05-0.27. In 2021, PLTC traded in a price range of EUR 0.27-0.49 (according to data from Coingecko.com). (price development table)

Platon Life products

The ecosystem is constantly evolving and growing. All products or services within it can be paid for in PLTC. It currently consists of the following services /products:

Platon Wallet: A secure digital wallet that accepts 8 cryptocurrencies, provides instant internal transactions, with speeds up to 5k transactions per second and multiple layers of security in partnership with Broadcom (Symantec).

Internal exchange: A marketplace for private clients – used to ensure the liquidity of purchased PLTC.

Platon Store: It offers the possibility to get significant discounts on goods and services through vouchers from partners, as well as access to many products and services in one place.

Platon Pay: A payment gateway that provides a functional link between the user environment and the trading and/or exchange platform.

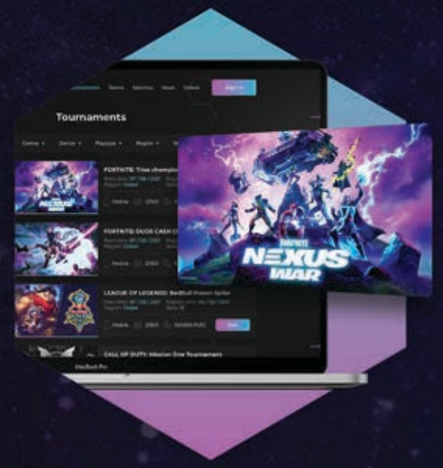
Membership with referral program: Several levels of membership that include a referral program with rewards for customers from their PLTC purchases, vouchers, auctions, holdings, memberships or payment gateway usage.

Platon Auction: Auctions of items such as collectibles, one-of-a-kind artwork or digital game objects.

Platon Life for Business: An employee benefit programme that gives absolute freedom of use to the employees/users via their Platon Benefit Cards for Business, a revolutionary product that reduces administration and payroll and corporate costs.

Custom CRM system: A tailor-made system for the entire ecosystem that enables efficient management of all activities.

Education: Free educational module for the public, including webinars and seminars, popular and educational articles to raise awareness about current trends, economy, IT, Industry 4.0, blockchain and cryptocurrencies, fundamental and technical analyses, and lectures on finances, digital currencies and the history of money for high schools to increase financial literacy among students.

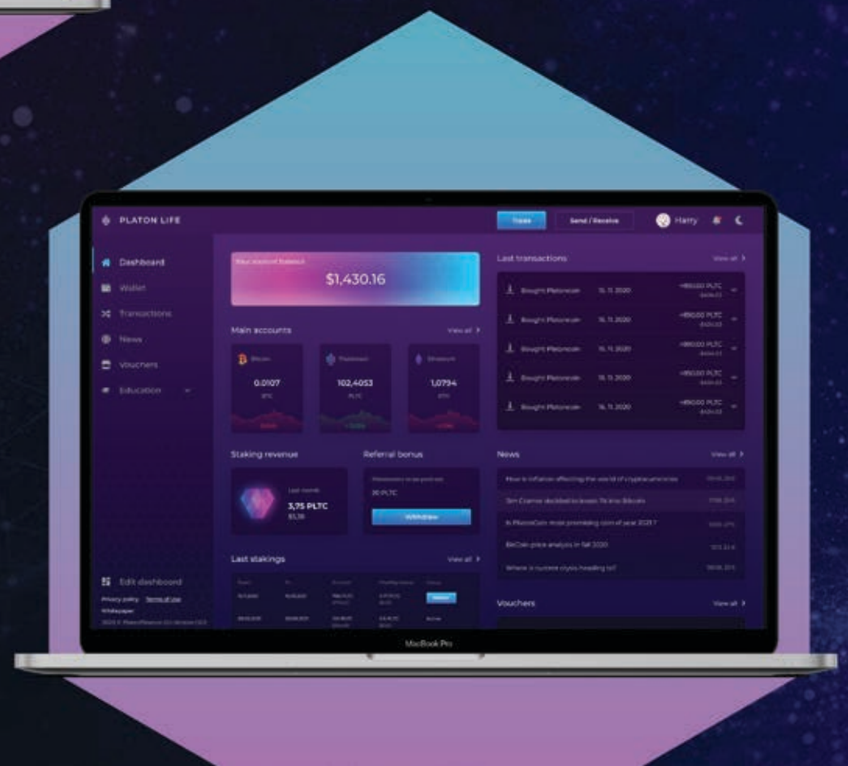


For 2022 we are preparing:

NFT platform: Aware of the potential of the rapidly growing NFT market, Platon Life is paying attention to this sector. We are preparing an NFT platform and we are also developing the possibility to participate in online auctions of digitised (tokenized) works in the form of NFTs in cooperation with our curator Pavel Šťastný. The launch is expected in Q1 2022.

Gaming platform: A portal that will bring together online gamers. Platon Life will announce rankings of the best players and tournaments in cooperation with major Platon Life partners. Valuable prizes will be awarded for winning tournaments or top ranking positions, including the opportunity to win PLTC. The launch is expected in Q2 2022.

GPS localization: An interactive online map of locations that will show partners that accept cryptocurrencies, including PLTC, be it shops, restaurants or other businesses. With this map, customers can easily view and find everything they need to know about a business location and the crypto services provided in a specific city or at a specific address. The launch is expected in Q3 2022.



Our history, vision and goals

2017

Q2 2017 - Creation of PlatonCoin token on the BTC blockchain

Q4 2017 - First version of digital wallet, start of collaboration with Symantec

Symantec

2018

ANDERSON

Q1 2018 - Start of insurance development with Anderson and development of Platon Club

Q3 2018 - Move to blockchain ETH

Q4 2018 - Wrapping up on LaToken

2019

Q1 2019 - Launch on Coinmarketcap

Q2 2019 - Listing on DigiFinex

DIGIFINEX

CoinMarketCap

2020

HitBTC

changelly

Q1 2020 - Increase issuance from 21 million to 300 million.

Q2 2020 - Implementation of KYC and AML

Q3 2020 - Launch of HitBTC and Changelly, rebranding of Platon Life

Q4 2020 - Launch Platon Store and membership program

2021

Q1 2021 - Launch of Emirex and Emiswap

Q2 2021 - Launch of the first version of the exchange

Q3 2021 - Launch of the next part of the exchange, referral program, staking program

Q4 2021 - Launch of Platon Auction, listing on Changelly PRO

EMISWAP

Our vision and goals

Platon Life's vision is to make digital currencies available to everyone as efficiently and securely as possible, while connecting the digital world with the world of real products and services. Our ultimate goal is a globally accessible and convenient ecosystem with added value for all its members. We want to expand our reach into education and research and development in related fields such as digital technologies, Industry 4.0, the use of blockchain technology and others.

Julie and Dan Tanner founded Platon Life and PlatonCoin digital currency four years ago. Drawing from their experience, they implemented the idea of connecting digital currency with an easy-to-use application and an all-in-one ecosystem called Platon Life. The team behind it started as a family, but maintains those values despite having today more than 120 members in IT, business and marketing.

www.platonlife.com

Security

C2ECH
STRATEGIC
TECHNOLOGIES

The Czech defence
and security industry
certainly deserves to be called

strategic

for its role in providing vital supplies
of goods and services to the Czech Armed Forces.

I am proud to say that Czech companies produce
cutting-edge products and technologies which define
new standards in their respective fields and promote
the good name of the Czech Republic globally.

Jana Černochová

Minister of Defence
of the Czech Republic

MINISTRY OF DEFENCE
OF THE CZECH REPUBLIC

NATO Days in Ostrava
& Czech Air Force Days

the biggest security show in Europe

Organizer

JAGELLO 2000

www.natodays.cz | www.jagello.org

The motto of the event is:

Our security cannot be taken for granted and there is no prosperity without security

CZECH STRATEGIC TECHNOLOGIES

Regular attandance

220,000 visitors

+ 15 countries
+ 100 aircrafts
+ 300 pieces of ground equipment
+ 1,000 soldiers

www.natodays.cz

DNY NATO DAYS
SINCE 2001

Organizer

JAGELLO 2000

NATO Days in Ostrava & Czech Air Force Days

the biggest security show in Europe.

The motto of the event is: "Our security cannot be taken for granted and there is no prosperity without security", therefore the event's aim is to present the wide spectrum of the resources and the capabilities of the Czech Republic and its allies in the field of security provision to the general public.

NATO Days in Ostrava belong to a "club of prestigious European shows" and in spite of annually rising costs the public had, has and always is going to have free entry to the event. The main programme, taking place at Ostrava Leos Janacek Airport, consists of presentation of heavy military hardware, police and rescue equipment, dynamic displays of special forces' training, flying displays and presentations of armaments, equipment and gear of individual units.

This is the only event that brings the up-to-date technology used by soldiers, fire fighters, policemen, customs officers, the prison service, the municipal police and other elite units in one location. In addition to that, each year the organizers try to offer something really special.

NATO Days in Ostrava consist also of meetings, presentations, workshops and seminars. NATO Days in Ostrava & Czech Air Force Days, which are the most-visited two-day family event in the Czech Republic, are not only a show with an attractive programme, it is also an important platform for explaining important security topics with a unique opportunity to remind our rich traditions to the public.

They are also an important social event that serves as a meeting point for representatives of the private commercial and public spheres, local governments, the top management of the participants and partners of the event, and important guests from the political, commercial, academic, cultural, social and sports areas.

Regular distinguished guests include representatives of the Czech government, NATO and the European Union, representatives of regions, cities and municipalities, ambassadors, military attachés, members of civilian and military delegations and other guest from the Czech Republic and in growing numbers also from foreign countries – especially from Europe and the United States of America.

The organization of the event, which takes pride in its 200,000 visitors, calls for a joint effort of hundreds of people. The safe journey to and from the event and safe stay would not be possible without participation of the integrated rescue system's components.

The main organizers are the Jagello 2000 Association, the General Staff of the Armed Forces of the Czech Republic, the Fire Rescue Brigade of the Moravian-Silesian Region, the Regional Police Directorat of the Moravian-Silesian Region, the Emergency Rescue Service of the Moravian-Silesian Region, and the Ostrava Leos Janacek Airport.

JAGELLO 2000

The Jagello 2000 Association is the main Czech entity of public diplomacy in the field of security policy and membership of the Czech Republic in the North Atlantic Treaty Organization, but it also participates in projects focused on the European Union. The main goal of the association is to raise awareness among the general and professional public about security policy and transatlantic relations.

It was founded in Ostrava after the accession of the Czech Republic and Poland to NATO, which the founders, coming from the North Moravia and Silesia region, perceived as a unique opportunity to build Czech-Polish relations and the promotion of this newly formed alliance was the primary goal of the association's existence in the first years.

2001 was the year of the first NATO Day in Ostrava was held, the launch of the natoaktual.cz information portal, and the first Aliante high school competition. A year later, Jagello 2000 also became the operator of the NATO Information Centre, and with these projects, which are still alive, except of Aliante, its activities have shifted to Euro-Atlantic area. Thanks to this, Jagello 2000 also participated in organizing an accompanying program for the NATO Summit in Prague and a year later it was intensively involved in the information campaign on the referendum on the Czech Republic's accession to the European Union. This established it in the Czech environment and the Ministry of Foreign Affairs then chose it as a partner for projects in Serbia and Montenegro and Ukraine, whose aim is to present the Czech Republic as a partner and ally in the process of integration into Euro-Atlantic structures.

www.jagello.org

Zbyněk Pavlačík – Chairman of Jagello 2000 and main organizer of NATO Days in Ostrava and "Our Security Cannot Be Taken For Granted" conference

The first national conference "Our Security Cannot Be Taken for Granted" was held in 2014 on the occasion of the 15th anniversary of the Czech Republic's accession to NATO, but due to significant feedback and demand it has been held annually since then, becoming firmly anchored in the portfolio of Jagello 2000 activities. Jagello 2000 made use of its experience in organizing NATO Days in Ostrava when it became co-organizer of the Čáslav AFB Open Day.

In November 2003, Jagello 2000 was elected representative of the Czech Republic in the Atlantic Treaty Association. Since 2009, Jagello 2000 has been a member of the European Airshow Council as the main organizer of NATO Days in Ostrava.

Our Security Cannot Be Taken For Granted

Czech national conference

„Our Security Cannot Be Taken For Granted" is a prestigious Czech national conference that since 2014 has regularly brought together top political representatives and leading security experts to assess current development and to present plans for defence and security of the Czech Republic.

The 9th edition of the conference „Our Security Cannot Be Taken For Granted" is held on 10 March 22, 2022 at the Ball Games Hall of the Prague Castle. The invitation to speak was forwarded to the experts, representatives of the Government of the Czech Republic and the chairmen of political parties represented in the Chamber of Deputies of the Czech Parliament, as well as important foreign guests.

The conference series is organized by Jagello 2000 Association that launched this format on the occasion of the 15th anniversary of the Czech Republic's accession to the North Atlantic Alliance in March 2014 at the Prague Castle. Before that, it organized also conferences on the occassion of the 5th and 10th anniversary of the NATO accession.

One of the main objectives of the event is to facilitate debate on defence and security among top political figures, experts and members of the armed forces and security forces. Over the years, this unique format of interaction and factual discussion between political representation and the professional public has gained success and positive responses.

The first edition of the conference in 2014 was an unprecedented success with the signature of the Declaration of Defence of the Czech Republic by all chairman of the parliamantary political parties (except of the Communist Party). On the basis of this conference the coalition parties signed the Treaty on Defence of the Czech Republic, in which they commited themselves to raise the Czech defence budget to 1,4 % GDP by 2020.

www.nbns.cz

Traditional speakers of the conference include the President of the Czech Republic, leaders of the Parliament, Prime Minister and Deputy Prime Ministers, Ministers, armed forces commanders, diplomats and security experts. Each year the event features a foreign guest as an honorary speaker, such as former Polish President Aleksander Kwaśniewski, former NATO Secretary General George Robertson, NATO Deputy Secretary Generals Alexander Vershbow, Rose Gottemoeller and Mircea Geoana, and former Deputy Chief of Staff of the Israel Defence Force Maj. Gen. (ret.) Yair Golan.

The auditorium of this national political and expert debate consists of members of the Parliament of the Czech Republic, senior representatives of the armed forces, representatives of the ministries of foreign affairs, defence and interior, key Czech security experts, academia, diplomats and military representatives of NATO countries, media and other professional visitors. This time, industry representatives, economists and teachers were for the first time in the auditorium.

Organizer

JAGELLO 2000

NEW AND INNOVATIVE TECHNOLOGIES ARE **THE FUTURE OF THE DEFENCE AND SECURITY INDUSTRY**

It has been two years since not only industry but also the ordinary lives of each of us have been affected by the covid-19 pandemic. The pandemic has brought a global crisis that has affected almost every industry sector. However, a light of hope can be found even in times of crisis, and even a crisis can bring some positives. First, the crisis highlighted several problems that existed before it but lacked the social and political will to find solutions. However, finding solutions to these problems has proved inevitable due to the crisis. Second, the pandemic has fully demonstrated the capabilities of the defence and security industry to manage emergencies and crises. Many Defence and Security Industry Association of the Czech Republic (DSIA CR) member companies have been significantly involved in managing the covid-19 pandemic. With their products, technologies, and solutions, they have been successful not only in the Czech but also in European and global markets. The pandemic has opened up new directions and fields in which innovations and new technologies will inevitably tend. Czech producers are very active in this area and offer foreign partners a wide range of cooperation opportunities.

Mr Jiří Hynek – President and Executive Director, Defence and Security Industry Association of the Czech Republic

The success of Czech defence and security industry companies is possible for several reasons. Due to the limited possibilities of purchases from domestic customers, Czech producers have always had to focus more on foreign markets. Even today, exports account for more than 90 % of Czech defence and security industry production. For Czech producers to succeed in foreign markets, they must keep up with the latest trends and innovations and develop innovative solutions because innovative solutions that are quickly available and adaptable to the end customer will be sought increasingly. And the Czech defence and security industry has a long tradition and excellent reputation and is known for its unique structure, high-quality products, and strong innovation potential.

ABOUT DSIA

The Defence and Security Industry Association of the Czech Republic (DSIA) represents and associates Czech industrial companies from a wide range of areas of defence and security. Currently, DSIA has more than 130 member companies developing, manufacturing, and trading with military equipment (30 % of total turnover) and dual-use and civilian technologies – with the total turnover being almost 2 billion EUR last year, with an added value of 630 million EUR. The total number of employees of DSIA member companies is more than 20,000, and about one-fifth of the employees have a university degree. DSIA is an important contact point for Czech state authorities (Ministries of Defence, Interior, Industry and Trade, and Foreign Affairs), but also for institutions, structures, and projects within the European Union, the NATO, and similar foreign associations or companies interested in products and cooperation with Czech companies. DSIA also has several agreements with ministries and foreign associations and is a member of or cooperates with several organizations and institutions within NATO and the European Union.

FOCUSING ON MODERN TECHNOLOGIES

What makes the Czech defence and security industry so successful? Mainly high-tech innovations and sophisticated technologies, which Czech manufacturers can always adapt precisely to the needs and technical requirements of the customer. Czech manufacturers also provide their customers with care throughout the life cycle of the products they supply, which includes repairs, modernization, or product innovation.

Some products of the Czech defence and security industry represent the world's top and unique technologies, including passive surveillance systems, light combat aircraft, and military jet trainer aircraft or disciplines focused on cyber-security and A.I.

SUPPORTING RESEARCH AND DEVELOPMENT

For several years, DSIA's priorities have been strengthening cooperation in science and research and development and focusing on innovations and new technologies. For this reason, DSIA members include not only companies but also several universities and research institutes. E.g., during the covid-19 pandemic, Czech Technical University developed a new respirator that received European certification and has already been tested in NATO or the United States Navy.

At DSIA, we believe that connecting the academic and research spheres with industry helps significantly to increase the innovation potential of the Czech defence and security companies. That is why DSIA has established cooperation with leading scientific institutes in the Czech Republic, such as the Academy of Sciences of the Czech Republic and the National Center for Industry 4.0.

Moreover, in cooperation with the fair organizer, DSIA organized the Start-up Innovation Pavilion at the International Defence and Security Technologies Fair IDET, held at the beginning of October 2021. Thanks to this, five selected Czech innovative companies get the opportunity to exhibit and present their products, services, and unique solutions for defence and security technologies in a separate pavilion. The innovative technologies of these five start-ups had success, so DSIA plans to continue with this project in the future.

STRENGTHENING COOPERATION WITHIN NATO AND EU

However, DSIA also offers a wide range of opportunities to participate in the activities of technology agencies within NATO or the EU. DSIA represents the Czech defence and security industry in several institutions and organizations, and in some of them is even a member or partner.

Within NATO, DSIA cooperates with the NATO Support and Procurement Agency (NSPA) and NATO Communications and Information Agency (NCIA).

DSIA President Jiří Hynek is the head of the Czech delegation to the NATO Industrial Advisory Group (NIAG), in whose studies member companies frequently participate.

DSIA also cooperates with European Union institutions, such as the EDA (European Defence Agency). From the beginning, the DSIA regularly participates in EDA management meetings with representatives of national associations and contributes its specialists to expert working groups – specialists from member research institutions and institutes and experts from member companies. The new impulse is the European Defence Fund (EDF) managed by the European Commission – DSIA is the contact point for EDF in the Czech Republic, and has also gained the position of National Focal Point. Furthermore, DSIA is a member of two European but non-EU organizations: AeroSpace and Defence Industries Association of Europe (ASD) and The Federation of European Defence Technology Associations (EDTA).

WHAT'S NEXT?

The current crisis has clearly shown what will play a key role in the future development of the defence and security industry – new technologies and the industry's ability to use them and engage in manufacturing. The Czech Republic has an excellent name and tradition in Europe and the world regarding science and research. It would be a great pity if we could not utilize it adequately and get into the tow of other states when, on the contrary, we can be the "innovation leaders." Essential is keeping smart, capable, and innovative people in the Czech Republic to avoid brain drain. The Czech Republic should stay at the forefront of European technological progress. We must primarily invest means and efforts to modernize and innovate industrial and other sectors and invest in science and research to be competitive and on the top. As the DSIA, we are doing everything to make the Czech Republic a strong, self-sufficient, and competitive country that can fully develop its innovation potential. We will continue to do so in the coming years.

DSIA

- Has been representing and developing the Czech defence and security industry since 1997.
- Associates over 130 members.
- Is a respected partner of the Czech government and key state administration bodies.
- Represents the interests of Czech producers in international organizations.
- Supports Czech companies in foreign markets.

www.aobp.cz

vrg. vrgineers

C2ECH STRATEGIC TECHNOLOGIES

THE PATH OF A CZECH VIRTUAL REALITY HEADSET INTO THE LATEST WESTERN FIGHTER

Marek Polčák, Vrgineers co-founder & CEO in a F/A-18F Super Hornet cockpit

Military pilots are no longer the movie hot shots seen in Top Gun or similar Hollywood blockbusters. Today, cadet pilots don't just learn to fly but work as an operator within a network-like architecture of multiple aerial and ground elements, including JTACs. New pilots need to learn to work with helmet-mounted displays and distributed aperture systems coming into service with the cutting-edge F-35 fifth-generation fighter and other modern aircraft. Virtual and mixed reality systems, including the breakthrough Xtal headset and reconfigurable modular pilot simulator from Vrgineers, are examples of promising concepts that address the needs of modern pilot training. Digitalization of pilot training and situational awareness increases the effectiveness and safety of training while providing long-term savings when preparing pilots to fly increasingly complex aircraft.

Virtual reality and aviation are complementary fields, but they have not found their ideal confluence yet. The only area where virtual reality has prevailed are simulators that rely heavily on virtual airspace and aircraft models. This technology already exists and continues to develop, but it is not capable of meeting the needs of the latest technologies being deployed. One of very few brand-new elements revolutionizing pilot training is full virtual reality, eliminating the need for hardware such as projection domes.

This is where the story of Vrgineers comes in. A few years ago, Marek Polčák, CEO and co-founder of the company, was not satisfied with the quality of VR headsets on the market. Leveraging his hardware experience from his previous company Quanti, he decided to develop his own bleeding-edge VR headset. At first, the company focused on the industrial segment, but later it found more meaningful long-term applications in the aerospace sector. Polčák's goal is to produce the best VR headset for pilot training. The reresults speak for themselves as the United States Air Force (USAF) decided to test Vrgineer's latest headset, the Xtal, as as a training element for its state-of-the-art F-35 fighter.

FOCUS ON MODERN FIGHTERS

The Xtal by Vrgineers is based on a unique and patent-protected lens design and optical correction software. Its singularity lies in its production and processing technologies. Vrgineers managed to create unique asymmetric optic technology which offers outstanding image quality and a 180° field of view. Together with its advanced proprietary software, the Xtal provides a new benchmark for immersion into a virtual environment. The excellent optical quality of the 8K picture and system speed is truly breathtaking. The Xtal was researched, developed, and produced in the Czech Republic using mostly COTS components. Although costlier than gaming-level technologies, the Xtal is a priceless tool in aerospace and other engineering sectors to slash training and prototyping costs. This technology is so promising that the USAF selected the headset for their F-35 fighter to evaluate its possible implementation in training. "It is an honor to participate and contribute on the most advanced fighter jet platform in the world," Polčák said. The company's success is all the more impressive considering it never received any direct government support, and its achievement is solely attributable to the quality of its product and the hard work of its people. It's already a Tier 2 supplier to Lockheed Martin with the clear goal of moving up to Tier 1. Its business plan expresses the company's ambition to become a complex training solution provider with an in-house developed roadmap that includes training syllabi and evaluation.

GO WEST

So how did the USAF's technological scouts discover Xtal and the potential that premium-quality VR offers? "I never met a technology scout here in the Czech Republic or anywhere near by, but we were and continue to be on their radar in the US," Polčák noted. Moreover, the Royal Air Force is currently testing the headset for its F-35s. Vrgineer's Xtal is the missing piece of the virtual reality training puzzle: It can fully replicate sophisticated helmet-mounted displays while also supporting a distributed aperture system using its panoramic cameras.

Using Xtal Mixed Reality, cadets can operate the cockpit and see their own hands at the same time.

