

Aerospace in the Czech Republic



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Czech
Republic
**The Country
For The Future**

CzechInvest

CzechInvest plays a key role in the area of supporting business and investments in its comprehensive form. The agency's unique combination of regional, central and international operations ensures the integrity of services and the ability to connect global trends with regional conditions in the Czech Republic. One of CzechInvest's main objectives is transformation of the Czech Republic into an innovation leader of Europe. Established in 1992, CzechInvest is a state contributory organisation subordinate to the Ministry of Industry and Trade of the Czech Republic.

CzechInvest's activities:

- + development of Czech technology firms' potential
- + support for "smart" investments
- + motivation of foreign investors already established in the Czech Republic toward sophisticated complementary investments
- + development and cultivation of the national start-up and spin-off environment
- + assistance for Czech firms when entering foreign markets
- + promotion of the Czech economy, technologies and R&D abroad
- + cultivation of the business and investment environment in all regions of the Czech Republic
- + linking of partners from the business and R&D spheres
- + use of trends in progressive sectors of the global economy



Czech Aerospace at a Glance

The Czech Republic has a long aviation tradition dating from the early 20th century and has always had a strong presence. Over the years the country has made a name for itself based on outstanding quality, reliability and innovation in the industry. From basic production to final aircraft assembly and cutting-edge R&D programmes, the local aerospace industry has progressed significantly and simply cannot be overlooked.

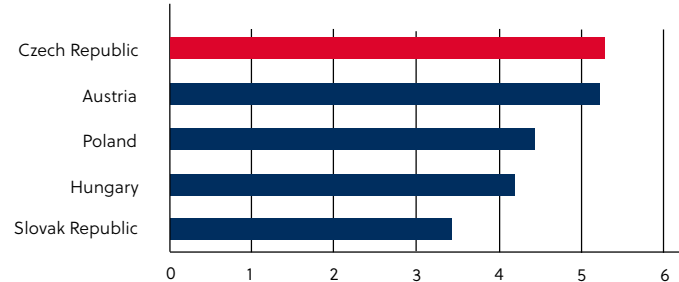
- + a century-long history in manufacturing excellence
- + one of the largest Ultralight and Light Sport Aircrafts producers in the World
- + one of the few countries in the world constructing the aircraft „in house“
- + world-class ability to develop aircraft engines
- + well-developed supplier base
- + aerostructure programs with global market leaders
- + world class aerospace R&D centers
- + modern airport infrastructure and MRO facilities
- + Czech Republic is an ESA member state and home to GNSS Agency



Airport Infrastructure

The Czech Republic operates with 93 aerodromes in total, of which 19 has international status. Five main international airports welcomed more than 18 million travelers in 2019. The quality of air transport infrastructure is the highest among V4 countries. The Czech Republic also manages 63 heliports.

Quality of Air Transport Infrastructure



Source: fDi Benchmark from the Financial Times Ltd 2019

International Airports and MRO

MRO Facilities

Prague



Ostrava



● Main international airports with IFR/VFR and scheduled traffic

Source: Air Navigation Services of the Czech Republic 2019

Milestones of the Czech Aerospace

1919

Aero Vodochody, major aircraft manufacturer established



1923

Czechoslovak State Airlines founded, initially operating the Prague-Bratislava flight



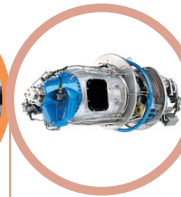
1969

L-410 commuter turboprop aircraft maiden flight



1997

L-159 advanced light combat aircraft maiden flight



2019

New generation of jet trainer based on the historical heritage of the reliable L-39 Albatros



2011

New H80 engine certification and entry into service by GE Aviation Czech

Source: CzechInvest, 2019

Aerospace Professional Groups and Associations



Main reasons to invest in Czech Republic

The Czech aerospace industry has undoubtedly advanced to the level of global competitiveness in terms of quality and innovation while maintaining some of the advantages of an emerging markets for investors. Companies such as Honeywell, GE Aviation, Safran and others have taken advantage of that while expanding their businesses. Join the world's elite and invest in the Czech Republic!



