

*Aero* | VODOCHODY

# Czech Aerospace industrial setup

**BRNO**  
**4<sup>th</sup> December 2018**

# The aerospace world scenario

In spite of these economically difficult times and fierce international competition, Aerospace Industry is one of the world's sustained growth industries. We can call it a timeless industry. In the global society people are increasingly relying on air transportation to cross geographical boundaries at greater and greater speeds. And aviation technology continues to evolve to meet the growing demand. During the past three decades, commercial aviation grew at an average sustained rate of 7 percent a year in revenue/passenger/miles, and it is forecast to continue growing at an annual rate of 5 percent for the next 20 years.

In the defense compartment the forecast is for a growth at an average of 3% in the next decade due to international instabilities and uncertainty that are characterizing the present geopolitical scenario.

The lead in cost-competitive technology will be crucial. That includes products, manufacturing, and services. Aerospace Industry will need to seek new ways to work smarter, more productively, and with greater speed.

Part of this improvement will come from smarter design, better integrated manufacturing, improved process development, advances in manufacturing technology, better use of equipment, better factories, better systems, better quality control.

# The cost and time challenge

- We are grossly mistaken if we believe that profits on a sale are created in marketing.
- Profits are created when design, engineering, and manufacturing work together to create and execute cost-competitive technologies.
- The challenge is to make better quality products at the lowest possible cost and to deliver the best value to the customer with improved speed and quality.
- The resultant products must anticipate the changing dynamics of the marketplace and give a company its edge

# Czech Republic scenario

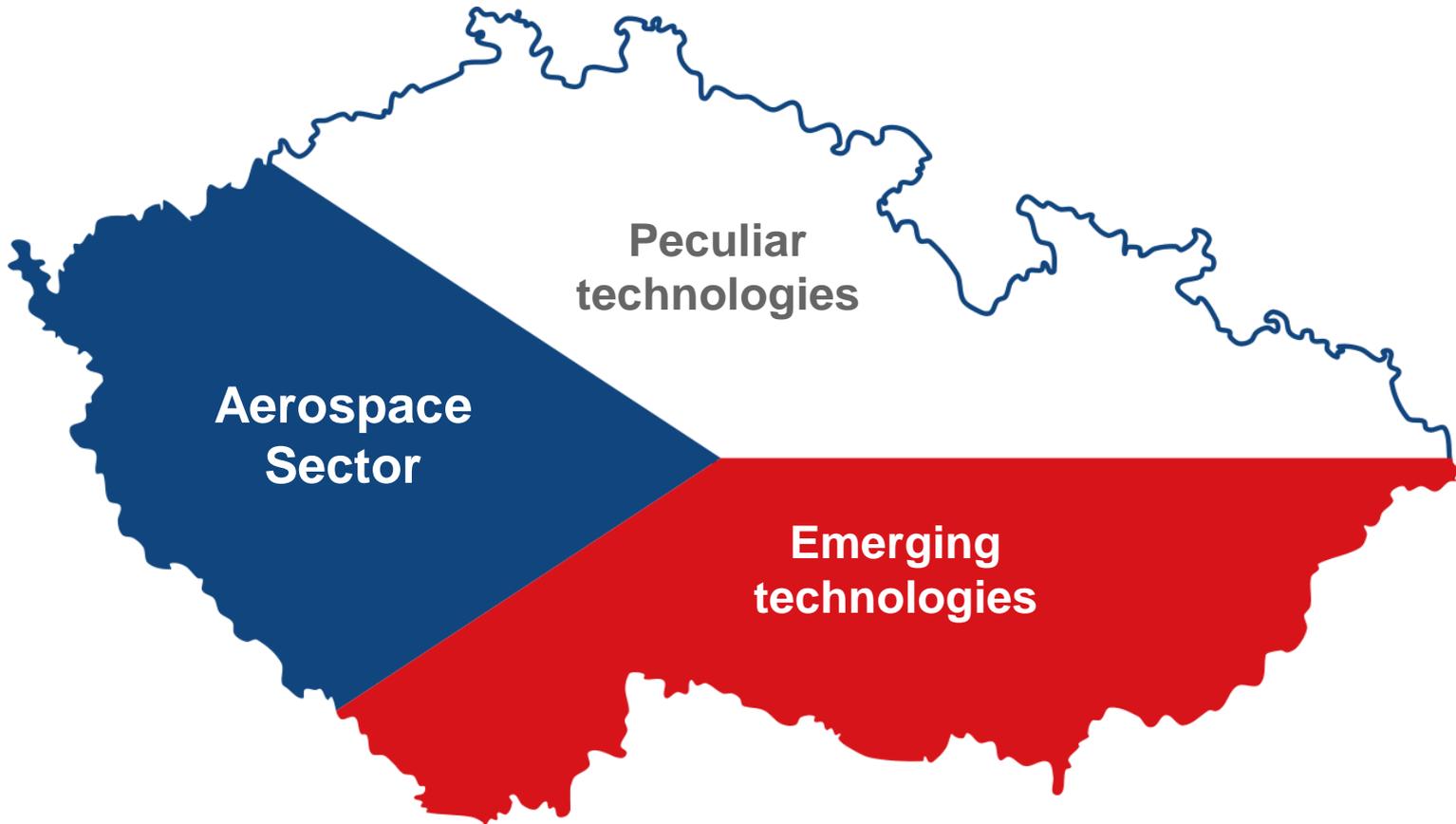
- In the last few years Aerospace Sector in Czech Republic has witnesses a stepped increase in terms of interest and capacity to generate revenues for the Country