The Xtal replaces expensive training helmets for each individual pilot that are currently used while offering unparalleled freedom of movement and modularity. It also delivers a new level of situational awareness in training, something that is impossible with existing flight simulators and projection domes. If successful, the company may soon benefit from the wide and ever-growing fleet of F-35s. Furthermore, Vrgineers has selected other platforms for future growth, such as the AH-64 Apache and UH-60 Blackhawk, among others. The Xtal can be adapted to any platform with the option to use the same system for multi crew coordination where door-gunners or rescuers can use the same headsets and train together with pilots. Vrgineers also plans to integrate its system with open OEM software, allowing the operator to upload military-grade aircraft-related software on their own with unlimited exportability.

The US is our main market, although we also work with European civil and training aircraft makers," Marek added. The Xtal headsets are currently undergoing tests administered by the US Air Force, US Navy, and a few other governmental organisations. The company continues to focus on exports with support from the national CzechTrade agency.

UNLIMITED POTENTIAL

Although heavier than gaming-level headsets, the Xtal is much lighter than an actual pilot helmet with its display and night vision goggles. Start-up time is exceptionally fast, while the underlying computing runs with only a few milli-seconds delay, meaning user perception is just like real-time. The image quality and level of detail is phenomenal, putting the Xtal on a different level compared to the best headsets on the market. The system supports full hand movement mapping, as well as haptic feedback with the use of a hardware replica of the cockpit. To achieve full immersion, MFD bezels can be added and controlled using Xtal's mixed reality extension. Vrgineers invests significant effort into tactical training, combining advanced situational awareness with cooperation. The headset is thus the ideal tool for any type of training as it can convert classrooms into virtual combat scenarios within seconds. The software development capabilities of the company, not born in the aviation industry, are comparable with its well-established competitors, and the F/A-18 and Mi8MTV-2 simulators in its showroom in Prague and under construction in San Antonio demonstrate that a superb training tool can be provided by a newcomer. The headset helps pilots master their aircraft, tactical training, multi-crew cooperation, and much more at a fragment of the cost of existing full-mission projection domes and with almost no infrastructure requirements. Basically, the leap forward offered by the Xtal is like the difference between CRTs and MFDs.

CONCLUSION

Vrgineers is a well-funded, Czech-US corporation built wholly through entrepreneurial spirit while offering a revolutionary solution. Its success was based on the bravery, knowledge, skill, and sheer effort from Marek and his team. Vrgineers is a brand new, paradigm-shifting example of the tradition of hard work and ingenuity.

Vrgineers delivered European Air Services the game-changing mixed reality simulator, which is combined from the latest version of F-16 BLOCK 70 physical cockpit and the XTAL headset.

Vrgineers cooperates with:

LOCKHEED MARTIN · NASA · AIRBUS DEFENCE & SPACE · Brazilian Air Force · U.S. AIR FORCE

INTRODUCING THE XTAL™ 3 THE WORLD'S MOST ADVANCED VIRTUAL & MIXED REALITY SIMULATION HEADSET

Vrgineers, a leader in delivering virtual and mixed reality pilot training systems for professional and military clients, announces the launch of the XTAL 3 VR and MR headset, a game changer in enhanced pilot training.

XTAL 3 - The most advanced pilot dedicated mixed reality headset with the highest fidelity, market-leading 180° field of view, and 8K resolution.

The newest XTAL has been developed in cooperation with a team of international Air Force pilots. Thanks to their input, Vrgineers has unleashed the potential of virtual reality simulations and paves the way for the next generation of mixed reality pilot trainers. Trainees and cadets can learn the crafts of avionics in the most realistic simulations available as the XTAL 3 brings the most true-to-life experiences with the first-ever pilot-dedicated headset on the market. The incorporated mixed reality technology allows pilots to see their hands and interact with instrument panels, learn proper motor skills, and practice standard procedures. The basis of this technology embodies two front-facing pass-through high-resolution cameras. The responses of pilots wearing the XTAL 3 in the simulated environment are nearly identical to real situations, teaching the decision-making processes required to gain air superiority. This was achieved thanks to the XTAL 3's unique combination of high fidelity with a wide field of view, providing the highest level of immersion and situational awareness.

Moreover, the XTAL 3 offers an extended field of view of 180° horizontal and 90° vertical, currently the widest visual field on the market for professional simulations. In combination with two 4K resolution displays and a pair of 4K mixed reality cameras, it delivers an outstanding visual experience.

The combination of the proprietary Vrgineers lenses embedded in the XTAL 3 and advanced warping algorithms provide high fidelity undistorted images that can be enhanced by additional corrective lenses inserts. Thanks to this feature, pilots who would normally wear glasses can train without the discomfort of having their nose compressed while seeing a perfect picture.

The headset frame is made of lightweight compounds, ensuring comfort, and avoiding neck tension during mission training. The ergonomics were fine-tuned based on feedback from pilots to sustain multiple hours of training.

The XTAL 3 with its mixed reality capabilities, is the first headset that allows pilots to train in a completely immersive environment coupled with a fully functional replica cockpit. This combination enables pilots to control the instrumental panel and see their hands while simultaneously experiencing haptic feedback.

Even though the design of the newest XTAL 3 has changed, Vrgineers kept its recognizable curves and unmistakable shape. Furthermore, the company was able to significantly reduce the weight of the unit and equip the XTAL with proprietary inside-out tracking. This very convenient feature offers a pair of fast-switching infrared cameras positioned on the lower edge under the central cover. The XTAL 3 currently supports inside-out tracking, Optitrack, ART Tracking and Vicon. Vrgineers plans to integrate Lighthouse tracking later this year.

"The central cover of the headset is removable and reconfigurable, making it possible to change the headset from purely virtual to mixed reality, or replace inside-out tracking with ULTRALEAP hand tracking."

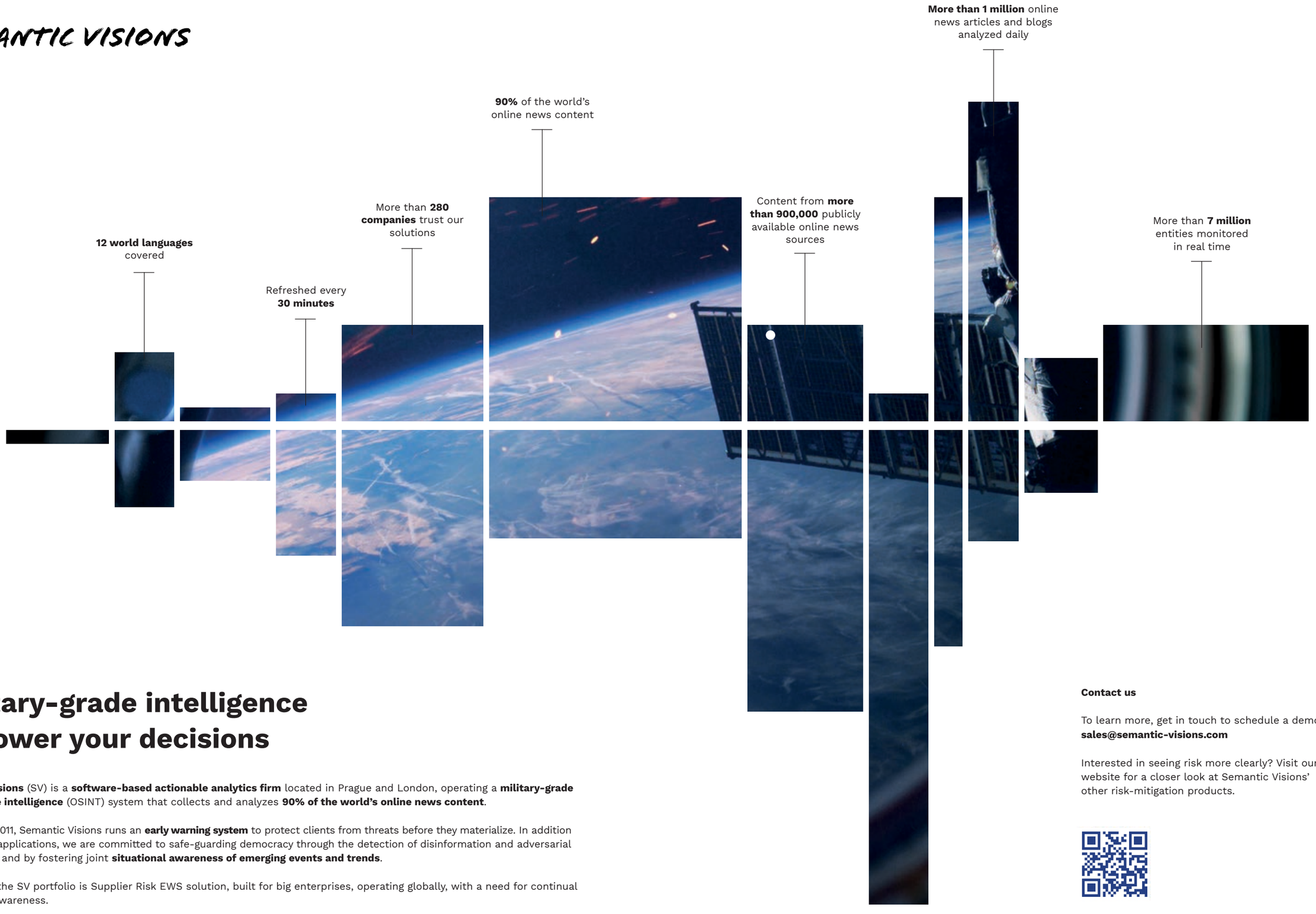
CEO and co-founder Marek Polčák notes and adds: *"We can assure all our clients that the XTAL will be compatible with all existing and future technologies they might need while maintaining the highest levels of comfort and convenience."*

Additional functionality, such as a proprietary eye-tracking system with unique one-dot calibration for IPD (inter-pupillary distance) adjustment and foveated rendering are supported as well. The gathered information can be further processed and visualized in heatmaps to be utilized for behavioural analyses.

"Our new one-dot calibration removes the biggest obstacle to the wide adoption of foveated rendering technology. The major bottleneck has always been the time-consuming calibration process necessary before every use of the foveated rendering feature. The XTAL 3 calibration process uses unique one-dot calibration that creates a virtual mathematical model of the user's face allowing us to calculate precise calibration formulas for eye tracking," Polcak explains.

The XTAL 3 brings multiple new features and advancements to the immersive realm and brings us one step closer to the Ready Player One experience.

SEMANTIC VISIONS



Military-grade intelligence to power your decisions

Semantic Visions (SV) is a **software-based actionable analytics firm** located in Prague and London, operating a **military-grade open-source intelligence** (OSINT) system that collects and analyzes **90% of the world's online news content**.

Founded in 2011, Semantic Visions runs an **early warning system** to protect clients from threats before they materialize. In addition to business applications, we are committed to safe-guarding democracy through the detection of disinformation and adversarial propaganda, and by fostering joint **situational awareness of emerging events and trends**.

The core of the SV portfolio is Supplier Risk EWS solution, built for big enterprises, operating globally, with a need for continual situational awareness.

Contact us

To learn more, get in touch to schedule a demo:
sales@semantic-visions.com

Interested in seeing risk more clearly? Visit our website for a closer look at Semantic Visions' other risk-mitigation products.

Mr. Filip Engelsmann is the current owner and CEO of AURA, who took over the management of the company from its founder, his father Mr. Jan Engelsmann in 2005.

Mr. Engelsmann, AURA has become the largest exporter of military logistic information systems. Surely this has not been an easy and straight-forward journey?

AURA, a purely Czech company based in Brno, started building its brand in April 1989. AURA's first cooperation projects with the armed forces date back to the early 1990s. They were aimed at building information systems for central warehouses and supply bases. So far, one of AURA's major projects is the delivery of the Information System of Logistics (ISL) for the Ministry of Defence and the Army of the Czech Republic. ISL represents an integrated system of military logistics support for all branches of the armed forces. In total, ISL manages movable and immovable assets worth more than a quarter of a trillion CZK.

After 2005, AURA began to focus its strategy more strongly on export. Following the successful delivery of a cataloguing support information system to Slovakia, it expanded its codification contracts to Scandinavian and Baltic countries, Africa, Latin America, the United Arab Emirates, Australia and Japan. The MC CATALOGUE codification information system developed and implemented by AURA, has become the most widely used within the NATO Codification System – it is currently used in more than 20 countries worldwide.

What mainly accounts for the undisputed success of your company and what can we expect from AURA in the future?

I always stress at all levels that a capable and stable work team is the greatest asset of our company. Today and every day we strive to live up to this truth, which has been proven over more than 30 years of operation. And it pays off handsomely. We are proud that from our position as a world leader in information systems for military logistics, we are making the world of information more organised.

That is also why we have taken the strategic decision that you can expect further development and implementation of military logistics information systems from AURA. For example, we are currently working on the development of a new generation of modular Logistics Information System (LIS), which is primarily designed for foreign markets and is looking forward to welcoming more clients.

AURA is an open company with agile values and a focus on creating and maintaining long-term progressive relationships with customers.

MC CATALOGUE – the world leader in information systems for codification

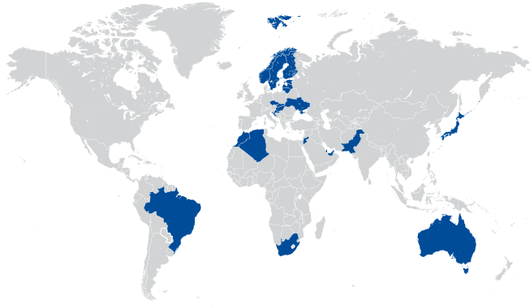
Codification, i.e. the identification and description of weapons, military equipment, spare parts and materiel, is rightly called the DNA of military logistics among military experts and the less initiated alike. The NATO Codification System (NCS) is currently used by more than 60 member and non-member countries of the North Atlantic Treaty Organization.

MC CATALOGUE:

- supports the NCS implementation process
- increases the efficiency of the work of the National Codification Bureaus, or of the entire defence industry of individual countries
- fully identifies and describes weapons, military equipment and materiel
- indicates the item of supply with a unique identifier – the NATO Stock Number (NSN)
- enables to codify non-military products and services
- ensures interoperability in international cooperation and missions in the supply of equipment and spare parts

MC CATALOGUE has become the most widespread information system for codification used around the world. Together with its related services, it forms the backbone of AURA's current international strategy.

The MC CATALOGUE User Group, which brings together users of the information system, plays an important role in managing the development of our software.



LIS – Logistic Information System

To meet the ever-increasing defence requirements, AURA combines the latest technology and 30 years of experience in information systems for the development of military logistics. The outcome is a modern, comprehensive and secure Logistic Information System (LIS) that overcomes the obstacles of today's world.

Accurate information at the right time

LIS provides the users at all organisational levels with quality information at the time required for their work. For supreme command and management, LIS produces comprehensive reports that provide a clear picture of the armed forces' current state, as well as advanced planning functionalities that support sound decisions. For lower-level command and operations personnel, LIS provides automated and efficient tools to facilitate their daily tasks. We build our product in line with our long experience working with armed forces all around the world.

Modularity and flexibility

LIS covers all areas of logistics information support. From asset management, through the operation and maintenance of equipment and weapons, to planning foreign missions. This approach helps us to offer a solution that perfectly suits the customer's needs. LIS improves the overview of assets throughout their entire life cycle, from acquisition to disposal, increases the readiness, reduces excess inventory and helps to track spending and make significant budget savings.

Security

The system is designed primarily for the armed forces, hence we place the utmost emphasis on security. We hold international certifications that allow us to deploy LIS in restricted or classified environments. The system is also being developed as a distributed system, which means that individual parts can run independently on servers in different geographical locations. This significantly increases the availability of the system even in remote areas without reliable connectivity.

As the acquisition of a new information system is a long-term investment, good mutual relationships are crucial. We make sure that the system is implemented in a short period of time, we provide our customers with continuous care and they can rely on our team of experts to quickly solve any problem.

THE TRADITION CONTINUES

CZECHOSLOVAK GROUP

Czechoslovak Group (CSG) is a holding that continues in the tradition of Czechoslovak industry. It supports the development of traditional Czech and Slovak companies focusing on military as well as civil production and trade. In 2020, the companies of CSG holding had an EBITDA indicator of CZK 2.278 billion, and currently they employ over 8200 people..

The business scope for CSG primarily covers the engineering, automotive, rail, aviation and military areas. Thanks to its strong focus on exports, CSG's products can be found on all continents and the number of its customers is continuously on the rise. Its product range is varied, and ranges from watches and rail brakes to trucks. Radar and navigation systems – both civil and military – are also one of its prominent business areas.

CSG CZECHOSLOVAK GROUP

WWW.CZECHOSLOVAKGROUP.CZ

TATRA TRUCKS

TATRA TRUCKS is one of the oldest automotive producers in the world with a tradition of vehicle production dating back to 1850. TATRA TRUCKS is owned by the Czechoslovak Group holding (65 %) and the Promet Group holding (35 %). In recent decades, TATRA TRUCKS has focused exclusively on the production of medium and heavy trucks, the vast majority of which are built on a unique chassis of the original Tatra concept with a central backbone tube and independently suspended swinging half-axles with wheel drive from 4×4 to 16×16 or more. In addition, TATRA TRUCKS is one of few truck manufacturers in Europe that produce their own engines, cabs and chassis in own production plant. The great value of TATRA TRUCKS is the ability to produce highly specialized vehicles designed according to customer requirements, even in small series, which complements the serial production of standard model lines.

TATRA TRUCKS currently has three model lines in its portfolio. The core product of the company for the defense sphere, rescue services and special civilian use is the Tatra Force model line with the Tatra concept chassis supplemented by Tatra air-cooled V8 engines and Tatra gearboxes. However, TATRA TRUCKS also offers fluid-cooled engines and gearboxes from renowned world manufacturers. The Force model line can be equipped with standard cabs in two or four-door versions, as well as armored cabins certified to NATO standards. Armored cabins are also available in two-door or four-door versions with a capacity of three, respectively five seats.
Another product for the defense sphere is the Tatra Tactic model line with a conventional frame chassis and Tatra Rigid portal axles. The vehicles are manufactured in a 4×4 or 6×6 configuration with standard or armored cabins and superstructures according to customer requirements. The latest generation of this model line has Cummins engines, the transmissions can be either fully automatic or manual. The original Tatra cabin with a capacity of four people has a number of elements in common with the Tatra Force model line and can be equipped with additional armor.

The Tatra Phoenix model line is a key element of the civilian production program of TATRA TRUCKS, which is aimed at customers in the sphere of construction, agriculture, forestry, road management, technical services, etc. However, TATRA TRUCKS also offers the Phoenix vehicles in military versions, especially for foreign customers. The Phoenix model line uses a combination of the original chassis of the Tatra concept in a 4×4, 6×6, 8×8 or more configuration and subassemblies of renowned world manufacturers (e.g. DAF, Paccar or ZF and Allison). TATRA TRUCKS also supplies its chassis platforms for special military vehicles from other manufacturers. Tatra chassis for military and civilian applications are exported to, for example, France, the Netherlands, Germany, Belgium, Austria, Russia, Ukraine, Australia, Brazil, Israel, Jordan, Egypt, Turkey or India, Tatra military vehicles are manufactured, except Czechia and Slovakia, in India or Saudi Arabia.

CZECHOSLOVAK GROUP

THE TRADITION OF CZECHOSLOVAK INDUSTRY

EXCALIBUR ARMY

EXCALIBUR ARMY (EA), a company owned by the CZECHOSLOVAK GROUP (CSG) holding, is a manufacturer and seller of heavy military vehicles, spare parts, weapons, ammunition and other military equipment. It focuses on the development and production of modern vehicles, service, overhaul and modernizations, including major upgrades, mainly of land military vehicles and equipment.

EA owns several production and storage facilities throughout the Czech Republic and is one of the major Czech employers in the defence production sphere. EA cooperates with a number of companies not only from the defense and security industry and is a member of the Association of the Defense and Security Industry of the Czech Republic. It has customers around the world and cooperates with renowned global manufacturers such as General Dynamics European Land Systems. He also works closely with partner companies from the CZECHOSLOVAK GROUP on many projects, such as TATRA TRUCKS and TATRA DEFENCE VEHICLE.

Its main current projects include Patriot 4×4 and Patriot II 4×4 armored vehicles on Tatra chassis designed for the armed and security forces as well as for civilian rescue services. These are modular machines, which meet all NATO standards. EXCALIBUR ARMY in the sphere of special wheeled vehicles also offers universal machines usable in the armed forces and in security or rescue services. It is, for example, a TREVA rescue vehicle, it is also a DECON decontamination special vehicle or a TRITON armored firefighter vehicle, all of which also use proven Tatra chassis. Tatra chassis also serve as the basis of AM-50 EX and AM-70 EX military bridge vehicles.

The combat systems produced by the EA company include modern 152 mm DANA M2 wheeled self-propelled howitzer and the DITA 155 mm NATO howitzer project, and for example RM-70 Vampire or BM-21 MT rocket launchers. The company also offers modernization programs for infantry fighting vehicles and tanks, such as the T-72 Scarab project. EA also has technological capabilities and production capacities for serial production of special vehicles and produces most of them also in civilian variants suitable for security and rescue services.

TATRA DEFENCE VEHICLE

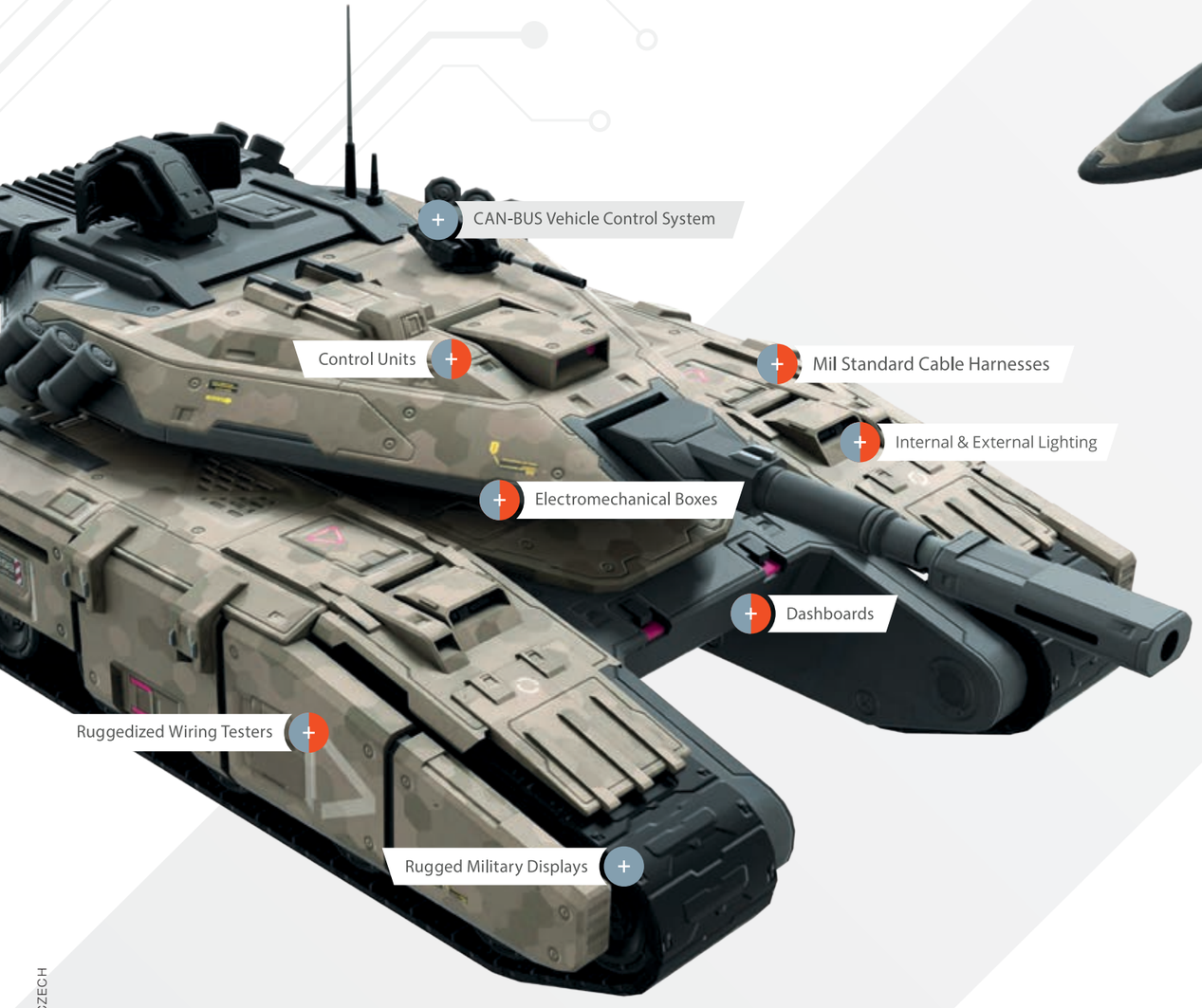
TATRA DEFENCE VEHICLE (TDV) is one of the youngest companies of the Czech defense industry, which also belongs to the CZECHOSLOVAK GROUP holding. It deals with the development and production of military and special land vehicles, especially on wheeled chassis. In addition to the production of special military vehicles, it also performs repairs and modernizations of the land military systems.