- + **more than 120 aerospace-oriented companies**
- + **more than 21 000 professionals within the field**

- + **one of the 7 countries in the world with the capabilities to develop and manufacture aircraft engines**

- + well developed supplier base
- + skilled labor force
- + industrial cooperation between companies, universities, R&D centers and high schools
- + transparent system of investment incentives
- + EU and NATO memberships
- + safe investment environment

Source: CzechInvest 2019



Sector Database of Suppliers on the Czech market
available free of charge at suppliers.czechinvest.org



Foreign Investors and Key Players in Aerospace

1. Prague

Aero Vodochody
ATG
Bell Helicopter
Czech Airlines Technics
GE Aviation Czech
Honeywell
Latecoere
LOM Praha
MESIT aerotrade
VZLÚ

2. Brno

Frenchtech Aerospace
Honeywell
Unis

3. Pilsen

Precision Castparts Corp.
Safran Cabin CZ
Workpress Aviation

4. Pardubice

ELDIS Pardubice
ERA
RETIA

5. Ostrava

International Aerospace Coatings
JOB AIR Technic

6. Olomouc

Honeywell
SEKO Aerospace

7. Kunovice

5M
Aircraft Industries
Czech Sport Aircraft
Evektor

	Company	Location
8	Aerotech Czech	Klatovy
9	Alucast	Tupesy
10	Aveo Engineering Group	Drásov
11	BD SENSORS	Buchlovice
12	CHARVÁT AXL	Semily
13	Jihlavan	Jihlava
14	Jihostroj	Velešín
15	PBS Velká Bíteš	Velká Bíteš
16	Quittner & Schimek	Nová Paka
17	Ray Service	Staré Město
18	Startech	Říčany u Brna
19	ZLIN Aircraft	Otrokovice