**Czech Aerospace Industry footprint**

- if we look at the number of companies operating in this Sector and considering the relative small dimension of CR, we can affirm that Aerospace is a very stimulating environment for Czech industry.

# The future industrial challenge



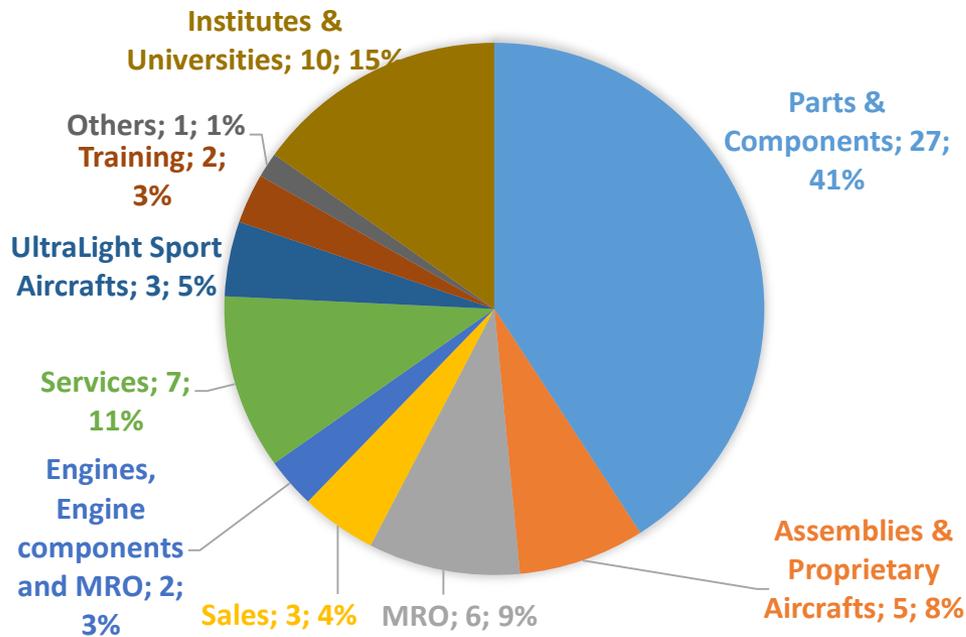
# Aerospace Peculiar Technologies

## Czech Aerospace companies distribution

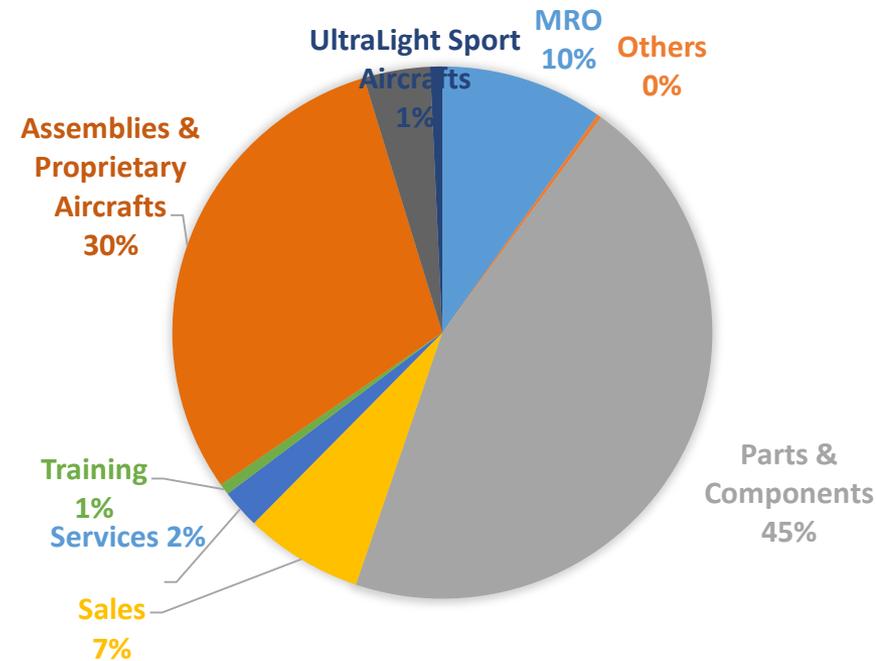
- Aerospace industry in Czech Republic is very fragmented

- Represented in approximately 70 companies and institutes

Distribution by quantity



Distribution by Sales



# Aerospace peculiar technologies

## WHAT TO DO

- Reorganize and rationalize all the capacities and capabilities of the Czech aerospace cluster
- Invest in digital manufacturing (3D printing technologies)
- Invest in other emerging manufacturing technologies
- Invest in Industry 4.0
- Invest in new composite materials technologies
- Promote international partnerships
- Enter competition on all international markets



**HIGHER RISKS = HIGHER OPPORTUNITIES**

- ČR has a remarkable heritage in Manufacturing as well as in Innovation. The Country is well known abroad to have qualified and skilled people, ingenuity and creativity
- Many interesting initiatives are currently ongoing in the Country, involving the usage of Emerging Technologies that are creating big disruptions in traditional industries like automotive or constructions
- What we are observing in ČR is that the required contamination between the Aerospace industry and these Emerging Technologies does not seems to happen.
- This misalignment will bring, in the future, to a loss in competitiveness in both Sectors

## *New technologies portfolio*



**Big Data**



**Cyber Security**



**Internet of Things**



**Digitization**



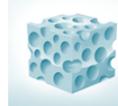