One of the key parts of its business is the licensed production, modernization, maintenance and repair of Pandur II 8×8 vehicles for the selected markets in Central and Eastern Europe as well as in Asia on a strategic cooperation basis with General Dynamics European Land Systems. TDV provides the production of Pandur II vehicles and technical services for these vehicles operated by the Army of the Czech Republic. TDV is also the main integrator of the TITUS armored vehicles project for the Czech Armed Forces, in which it cooperates with TATRA TRUCKS and another renowned European industrial partner – the French corporation Nexter Systems.

The company also deals with the development, construction and production of armored cabins for chassis produced by TATRA TRUCKS as well as the development and production of armored vehicles on Tatra chassis. He is currently working, for example, on a project to develop armored cabins for logistics trucks on a Tatra chassis for the Belgian army or on armored cabins for Caesar self-propelled howitzers intended for the Czech army. TDV is also involved in the LRPV Cheetah light combat vehicle project, which could replace the obsolete special combat versions of Land Rover Defender cars in the Czech Armed Forces. Furthermore, in cooperation with EXCALIBUR ARMY, it participates in the repair of tank components and provides technical services for off-road vehicles on Land Rover Defender chassis.

RayService

ADVANCED ELECTRONIC SOLUTIONS



Built to Print Ray Service Products

The combination of tradition and innovative approaches allows Ray Service to have the highest ambitions.

3G Holding's largest company is an international innovative manufacturer, distributor and integrator of wire harnesses, electromechanical assemblies, electronic devices and cable components for a wide range of customers. More than twenty-five years of experience and intensive development have resulted in a strong, modern company that is a reliable and sought-after partner on an international level.

The quality of the products and services is evidenced by a number of awards, both in the field of employee care and, in particular, from long-term strategic partners, with whom Ray Service enhoys well-deserved favour and actively participates in building positive and mutually beneficial relationships, whether suppliers or customers.

RAYSERVICE.COM

Enjoy flying,
we will arrange the rest for you

The state enterprise of the Ministry of Defence LOM PRAHA s.p. is one of the worlds 's leading companies offering complex services for Mil helicopters and L-39 aircraft. Our experienced staff is able to provide a whole range of services starting from helicopter acquisition support, through ground and flight crews training to all levels of helicopter maintenance works including general overhauls and upgrades.

LOM PRAHA

"Aircraft technology operation consists of many essential tasks. We in LOM PRAHA believe that only high-quality services can lead to a safe and a smooth operation of aviation technologies. Customer satisfaction and safety are our top priority, which is the reason why we offer comprehensive services of the highest quality," says the director of the state enterprise Jiří Protiva.

The main part of our portfolio include:

MRO & Modernizations of Mil helicopters and L-39 aircraft

LOM PRAHA is providing MRO & life cycle support solutions for Mi-2, Mi-8/17, Mi-24/35 helicopters and their equipment (MRO - maintenance, repairs and overhaul; airframe, aggregates and dynamic components/drive units) as well as MRO of L-39 aircraft (including AI-25TL engines).

In addition, we provide repair services for the MI family helicopters in the NATO and EU countries which are certified by the Russian MVZ Mil and OAO Klimov design bureaus, the Interstate Aviation Committee MAK and domestic aviation authorities.

We are also a Mil-certified provider of modernisation solutions for Mil helicopters. Machines modernised by LOM PRAHA are battle tested in ISAF Afghanistan, where they proved to be 100% reliable and combat-effective.

We have established a long-term cooperation with leading manufacturers of avionics and other aircraft and helicopter components to be able to deliver turnkey

Jiří Protiva, CEO of LOM PRAHA s.p.

modernisation solutions for Mil helicopters. Years of R&D, qualified technicians and a profound know-how result in truly functional and unique modernisation capabilities, which were battle tested in ISAF Afghanistan with 100% efficiency and reliability. LOM PRAHA is capable to bring the best of „both worlds" together by combining and successfully integrating western technologies into Russian reliable and durable helicopters. We are the only company outside the Russian Federation certified to modernise Mil helicopters by the Mil Design Bureau.

Drive Units MRO - TV3-117, AI-25TL, AI-9V, VR-14/24

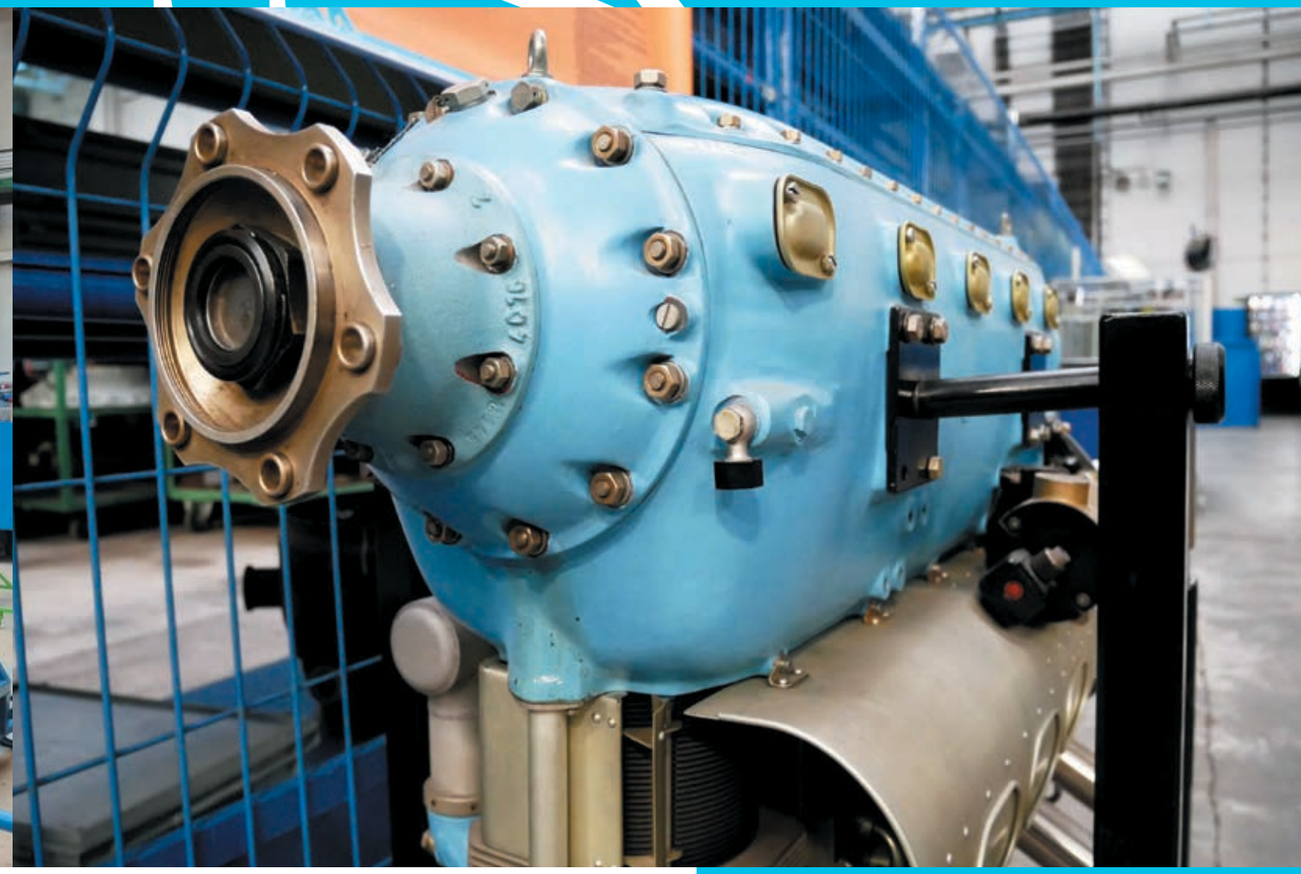
LOM PRAHA fully supports the dynamic component and aggregate life cycle of Mil helicopters and L-39 aircraft. We provide acquisitions, adjustments, repairs,

maintenances, overhauls and testing & analysis of TV3 117 turbo shaft engines (in all of its variants), AI-9V APUs and AI-25TL turbofans, as well as VR-14/24 gearboxes. All offered services are carried out in accordance with the documented technical requirements and under certification of the OEM manufacturers.

MRO includes Engine / Gearbox /APU / Aggregate / Sub-component technological inspection, disassembling, cleaning, crack detection, damaged parts replacing or overhauling, overhauled items assembling and installation, rotation balancing, testing etc. All mentioned works can be performed at LOM facilities under our quality department supervision. LOM PRAHA has its own test facilities for setting and trimming of Engines, Gear Boxes and APUs.

Flight, Ground & Simulated Training

LOM PRAHA´s Flight Training Centre (CLV) in Pardubice provides comprehensive and modular training programs for both fixed wing and rotary wing aircraft pilots, flight engineers, ground crews and maintenance personnel. The offered training and skill improvement programs are carried out with the use of modern interactive teaching methods, state of the art simulators and real flights with our own Mil helicopter and airplane fleet. All courses are taught and supervised by our professional employees, which are former Air Force veterans with valuable experiences.



Tactical Simulated Training

Tactical simulation training provided by LOM PRAHA covers training of various tactical situations and skills devoted to tactical air force pilots. Training is provided at a modern Tactical simulation centre (located at Pardubice air force base) equipped by the latest technologies allowing visualization and perception close to reality.

In comparison to a real aircraft, simulation-based training allows for the training of manoeuvres or situations that may be impractical, or even dangerous to perform in the aircraft, while keeping the pilots in a relatively low-risk environment on the ground. Flight simulation also provides an economic advantage over training in a real aircraft.

Parameters such as aircraft/weapons/radar performance can be modified according to request of a customer. Controls and cockpit layout for a different type of aircraft can be modified on the basis of agreement.

Production & MRO of Piston Engines

- EASA certified in the category of „General Aviation“
- High degree of reliability proven over the last 60 years
- Excellent power to weight ratio of 0,85kg / kW
- Robust engineering that guarantees a TBO (time before overhaul) of 2000 hours
- Reliability proven in extreme weather conditions with low/high air temperatures and humidity (from -40°C to +40°C and humidity of 35-100% up to altitudes of 6000 meters)
- Engines are designed and engineered with acrobatic use in mind (+6/-3,5g up to +8/-5g)
- Certified to run on automotive MOGAS according to EN228
- Low combined fuel consumption of 233g / kW / hr
- Supercharging allows performances in high altitudes
- Lowest frontal drag resistance in their category

LOM PRAHA

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LIAZ SKYSPOTTER 152

LIAZ a.s. is a company that develops and manufactures unmanned helicopters. It builds upon the long tradition of production of the same brand – LIAZ trucks. That company, founded in 1951, produced up to 13,600 vehicles per year in 10 manufacturing plants with 11,000 employees.

LIAZ a.s. is not only a UAV helicopter supplier but it also offers interconnected systems and other specific services and technologies. It delivers systems designed to meet customer needs.

Its extensive experience in the technical and production fields allows LIAZ personnel to introduce innovative technologies in the development and implementation of ambitious solutions.

Skyspotter 152 has great capabilities of various types of flight. It has the ability to work with a connected device (payload). Depending on the type of payload and its work, the tasks performed can be designed for civilian, rescue and military missions.

Each customer will receive a ready-made solution for the application of the complex SkySpotter 152, taking into account the client's business features and the assigned tasks to the LIAZ team.

TECHNICAL PLATFORM PARAMETERS

FLIGHT CHARACTERISTICS	
Max. speed	120 km/h
Flight time	up to 7 hrs
Max. altitude	4,000 m
Capacity for the attachment of payloads	70 kg
Operating temperature	-20 to 50 °C
Control range	up to 100 km
AIRFRAME	
UAV empty weight	130 kg
Max. takeoff weight	220 kg

DRIVE UNIT
Special two-stroke engine
Fuel tank 70 L
Generator output power 2 kW
OPERATION
UAV pilot
Payload operator
Data operator for master systems (non-compulsory)

GIMBAL
surveillance and monitoring

TRANSPORT BOX
transport, controlled box placement

SPRAY
disinfection, decontamination, precision agriculture

RADAR
electronical monitoring and detection

CATCHER
mobile phone interception, location and jamming

RADIATION SENSOR
monitoring, localization and measurement of radioactivity

Czech Republic | **www.liaz-uav.com** | info@liaz-uav.com

19 - 21 October 2022

PRAGUE, CZECH REPUBLIC

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Security

Security

Industry & Science

Industry & Science

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STRATEGIC
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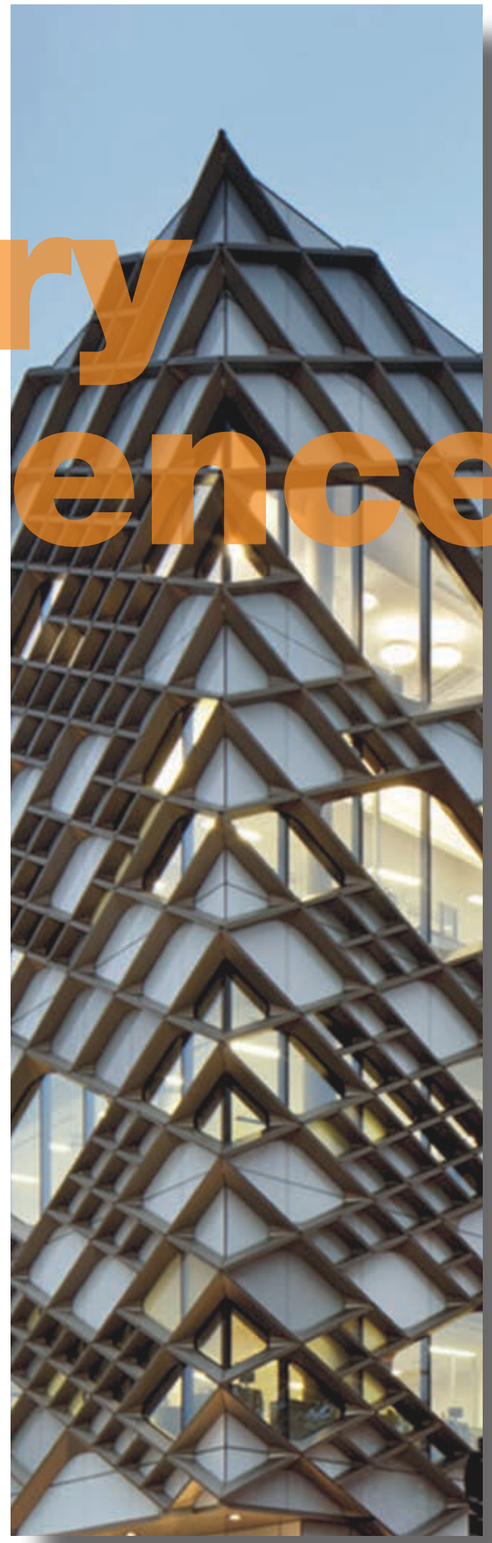


TA CR
Technology Agency of the Czech Republic

We support research and innovation

In the twelve years of its existence, the Technology Agency of the Czech Republic has become a highly professional institution employing over 100 people. Each year, it supports hundreds of research projects of small, medium and large enterprises, research organisations and universities, totalling more than 220 mil. €. This is done in programmes that support domestic and international research collaboration, reflecting the needs of the market and society.

Petr Konvalinka, Chairman of TA CR

In an interview two years ago, you said:
"I am happy that the Agency is now perceived as a highly respected institution that distributes state funds for applied research and innovation. We strive to be a modern institution with an open approach that reflects and adapts to both the market conditions and the needs of researchers."
Has anything changed since then?

No, it hasn't. But the environment has changed. Market conditions have changed and will continue to change dynamically, and the needs of society as a whole have arisen or manifested themselves in ways that were completely unknown and unexpected some time ago. The attention that applied research has received is truly unique in the history of our country, and it is not limited to research focused on the fight against the covid-19 pandemic. It shows that support for applied research and innovation, social science research and young researchers will play an important role in our future, and in the future of Europe as whole; actually, of our entire civilisation.

In which areas do you think the impact of innovation will be most evident?

In all areas of life. If you look at the Sustainable Development Goals set by the EU in 2019, you will see that almost all of them are related to the use of research and innovation in some way or another. In general, for example, the benefits of innovation boost productivity through effects such as lower morbidity or longer working lives. Approximately one third of the increase in longevity in Europe is due to pharmaceutical innovation.

So you think across-the-board, global support for innovation should yield good results?

This process has actually been going on for a long time, for example, in the form of creating and supporting various innovation ecosystems in individual countries. The European Commission has recently launched a new consultation to gather stakeholders' views on how to strengthen the European innovation ecosystem and improve innovation coherence in Europe. It closed on 7 September 2021, so we will have to wait a while for its conclusions, but many of them are to be expected. An innovation ecosystem is essential to meet the commitments of the green and digital transformation, for the associated social transformation, for the recovery of economies from the pandemic and to achieve the necessary position in key technologies and innovative solutions. This process involves a wide range of innovation actors – start-ups, SMEs, business support organisations, cluster organisations, universities. The contribution of research organisations, science and technology parks, incubators and accelerators, investors and local, regional and national authorities is also significant.

What is the position of Europe and the Czech Republic?

Europe has long been an important driver of global innovation. Given the relatively high labour costs, and the low dependence on raw materials and natural resources, the importance of innovation for the continent's economic and social system is unquestionable. However, it can be estimated that Europe's current share of the world's total industrial R&D is only about a quarter. In recent years, the US, China and Korea have been at the forefront of this effort. Statistics clearly show that innovators who are the first to bring new products and services to the market experience significantly higher revenue growth. And that's what we need to focus on. There are examples of R&D-intensive sectors such as information and communication technology (ICT), pharmaceuticals and advanced manufacturing. In these and others, Europe should monitor the adequate allocation of support resources.

Can Europe regain its position or have a significant competitive advantage?

Certainly. In fact I think we've (to use the race analogy) had a lot of training and our researchers are in great shape. One of the many examples of this strategy can be seen in the "Minho Manifesto", produced at the University of Minho in Guimarães, Portugal, and confirmed in June this year. Its goal is to strengthen research related to high-performance computing (HPC) and to more closely connect the five supercomputing centres that now have petascale systems (Petascale computing, a system capable of computing at least 10^{15} floating-point operations per second). Ostrava's IT4Innovations – the Czech national supercomputing centre – will also join the newly emerging European network. Its capacities have already been used in the past by some researchers through projects supported by TA CR. In addition to the Czech Republic, the network includes supercomputers from Portugal, Slovenia, Bulgaria and Luxembourg.

In what areas is Czech research and development the greatest contribution, in what areas are we the best?

This is where the comparison with a race limps because it's not easy to measure a country's innovation potential accurately, especially when the collaboration between scientists and researchers has virtually no boundaries. We are truly a world leader in electron microscopy and imaging and manipulation techniques in the submicron world. This has a lot to do with materials engineering and related industries from electrical to mechanical engineering, where we have huge potential. Or our laser research centres, which are world leaders in the application and development of new lasers.

For several years, TA CR has awarded prizes to the most successful applied research projects. It's a prestigious award, how do you choose the best projects when you said yourself that it's difficult to rank research?

I am glad that the public perceives the TA CR Award as prestigious. And I'm also happy that this is not the only award for research, development or innovation that is given in our country, because there are several every year. This contributes a lot to create links in academia and industry, while at the same time bringing positive reflection to society. In order to be able to award prizes across the whole spectrum of disciplines, we evaluate supported research projects in four categories: Business, Society, Governance and Partnership. From the nominated projects, a panel of experts then decides on the winners in these categories based on documentation that includes not only the project design but also the implementation plans – i.e. how the results of the research will be applied in practice.

www.tacr.cz

Each year, it supports hundreds of research projects of small, medium and large enterprises, research organisations and universities, totalling more than

220 mil. €

Example of funded projects by TA CR

www.tacr.cz

Photo - unsplash.com/@thisisengineering

TE01020455

Centre for Advanced Nuclear Technologies (CANUT)

Centre of Competence Programme

Beneficiary: University of West Bohemia / Faculty of Electrical Engineering

Other project participants: CVŘ – Research Center Řež, ČKD ELEKTROTECHNIKA, ŠKODA JS, ÚJV Řež, ZAT, Czech Technical University in Prague / Institute of Experimental and Applied Physics, Brno University of Technology / Faculty of Eletrical Engineering and Communication

The research of all involved parties is focused on improving the operation and maintenance of current nuclear reactors (NR) - shortening downtime, reducing production and operating costs, automation of operations, use of modern types of fuels, higher NPP efficiency and extended service life. Another focus is the involvement of the Czech Republic in the development of new NR technologies and the use of new technologies throughout the fuel cycle, the development of new forms of fuels, new methods to increase the efficiency of nuclear energy and increase nuclear and radiation safety.

Examples of results:
- Equipment for inspections of the primary circuit of pressurized water nuclear reactors
- Innovation of fuel cycles and all parts of the external fuel cycle
- Nuclear instrumentation with increased reliability and safety of operation
- Development of tools and construction of experimental equipment for new generation reactors

…. And more

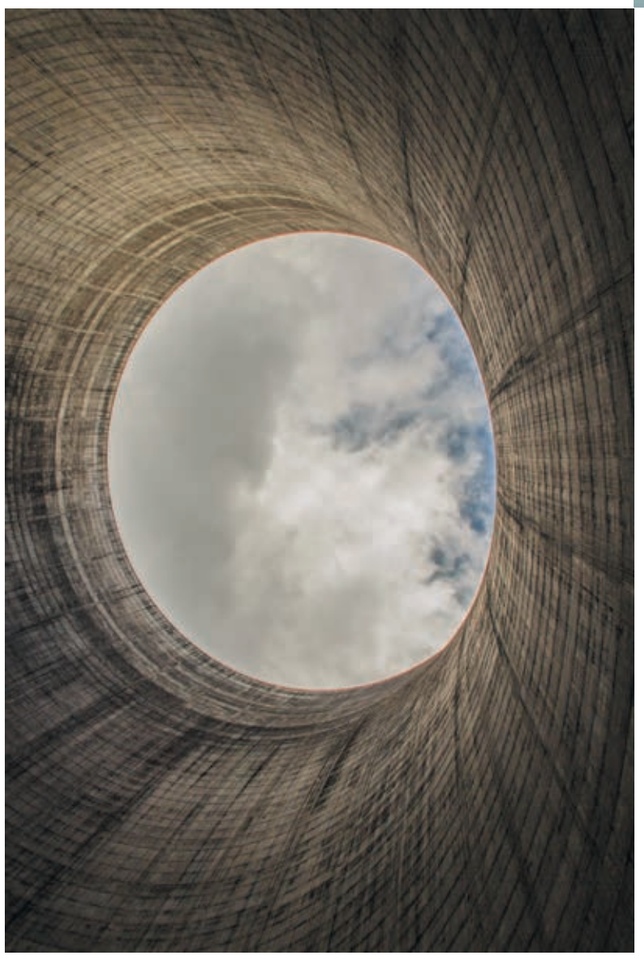


Photo - unsplash.com/@jmadsen

TF03000025

Research and development of a new plasma

Research and development of a new plasma activated ald deposition system with a unique low temperature plasma source based on microwave surfatron and ECWR discharge

DELTA Programme

Beneficiary: SVCS Process Innovation

Other project participants: Institute of Physics of the Czech Academy of Sciences, ISAC Research (Korea), Korea Institute of Materials Science, Korea Maritime & Ocean University

The developed device will enable the creation of very thin quality layers of materials under the action of low-temperature plasma for use in many fields. Thin film deposition is usually applied especially in the semiconductor electronics industry to prepare excellent dielectric layers. Thanks to the this progress, the importance of ALD is rapidly expanding in the production of innovative materials at the nanoscale.