Main Foreign Investors

GE Aviation
Czech

Bell Helicopter

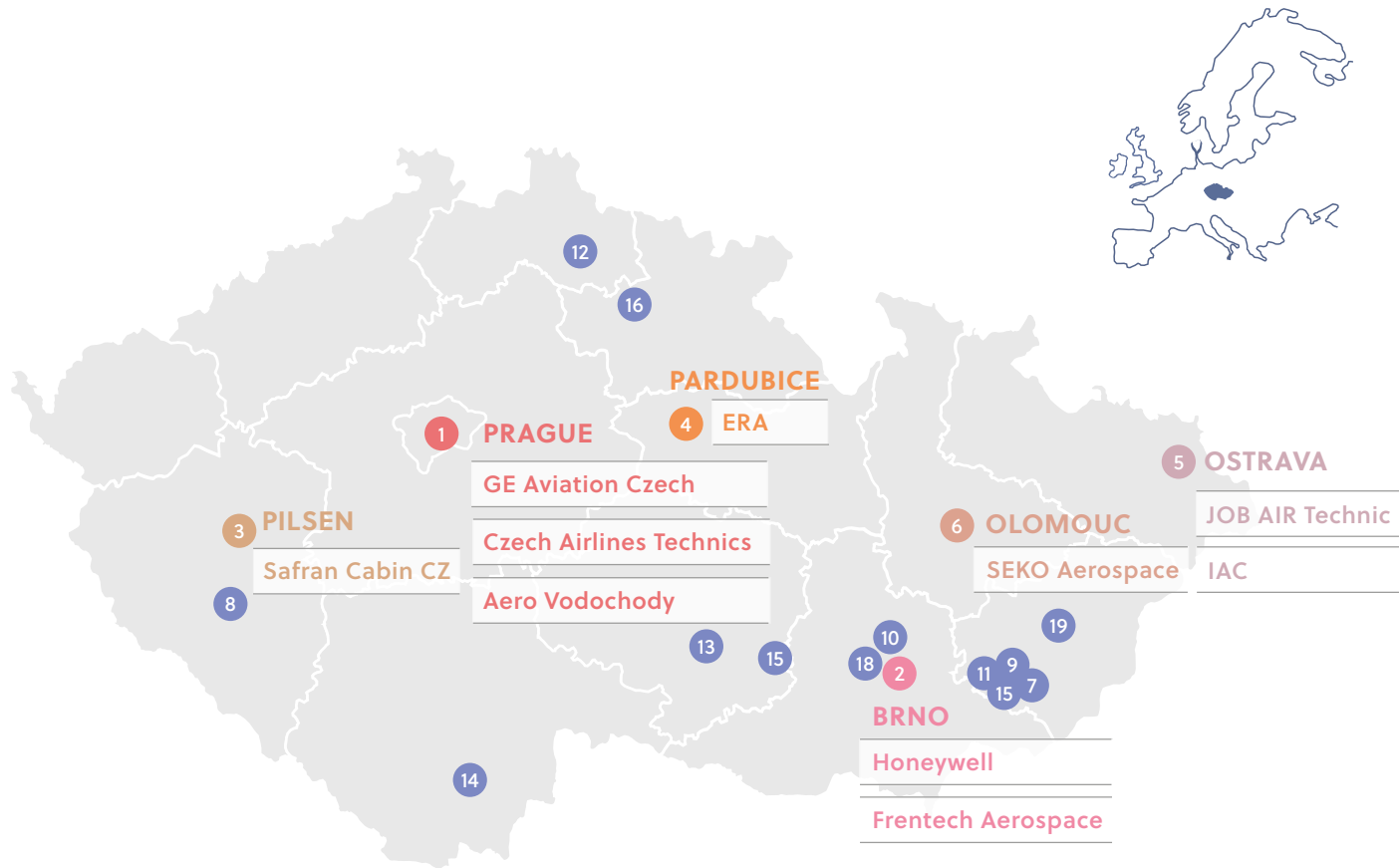
Honeywell

Latecoere
Czech Republic

Precision
Castparts CZ

Aerotech Czech

Safran



Investment Success Stories



GE Aviation has been successfully developing and manufacturing aircraft engines in the Czech Republic since it acquired certain assets of the local company Walter in June 2008. Since the acquisition, GE Aviation has already certified three new engine models and made significant investments in its Czech business. The company's engineering team has already more than doubled its size and is still expected to grow as new development projects are coming down the pike. The Czech operation has become a turboprop center of excellence for GE Aviation.



Bell Helicopter's customization and delivery center in Prague offers modifications, upgrades, avionics, and special mission packages for all current Bell Helicopter models. The facility offers customization, delivery and maintenance of Bell Helicopter aircraft and offers a wide range of aftermarket Citation Jet service offerings for Cessna. The facility in Prague serves as an anchor for Bell Helicopter in the region and is a key part of the strategy to provide regional sales, customization, delivery, training and aftermarket support to the European customers.



The Czech Republic is the cornerstone of Honeywell's global engineering strategy in Europe.

The Prague Laboratory opened in 1993 and the Brno Design Center followed ten years later. In 2006, the Brno Design Center was integrated into Honeywell Technology Solutions' international network of research, development and engineering centers. Honeywell also has two manufacturing sites in the Czech Republic: Aerospace in Olomouc and Environmental and Combustion Controls in Brno. More than 4,000 professionals work for Honeywell in the Czech Republic.

Innovation & Education

Universities Specialized in Aerospace



Brno University of Technology

One of the Czech's leading research and teaching institutions offers study programmes such as Professional pilot, Aircraft Design or Aeronautical Traffic.



University of Defence

UoD plays a vital role in providing military professional personnel university-level education through the specializations ranging from the aircraft technology to Air Traffic Control.