**Additive Manufacturing**



**Augmented / Virtual Reality**



**Blockchain**



**Smart Materials**



**Robotics**



**Artificial Intelligence**

# AERO Vodochody approach

- AERO Vodochody has decided to invest in some emerging technologies that seem to be the most promising ones in enriching its offering on the reference market

## AERO SCOPE

- ✓ Improve Aero technological position on the market in terms of innovation and emerging technologies
- ✓ Identify emerging technologies with potential promising applications and with a long term potential disruptive impact
- ✓ Strengthen product positioning gaining technological competitive advantage vs competitors

## AERO APPROACH

- ✓ Develop a technological road map targeting some initial results to be applicable to A/C entering to service in 2020
- ✓ Target initial investments to selected Emerging Technologies with direct application to aerospace
- ✓ Partner with other companies, start up and university to contaminate aerospace activities with emerging technologies to be applied on AERO products



**Augmented / Virtual Reality**



**Artificial Intelligence**



**Additive Manufacturing**

## Final considerations

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- The future is opportunity, but it is also challenge.
- Sustained economic growth for Czech aerospace industry will come about only through a renewed national interest and willingness to invest in aviation technology.
- As a country, we need continued investment in resources that push technology as well as a new cooperative spirit between industry, government, and universities in order to combine peculiar Aerospace technologies with Emerging Technologies.
- This will give us to possibility to better support our national aerospace industry and to access all remunerative aerospace international markets.
- We need an initiative that makes the aerospace industry a national priority.
- Finally, we need the young generation to be engaged by the vision and excitement that this industry holds for their future.