The potential use for ALD is very multidisciplinary - it has potential in the field of photovoltaic cells, flexible electronics, improving the properties of glass, paper and textiles, decorative paints, new generations of transistors, sensors and advanced technologies of energy raw materials. Researchers expect to achieve a higher quality of deposited films compared to the available plasma-activated ALD processes and this developed technology will allow the preparation of new types of thin films on new progres-sive types of substrates.

TH03020142

Implementation of technology

Implementation of technology for the preparation of pure silica nanofibrous layers for healthcare into industrial production

EPSILON Programme

Beneficiary: NANOVIA

Other project participants: Technical University of Liberec / The Faculty of Science, Humanities and Education

The aim of the project is to transfer the method that was developed at TUL which includes the preparation of pure silicon nanofibers by electrospinning and the subsequent immobilization of antibiotics on their surface from pilot to industrial scale at the main investigator.

The novelty of this procedure has been confirmed by the grant of the Czech patent (CZ 303 911), worldwide protection (WO 2014026656) and in the final stage is the grant of an European patent (EP 2884968).

The final product will be used after the approval of SIDC in the form of a medical device as a cover for poorly healing wounds. The principal investigator will become the producer and distributor, and after the start of production, the predominance of export over domestic consumption is assumed.

Photo
unsplash.com/@diana_pole

PRUSA RESEARCH

3D PRINTING IS THE FUTURE OF MANUFACTURING

Founded by Josef Průša in 2012 as a one-man startup. Prusa Research quickly became known for their best of class 3D printing user experience and as an incredible success story. The company reached global charts in just a few years and became the fastest growing tech company in Central Europe according to Deloitte. Original Prusa 3D printers have claimed many prestigious awards and at the moment, the company is preparing to launch a new revolution in manufacturing.

ORIGINAL PRUSA i3 MK3S+
THE AWARD-WINNING FDM 3D PRINTER

A silent, reliable, and powerful 3D printing workhorse for both hobbyists and professionals. Awarded as best 3D Printer in the Ultimate Guide to Digital Fabrication by the prestigious MAKE: Magazine. You can find a MK3S+ in nearly every country and on all continents. Best for making mechanical parts, prototypes, batch production with minimal required maintenance. The printer supports a wide range of thermoplastic materials from multiple brands. The functionality of the MK3S+ can be further expanded with the unique Multi-Material Upgrade for printing with up to 5 materials simultaneously.

ORIGINAL PRUSA SL1S SPEED
THE FASTEST MSLA 3D PRINTER

The Original Prusa SL1S 3D printer is based on MSLA printing technology. Unlike the Original Prusa i3 machines, this printer uses a high-resolution (MONOCHROME) LCD panel and a UV LED array to cure thin layers of resin to achieve an unprecedented level of detail.The SL1S is the perfect choice for producing extremely detailed 3D prints - and fast! No matter whether you want to produce highly detailed sculpts, design and prototype, or you need a reliable workhorse for your workshop or lab, the SL1S delivers outstanding results across the board.

The beginning of the story wasn't anything spectacular: It was in 2009 when an economics student Josef Průša joined the open-source RepRap project focused on developing and building an affordable 3D printer. Josef was a DJ in his free time and needed a custom set of buttons and knobs for his gear which brought him to 3D printing. Back then, 3D printing was mostly considered a niche hobby, a fun technology with unknown potential.

Josef quickly became familiar with it and made several key improvements to the basic design of RepRap printers – and that's how the Prusa FDM 3D printer design was born. As time went by, it became one of the most popular ones, adopted by many manufacturers and hobbyists across the world.

Josef's story became far more interesting from that point. On his own, Josef founded Prusa Research and began selling 3D printer frames packed in pizza boxes from his basement workshop. The demand grew and so did the team. Fast forward ten years and Prusa Research now has more than 650 people and ships over 9000 3D printers worldwide every month,

directly from its HQ in Prague. What was once a one-room and one-man operation now has over 12 000 square meters and keeps growing rapidly.

But even with all the success, Prusa Research stays faithful to its roots: Original Prusa 3D printers are still open-source and most parts are still printed on other 3D printers. Both the hardware and software are developed at the Prusa Research HQ and a visit feels like walking into a craftsman's workshop.

3D PRINTING

So how does a Prusa FFF 3D printer work? It's surprisingly simple. A digital model is "sliced" vertically into layers like a mountain in a topographic map creating the instructions for how the printer will create the object. Those instructions are sent to the printer which then heats up a nozzle designed to melt the filament of plastic that is pushed into it. A precision motion-system moves the nozzle to draw the shape of the object in a thin layer of plastic that is stacked and fused together one layer at a time. While simple, there are still many opportunities to continue improving the technology.

FROM HOME TO BUSINESS

Prusa played a significant role in the popularization of this amazing technology on a global scale. The interest in 3D printers skyrocketed as once-expensive machines started to find their way into workshops and offices. As a result, hundreds of thousands of DIY enthusiasts, hobbyists, and makers began to discover the magic of 3D printing. Affordable 3D printers eventually found their way from hobbyist users to various industries and manufacturers, which discovered that they are ideal for local prototyping and small-scale production.

They can quickly make custom parts, and have low operational costs. Companies such as NASA, SpaceX, Tesla, Ford, Škoda Auto, and several Formula racing teams are equipped with Original Prusa printers and use them every day for various applications.

Modern-day business requires flexibility, Adaptability, and reliability, ideally in the form of an all-in-one solution. Prusa Research runs the largest 3D printing farm in the world, consisting of 600 Original Prusa printers that produce the plastic parts for more printers we sell. Based on that experience, Prusa Research began developing a mass-production system that would allow tackling any print job, no matter how complex. A system that would be fully automated and scalable for any needs a customer may have. This resulted in the creation of the Prusa Pro AFS (Automated Farm System), which was presented first at Expo 2020 in Dubai.

PRUSA PRO AFS
AUTONOMOUS FARM SYSTEM

A wall of Prusa Pro AFS 3D printers, each creating a unique "snowflake" print as part of the Czechia installation at Dubai Expo 2020. This demo not only shows the power of an automated farm but also one of the primary advantages that 3D printing can provide manufacturers, the ability to create many of the same parts or many unique parts with almost no overhead.

PRUSAMENT
PREMIUM-QUALITY MATERIALS FOR 3D PRINTING

Prusament is Prusa Research's inhouse made filament and resin. The advanced manufacturing process allows for a higher level of quality control, more efficient testing, and guaranteed manufacturing precision. Each spool of Prusament has a perfect winding and it's meticulously tested. The complete manufacturing reports are available online, enabling customers to see detailed properties of every spool they have purchased. Prusa Research is the only company providing their customers with this unique option. The range of materials under the Prusament brand was expanded with high-quality in-house-made UV curable resins in 2021.

ADDITIVE MANUFACTURING FOR THE 21ST CENTURY

The autonomous print farm by Prusa Research is a glimpse into the future of additive manufacturing (3D printing). Compared to a subtractive manufacturing process, in which material is removed, there is noticeably less waste material. Moreover, with a suitable object design, it is possible to reach completely negligible amounts of waste.

Sophisticated design elements of the print farm ensures further savings. The farm, thanks to its compact design, is downright destined for efficient local production. In addition, the farm is completely enclosed, so the printers can heat up faster, resulting in electricity savings. The custom-made software schedules print jobs so that the 3D printers won't cool down completely between jobs and don't need to heat up from low temperatures. Helping to improve the sustainability aspect of 3D printing, new ways to create printable materials from recycled plastic are constantly being discovered and improved.

The biggest advantage of this form of manufacturing is the potential for advanced automation. A robotic arm can harvests the prints when complete and the software takes care of the efficient management of the production, always selecting the most suitable printer for the job. This means that the customer only needs minimal staff to operate the AFS, mainly for maintenance and inspection.

The entire farm is scalable: if the customers need more printers, they can simply add them and the management software takes care of the rest.

The autonomous print farm by Prusa Research will be available in late 2022 to business customers worldwide.

WHAT'S NEXT

Josef Průša's journey from a small basement workshop to the EXPO 2020 exhibition halls clearly proves that even without clinging to patents and copyrights, it is possible to build a successful business. However, his journey is far from over. As he says: "We have ten years of existence behind us, but we are still only at the beginning." What's next for Original Prusa 3D printers and 3D printing? The machines in the autonomous print farm may reveal certain hints.

Glass and light metal **façades in Europe**

Sipral leaves a Czech mark all over Europe with its unique façades. Sipral façades adorn for example the Wardian, one of the tallest buildings in London, the revolutionary Copenhagen's Amager Bakke waste-to-energy plant with a rooftop ski slope by BIG architects, and the Fondation Louis Vuitton building in Paris by Frank Gehry, which resembles a ship with sails made of glass. "Every project is unique, every project is a challenge," says Leopold Bareš, founder and owner of Sipral, a company which has been in the business of delivering lightweight building envelopes (glass façades) for 30 years.

Sipral, is highly sought after by major developers and world-renowned architects. Your declared mission is to create and deliver excellent value in the form of smart, technically unique, visually appealing, dependable, and lasting solutions. Can you tell us more about what is under the hood of your projects?

Each order is specific and unique. We at Sipral enjoy discovering this specificity and then designing a unique solution, which may, of course, be quite challenging in terms of both design and technical implementation. I have always said that my goal is to do creative work and produce different solutions than other people. We have told ourselves that "every project is unique; every project is a challenge" and we have stuck to this motto for a long time now. Anyone can make simple things complicated, but only few can simplify complicated things. Thanks to our creative, innovative, and technically sophisticated approach, we are sought after by clients with novel ideas which can be quite difficult to implement in terms of construction. Ten years ago, we had a visit from a top designer and head of RFR, a French design office, with whom we collaborated on our most important project – the Fondation Louis Vuitton building in Paris. I wanted to thank him for giving us the opportunity to work on prestigious projects such as this one. And he said: "No, I am grateful to you. We have extravagant ideas for incredibly complex structures. It is extremely hard to find a supplier willing to take such risks and look for solutions, to step into the unknown. There are few such companies in the world." That was a great compliment for us.

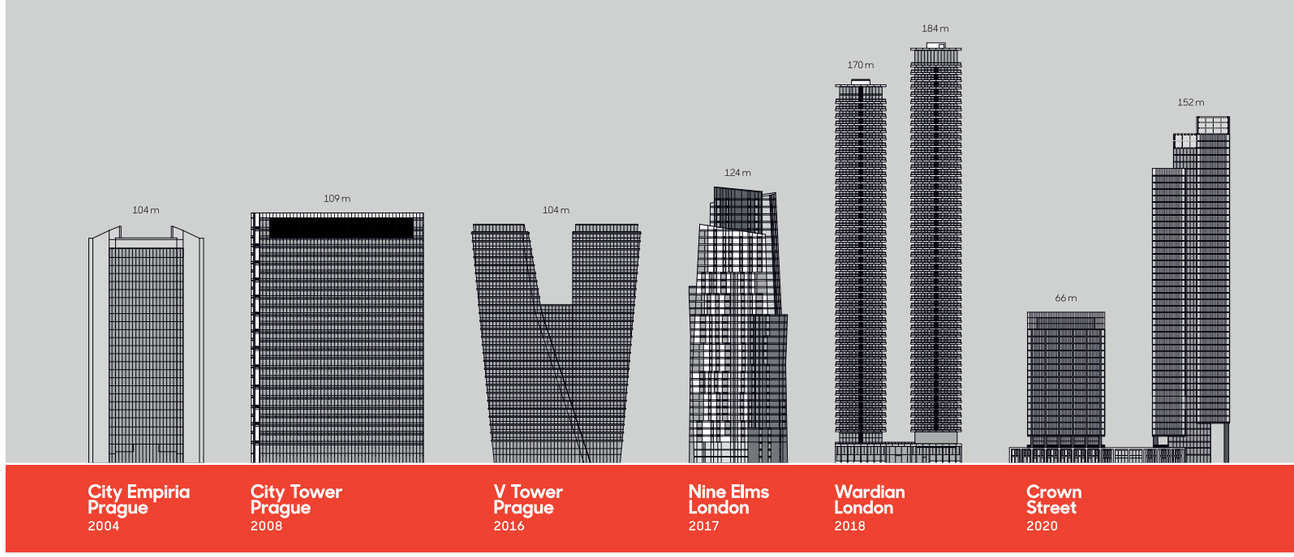
Could you describe how unique façades are made in Sipral?

A project succeeds or falls with the capabilities of the project manager. They must be good in leading people and communicating with clients. They must not let them off the hook but offer a service that the clients will be satisfied with. It also depends on the place where you are implementing the project and who the general contractor and the client are. The manager must understand the economic side of things and be able to meticulously plan the project. We employ an excellent team of people without whom our business would be impossible. There are many solutions available today thanks to the advanced technology we have access to. Standard system solutions can be used for a project, or we can develop a brand-new unique façade system tailored to a particular project. The whole creative process can be likened to automotive manufacturing – we do engineer with tremendous precision, but we have to work in a construction environment at the same time. Since 2008, we have been producing façades in our manufacturing and logistics facility in Jirny, near Prague. The current production and warehouse area covers 38,000 m² and includes six production lines. Some orders are so large that we need three production lines operating simultaneously to complete them.

You co-operate with leading Czech and international architects. Which people are involved in a project?

I like to say that construction is a collective work. It relies on the interaction of the investor, the architect and construction companies. Things are different depending on where you are working – in England,

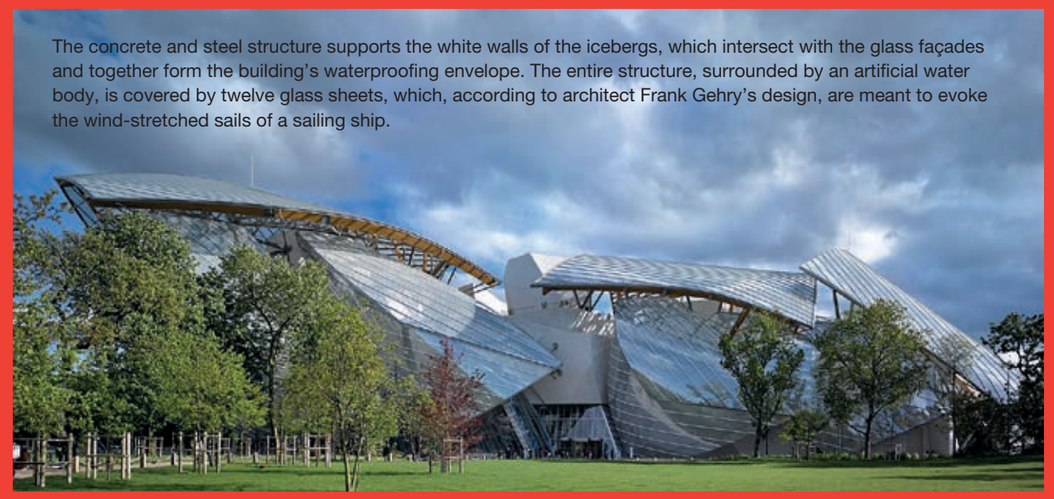
Leopold Bareš, founder and owner of Sipral



SIPRAL

Founded in 1991, Sipral is now a leading Czech supplier of glass and light metal building envelopes and interior and atypical structures with over 240 employees in the Czech Republic and the UK. Since 2006, Sipral has had a British subsidiary, Sipral UK Ltd, which is based in London and has offices in Paris and Copenhagen. Sipral has completed over 320 projects in 8 European countries, working with ninety-seven architects for 160 clients. The company's most renowned projects include Fonda-tion Louis Vuitton by architect Frank Gehry, Copenhagen's Amager Bakke waste-to-energy plant by BIG architects, and Paris' Arena Nanterre, designed by Atelier Christian de Portzamparc. The Wardian building by Glenn Howell Architects is one of the most important projects imple-mented in London. In the Czech Republic, Sipral supplied sophisticated cladding for developments such as the Quadrio multifunctional building by architect Jakub Cigler, the Zlatý Anděl building in Prague by architect Jean Nouvel, and the City Tower in Pankrác by Richard Meier. Sipral is currently working on the delivery of the façade for the Masaryčka project in Prague, designed by the globally renowned Zaha Hadid Architects.

Fondation Louis Vuitton, Paris



The concrete and steel structure supports the white walls of the icebergs, which intersect with the glass façades and together form the building's waterproofing envelope. The entire structure, surrounded by an artificial water body, is covered by twelve glass sheets, which, according to architect Frank Gehry's design, are meant to evoke the wind-stretched sails of a sailing ship.

Denmark, or the Czech Republic – on the general contractor and of course the client. And a lot depends on the human factor. When the whole team works well together – the architect, the investor, the general contractor, technical supervisors, and subcontractors – the project comes together smoothly. If the team does not get along well, you can lose money on the project even if the delivered work looks the same in the end. The façades are not only a visually significant element. They are also important in terms of functionality – they are supposed to prevent overheating and be resistant to cold, wind and turbulence and provide sound proofing. A façade is demanding technical work. Architects are a diverse lot – some are stubborn and obstinate. Then there are those who have a clear idea of where they want to go with the building but are aware that they need a team around them to put their ideas into practice. They appreciate that they do not and cannot know everything that is to know about what contemporary construction industry has to offer.

Which building projects were ground-breaking for you?

There are several such buildings. Our first construction project: the taxi dispatch building at the Forum Hotel in November 1990. The contract was worth 1.8 million Czech korunas. The Zlatý Anděl project in Prague–Smíchov was a milestone in 2000, because for the first time we worked with an internationally renowned architect, Jean Nouvel. In our first international project, we delivered fifty windows for Checkpoint Charlie, the famous border crossing between East and West Berlin, where office buildings were being built rapidly after the fall of the Iron Curtain. Today, our production line can make this number of windows in about a day. Then came the contracts that earned us respect in the industry and led to other new projects, especially in the UK and Paris. We started receiving invitations to participate in projects where a certain degree of technological experimenting was necessarily involved. A huge milestone in Sipral's development came with the delivery of a decorative latticework for the Louis Vuitton store in Paris. Subsequently, we delivered the façades for the Fondation Louis Vuitton building and the Amager Bakke waste-to-energy plant in Copenhagen. The largest project so far has been the construction of the Wardian.

You achieved worldwide acclaim for the Fondation Louis Vuitton Museum in Paris, where you collaborated with Frank Gehry. Tell us more about this building.

The construction of Fondation Louis Vuitton was completed in 2014. In Sipral, we are immensely proud to have been able to realise Frank Gehry's vision of an all-glass façade with all its incredible geometric complexity. Gehry works by designing the envelope first, in which he completely disregards the rules. Things like structural soundness and construction complexity are dealt with later. Basically, you try to find out how to build the insides so that the building is functional. Everyone who has worked on Fondation Louis Vuitton had to collaborate in a shared 3D environment, which we called the "synthesis". Once a week, teams working on site uploaded everything to a server in Los Angeles and then received feedback with the conflicts marked and everything was checked again. The project had an atmosphere of incredible creativity, and we were praised for it. It was an exceptional project for an exceptional client with a big budget. Such a building is created only once in a lifetime.

What were the challenges of the façade of the Amager Bakke waste-to-energy plant in Copenhagen?

For the Amager Bakke project, the architects initially procured a technical solution from a consultant. It was a clever, beautiful, and very logical solution, but for us as the company which was "merely" supposed to implement it, it was too technically complex. Furthermore, it was quite difficult to assemble in the harsh conditions with fierce winds blowing from the sea. And so, we produced our own solution, which the architects accepted, and which saved 30 per cent of the cost for the investor.

Last year Sipral celebrated 30 years of founding. How has the construction industry and façade development and production changed over the past 30 years?

The 1990s brought a transition to a completely new system. It was only after the fall of the Iron Curtain that we gained access to good materials, and that was our first step to improve quality. The fact that we did not have defined construction standards in the Czech Republic played a key role, because we could adopt those used in Germany or Austria. After the fall of communism, we also got access to modern technologies quickly, we were able to start using them rapidly and thus meet European standards for quality. We made enormous leaps in terms of technology. We were using drawing boards when we started. Then AutoCad came along, we bought two licenses, and that made us the proverbial one-eyed person in the land of the blind. A really big technological leap for us was the shift to 3D design, which was required to design the latticework for the Louis Vuitton store. Many of the spatially complicated projects today simply cannot be designed in 2D. Fortunately, we have always been proactive and that gave us a head start. We have invested in IT, learned to design our own management software, deploy upgrades and solutions to work alongside the existing ones. We have combined everything with 3D software that allowed us to design and implement complex spatial structures and projects, but also to present our work in quite an effective way.

SIPRAL

So, you work with 2D and 3D modelling in the design process. What other technologies do you use in Sipral?

Yes, working in 3D is now integral part of the design process for us. This combination with 2D enabled us to design a wide range of projects very effectively and quickly. Today, we have managed to automate many processes. We also use parametric modelling, which enables us to clone individual module types. The key moment is to specify the basic concept precisely, then the automation takes off. This carries certain advantages and disadvantages. You make one small mistake, and it gets replicated in everything. Therefore, the principles and the entire process must be carefully thought out and tested.

Decorative latticework for Louis Vuitton store, Paris

A structure comprising approximately 1,600 m² of internal decorative latticework divided into eight discrete zones. The individual parts of the latticework consist of die-cast star-shaped elements measuring 117 x 117 mm made of aluminium alloy. A total of ninety-eight thousand of these were used on the project. The golden sheen of the stars was achieved by a complex galvanic application of several layers of different metals with a final layer of true gold.

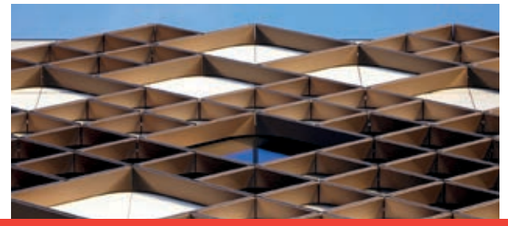
Amager Bakke, Copenhagen

Amager Bakke is the most modern and environmentally friendly waste-to-energy plant in Denmark. According to the ambitious design by BIG Architects, the incinerator is built in the shape of a slope where visitors can enjoy skiing, climbing, cycling, or hiking. In this way, the building shows the world how utility buildings can be made into a public space. The Amager Bakke is a distinctive utility building in the city centre with a two-part façade. The functional façade cladding consists of modules up to 10.5 metres wide. The second layer is made of prefabricated cassettes, the "bricks". It is an element that is repeated on the façade and lends it a uniform appearance. Most of the parts were made in the Czech Republic.

What is behind your success abroad?

The road to success is paved by good references and recommendations. Our approach also helps us a lot, because even though we are already a relatively large company, we remain flexible enough to step out of our usual processes and solutions. We have also always had the undeniable advantage of cheaper labour costs. Nevertheless, we are losing it due to the current national policy. We are catching up with the rest of Europe in salaries, but unfortunately not in productivity and efficiency. Sometimes not having the euro as the national currency is an advantage. When the Czech koruna weakens, our exports get cheaper and more competitive. Turkey is leading in this respect now given its weak currency, which allows Turkish companies to win contracts in the UK with 10-20% lower prices. Other price-competitive regions now include the Baltic countries, Croatia, and Slovenia.

Each project is unique, **each project is a challenge...**



The Diamond, the University of Sheffield

The 6,000 m² modular façade consists of 803 unique elements. Most of the façade elements are fully glazed. On each element there are at least two, but sometimes even twelve pieces of glass of various shapes, sizes, and compositions.