Czech Technical University in Prague

One of the biggest and oldest technical universities in Europe. It provides education in various programmes (Aerospace Engineering, Aerospace Systems, Air Transport) across several faculties (Mechanical Engineering, Electrical Engineering, Transportation Sciences)



Technical University of Ostrava

Faculty of Mechanical Engineering provides expert knowledge within Aircraft Operation Technology, Aircraft Maintenance Technology and Air Transport Technology programs

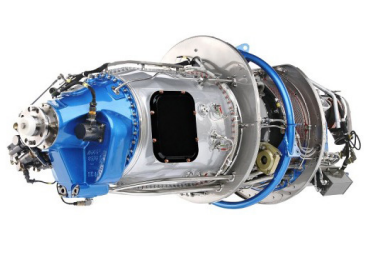


High Schools Specialized in Aerospace

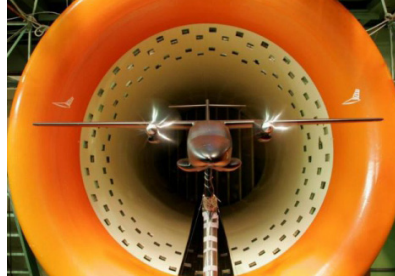
Significant and ever-growing position of the Czech Aerospace industry also draws on the vast portfolio of high schools that throughout their aerospace specialization compose necessary foundation of the contemporary success. Czech Republic thus might rely on the large group of professionals that use their experience in the field of MRO, airport technologies or prepare for the career in Air Navigation Services. The crucial link between the schools and prominent Czech aerospace companies also undoubtedly enhance the overall status of the industry.



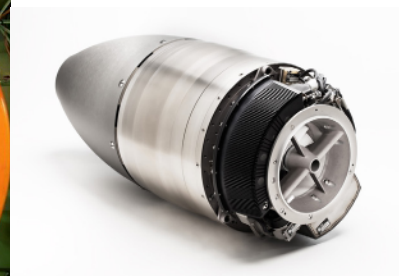
Evektor's SportStar EPOS airplane represents a concept of environmental friendly electric sport aircraft of the future.



GE H80 Turboprop engine is the first engine in the history of GE Aviation that has been designed and manufactured outside the US.



Wind tunnel—the testing facility is an essential part of development procedures at the Aeronautical Research and Test Institute.



TJ 100—small turbojet engine for light air vehicles. In the category of small turbojet engines, TJ100 with thrust up to 1250 N ranks among the best in the world.

The European Global Navigation Satellite System Agency is the first EU regulatory body located in the Czech Republic.

The state-of-the-art testing laboratory of the turboprop engines located in the Hradec Kralove. The facility originates from the cooperation between GE Aviation Czech and Czech Technical University.

Unique ability of self-sufficiency within the development and production of the **jet trainers, commuters or LSA category.**

Booming experience with development and production of the **UAVs** with both the civil, rescue and government application.



Research & Development

Nowadays the aerospace industry is largely based on sharing knowledge and experience with partners at the national and international levels. Unique research teams work within the industry and academia. Public-private cooperation has been a key activity in the R&D area, thanks to which specialised university centres have become involved in high-value-added projects. Knowledge and innovation are among the most important factors to remain competitive on the global level and to be able to advance further.



Czech Aerospace Research Centre

National centre for R&D and testing in aeronautics and space industry.



Institute of Aerospace Engineering

A part of Brno University of Technology, institute provides both the education in programmes and constituting a prominent R&D centre.

Honeywell

Honeywell Technology Solutions

R&D centre for comprehensive solutions in aerospace, automation and control systems.

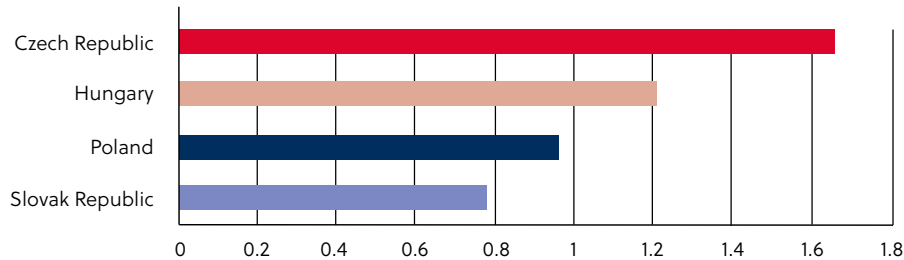


GE Aviation Czech

First GE's R&D centre out of the USA for new Advanced Turboprop engines.