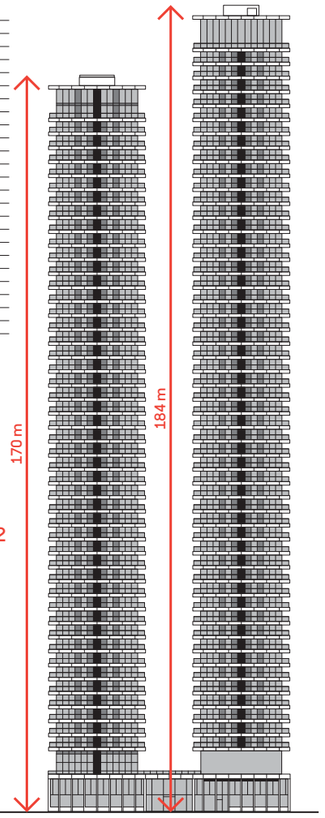
Execution	2017–2020
On site	11/2017–03/2020
Contract value	€75+ m
East Tower (height)	55 floors (184 meters)
West Tower (height)	50 floors (170 meters)
Balconies in total	3,880
Glazed railing	14,550 m²
Façade area in total	40,000 m²
Material for a single floor	ca 12 trucks
No. of trucks	1,400+
In total	792 apartments
Swimming pool	25 m

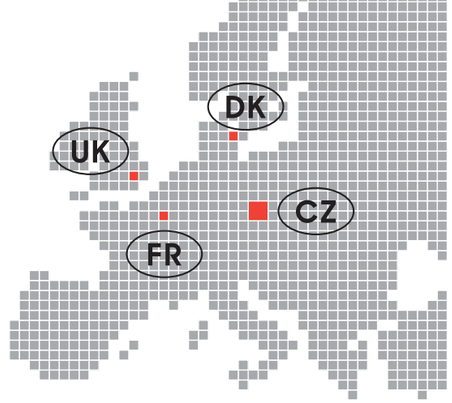
1,400 +

FAÇADE

40,000 m²

€ 75+ m





SIPRAL

www.sipral.com

Wardian, London

The residential development is in the heart of London's most prestigious financial district, the Isle of Dogs. The building comprises two towers of 170 and 183 metres, making it one of the tallest structures in the UK. The façade of the buildings consists of aluminium cladding, up to three metres long aluminium balconies and all-glass railings. For Sipral, the project is worth CZK 2 billion, which makes it among the largest ever executed by the company.

Airports in Senegal

Transcon Electronic Systems

Transcon Electronic Systems is Czech company preparing to modernise five regional airports in Senegal. “We will build new airports, actually” says Ilja Mazánek Sr., commercial director of the company, which is one of the five largest players in the world in the field of airport technology.

Transcon is planning to upgrade five regional airports in Senegal over the next few years. How important is this project for the future of your company?

Ilja Mazánek Sr.: Above all, this is the largest Czech or Czechoslovak project in sub-Saharan Africa in the last fifty years. Of course, it’s also one of our company‘s largest projects, with a total contract value of more than EUR 150 million. In Senegal, the idea is to modernise airports, but we will actually build completely new ones. So far, we have supplied many countries with components of airports, like control towers, and have been largely involved in their construction. We are one of the five largest companies in the world specialising in airport lighting, navigation and control systems, and today, we have a global market share of more than 15 percent in our industry.

So the Senegal project is a turning point for you?

IM Sr.: Yes, it is. As a company that has been on the market for thirty years, we have long directed our development towards the construction of entire airports and now we have completed it. The Senegalese first turned to the French and the Chinese, but without success. We have a separate division of modular systems from which entire regional airports can be assembled.

Is it fair to say that you’ll be supplying turnkey airports to Senegal?

IM Sr.: We are the only company in the world that has taken the modular concept to the end and can actually build a regional airport from A to Z. These are airports that can handle half a million to a million passengers a year. To give you an idea – the airports of Brno an Ostrava, for example, are this big. We are able to build a modular regional airport in eleven months with everything: fully equipped passenger terminals, control towers, hangars, administrative block, runways, lighting, power, and navigation and radar systems. It usually takes three to four years to build such an airport.

Ilja Mazanek senior and junior
Economists and Arabists,
are in charge of airport projects in Senegal

ELECTRONIC SYSTEMS TRANSCON 32 1990 2022
www.transcon.cz

TRANSCON - A FAMILY COMPANY

Transcon was originally founded as a completely new company?

Ilja Mazánek Sr.: Yes. It’s a family company, owned by entrepreneur Vladimír Drábek Jr. His father, Vladimír Drábek Sr.. founded the it in 1990 in Frýdek-Místek. As a Candidate of Science, he was involved in the development of a number of airport systems, thanks to which the company reached a higher technological level compared to the rest of the world in the 1990s. It gained a strong position first in the traditional Czechoslovak markets – mainly in the former Soviet Union – and then in other parts of the world.

Ilja Mazánek Jr.: The founder of Transcon, Vladimír Drábek, was originally a mining engineer. During the previous regime, he was involved in the automation of mining technology, which proved to be an important know-how for the field of airport technology. It may sound surprising, but the concepts and methodologies applied to mining automation can be used, for example, in the development of airport control systems.

I read that Transcon‘s original mission was to develop technology for military airfields.

IM Jr.: That’s right. In the 1990s, the army was preparing to join NATO and needed to modernise outdated technology relatively quickly. This included, for example, control towers. Transcon developed the necessary know-how, including the aforementioned modular systems, to be able to offer a suitable technological solution at a reasonable acquisition cost.

Why is it that nobody else in the world offers turnkey construction of a regional airport except you?

IM Sr.: It is very complex. Typically, the construction of an airport involves two to three general contractors who focus on individual segments. The development of the project alone is very demanding in time and finances, in the case of a regional airport it takes about a year. We don‘t manufacture everything either, of course, but we build most of the airport based on our design – some of the equipment we manufacture ourselves, some of it our suppliers. We’re the general contractor who assumes all responsibility and is also the know-how holder of the entire project. You need to have a strong team able to prepare a project for African or Asian conditions.

IM Jr.: In my opinion, the fact that Czechia is a relatively small country and a small economy also plays an important role. We do not have as many financial resources as China, the United States, Germany or France, and this forces us to look for alternative technical and organisational solutions to reduce costs; reality pushes us to be inventive. As a result, we have achieved a certain know-how that our engineers and our partners retain.

Could you give us an idea of which airports you will modernise in Senegal?

IM Jr.: So far we have a credit framework for the first two. One of them is Saint Louis, the former capital of Senegal, which is a UNESCO World Heritage Site. It has great potential for the development of tourism, but the current airport infrastructure is not up to the task. In addition, the Senegalese government plans for this to be a back-up airport in case the main international airport in Dakar needs to be temporarily closed. The second airport is in Ouro Sogui-Matam in the north-eastern part of the country. It’s located in an isolated and difficult to access region, but it also has some potential due to its phosphate mining. Ouro Sogui is 700 kilometres from Dakar, but today you have to drive ten hours on a dirt road to get there. As for the other three airports, one is located in an area of Senegal separated by the territory of The Gambia, the second in a major mining capital and the third near the much-visited Niokolo-Koba National Park.

EUROPE AND OTHER CONTINENTS

Projects of entire airports or their modules are more likely to be applied in developing countries?

IM Sr.: We also export to Western Europe, for example to Germany and Great Britain. I’m convinced that we will also implement our modular projects in Europe. Even for potential European customers, the fact that we can build a regional airport quickly and at significantly lower costs is a major advantage. In addition to Europe, we also focus a lot on Asia, sub-Saharan Africa and the Middle East. In Saudi Arabia, for example, we were involved in the construction of an airport for the royal family.

Airports in Senegal
Transcon Electronic Systems

How much of your revenue comes from the supply of airport modules?

IM Sr.: About 25 %. We also supply airport equipment for the Czech army and the armies of NATO countries, including equipment for heliports, as well as the so-called mobile airports, which can be assembled from individual modules – including, for example, a 2.5 km lit runway. This modular system comes with a power supply and can be assembled in about 4.5 hours.

Who's involved in the development of your products? I guess you also collaborate with research institutions.

IM Sr.: Out of a total of roughly 60 employees, about fifteen are involved in development. As a medium-sized company, we can carry out huge projects with a relatively small number of people. We cooperate with the technical universities BUT in Brno, CTU in Prague, the Mining University in Ostrava, the Air Traffic Control Development Centre and many other research institutes in the Czech Republic and abroad.

Do you feel you are continuing the Czechoslovak tradition of exporting larger investment units?

IM Sr.: For sure! Unfortunately, the Czechs have fallen behind in the export of investment units compared to the past. Local companies often lack the know-how that former foreign trade companies had. We have a lot of smart industrial companies that make great products but can't sell a large investment package. They often don't even see a reason to export outside Europe.

I'm convinced that we need to diversify geographic export risks. Not every smaller company necessarily has to export to Africa, but it can be very profitable for it to become a subcontractor of a larger Czech exporter, who can usually pay better than, for example, a German buyer, and is also willing to present them on foreign markets and provide them with references. All profits, however, remain in the Czech Republic.

IM Jr.: We often hear that we need to export higher value-added products, but I think that statement does not quite capture the truth. Czechs can offer very technically sophisticated products, but with the collapse of Czechoslovakia we lost our organizational skills. Supplying an investment unit is different from exporting turbines or generators. It brings a lot of logistical and organisational challenges, a lot of crisis situations, and not everyone is willing to undergo this discomfort and uncertainty. Moreover, I fear that Czechs often lack a healthy dose of self-confidence – we are too concerned about not making any mistakes. Due to its complexity, the export of investment units creates quite a large margin for error, and that's why many choose easier and more convenient solutions.

COMPREHENSIVE CZECHIA

Aren't you worried that your approach will remain rather exceptional at the moment? Is it even realistic for a small country like Czechia today to export large investment units such as complete power plant supplies?

IM Sr.: We would like to inspire others. In my opinion, investment units should account for at least five or ten percent of Czech exports. We are an open and export-oriented economy with a strong industrial tradition. According to the Economic Complexity Index (ECI) compiled by experts from the prestigious American universities Massachusetts Institute of Technology and Harvard, the Czech Republic has long ranked among the top ten countries. We are able to build almost everything with the exception of submarines. For example, the French are behind us in this index.

It also depends on whether the quality of all these Czech products is comparable to the world competition...

IM Sr.: Many Czech products are among the world's best. For example, we are members of a small club of countries that produce quality machine tools, CNC machines and other engineering equipment. But as an advanced industrial country, we have one downside: we are small. It'll be difficult to assert ourselves in the growing international competition of countries that are experiencing economic growth – from China to Southeast Asian countries to Mexico. When you want to make it in the world, you come up against tenders everywhere; you have them in every industry and there are millions every year. Investment units are a guaranteed way to success. Their export guarantees Czech subcontractors access to foreign markets without having to participate in local tenders, which correspond to the conditions of a given country and sometimes come together with various unfair practices. Of course, it is important that the export of investment units is supported by state export institutions, including the insurance company EGAP and the Czech Export Bank, as well as commercial banks.

Does all of this also apply to your airport exports to Senegal?

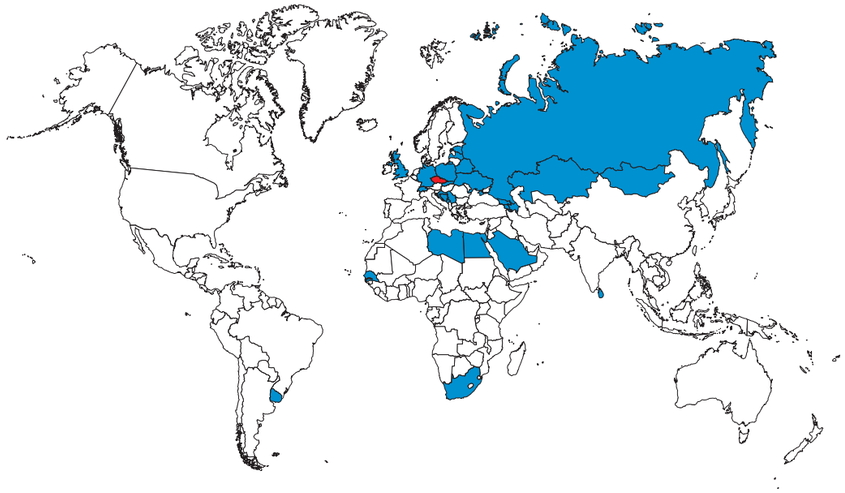
IM Sr.: Yes, we're opening up the Senegalese and the entire West African market to our subcontractors. In some cases, these are internationally known companies that will now be able to establish themselves in this part of the world, and I believe they'll remain active there for decades to come. Thanks to us, they'll have service centres in Senegal.

ELECTRONIC SYSTEMS TRANSCON 32 1990 2022
www.transcon.cz

What is the share of your domestic and foreign subcontractors in this case?

IM Sr.: The Czech share in the entire project exceeds 60 percent, about half of which is accounted for by our own production and half by our domestic subcontractors, which include manufacturers of trucks, fire trucks and tankers. The share of foreign subcontractors is therefore less than 40 percent overall – mainly Senegalese construction companies, but also one Senegalese law firm, and one Spanish and one French firm.

IM Jr.: I would like to add that political support from Czech state institutions plays an important role in promoting such projects and their implementation. This is an extremely important point that governments and authorities in African, Asian and Latin American countries take into account. In the case of the regional airports project in Senegal, we had the active support from the Ministry of Foreign Affairs, the Ministry of Industry and other Czech institutions, and the Czech Embassy in Dakar also contributed significantly to the success of this project.



www.transcon.cz

asiana GROUP

WE ARE PROFESSIONALS ON BUSINESS TRIPS, LEISURE OR MICE.

Our mission is to aggregate, sort, combine and offer ideal solutions, which will serve our client's needs and spare them from unnecessary troubles. After-all, we are also travellers.

letuška.cz | Moje letuška | Superletuška | Stjuardesa | Europea travel | HR shop. | asiana MICE | Study CZ | viza.cz

ASIANA was established in 1993 by Šárka and Alexej Litvin as a travel agency focused on providing complex leisure and business travel services. In 2001, ASIANA was the first agency in Centrail Europe to launch and online booking engine for air-tickets. Since then Letuška.cz, its flagship portal, has been a leader in online travel services.

Rostislav Litvin
Chief Technology Officer

Travel is a challenging and technologically complex industry.

In order to stay competitive we need to constantly revise our technological background and keep improving it. The digitalisation process did not end with electronic tickets. Some parts of the airline IT, for example, can still be surprisingly obsolete. On the other hand, they work pretty well and to change them is like changing the car engine while driving. Sometimes there is no adequate incentive in doing so.

Being in the distribution frontline and close to our customers we constantly need to integrate new features, which precipitate from other industry players such as airlines and Global Distribution Systems. Our role is to aggregate and sort the content, but not necessarily all of it. Some products can be risky or even harmful to our customers and consequently our reputation may suffer.

Fortunately, not all parts of the travel industry are so technologically difficult. Thanks to our 30 years' experience as IATA agents, we do not have much difficulty in developing less complex products in elds such as medical tourism, study abroad, events and incentive travel - those are already strong parts of our business.

Josef Trejbal
Chief Commercial Officer

The main driver of our company's success is the bond between people and technology.

On one side there are petabytes of data flowing from thousands of sources in order to be sorted and presented in our booking engines. On the other side there are people who overlook the whole proces ranging from issuing a ticket up until the traveller returns from a journey. All this is done by a relatively small team of effective professionals.

Pavla Pulchart
Business Development Manager

One of the most recent product developed by ASIANA for corporate clients is a comprehensive marketplace for purchasing travel services and organisation of corporate events.

HRshop aims to make it simple for HR a procurement departments to organise a wide range of team-building programs, sports, adventure or entertainment activities. It also covers a full range of accompanying travel, accommodation and visa services. Tailored coaching, language courses, conferences facilities and catering are naturally offered as well.

Based on our extensive experience in servicing corporate clients and governmental institutions ASIANA developed a unique administrative process, which simplifies invoicing of orders, even-though a vendor is not listed within the client's system. This feature is appreciated especially by large corporate clients for whom listing all vendors poses an administrative burden.

Petr Štěpánek
Head of IT department

Our services are used by individuals, large corporations as well as government institutions.

Data security is of the utmost importance in ASIANA. We use the most modern technologies and methods and constantly update them. Being among the pioneers, we recently deployed two-factor authentication via biometric FIDO2 key, for instance.

At the same time we constantly innovate our backoffice systems in order to provide our customers with maximum comfort. Last month we launched a brand new customer care center, which can process queries from various types of voice and text channels. Our agents are now able to interact with customers in a much more effective manner.

Whether we deal with recent trends in security or implement innovations at our backoffice, we always try to use the best options offered by on-prem solutions the cloud environment. This gives us flexibility and scalability, and that is the reason why we remain faithful to the hybrid scenario.

Daniel Nedvěd
General Manager, Incoming

MICE, stands for Meetings, Incentives, Conferences, Events.

It is a special segment of tourism that requires an understanding of the needs and intended goals of companies. An integral part of it is meeting people, colleagues, business partners and corporate suppliers. In ASIANA, I have the opportunity to lead the MICE team, which has not only experience, but also creative ideas and modern technologies that allow us to conduct and operate such kind of events. Thanks to them, we have always been able to communicate effectively, manage purchasing, and gain feedback for us and our clients. Both in our country, the Czech Republic, and elsewere in the world.

SIGMA

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- Production and testing of filters
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RESEARCH & DEVELOPMENT

- Design, CFD and FEM simulations
- Pump testing facility

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Svaz výrobců čerpadel České republiky

Europump
The Voice of the European Pump Industry

SIGMA GROUP is the most important producer of industrial pumping technology in the Czech Republic focused on research, development and production of mid-size, heavy and one-off specialized pumps and pumping sets for industrial applications. In this sector the company ranks among the best in the world.

Many years of experience, combined with its own R&D institute, production facilities with high-tech manufacturing equipment and extensive service facilities enable SIGMA to offer the best and most comprehensive packages involving pumping technology on a turnkey basis.

POWER GENERATION SECTOR

Full scope of pumps for both conventional and nuclear power plants.

METALLURGICAL WORKS

Pumps of modern design significantly reducing costs and increasing the efficiency of cooling circuits in all metallurgical plants. Upgrading of scale spraying systems in rolling mills.

AGRICULTURE AND IRRIGATION

Large mixed flow and propeller pumps with flow rates up to several thousands of liters per second are currently installed in countries with intensive irrigation of sizeable areas (e.g. Egypt, Sudan, Iraq, Syria, Ecuador and India).

CHEMICAL AND PETROCHEMICAL INDUSTRIES

Pumps in accordance with API 610 standard intended for pumping of a wide range of petroleum products, form a vital link in the complex and demanding chain of technologies in refineries and crude oil processing plants.

Within the above mentioned fields of business SIGMA has been a reliable supplier of descaling systems (flat products, long products, shaped sections, pipes), cooling systems and water treatment units (air-cooled cooling systems, compressor cooling systems, mechanical and sand filtration units, ultra-filtration units, flotation units, units for production of demineralized water).

Our testing facilities enable hydraulic testing of each produced pump, and a new testing room allows the pumps to be tested under real working conditions, with liquids of up to 190 °C and maximum outlet pressure of 520 bar (a).

AIR SQUARE

THE ART OF MAKING LIVABLE CITIES

URBAN CATALYST

AIR SQUARE is a transportable venue that activates underused urban spaces by bringing them purpose and a vibrant public life.

ADAPTABLE
It is designed to host multiple functions and programs such as performances, farmers markets, or serving as an all-in-one public furniture with seating, lighting, and shading systems integrated. It a peaceful place to hang out at and rest.

READY TO ASSEMBLE
Separate components are packed and ready to go, together with most hardware and assembly instructions to assist the construction process.

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Mitigates urban heat islands and, as an alternative to trees, casts shadows that deliver refuge from heat.

INCLUSIVE
Built for diversity, inclusion, and equality, ensures barrier-free access, day and night.

KOGAA + KUBICEK VISIONAIR

The merge between innovative urban solutions and research on new technologies brings on the market a unique product never seen before.

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Why measuring carbon footprint is necessary for a sustainable business

EnviTrail focuses on evaluation of ESG strategies and the carbon footprint of companies.

By means of an engineering approach and financial evaluation, we deliver exact and technical solutions for a sustainable business.

Lukáš Ferkl - Managing partner at EnviTrail

How come a university professor becomes an entrepreneur?

EnviTrail is not my first start-up. Since my university studies, I have been focused on applied sciences and engineering. After receiving my PhD, I founded a company called Feramat Energies, which is still active and is now run by my former PhD students. But it was not satisfying for me, so I returned to academia and climbed the ladder. I became an associate professor and in 2013, I started working as a director of the University Centre for Energy Efficient Buildings at CTU Prague. This is a research centre with 150 employees, about 100 students, and 200 research projects every year. I had to build the centre literally from scratch, but it succeeded and become a renowned centre for cooperation between academia and industry. Our most successful project was S.A.W.E.R., a unique apparatus for extracting water from the air in the dessert, which became famous at Expo 2020 in Dubai.

www.envitrail.com

That was quite an achievement, so why did you establish EnviTrail?

I have always liked challenges and new things and the centre became kind of old to me. But I saw great potential in environmental assessments, with an ideology-free approach to our nature, but also to human development as well. Moreover, COVID was just starting, and that was the ideal time to establish a business – in the middle of a global crisis.

Many companies focus on ESG and carbon footprint. How is EnviTrail different?

The approach of our competitors is very formalistic. They tend to fulfil the methodologies for ESG or carbon footprint calculations, without being in touch with the real problems of the companies, or sometimes even without grasping the problems of nature and environment. To give you an example – in the pursuit of carbon neutrality, they advise clients to offset their carbon footprint by planting trees. That is a piece of very cheap advice. You should always go deep into the company and look for savings, which are always there. This is what we do in EnviTrail.

The politics of the EU is very much focused on decarbonisation and the protection of the environment. What is the situation in the EU business?

The EU companies must comply with EU legislation, such as EU Taxonomy or various non-financial reporting directives. This becomes even more serious when talking about banks – the EU banks are a tool for the EU to implement the environmental targets.

Can EnviTrail help non-EU companies to enter the EU market?

Companies are very often scared of various EU demands, which are very specific – many still remember the rumble around so-called GDPR. The environmental legislation is not difficult to fulfil, but the language of the various norms and directives can be discouraging. In EnviTrail, we believe in simple solutions, and we apply this principle to compliance with EU legislation.

We see that EnviTrail clients comply with the environmental legislation of the EU. Does that bring some business benefits?

It does, indeed. The EU market is becoming very much sustainability-oriented and sensitive to both "dirty" products and mere greenwashing. Having clear communication and a green company strategy is a big advantage in the EU market for all types of companies.

Start Up

CZECH
STRATEGIC
TECHNOLOGIES

ELAI Aim Higher!

Every year, Innovation Week is one of the largest events in the country focused on innovation. It tries to connect important actors, introduce interesting startups or breakthrough technologies, and present the latest knowledge from various sectors through expert seminars. We asked Lukáš Sedláček, the founder of Innovation Week, for his view on the quality of the Czech innovation environment.

What is the purpose of Innovation Week?

I organized the event for the first time six years ago on the conviction that in the future those who can combine knowledge from different disciplines, think creatively about it, and look for new ways will have an advantage. Today, I think this is even more urgent. If we can manage that right after the crisis, there would be hope, because what will be crucial in five, ten or fifteen years is the added value of the Czech economy.

Lukáš Sedláček, founder of Innovation Week and of Elai

What can visitors to Innovation Week see or experience?

We have managed to bring remarkable personalities from the world to the Czech Republic, but we have also invited local experts. Some of the figures that have given lectures at Innovation Week include, for example, Bill Gates' favourite scientist Václav Smil, artificial intelligence expert and former chairman of the European Association for Artificial Intelligence Barry O'Sullivan, Seán Ó hÉigeartaigh, director of the Centre for the Study of Existential Risks at the University of Cambridge, and also Sophie, the first humanoid robot, and Stephen Hawking's favourite Sabrina Pasterski.

We also strive to introduce disruptive innovations and technologies. These have included Israeli creations such as an exoskeleton that allows paraplegics to walk, a wearable computer vision device that allows the blind to recognize faces and objects or even read, and many others.

One of the big themes of the event is environmental sustainability and we also have also included a panel discussion on innovation and digitalisation in companies. Last year, for example, we focused on how to restart the Czech Republic after covid, among other things.

An important part of the event is the presentation of domestic startups, those that have interesting potential as well as those that can already boast considerable success.

It's true and I'm extremely happy that we have something to present. There are a lot of really interesting young technology companies operating in the Czech Republic. This, by the way, is also evidenced by the Technology Fast 50, a competition of the fastest growing companies in Central Europe, which is regularly organized by Deloitte. Last year, for example, besides the overall winner, there were nineteen Czech companies in the top fifty, which is fantastic.