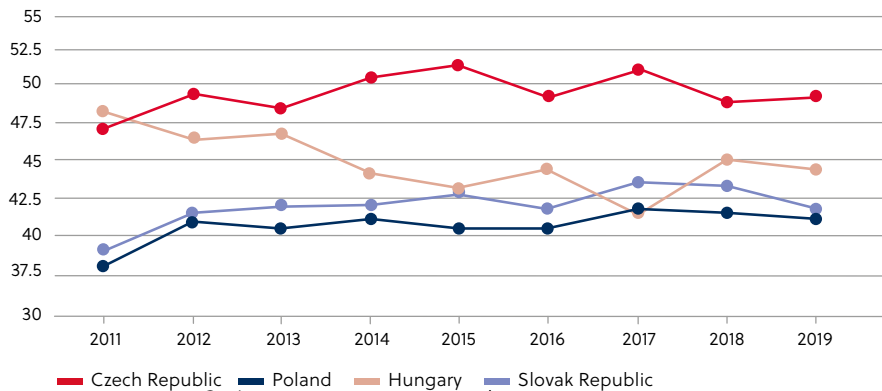
Research and Development Intensity



Research and development expenditure as a percentage of GDP, V4 group

Source: fDi Benchmark from the Financial Times Ltd 2019

Global Innovation Index (2011 - 2019)



The Index rates a countries innovative capacity, it measures 85 data points, going beyond the traditional measures of innovation, V4 group

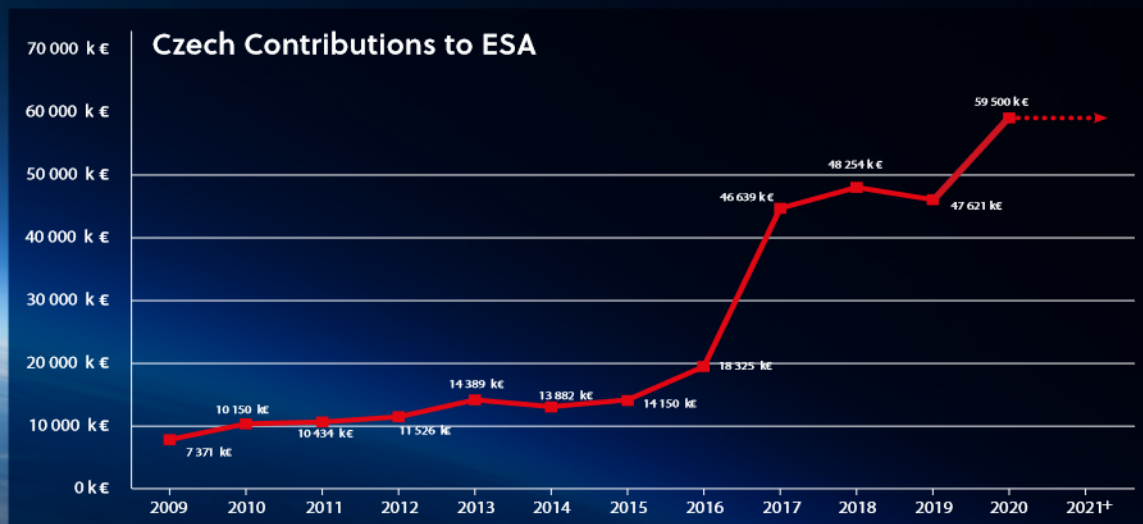
Source: fDi Benchmark from the Financial Times Ltd 2019

The National Space Plan 2020–2025



The National Space Plan 2020 is a strategy of the Czech Republic for the development of capacities and capabilities of its industry and academia in the field of space activities. The aim is to ensure competitiveness and maximize the return on public investment in space activities and related areas. For this purpose, the Czech Republic managed to allocate an additional CZK 275 million (10.9 million of euros) a year to strengthen the Czech Republic's participation in ESA's programs (in total 59 million of euros).

Czech Republic being active member of the European Space Agency (ESA) since 2008, ESA programs are the main instrument for the development of the Czech space industry and scientific excellence in space science. Space activities are all state, industrial, and scientific activities that aim to exploit the opportunities that space offers.



Space Industry

The Czech Republic recognizes space as a strategic element of national policy and has effective tools to implement it. Czech companies have a sustained presence in the supply chain of European space industry.



European Space Agency

Space activities of the Czech Republic

- + over 350 concluded agreements with ESA
- + 50 companies working with ESA
- + 23 startups incubated in ESA BIC
- + 23 universities and R&D institutions
- + 23 satellites and probes with Czech participation
- + 3 launch vehicles with Czech participation
- + 2 Czech satellites in the last 10 years
- + 1 ESA BIC (Prague and Brno)
- + 1 ESA Technology Transfer Broker
- + 1 Space Education Resource Office (ESERO)
- + 1 Czech Space Alliance
- + 59 million euros per year

Since 2011 the Ministry of Transport of the Czech Republic is the coordinator of all space activities in the Czech Republic



Czech Republic
Ministry of Transport

ESA

The Czech Republic has been an active member of the European Space Agency (ESA) since 2008 and today the ESA represents the main opportunities in Czech space activities in terms of maximising benefits to society as a whole. Accession of the Czech Republic to ESA has been an essential stimulus for change in approaching space activities, including the need to develop the National Space Plan.

GSA

Since 2012, the European Global Navigation Satellite Systems Agency (GSA) has established its headquarters in Prague. GSA is responsible for Galileo navigation system and European Geostationary Navigation Overlay Service (EGNOS). It opens new opportunities for the Czech companies and their partners to encourage them to exert greater effort in research and technological innovation in order to stay ahead. Being the heart of Europe's navigation, the EU Agency for the Space Program (EUSPA) will open in Prague in 2021, expanding the current GNSS Agency. Among its responsibilities will be managing responsibilities for Copernicus or prepare the European Union Governmental Satellite Communications (GOVSATCOM) program.

ESA BIC Prague

The ESA BIC Business Incubator supports young companies that are transferring space technologies back to Earth or developing new technologies into space. The ESA incubator compiles a variety of expertise and gives space ideas a tailored solution by helping their business and technology development. ESA BIC Prague was founded in 2016, and two years later, ESA BIC Brno joined in. Among the supported projects are stratospheric stations, luxury light bicycles from cosmic materials, CubeSat satellites, drones, algorithms for calculation of uncertainty propagation, diagnostic technologies processing sound, and X-ray to verify the authenticity of artworks. These all projects combine space and business ideas, use space patents, navigation systems, or remote sensing. They create technology that helps us in our daily lives.

ESA Technology Transfer Broker

Managed by The Technology Centre of the Czech Academy of Sciences, the ESA Technology Transfer Broker is responsible for technology transfer between ESA and private sector and thus seeks to increase the amount of technology and knowledge transfers from space to non-space industry. Technology centre has been doing this service since October 2015 and the Czech Republic is therefore involved in a significant network of ESA Technology Transfer Network.

Foreign Investors and Key Players

1. Prague

CGI IT Czech Republic
Czech Aerospace Research Centre – VZLU
esc Aerospace
GISAT
Honeywell
Huld
SPACEKNOW

2. Brno

Frentech Aerospace
S.A.B. Aerospace
G.L. Electronic
L.K. Engineering

Company		Location
3	5M	Kunovice
4	ATC Space	Klatovy
5	BD Sensors	Buchlovice
6	Rigaku Innovative Technologies Europe	Dolní Břežany
7	Sobriety	Kuřim
8	Toseda	Pardubice





Czech Space Alliance

Established in 2006, The Czech Space Alliance (CSA) is an industrial association of, and for, the Czech space industry, with proven skills and track record in aerospace business and with broad international client base.



Czech Space Office

Czech Space Office is an organization that since its inception in 2003 is seeking to develop space activities in the Czech Republic. The main aim is to provide the largest and most effective involvement of Czech research, development and industrial institutions in international space projects as well as the consulting, advisory and networking services in space.

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