Moreover, Czech startups are beginning to play an important role in the local economy; among other things, they are gradually becoming important employers, for example, Avast, Prusa Research, Pilulka, Nano Energie, Brand Embassy and Poetizer. We also try to support them with other events under the banner of Innovation Week. For instance, at the beginning of last year, we organized a meeting of representatives of the most important local startups with the then Foreign Minister Tomáš Petříček, during which we discussed their support in expanding to foreign markets.

From what ideological legacy do these companies grow, do they have something to build on in terms of the history of the Czech Republic?

For sure. In the first twenty years of its existence, that is from 1918 to 1938, Czechoslovakia was a very industrially developed country. In particular, its shoe, glass and textile industries were among the most modern in the world, with a number of very prosperous companies, which were also successful on foreign markets.

After World War II and the communist coup of 1948, there was a gradual deterioration in virtually all areas of society, but even so, some truly remarkable personalities emerged and some exceptional innovations were made during this period. For example, the chemist Otto Wichterle developed the world's first soft contact lenses in 1961, and Jaroslav Heyrovský discovered polarography and won the Nobel Prize in Chemistry in 1959.

How are the current Czech startups doing, have they had any success abroad?

Quite a lot, actually. For example, Avast is now one of the world's largest computer security companies, with over 400 million monthly active users and the most widely used antivirus program in the world. Then there's Kiwi.com, which, thanks to its unique algorithm, allows a combination of more than 750 airlines. Its system runs more than 100 million searches a day, and the company is also ranked fifth in the Deloitte Technology Fast 500 EMEA. I would also mention Brand Embassy, an omnichannel cloud-based customer service platform that provides companies with a tool for effective communication with customers online. It has headquarters in Prague and offices in San Diego, Boston, London and Dubai, and in May 2019 it was acquired by the Israeli company NICE.

Another example is Socialbakers, a social media marketing platform using machine learning that provides social media marketing to thousands of companies and SMEs, including more than one hundred Fortune Global 500 companies. They have also become a global company, with offices in New York, London, Paris, Munich, Prague and Singapore, it employs over 400 people worldwide and was acquired by the US-based company Astute in 2020. I must not forget that the Czech Republic is also very strong in the gaming industry. For example, Warhorse Studios is world-famous for the games Mafia and Mafia 2 and Kingdom Come: Deliverance.

How do you see the Czech startup environment?

Of course it has its flaws, but the important thing is that it's developing very quickly. Every year new startups emerge, even though the initial boom, which began about ten years ago, is naturally behind us, and the environment today is mostly maturing in its own way. The great news is the significant grow of the number of startups based outside Prague, which some time ago made up almost half of the Czech startup scene thanks to its extraordinary economic strength, but now it's about a third. In recent years, there has been a rapid increase in the number of regional innovation centres, and the growing number of regional programmes to support local startups has certainly played a role, too. I also consider it a great signal that, according to surveys, the number of startups that are considering foreign expansion is increasing; today it's almost 80 percent.

Let's come back to you, because you are trying to support the domestic innovation environment in other ways.

Yes, in our ELAI Institute we are preparing educational workshops. They are based on the method of transferring real experience by personalities who are among the best in the Czech Republic and have vast experience mostly from abroad. Our lecturers are, for example, the head of Czech Google Táňa LeMoigne, the former highest-ranking Czech in global business Jan Zadák, the director of the internationally successful organization People in Need Šimon Pánek, and many others. I think this way of education is the most effective in terms of staying ahead of the competition.

INNOVATION WEEK

Innovation fair - International Conference
Professional seminars - Accompanying events

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Czech startup Poetizer takes the publishing world by storm

Poetizer, the technological startup that's taking the social media and publishing world by storm, began, in all places, in Stromovka park in Prague, Czech Republic.

To date, Poetizer has prompted millions of poems from users in over 120 different countries across the globe. Poets range from amateurs who are just starting to use poetry as an artistic form of expression, to the New York Times bestselling author, Atticus. Poets from all levels are gravitating towards the platform for it's easy-to-use interface and highly supportive community.

The team behind Poetizer believes that poetry can be a strong force for good in today's world, and offer voices to those who want to be heard. It has the power to unite people across the world, irrespective of superficial differences which tend to matter more than they perhaps should.

Poetizer is a digital platform that offers users a space to read, write, and publish poetry. It provides an innovative model of digital publishing embedded in its own social platform, which connects writers to readers, and enables everyone to publish their work ecologically. The startup aims to remove traditional barriers from publishing so that everyone has the opportunity to see their words in print.

> "Poetry can be a strong force for good in today's world, and offer voices to those who want to be heard."

Sustainability is at the core of this Czech startup. As a result of local production and reduced transportation distances, Poetizer has managed to reduce carbon emissions on each and every order. In order to avoid excess production and landfill waste, the products are printed on demand from the closest possible shipping site before being sent off. So, pages aren't just black and white. They're also green.

Download the **Poetizer app** or go to **www.poetizer.com**

Poetizer

WHERE POETRY GETS SOCIAL

A new way to share information

The Code Creator s.r.o. developed and maintains Publi.cz, an automated system for creating, publishing, and distributing electronic documents.
We've been watching current trends since 2014 and we anticipated the change in the ways of working with documents, as we've seen it with music, photos, and multimedia.
MP3 replaced CDs, MPEG and streaming replaced DVDs, JPEG replaced paper photos. Users' habits quickly started to change and printed materials became insufficient.

*We decided to create an **electronic library** accessible from anywhere, at any time, with no restraints, where the documents are protected against unauthorized sharing.*
*To make studying easier and more pleasant, we added **videos, sounds, interactivity,** and more. This way, the user gets an elegant document with added value. We created **mBook** - an interactive, multimedia product of the digital age. Eventually, we developed also a platform that creates a **responsive document** thanks to the intuitive editing tool.*

IT ALL BEGAN AT SCHOOL

We created the first set of interactive books for **Masaryk University**, and more universities followed. Today there are more than 1000 ebooks that are mostly published by universities themselves.
The majority of our customers have **electronic library apps of their own design** for smartphones and computers, available in Stores (App Store, Google Play, Microsoft Store). We called the documents **mBooks** to express that this is a new way of sharing data and that it's multimedia, multiplatform, mobile, mine, and much more.
There's video, audio, animation, schemes, and tests in the new ebook format. You write texts with mathematical, chemistry, or physics formulas.
Students appreciate **interactive exercises** and **tests** to check their knowledge. The schools offer them modern books that they can have with them at all times, read comfortably even on the small display of a phone, meeting all their current needs.

WE MAKE IT EASIER

We want as many readers as possible to be able to access the documents. Hence we chose **HTML** format because it's accessible in all systems.
To protect the documents, we developed a special reader with an interface and properties that can be further customized. This way we can create documents accessible from any device.
The key is the HTML book, but we also work with **ePub, PDF**, and other formats. We protect the documents through the Publi app for **iOS, Android, macOS, and Windows** and they're also accessible offline. The rest of the formats are accessible in internet browsers.
As a next important step, we wanted to make reading mBooks more comfortable.
We added **study tools**, such as highlights, options for making notes, creating an abstract, an automatic citation, and search.
We continuously improve our mBooks, to be the best and seize the full potential of the devices.

EDUCATION FOR FREE, OR FOR A CHARGE

Most of the books in our libraries are free, but they can also be sold safely. Last year the **NEWTON UNIVERSITY** made a request - they wanted to sell their electronic textbooks. So we enabled it on an eshop **Publi.cz/en/epubli**, with the possibility to pay quickly by card. Currently, they motivate and reward their authors for creating their own digital materials to enable their students to study on a world-class level.

SAFE LIBRARY WITH BRANDED APPS

Now we have a library, we have an interactive multimedia format, we're sharing - why don't we add even more? The experience we gained while working with more than 10 universities and several institutions has motivated us to offer our services to a **corporate environment**. Staff at companies work with a large number of documents on a daily basis, and their flow varies. They need a modern solution to **manage** the **digital agenda** not only within their companies, but also outwards to customers and partners.
Our idea of a corporate digital library accessed by potential customers is useful for marketing purposes. However, companies place great emphasis not only **fast publishing** and **on/off-line access**, but, more importantly, also on **secure file distribution**; they are interested in **feedback** and want to keep track of who has read the documents and when.

A solution tested by schools was offered to a corporate clientele. Businesses will likely appreciate their **own company design in the app** as well as the **branded library (dsia.publi.cz/en)**, where they can publish and manage any internal documents, or create documents that can be accessed based on individual licensed access. To be able to work with the documents, the user needs to sign in. Companies can save regulations, guidelines, strategic documents, or anything, they need. Everything is safe thanks to the **special encoding**. The content is what matters, not the format.

THE FUTURE IN DIGITIZATION

In our company, we only work with digitized content. We create mBooks in the intuitive editor, we store our documents on electronic shelves and we can check who and when read each document thanks to the administrative setting. Importantly, our platforms run on clouds. The encoding allows us to leave the intranet and work safely and share files easily and securely with other libraries - with companies and universities, in the Czech Republic and abroad. Publi is ever-developing, flexible, and responsive to our customers' platforms. We care about quality, effective distribution, and high data protection. We choose speed, simplicity, and safety.

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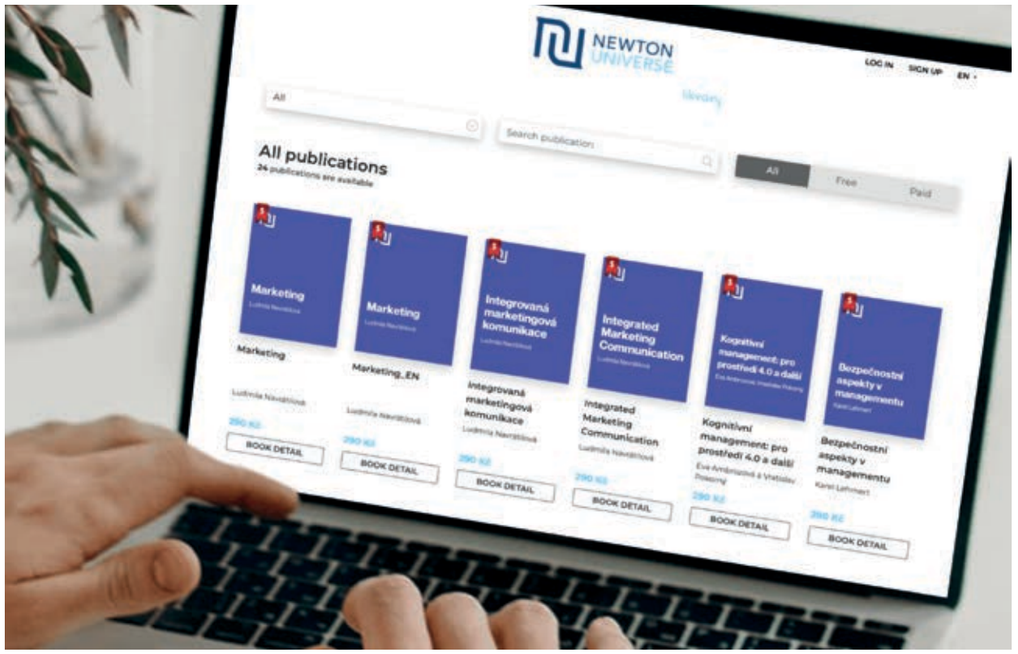


_spacemakers

CREATE your own virtual world

Welcome your partners to your own virtual office or host a presentation in a custom-made virtual world. Make your virtual event one that is truly unforgettable. Connect with the world with a single click via your computer browser or on your mobile device.

WHY VIRTUAL MEETINGS?

Are you tired of the same old Zoom calls? Getting a word in during a video conference with dozens of people is often almost impossible, not to mention noninteractive. Fortunately, there are alternative online communication platforms that are bringing the interactivity and fun of online meetings back into play.

Take your first step into the world of Metaverses

Freedom of movement, interaction, choosing your agenda and conventional small-talk are all possible here. Our metaverse offers fun, interactive and gamified spaces 24/7, through which you can digitally connect with anyone around the world. It offers countless possibilities - meet with your global business partners at one table, confer with your department managers in a private meeting room, or address all of your employees at once from a main stage podium.

Metaverse hypetrain

Getting on board with the trend of meeting in a virtual world doesn't have to be complicated. You don't even need virtual reality hardware, it's just a one-click connection via browser on your computer or mobile device. There are a number of platforms you can use to meet virtually. It will be up to you to choose the one best suited for your personal needs, so that your participants can enjoy the best possible experience of an entirely online event. Be prepared for the future, virtual meetings, digital shopping and operating in the metaverse.

Impressive events for a fraction of the cost

Surprise your employees or customers from all over the world with an interactive meeting that will keep them engaged and entertained. Using platforms such as Gather Town offers many benefits. You can receive feedback on the actions of your customers and attendees in your virtual meetings including a detailed analysis according to your specifications. Furthermore, the space for hosting your events, workshops or meetings can be entirely customized to your liking including your branding and localized assets that fit your individual needs.

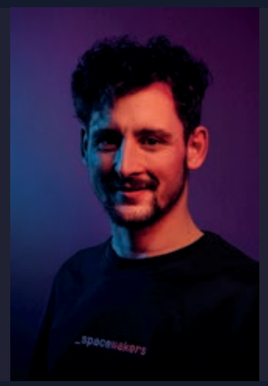
ABOUT US

We are experienced event producers and marketing specialists, running virtual events on a global scale and ensuring their top-notch execution. As an official partner of the rapidly growing Gather Town platform, we have been enabled to create virtual environments and events perfectly suited to its specifications. We have already created over 50 custom venues for more than 40 clients from all over the world.

We create everything, from virtual offices to customer centers and even entire virtual worlds. Notable projects include a replica of the Red Bull HQ in Austria, a virtual environment in the form of a rescue mission for Doctors Without Borders and their global hackathon, or a custom-made decryption game accompanying a meet & greet with influencers for Samsung.

"We would be happy to serve as your guide for your first encounter with metaverses and virtual environments. Do you want to create your own digital space? Get in touch!"

ING. LUKÁŠ ČERNÝ, CEO SPACE MAKERS



CONTACT US

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We are an official partner of Gather Town

Gather

productboard

Helping improve digital products: Czech company Productboard is a dollar unicorn

Productboard's mission is to help companies across the world to understand markets better and to react to demand through appropriate digital products. Its growth reached another milestone this January: after another round of investments, Productboard is now a dollar unicorn – the second one on the Czech market and currently the most valuable Czech startup.

"Companies across the globe are going digital, but not all of them excel in creating exceptionally good digital products," says Hubert Palán, who founded Productboard in 2014 together with Daniel Hejl. Their product has grown into a very complex system which helps even the biggest companies with hundreds of product managers to control their digitization process in a more efficient way.

Using Productboard's cloud software (SaaS, Software as a Service) allows companies to gather a range of information — that used to be scattered across emails, Slack or Microsoft Teams, customer surveys, CRM systems or customer communication tools — in one single place. Aggregated information then offers the company — or, more precisely, its product managers — a complex overview of product development, customer requests and potential opportunities. An essential thing is that thanks to these records in Productboard, companies can prioritize their next steps in the digital world.

Productboard's team has doubled every year since the beginning: today, it has more than 400 members working in and around Prague, Brno, San Francisco, London, Dublin and Vancouver. Offices in these cities have become key hubs where particular teams meet. From the very start, Productboard has worked in a hybrid mode. Having teams in Europe and the US, its people are used to working remotely. Productboard's software is used by 5,400 companies, including Microsoft, Volkswagen, Zoom Zendesk, UiPath, and Avast.

Productboard's founders shared their thoughts in an interview for CzechCrunch, a leading Czech tech and business platform:

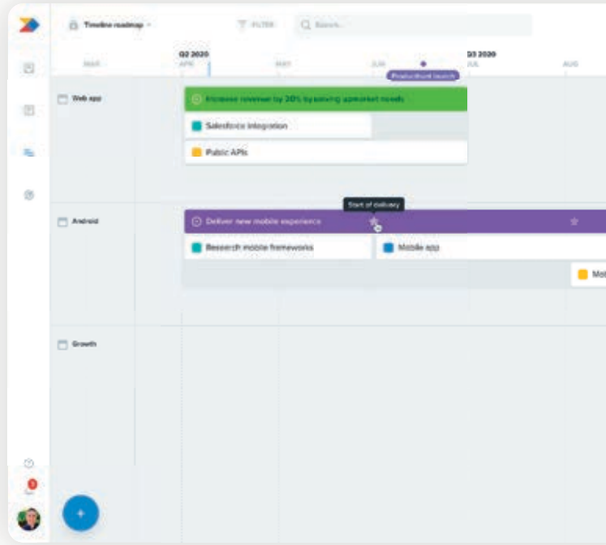
Many people struggle to understand what exactly Productboard does. What would be a simple definition?

Hubert: Imagine you go to a doctor who examines you and enters the data in a system. All patients and records about their needs and diagnoses are gathered in this one place. And it's the same in the digital world. When building a mobile application, you need to keep a record of what particular customers need. Because everyone needs something else. For this, you need a system. And we create such a system.

Daniel: We develop a system for gathering customers and their needs, based on which you make product decisions. You need to know which of your product's functions are used, who uses them, or which needs your product doesn't satisfy yet. This way you set your priorities. Not having such feedback from your users may lead to wrong decisions about your future direction.

How do you collect this feedback? For example, when an app asks me to provide feedback, will it automatically be inputted into Productboard when I send it?

Daniel: Exactly. We pick up any communication with customers or information about them. You need to



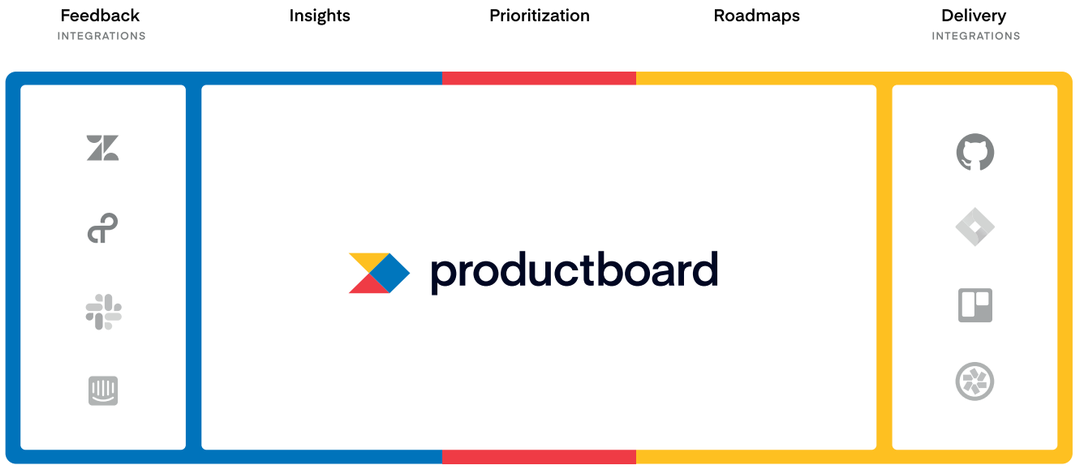
know for whom you develop your product. Big companies can have hundreds of product teams with their product managers and engineers. That makes it very hard to keep an eye on who works on what. Are they working on the same thing instead of complementing each other? Productboard helps with organizing this, too.

Do you use Procutboard at your company?

Hubert: We do.

So it's functionality is verified.

Hubert: Sure, but the tool itself won't ensure everything will work automatically the way it should. Buying the fastest car won't turn you into Niki Lauda, either. Anyway, our tool helps you minimize the risk of making a bad decision.



You see each other quite rarely, sometimes it's just once a year. Is it a big obstacle in building a company?

Hubert: What was demanding for the company was its rapid growth. Our team had 100 people at the beginning of the pandemic, now it's more than 400. Many people have never seen one another in person, so it's quite difficult to create bonds. At the same time, teamwork is based on trust you build by meeting and getting to know others. For example, when I meet our marketing team, I learn more about particular people than in six months on Zoom.

How is it between the two of you? Can you manage the company effectively over Zoom?

Daniel: Before the pandemic, Hubert and I had regular calls, and I would often fly to San Francisco, too. We had dinner together and sorted everything out. During the pandemic, we had to double the frequency of the calls. It helped to a certain extent, but it still isn't optimal — when we call at 8pm Prague time, I'm exhausted, don't want to speak and want to go to bed, while Hubert is getting up. (Laughs)

Hubert: Our situation is different anyway, because we already have that trust built. It's not necessary for us to see each other face to face, and there's also no need to tiptoe around something; we can get straight to the point. If you have a new employee, you can't go and shoot tough feedback at them, for example, because you don't know them, don't know how they'd react.

How important and interesting is it for a company to be a unicorn, regarding its position on the market or when negotiating with investors?

Hubert: Investors don't care at all. They look at the math. On the contrary, many funds want to reach as low a valuation as possible, because they intend to increase the value to the maximum. I think that the unicorn badge might be perceived positively by people coming to the company; on the other hand they don't realize that it makes their shares more expensive if they receive them as employees. It may get confusing. As an employee, your goal should be to join a company as early as possible in order to have a potential to increase the value. The later you join, the more stable the firm is, and you risk less, but the chance to increase value is lower. The same holds true for investors.

Well beyond the unicorn mark

Productboard is in the spotlight of renowned investors: in the latest investing round, Series D, they've given as much as $125 million. Productboard's valuation has thus risen to $1.725 billion, safely breaking the level needed to become a unicorn.

The investment was co-driven by two funds: Dragoneer Investment Group of San Francisco, which had invested in Spotify, Uber, Airbnb and Atlassian and dozens of other global tech giants before; and by Tiger Global Management of New York (Airbnb, Yandex, Uber, LinkedIn and Coinbase), which drove the Series C round where Productboard raised $72 million last April. Series D included other star investors from previous rounds, too — Bessemer Venture Partners, Sequoia Capital, Index Ventures, Kleiner Perkins and the Czech Republic's Credo Ventures.

"I hope that our growth and success helps represent Czech talent across the world. Reaching unicorn status is one of the milestones on our path to building a strong global business which will help companies create better digital products. The ever-accelerating digitization of the world is in our favor: we have big plans. It's crucial for our future successful growth to hire the world's top experts. They should help us, together with our current team, to extend Productboard's capabilities to become an even more important and strategic partner to the world's biggest corporations," says Productboard founder and CEO Hubert Palán.

5000+ customers love Productboard

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Daniel: When talking about unicorns, it's interesting to see how the entire market developed in the past 10 years. Being a unicorn used to be interesting as a benchmark of when it starts to make sense to go to the stock exchange. It was roughly a billion-dollar valuation and $100 million in regular yearly income. Today, many funds are willing to invest in bigger private companies, too. The valuations are bigger.

Is it a big deed in your business to double during a year?

Hubert: It is. Some companies managed to grow several times more during the pandemic, but that was because Covid was an artificial shock. All of a sudden, everybody needed Zoom, for example, they couldn't work without it; such companies grew in the short term and artificially. As for our growth, digitization is favorable in the long run, because people realize they need to create good digital products, but it wasn't an instant change, that everybody went to Productboard with the beginning of Covid. We still need to keep raising public awareness.

You don't disclose your income. Why?

Hubert: We consider this an internal metrics that we decided not to reveal. It's partly a competitive matter. The bigger you are, the more money you obtain, and your value grows. The more attention you draw, most probably the big players will notice you. This way, you're inviting them in the competition, which is something you don't want.

You don't manufacture physical products, have no warehouses and so on. What's the biggest challenge when developing a digital tool?

Daniel: First, you need to make sure the product really works. Another challenge is to do everything as quickly as possible. Maintain a fast growth, manage to hire people and not lose productivity along the way. As the saying goes, the bigger the company the slower it moves, but we need to remain as nimble as possible.

Hubert: If a startup comes across a big opportunity on the market, there's another challenge — will they manage to build a standalone company capable of competing with the bigger ones? Or will a bigger company buy them? For example, Slack decided it's more convenient for them to let Salesforce buy them and keep building the company under a renowned player. It's all about the before-mentioned speed and making the right decisions.

There were just a few of you in the beginning — your thinking has probably changed a lot since, right?

Daniel: We still think about how to be effective when hiring people. We've expanded a lot in terms of locations. We have offices in San Francisco, Prague, Vancouver, London, and Dublin. There are a couple of colleagues in Berlin and Amsterdam. It's important we're not limited to Prague only and that we can offer interesting places, even though hiring is done here in Prague.

Hubert: Covid made working from anywhere a big topic, but we think having physical hubs where people can meet is a great advantage. You can find developers anywhere in the world, but it makes a difference when you can meet them in person, have lunch, and, for example, listen to how things work at Slack or Hootsuite where they worked before. Such a relationship is hard to keep without physical contact. Having offices is our competitive advantage, because people know they're not required to be here every day, but can be part of this environment.

Excerpt from an interview published on CzechCrunch.cz

CZECHCRUNCH

Projects made easy

Their software is used by clients in more than 90 countries across the globe: software developers, automotive companies, and even the Czech Ministry of Foreign Affairs and Kazakhstan's entire state administration. Easy Software's project management tool has been in development since 2007, and now has 16 language versions and has been purchased by more than 3,500 organisations to date.

Easy Software's founder and CEO Filip Morávek

'Wherever there's a project, we are there. We make people's lives easier by improving the way their projects work. We're a Swiss army knife for projects,' says Easy Software's founder and CEO Filip Morávek. He is a one-company man who founded his firm right after school and has never worked anywhere else since.

Morávek started focusing on project management in 2005. A year later, he delved into the tech business with the Easy Software brand. 'We started with custom-made websites and intranets and soon found out we needed a tool to manage all of this development. We came across an open-source application called Redmine and started building our own modules and extensions for it. The first commercial version of Easy was released in 2007. In 2012, we started to realize our software could be successful on a global level. And it was. So we abandoned our custom website development endeavors and focused fully on our own products, Easy Project and Easy Redmine,' Morávek explains.

Two products. Easy.

The company's core product is an application for managing projects or even entire companies called Easy Project. It covers the whole process from planning projects to execution and support. But it also includes advanced features like risk and resource management, mind maps, Work Breakdown Structure and Gantt charts. This complexity offers users the ability to make extensive modifications without any code, and it makes the tool a perfect fit for any management style and approach. An essential part of the platform is its CRM module, which is primarily focused on B2B businesses that offer advanced access for their partners and control of their network.

'The tool is highly adaptable and flexible. You can take your pick from a multitude of templates and adjust them to match your company's aesthetic. Since the technology is open-source, clients can have it fine-tuned to suit their individual needs,' says Jakub Ryba, Easy Software's head of marketing.

Easy Project's business model is also a unique differentiator these days. As much as two-thirds of clients use their cloud-based platform, but the company also offers an 'on-premise' solution, which means the application runs on clients' servers. This is used by more 'traditional' institutions such as banks, pharmaceutical corporations, or state administrations that can't or don't want to send data out of their security perimeter. And now, they are finishing up a hybrid solution that offers benefits of both cloud and on-premise solutions.

The other application in the lineup is Easy Redmine, which has gained most of its popularity outside Czechia. It's an indispensable extension of the Redmine project management tool that expands its capabilities to make

What can Easy Project do?

Project Management
- Gantt chart
- Work Breakdown Structure
- Mind Maps

Agile tools
- Scrum Boards
- Kanban Boards
- Scrum Master Dashboard
- Sprint Dashboard

Resource Management
- Resources & Allocations
- Attendance management
- Dashboard & reports

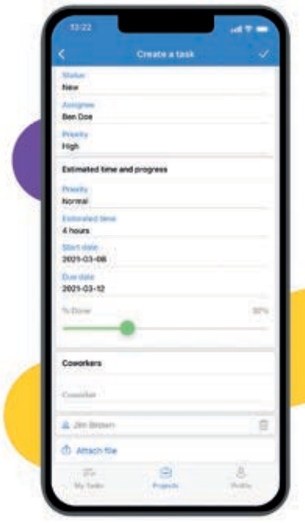
Expert PM tools
- Earned Value Management
- Scheduled Reports
- Risk management

Project budgets / Finance

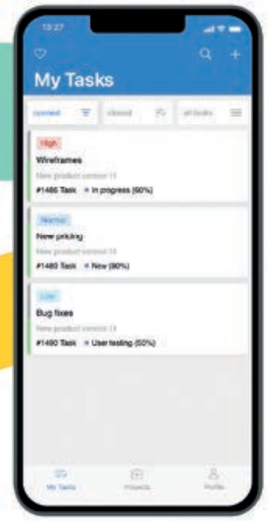
Help desk

B2B CRM

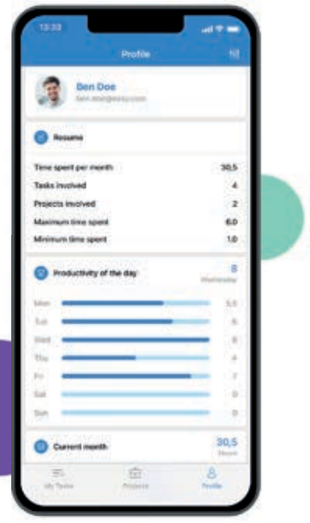
Create new tasks on the go



Manage your projects to keep things moving



Track and dominate your time

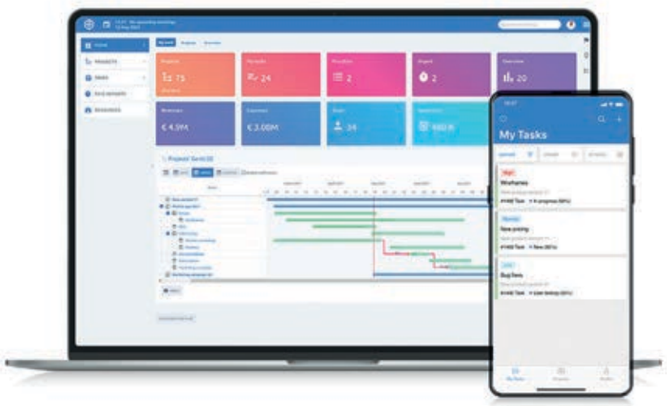


it more accessible. When a company has grown so much that an open-source only approach no longer meets their needs, it's the perfect time for them to turn to Easy Redmine. Some parts of Easy Redmine are available open-source and free of charge. To this day, more than 50 thousand users have downloaded the extension – making Easy Software the biggest and most popular company in the Redmine community.

In support of big names

Although not very big in terms of team size – there are barely more than 80 names on the employee roster – Easy Software is truly a global company. Aside from Antarctica, its activities are clearly visible on every continent. So far, this Prague-based company has sold its solutions to around 3,500 organisations. The SaaS part of their business – the subscription services Easy Project and Easy Redmine – is used by more than 1,500 companies in more than 90 countries worldwide. The remaining 2,000 organisations use one-off licences.

'Clients using the subscription model include highly-renowned software developers, hardware producers, automotive and marketing companies, universities in Czechia and abroad, and even state administrations. Several Czech



and foreign ministries, the town halls of many European cities and Kazakhstan's administration (see box). But our main focus at Easy Software is our enterprise clients. Clients like Czech Television, PPF, innogy, Zentiva, Ogilvy, Continental, and Bosch, to name a few. As much as 80 per cent of our clients are outside Czechia, which makes Easy Software one of the first global SaaS companies in the country,' adds Ryba.

Software developed in unconventional offices

Most development happens in Easy Software's offices in Prague's Bubeneč. Forget the modern glass-and-concrete buildings we tend to associate with tech companies. Morávek has chosen an old, picturesque tenement house as the headquarters for his operations. There's a small subsidiary in London, and another one is to be opened soon in Moscow – the plan is this year if local bureaucracy allows. 'Expanding to Russia opens the post-Soviet markets of the Commonwealth of Independent States. We want to use our experience from this part of the world where both companies and administrations have great trust in Czech products. We're also looking for talented individuals to help us with software development and other tasks. Russian engineers, technicians and chess players have always had a great reputation for excelling in their respective fields,' Morávek explains.

The expansion goes hand in hand with the continued growth Easy Software has been steadily experiencing for many years. Its turnover reached almost 150 million Czech crowns last year, and the company has been growing by 20 or 30 per cent every year. What's remarkable is Morávek's laid back approach, and it's quite an exception in the tech world, which is notoriously full of investments with many, many zeroes at the end. He admits that reaching a valuation of a billion crowns actually is his goal – but one he wants to reach slowly. He believes in natural, organic growth, saying that the billion-mark might be just a milestone on a much longer journey.

Which corresponds with another rare aspect of his entrepreneurship: sharing. To Morávek, being successful means giving back to society and the Earth. And this perspective is precisely what motivated him, in 2014, to found a Mindfulness foundation to support people in need through yoga and mindfulness. The foundation organises yoga and mindfulness classes in retirement homes, for medical staff, for primary and grammar school teachers, as well as convicts and staff in prisons. Easy Software is the foundation's most prolific contributor – every year, they give one per cent of their turnover to people and the planet.

'In 2014, I realised I didn't need more money for myself. So I started looking for new meaning in both my life and business. I realised I could combine having a company and making money to change things around me and help others,' Morávek adds.

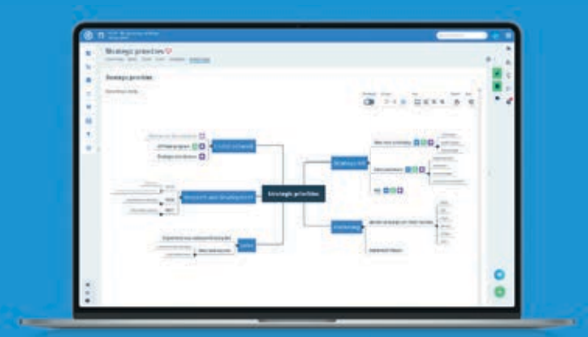
Providing a project management solution to the entire state administration of a country is quite the task. And when it's the ninth-largest country in the world, it's even more challenging. How did Easy Software manage to sell its product to the leaders of Kazakhstan? This is how Roman Olejnikov, Easy Software's regional business director for Eastern Europe, Middle East, Africa, Asia Pacific and Japan recalls the story: ‚We managed to build a solution that most of Kazakhstan's government runs on now, accelerating the digitisation of the entire country and inspiring the government to undertake new reforms. It started when our partners in Kazakhstan asked our distributor for a project management system for local governments in 2019. We introduced them to Easy Project, which we adapted to the needs of the local government, without any additional development, solely based on the supplied methodology. Easy Project got so popular that other local governments started to respond. Before we knew it, we were sitting in the Kazakh project office.'

After that, they presented their solution to the President of Kazakhstan himself and piloted it on state administration projects for two years. Of course, they had to go through a selection process before starting the pilot. The list for consideration was over twenty products long. The evaluation was done through a coefficient, which consisted of how many criteria (functions) the product could handle.

Each function was individually weighted. After completing the first round, they were up against solutions from two multinational giants. Easy Project won because it was able to adapt to the methodology set by the Kazakh National Project Office without any complicated modifications.

Methodology is the key in such implementations. In this case, it was a unique and original one. With the help of partners in Kazakhstan, Easy Software were able to remotely train all key users, connect a complex BI reporting process, set up the entire system and gradually implement over 40,000 projects down to the smallest detail.

'The pilot lasted two years, and I have to highlight one thing on the Kazakh side – their utmost professionalism throughout the entire project. They were amazingly proactive and lightning fast, which is not commonplace in demanding projects like this. Today, our platform provides maximum transparency of state projects with traceable, personalised accountability in meticulous detail. Even during recent times, when many projects have come to a complete standstill, Easy Project has been a stable partner. The country has even managed to digitise most of its projects already. Their transparent management allows them to keep pushing along, even under adverse circumstances,' Olejnikov says.



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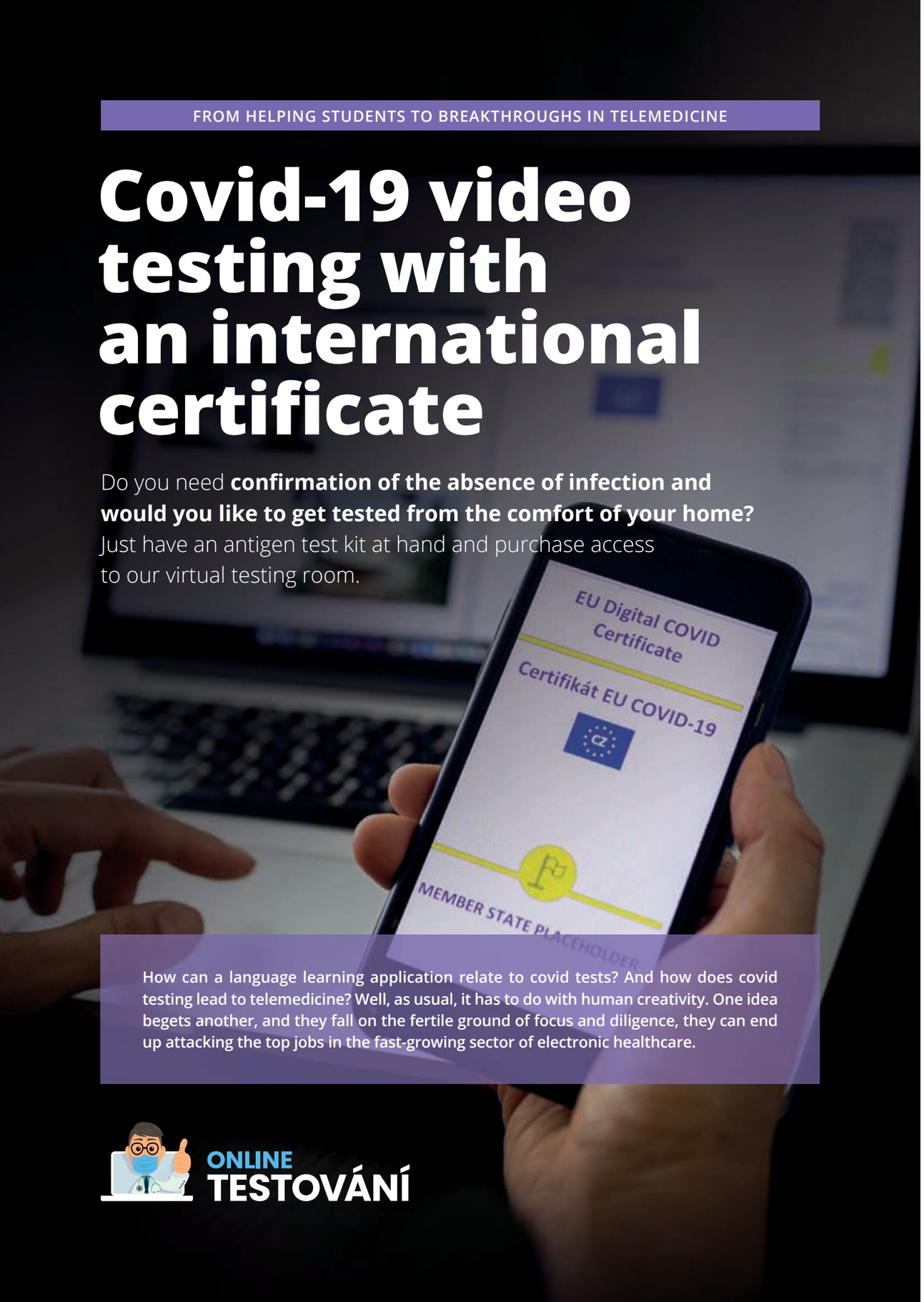


How can a language learning application relate to covid tests? And how does covid testing lead to telemedicine? Well, as usual, it has to do with human creativity. One idea begets another, and they fall on the fertile ground of focus and diligence, they can end up attacking the top jobs in the fast-growing sector of electronic healthcare.

ONLINE TESTOVÁNÍ

It all started a few years ago when a bunch of IT and online technology enthusiasts came up with the idea of a nifty app to help students learn languages – intuitive, fast, simple and above all, effective – and the RAFI learning app was born. It speaks to students, expands their vocabulary, stores words in its memory and, through a card system, in the heads of those learning one of six world languages. No need for a teacher, the app does everything itself.

At the time the app was created and quickly found its way to students, nobody could have guessed how rapidly its importance would grow when a pandemic swept the planet. Students suddenly found themselves unable to attend school and classes were transformed in an unprecedented way. Homeschooling soon made the already useful RAFI app almost indispensable.

The people behind it suddenly faced a whole new situation. With warnings and bad news pouring out of the media, they tried to find an opportunity in the inevitable spread of the virus. And they found it. In 2021 they established Doktor na telefonu (Doctor on the Phone) and the domain www.onlinetestovani.cz. What was it about? A unique yet simple and very practical idea: antigen testing with the results confirmed by a doctor without the need for physical contact. Anyone can take the test at home, on an airplane, or even on holidays abroad, where they have just been surprised by a change in covid the rules for tourists. Everything takes place in video interviews in which the test subjects identify themselves and a physician guides them. And fifteen minutes later, it's done. Once the testing is complete, the result is immediately entered into the ISIN system and a project called Smart Quarantine. If the test is negative, the subject immediately receives a certificate in the form of an EU CovidPassport. Testing is carried out in cooperation with renowned Czech physicians, using antigen test kits approved throughout the European Union.

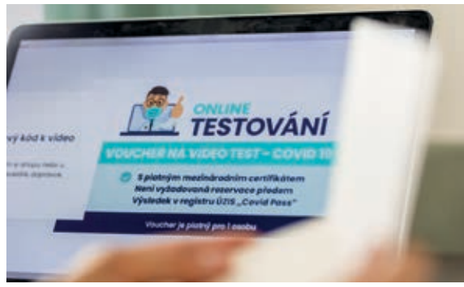
As you can probably imagine, something like this immediately attracted attention not only in Czechia, but also elsewhere in Europe. Travel agencies in particular, whose operations are fundamentally complicated by the constant turbulence in the covid rules, welcomed the service enthusiastically and started using it immediately. It seems that nothing could stand in the way of online testing. But there is one problem, while in Germany, Great Britain and France, for example, online testing is covered by appropriate legislation, in Czechia it still lacks legal support. It is a balancing act on a tight rope called „Recommended Diagnostic and Therapeutic Procedures for Telemedicine for General Practitioners by the Czech Society of General Practice". And nothing like that exists yet.

It was this legislative inadequacy that led those behind Doktor na telefonu to a new ambition: to establish themselves in telemedicine, become a strong player in the field and actively contribute to the creation of a legislative framework for this rapidly developing segment of healthcare. And now they are expanding their portfolio.

Currently, the main goal for Doktor na telefonu is to strengthen their position in the field of telemedicine in the Czech Republic, with plans to add further further services.

Today, the company is offering online GP services under the brand Doktor online, and they expect to expand the portfolio to include other medial specialisations.

Doktor na telefonu wants to be a strong player in the field of telemedicine in the Czech Republic, and also aims to support the development of legislation in the field. That legislation is lagging and new measures need to be adopted to bring the Czech Republic at least partly into line with the situation abroad.



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Exhibition mapping art created during the COVID-19 pandemic

This cultural project represents a new type of art in which artists from all over the world spontaneously created works with a unique theme and mission: to pay tribute to health workers and all those who helped during the pandemic.

Military University Hospital - Prague

THE MILITARY FIGHTS COVID AND HELPS

90 countries

artists **500**

2,000 works of art

Face mask
on Lennon's wall
in Prague

Many Czech companies have produced new innovative products in the fight against Covid-19 and they presented themselves at an exhibition called **Czech Anti-Covid Industry** in the Kotva department store.

Motol University Hospital in Prague

The exhibition was created thanks to a face mask on the portrait of John Lennon on Lennon's wall in Prague

Author and curator **Pavel Šťastný** explains why the exhibition was created:

"We all had to put on face masks. So we symbolically placed one on the large portrait of John Lennon's wall, which has been a symbol of freedom and love for our country for decades.

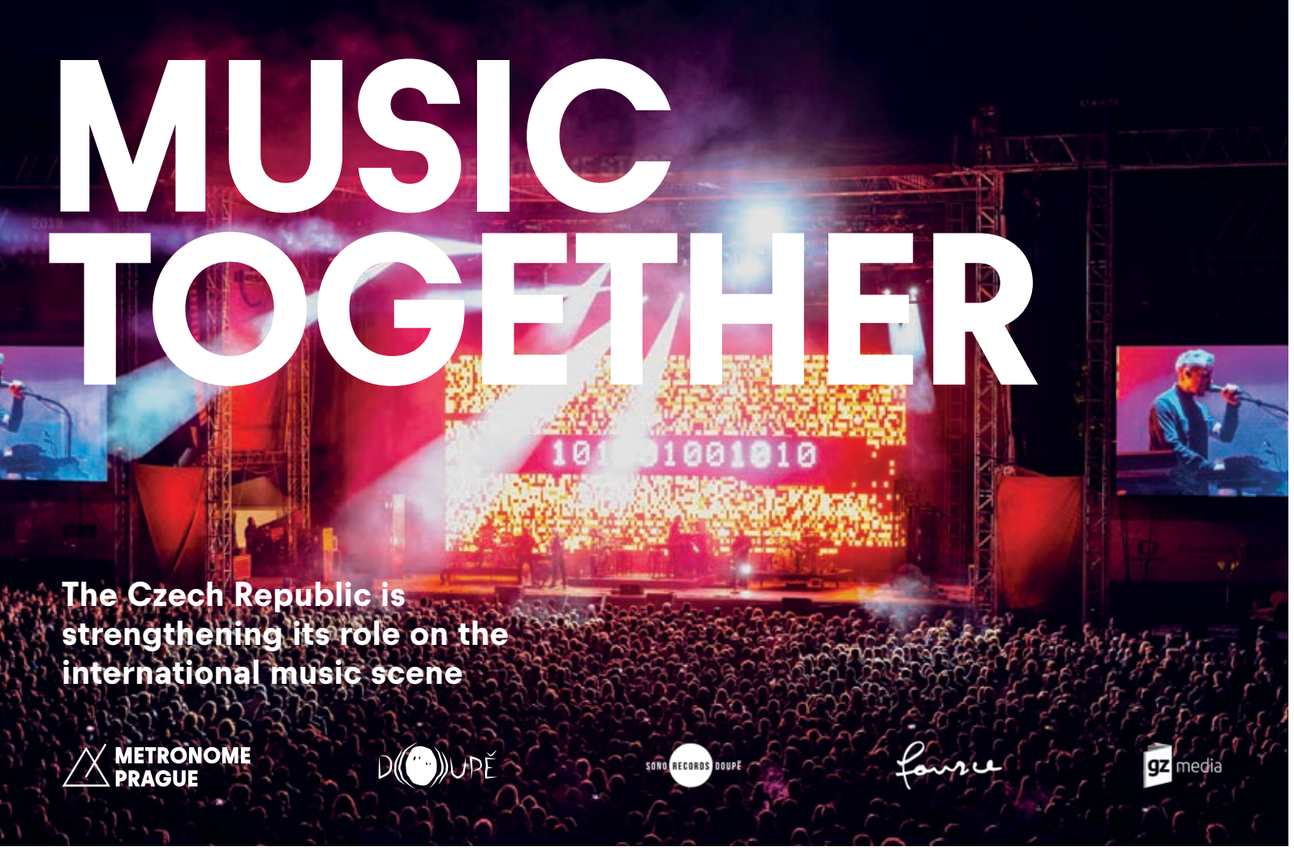
Photographs of the masked Lennon's Wall traveled the world and were published in hundreds of media outlets, becoming the most famous and largest Czech face mask.

The image became part of online groups of artists whose works focused on Covid-19. I started to receive dozens of works on social networks every day from many countries, supporting millions of people around the world in those difficult times, and helping everyone to survive mentally. So I decided to start mapping, collecting and sorting this new Art Covid and put together an exhibition with it.

This exhibition now has over 2,000 works of art by 500 artists from 90 countries of five continents".

Cuba / Albert Acosta - Life

www.artincovid.com



MUSIC TOGETHER

The Czech Republic is strengthening its role on the international music scene

The **MUSIC TOGETHER** association was established in the Czech Republic, and its aim is to offer exceptional music projects, artists, producers, investors and management the opportunity to cooperate and create in an environment with perfect conditions.

Five key players in the Czech music business have joined forces: the international music festival **METRONOME PRAGUE**, the exclusive music club **DOUPĚ**, the prestigious recording studio **SONO RECORDS DOUPĚ**, the world's largest producer of vinyl records **GZ MEDIA** and the international concert agency **FOURCE ENTERTAINMENT**.

The aim of this connection is to bring top quality music to listeners and inspire the world by providing extraordinary artistic experiences.

*"**MUSIC TOGETHER** is a unity of major music providers. We offer opportunities for musicians, producers and music business investors. We are all gathered in such a beautiful historic city Prague, Czech republic, a few minutes from the airport and from each other. Therefore, we enable professionals from music business to experience a dream production during intensive creative stay in our beautiful capital city, Prague. And because we have everything it's needed for that, the effectiveness of this approach is absolute. With a huge reach of customers and in an unbeatable time."* Says David Gaydečka, the producer of Metronome Prague Festival.

We are all parts of one puzzle. We have a top-class recording studio surrounded by inspirative nature, a secret, exclusively designed club for incognito concerts with the possibility of recording and live streaming, and an exceptional museum of radios and phonographs. We can mix and master immediately and get vinyls ready to be pressed within a day. We have a huge outdoor international music festival and we can broadcast live on TV. All of that with the best technical equipment.

"It's a great pleasure to meet the friends involved in this association in terms of sound quality. Sono Records Doupě, Doupě Club and Metronome Prague Festival are united in their effort to deliver the best to the music audience. A very specific connection with the Doupě Club will bring the opportunity to share the quality of sound, its recording

Sting – Metronome Prague 2017

or transmission to all involved parties, as well as the new Sono Records Doupě brand. We are looking forward to a new period and cooperation with the foreign music scene," says Pavel Karlík, the co-owner of the Sono Records Doupě recording studio.

METRONOME PRAGUE – international summer music festival with world-class stars, surrounded by the historical center of the city and beautiful parks, the biggest music event in Prague
DOUPĚ CLUB – tremendously designed, world-exclusive private music club and museum where one can create, play and remain hidden
SONO RECORDS DOUPĚ – one of the best recording studios with inspiring and relaxing space for creative ideas, with 2 Grammy Music Awards and more than 20 Anděl Music Awards (Czech Grammy)
GZ MEDIA – the largest manufacturer of vinyl records in the world, ready for the most demanding requirements
FOURCE ENTERTAINMENT – the concert agency working with top music producers and stars

GZmedia – LP Adele-30

Dagmar Pecková – Sono Records Doupě

Radiomuseum Doupě

Doupě Club

Within **MUSIC TOGETHER**, each provider is original. But it is our connection what brings the win-win situation! Thus, our service is complete and top-class. We are professionals. The international music scene is our home. We are not new on the market. We bring together the best experience we all have from past twenty years. We have succeeded most effectively and developed a creative environment for music business professionals.

"GZ Media is a Czech company that deals in world trade. We are proud to say that even a Czech company can be a world leader in its field. We have been producing records and covers for the world's greatest artists for 70 years and we are rightly proud of that. Although the vast majority of our products goes abroad, we operate in the Czech Republic and we are very happy to be part of the new project around the Doupě Club and the Metronome Festival, which aims to make Prague and its surroundings an important and unique place for music," says Michal Štěrba, the GZ Media director.

Both recording studios in **SONO RECORDS DOUPĚ** can offer every major recording and mixing format, analog or digital, reflecting the most recent changes in the recording industry. Clients may be confident that their exact technical requirements will be met down to the last detail. The studio is spacious enough to record a symphonic orchestra. Because of the long-term cooperation, the best sound and equipment is also available every year for **METRONOME PRAGUE** festival. We build a luxury conceptual music programme specialized on quality and comfort. This is not like having a concert in any sports hall around the world. This is a superb top-class performance on a big stage surrounded by thousands of fans, nature and historical city centre. **DOUPĚ CLUB** has several smaller indoor/outdoor stages and also a **RADIOMUSEUM**, all of them with a top-class sound system and very intimate atmosphere. Inspired by the 1920's jazz clubs and 1960's rock garages, Doupě club connects the best musicians all over the world to experiment freely and create new musical concepts here.

"It might seem that the Doupě Club is decorated with a collection of radios and turntables. It's not quite like that. We collect stories. Stories about the desire of inventors, about visions that have no boundaries. Stories that are hidden in every brand and in the fates of the owners of individual devices. We follow a thrilling century of sound and its secrets, which we enthusiastically tell musicians and their listeners about," adds Petr Chmela, the owner of the Doupě Club.

Artists and producers from all over the world now have a chance to come to the Czech Republic, experience a beautiful stay, relax, take advantage of great recording studios, perform in an exclusive private club with streaming and great sound, or on the main stage of an international festival and go back home with current recording already pressed in the vinyl record. That is something that has not been possible till now.

MUSIC TOGETHER allows all of this. We offer endless comprehensive service for music business.

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www.metronomeprague.cz | www.sonorecords.cz
www.gzmedia.com | www.fource.cz

INTERNATIONAL REFERENCES
METRONOME PRAGUE FESTIVAL CONCERTS – Sting, Iggy Pop, Morcheeba, The Chemical Brothers, Massive Attack, Nick Cave and The Bad Seeds, Kraftwerk, David Byrne, Liam Gallagher, Primal Scream, Kasabians, Young Fathers, John Cale, Underworld, Beck, and so on...
DOUPĚ CLUB CONCERTS – John Scofield, Julian Lage, Charlie Hunter, Mike Stern, Dennis Chambers, Dave Weckl, Herbie Hancock, Billy Cobham, Tommy Emanuel, Chris Jagger, and so on...
FOURCE ENTERTAINMENT AGENCY CONCERTS – Billie Eilish, Imagine Dragons, Shawn Mendes, The Smashing Pumpkins, The Lumineers, Twenty One Pilots, Oh Wonder, Jungle, Bonobo, Dido, Aurora, and so on...
GZ MEDIA TOP LP – Adele – 30, Elton John, Ozzy Osbourne, Metallica, Rolling Stones, Kiss, Pearl Jam, Diana Krall, and so on...
SONO RECORDS DOUPĚ RECORDING – David Bowie, Joss Stone, Nazareth, Gipsy Kings, Julian Lennon, Living Colour, Glen Hansard, The Levellers, Mike Stern, Limp Bizkit and many others

CAF – The Czech Association of Festivals brings together important festivals of live art across artistic disciplines: classical music, alternative music, jazz, world music, opera, dance and new circus.

Founded on 27 April 2015, the association's primary goal is to present and create valuable cultural projects. Its members exchange information, support each other and create joint promotional and artistic activities. The mission of the CAF is to unify the essential requirements in communicating with institutions (government, parliament, ministries, EU, regional and municipal administrations) and to promote the necessary legislative, systemic and economic changes that contribute to meeting these requirements. The CAF effectively communicates with professional organizations and the expert and general public.

www.czaf.cz

4+4 dny v pohybu

Four Days is a non-profit organization that organizes cultural and artistic events. The main activity of the organization is the international festival of contemporary art 4 + 4 days in motion, founded in 1996. It is currently one of the most important festivals of contemporary art in Central Europe. The dramaturgy of the international festival presents artists who confront their work in both classical and non-traditional theatrical space. Festival projects include all kinds of contemporary art; dance, theater, music projects, fine arts and multi-media. Within the festival and in individual projects Four Days presented more than 250 foreign art ensembles, initiated countless Czech premieres, site-specific projects, happenings, art installations, lectures, discussions, etc. The scope of production and dramaturgical activities of the organization is very wide. Since 2012, Four Days has also been the main curator of the open-air gallery Proluka and sculptural interventions in the courtyard of the largest hospital in the Czech Republic - FN MOTOL Four Days is a member of international IETM networks and since 2009 the organization is the Czech Republic's only representative IN SITU focused on the presentation of art in public space.

Blues Alive

Blues Alive was founded in 1996 in the House of Culture in Šumperk, and over the course of its existence, it has developed from a local one-day event to the current form of a three-day music marathon with worldwide prestige. Three basic dramaturgical lines run parallel through the history of Blues Alive. The first is led by an effort to introduce legends of the genre who have not played in the Czech Republic so far, such as James Cotton, Hubert Sumlin, Louisiana Red, Cephas & Wiggins or Bob Margolin. The second aims to capture the most contemporary developments in the blues genre, right at their peak. This has been the case with artists such as Kenny Wayne Shepherd, Jonny Lang, Warren Haynes, Shemekia Copeland, Fantastic Negrito, Mr. Sipp and many others. As for the third dramaturgical line, Blues Alive hasen't relinquished its search role and brings discoveries that stand at the beginning of a stellar career. For Czech budding musicians, as well as new talents from neighbouring countries such as Poland, Slovakia and Austria, the festival has Blues Aperitiv, a search competition with more than twenty years of tradition. Blues Alive has been awarded three times by the prestigious Polish music magazine Twój Blues. But the festival's biggest international success to date came in 2019, when it received the biggest award a non-musician can achieve in the United States: Keeping The Blues Alive Award.

Colours of Ostrava

Colours of Ostrava is a multi-genre international music festival organized annually in Ostrava since 2002. Since 2012, it has been held in the magnificent surroundings of Dolní Vítkovice – a re-cultivated industrial site that was formerly home to a steel mill, mines and an ironworks. It offers over 350 program points on 21 open and covered stages, including concerts, discussions, theatre performances, films, workshops and art activities. In 2015 and 2017, the festival made the shortlist of the Best Major Festivals at the European Festival Awards and won the Czech Superbrands award in 2015. In 2016, The Guardian ranked it among the top 10 European festivals. In the past, it has featured stars of world music such as Björk, Robert Plant, Norah Jones, Jamiroquai, Iggy Pop, The National, Imagine Dragons, Midnight Oil, Grace Jones, St. Vincent, Jamie Cullum and Bobby McFerrin. Colours of Ostrava also organizes a free musical showcase in the centre of Ostrava called Festival in the Streets, the Czech Music Crossroads conference, and the Meltingpot international discussion forum, which was first held in 2015.

Concentus Moraviae

Since its foundation in 1996, the Concentus Moraviae International Music Festival has established a firm place in the cultural calendar, becoming one of the most important classical music festivals in the Czech Republic. It offers listeners the opportunity to connect unique musical experiences with visits to inspirational sites in South Moravia, Vysočina and Lower Austria. Every June, almost 40 concerts of mostly classical music are held in the architecturally attractive areas of 20 cities. The festival is highly regarded for its unique curatorial programming concept, as each year it is prepared by a different dramaturg (for example Jiří Beneš, Aleš Březina, Barbara Maria Willi, Jelle Dierickx, Walter Labhart and Tully Potter), who tackle the chosen theme with extraordinary inventiveness and strong vision. Concentus Moraviae is a sought-after organizer among European musicians, as it initiates and supports new cooperation among Czech and international musicians, while also giving space to original crossover projects.
The official patron of the festival is the mezzo-soprano Magdalena Kožená.

JazzFestBrno

The JazzFestBrno international jazz festival was established in 2002. The original weekend music event grew into a multi-week cultural extravaganza that brings the best of what contemporary jazz has to offer to its fans travelling to Brno from across the country and abroad. Thanks to uncompromising and innovative dramaturgy, jazz is presented in all its diversity, not only as a genre with a deep tradition, but also as an ever-evolving platform for experimentation and fusion of all kinds of influences from the contemporary art world.

The festival cultivates the domestic jazz scene with the opportunity for direct comparison to the best in the world, as well as artistic opportunities for established bands and unique special projects. Fans are actively involved in festival events by participating in numerous jam sessions, club events and workshops. JazzFest's collaboration with both Czech jazz interpretation departments is presented in the spring festival section with a full-length student concert, and in the summer at the separate Jazz Courtyard mini-festival.

Folkové prázdniny

Folk Holidays is an eight-day multi-genre music festival held in a Renaissance chateau in the town of Náměšť nad Oslavou with specific thematic programming, exceptional singers and projects, and a rich accompanying program.
Folk Holidays is several festivals in one: the main music program, night concerts in extraordinary settings, a large festival of music, dance, art and textual works called Nest of the Muses, a mini-festival of folk musicians entitled Open Scene, professional colloquia on folk music and world music, debates with music publicists, music-themed exhibitions, and art-musical happenings.

The festival aims to introduce visitors to unique musicians from all over the world, who are often performing in the Czech Republic for the first time or have come here with a specific project. The festival has featured Glen Hansard, Majorstuen, Gjermund Larsen, Tim Eriksen, Hazmat Modine, Lucia Pulido, Eliza Carthy, Waterson:Carthy, Salsa Celtica, Lau, Muzsikasz, Tenores di Bitti "Mialinu Pira" and Harald Haugaard. Part of the festival includes short-term residency projects on specific topics or connections (Tři hlasy, Tři niněry, Struny nad Oslavou).

Letní Letná

For many years, the Letní Letná Festival has led the way to a new circus in the Czech Republic. Over that time, it has become an integral part of both the Czech and European cultural maps. From the very beginning, the festival has presented the new circus genre and its current trends, introducing top international ensembles to Czech audiences, while relentlessly supporting and helping to develop the local scene.
The program for families and children has always been an integral part of the festival. It has performances for kids, art and circus workshops, as well as other activities prepared for small, smaller and the smallest children, including "Letní Letňák" a summer camp where they can learn circus disciplines and create their own theatre performance.
While Letní Letná attracts a huge number of visitors every year, it has also succeeded in preserving a pleasant old-world summer circus atmosphere, unsullied by mass market or commercial interests.
The festival has become a meeting place not only for artists, experts and fans of new circus, but also for friends, acquaintances, families with children and people seeking active leisure activity.

Hudební festival Znojmo

The friendly summer atmosphere of the historical city combined with top performers and local wines makes the Znojmo Music Festival an unforgettable event. The festival focuses mainly on classical music, but also on dulcimer music, jazz and original crossover programs. Many projects are created directly for the festival and cannot be seen anywhere else.
The compact dramaturgy brings a wide range of concerts from chamber music through symphonic to open-air events. The highlight of the festival are its own opera productions, which the festival team prepare in a stylish interpretation together with the Czech Ensemble Baroque.

Established in 2005, the Znojmo Music Festival focuses on significant events in musical history, presenting works by well-known and lesser-known composers. The genre-rich dramaturgy is unified by the theme of the festival in the given year. The patron of the festival is violin virtuoso Pavel Šporcl, who is joined in Znojmo by top Czech and international musicians. The unconventional venues of Znojmo and its beautiful surroundings become a three-week musical experience for every visitor in July. A bonus are the wine tastings at each concert provided by regional winemakers. The festival originated in 2005 and since then has become one of the best in the field of classical music.

MHF Lípa Musica

The Lípa Musica International Music Festival, which began as a local festival in Česká Lípa in 2000 oriented around spiritual music, has grown over the years into an important musical and social event whose arrival is impatiently awaited at the start of every autumn. Currently, Lípa Musica is the biggest festival focused mainly on classical music in the Liberec Region and with overlap into the Ústí nad Labem Region and Saxony. During the festival's existence, over 350 concerts have been held in more than 30 Czech and seven German locations at which some 5,000 artists have performed, seen by more than 50,000 visitors.

The festival focuses on the presentation of classical music in selected interpretations by Czech and international artists, but also presents non-classical genres, dance, ballet and opera. An important line in the programming is Czech-German cooperation, for which the festival is logically predestined by its location, implemented not only by the presentation of German artists in Bohemia, but also by the holding of concerts in Saxony, where the festival is exported by prominent representatives of Czech music culture. At the same time, Lípa Musica actively supports the musical education and development of the youngest generations.

ČAF ČESKÁ ASOCIACE FESTIVALŮ

Moravian Autumn

The Moravian Autumn Festival is one of the largest cultural events in the Czech Republic with a long history. It was founded in 1966 when, after years of severe isolation, the activities of Brno organizers with international ambitions were awakened. The festival has gradually grown into a two-week event, which has been a biennial organized by the Brno Philharmonic since 2012. Based on dramaturgical originality and thematic unity, besides classical music, it provides considerable space for new and contemporary music, hosts first-rate Czech and world artists (LSO with Valery Gergiev, the Rotterdam Philharmonic with Cristian Măcelaru or the Czech Philharmonic with Jiří Bělohlávek, Colin Currie, Erkki-Sven Tüür, Michel van der Aa, etc.). Moravian Autumn is part of the Brno International Music Festival, which includes the progressive, several-day Exposition of New Music (founded in 1987) and the two-week Easter Festival of Spiritual Music (founded in 1991) held in Brno's cathedrals.

Respect

Respect, an international multi-genre music festival founded in 1998, is the only one in the Czech Republic to focus exclusively on the phenomenon of world music. It systematically introduces the public to non-European musical cultures, marginal styles of music from the European continent, and contemporary fusions. It pays no heed to seasonal trends, maintains a distinctive profile and introduces many visitors to music they have never heard before. The vast majority of the program is made up of international artists.

The festival is a year-round event held in Prague. The main program consists of a two-day open-air show, an accompanying program, additional club concerts, workshops, film screenings and more. Children's concerts are an integral part of the festival. The venues constantly change. Past venues include Prague Castle, the Rudolfinum, the Archa Theatre, Acropolis Palace, the Spanish Synagogue, Štvanice Island, the Prague Exhibition Grounds, Štvanice Villa and others. The festival is loosely connected to the year-round concert series Respect Plus.

Strings of Autumn

Strings of Autumn was founded in 1996 by curators of the Prague Castle music program Marek Vrabec and Martin Pechanec. Already in the early years, the festival attracted attention with its original program and exceptional concerts, such as the recital by Cecile Taylor or the Czech debut of Michael Nyman. Even now, at the beginning of the third decade of its existence, the festival fulfils its original mission, which is to provide unique artistic experiences and expand the audience's horizons. Each festival concert is a one-of-a-kind event.

The New York Times has called the festival "one of the most innovative music projects in Prague". Strings of Autumn also initiates new projects and productions, such as the concert performance of Zdeněk Liška's music to the film Markéta Lazarová. The festival also encourages artistic meetings that can prove crucial, such as the reunion of Gregory Porter with Czech Hammond organist Ondřej Pivec, which led to the joint recording of a Grammy award-winning album.

St. Wenceslas Music Festival

The largest international festival of spiritual music in the Czech Republic, whose main aim is to present informed interpretations of ancient and spiritual music in places of worship. Since its foundation in 2003, it has been running every September not only in Ostrava but also in many cathedrals in the Moravian-Silesian Region. The exceptional festival dramaturgy is guided by three main lines: monumental vocal-instrumental concerts, programs dedicated to the implementation of so-called old artificial music, and chamber and solo projects, which are supplemented each year by non-traditional or crossover projects. The accompanying program is extended to include films, workshops, discussions and exhibitions. In the spirit of its motto "A Concert in Church is an Experience", it presents European concerts, both domestic and international. The St. Wenceslas Music Festival has become a Czech phenomenon that not only presents a prestigious program in places of worship, but also this year presents the Musical Excursions project, which aims to open acoustically and historically interesting cultural and technical monuments in the Moravian-Silesian Region through musical productions. To that end, the St. Wenceslas Music Festival has extended the genre offer to include alternative music, jazz and swing.

TANEC PRAHA

The International Festival of Contemporary Dance and Movement Theatre is held every June in Prague and around 20 cities and towns in the Czech Republic. Since 1989, it has been the culmination of the dance season on the cultural map of the Czech Republic. The main mission of the festival is to enable the widest public to follow progressive trends and outstanding works of dance and theatre in response to changing conditions and new impulses. Quality, variety, contemporaneity, outreach into other genres and space for experiment are the most important elements when shaping the festival program.

Local artists are significantly represented in the program. The festival presents them as a priority in the regions, while also assuming the role of co-producer. It guarantees and supports the creation of new works by Czech artists and their subsequent presentation during the festival and in most cases afterwards as well. The extensive accompanying program also addresses the widest possible audience through workshops, discussions, screenings and more. Great public and media interest have given the festival a high profile abroad, where it has become a laureate of the EFFE (Europe for Festivals, Festivals for Europe).

United Islands of Prague

The United Islands of Prague Festival is the largest multi-genre festival in the city, one that brings to life the central part of our metropolis. This international open-air music festival was established in 2004. The first year was held on the weekend when the Czech Republic joined the European Union. From the beginning, the main program focuses on introducing the best discoveries of the local and world music scene. The festival enriches the Czech cultural scene with new musical impulses.

It draws attention to what is happening on the world stage. It has been introducing numerous audiences to young Czech bands that have the potential to become leading concert projects in the future, beyond the borders of the Czech Republic. It contributes to the diversity of the Czech scene and its contact with the world. The festival does not charge admission, provides the audience with a rich accompanying cultural program, and is therefore accessible to the general public.

ČAF ČESKÁ ASOCIACE FESTIVALŮ

Pavel Šťastný DESIGN

Plechárna FACTORY

Artist & Design Agency

Pavel Šťastný

Publisher
of the Czech Strategic
Technologies catalog

Czech conceptual artist,
curator and visionary

He is dedicated to international multicultural collaborations.
He creates logos, design, art projects, and he is also a painter.

He came up with the idea to create a catalogue of Czech Strategic Technologies, and he implemented it with his agency Plechárna Design Factory. This multidisciplinary catalogue was created to support and promote Czech ideas, inventions and technologies in the world.

He is the author of the OF – Občanské fórum (Civic Forum) logo, which became a symbol of the Velvet Revolution in 1989.

He is the creator of many other logos: Czech Chamber of Commerce, Seznam, Datart, Banánové rybičky, SAWER, the logo of the Czech pavilion at the Expo in Dubai, among others.

His works have been exhibited in many museums and galleries around the world, including the Victoria and Albert Museum in London and the Cooper Hewitt, Smithsonian Design Museum in New York. He is very involved with the theme of freedom in his cultural projects.

To mark the 30th anniversary of the Czech Republic's freedom in 2019, he created a new face for the Lennon Wall in Prague. In one day, 30 artists from 10 countries worked together to create a work on the theme of freedom and love. The painting was created as part of his international project Meet Art – a joint collaboration of artists from several countries on a single work of art.

At the beginning of the first wave of Covid, he put a large facemask on John Lennon's portrait, attracting media attention and becoming the largest and most famous Czech facemask in the world. It was also the inspiration for his international touring exhibition Helpful Art in Covid, which maps over 2,000 works of art from 90 countries. This cultural project represents a new type of art in which artists from all over the world spontaneously created works with a unique theme and mission: to pay tribute to health workers and all those who helped during the pandemic.

He is the founder and co-organiser of the first Czech Farmers' Market in Prague 6 and the Festival of Embassies Food & Culture, which has been attended by 55 countries from all over the world. He has been collecting forks, a symbol of gastronomy, and his collection now numbers several thousand pieces.

Pavel Šťastný designed the "**Lion Tail Cup**" for the mayor of Prague, which has been awarded to personalities such as Queen Elizabeth II, Prince Charles, Bill Clinton, Jacques Chirac, the 14th Dalai Lama, Michael Jackson, the Rolling Stones and others.

Logotypes
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Art Projects ...

www.pavel-stastny.cz **www.plecharna.cz**

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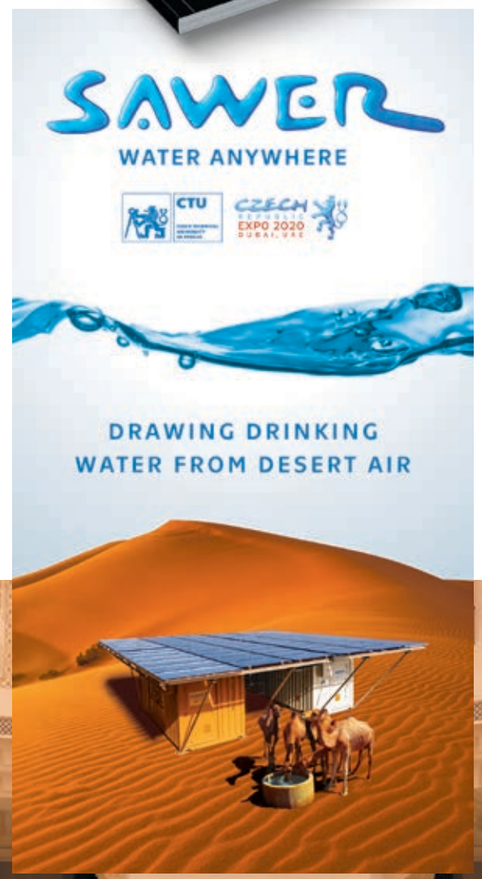

C2ECH
STRATEGIC
TECHNOLOGIES
The
Future
is in our hands

Content

CZECH
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