

## Top 10 Aerospace Manufacturing Companies in Europe - 2020

**W**ith new technologies including artificial intelligence, robotics/autonomous systems, additive manufacturing, augmented and virtual reality (AR/VR), data analytics, and sensor technologies taking centre stage, the aerospace industry will see an increased push toward the adoption of digital innovation.

Data analytics has emerged as the most essential ‘digital’ solution for 2020 for the end-user community as it has a proven use case, relatively low implementation costs, and the amount of data being generated by the industry is overwhelming. Other capital-intensive solutions such as AR/VR and AI will require more time to scale as the use cases and technologies continue to develop and mature. We will see higher growth in the digital domain as there is less risk involved in adoption.

Additive manufacturing is another trend flying high through the aerospace industry. The engineers have realised that additive manufacturing — coupled with topology optimisation — offers

more to the aerospace industry than just lighter parts.

Advances in material science have shown huge benefits for aircraft manufacturers. New materials like carbon nanotubes and graphene are assisting in making aeroplane wings more efficient by reducing weight and fuel consumption.

During the R&D phase of any product, its production is usually the most expensive area. There have been several ways that the industry has been exploring to reduce this, with 3D printing emerging as one of the most common.

This edition of Manufacturing Technology Insights features companies that are at the forefront of offering aerospace manufacturing solutions and services like Comi, Copas, Diab, and Cefival, among others. Manufacturing Technology Insights’ editorial board has assessed and shortlisted some of the most prominent companies in the industry that solve aerospace manufacturing challenges by implementing the current technological trends in the space. We present to you – “Top 10 Aerospace Manufacturing Companies in Europe – 2020”.



**Company:**  
TURBOMECHANICA

**Description:**  
Offers high-quality components and repairs for the aeronautical industry and for other high technological areas, with a dynamic attitude and focus on innovation

**Key Person:**  
Radu Viehmann,  
President and CEO

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[turbomechanica.ro](http://turbomechanica.ro)

# TURBOMECANICA

## A Continuous Improvement Approach to Mitigating Production Challenges

Over the horizon, the global aerospace and defence business landscape is unlocking new opportunities and brighter prospects in the wake of rapid growth in every manufacturing sub-sector. Beneath the surface, however, this massive increase in demand also presents a fair share of challenges for manufacturers in this industry. Amidst this growth, achieving the right level of operational excellence to support production growth, while also maintaining quality and keeping costs under control, is proving to be a mighty tall order.

This is where TURBOMECANICA is in a class by itself. As a supplier of components and repair services for the aeronautical industry and other high-tech areas, TURBOMECANICA is keeping pace with the rapid growth in the industry to deliver quality products, enable the efficient use of production capabilities and also present the capability to operate under flexible needs. With a vision to embrace change, strategic planning, and investing in the future, TURBOMECANICA is all set to reach stellar heights in 2020. The company is currently working towards receiving the EASA Part 145 certification and expanding its MRO activities in the civil aviation market by the end of the year.

In an interview with Manufacturing Technology Insights, Radu Viehmann, President and CEO of TURBOMECANICA, touches upon his company's innovative product line, vast industrial expertise, and a lot more.

**With the rapid growth in the aerospace and defence industry, what are the new initiatives TURBOMECANICA is embarking on? How does your company plan to address the challenges in the industry?**

From a production point of view, manufacturers are tapping into the challenging opportunity to blend the MRO activity with the component supplier activity in terms of resource planning and lead-time. To that end, 2020 marks important events, such as signing the certification agreement for the civil engine license and the start of the investments needed to be recognised as a Civil Engine MRO station. Growing the business in the MRO field will not determine a lack of focus on our mission as a component supplier; we will continue what we started in 2019 and expand some machining capacities critical to the demand increase forecasted by our international customers.

We are taking a continuous improvement approach to mitigate production challenges pertaining to technical design and cost reduction. Besides, to overcome the struggle of finding and developing skills, we have partnered with the Aerospace Engineering Faculty of the Bucharest Polytechnic University and established classes under the dual education system for recruiting aviation mechanics after graduating the aviation industrial high-school—Henri Coandă Bucharest. Furthermore, in 2019, TURBOMECANICA has entered into a cooperation agreement with the National Authority for Professional Education, authority which is under the direct coordination of the Prime Minister of Romania, with the aim of promoting and developing the dual system of professional education in Romania.



**Please walk us through the component supplier and maintenance services you offer to your clients.**

Located on a 41.000 square meters of industrial platform in Bucharest, TURBOMECANICA is the only national manufacturer and provider of MRO services for the Romanian Ministry of Defence, Secret Services, Navy, with regards to engine and helicopter assemblies, including gearbox (main, intermediate, tail), main rotor head, and transmission shafts. We accommodate in our platform two engine test benches and three gearbox test benches, an assembly/disassembly shop, two machining shop-floors, special processes for heat treatment and chemical processes, conformity control, chemical & metallurgical laboratories, NDT and administrative area.

TURBOMECANICA is also the only company offering MRO services to the engine and dynamic assemblies of the Romanian Helicopter PUMA SA 330 and IAR 99 Șoim trainer fleet. Internationally, for almost 20 years, TURBOMECANICA has been a reliable supplier for Leonardo Helicopters, delivering them with a completely in-house manufactured and tested Tail Gear Box under EASA Parts 21G Certification and main gearbox components like spur gears, bevel gears, disks, shafts, couplings, spinners, gearboxes, casings, rings, and other welded parts. You can find us in General Electric's list of approved suppliers due to our strong quality assurance system and all NADCAP certifications.

### **How does TURBOMECANICA deliver its legacy and promise of "quality, flexibility, and capability" when manufacturing and repairing aircraft engines?**

We have earned the reputation of delivering 100 percent quality to our customers. Our expertise was recently appreciated by Rolls Royce, presenting us the opportunity to renew our decade long collaboration with the company. Rolls Royce recognised TURBOMECANICA for being one of the few suppliers capable of delivering conforming parts for their recently developed business jet engine. TURBOMECANICA's flexibility relates to its ability to adjust to short-term change, quickly and calmly. This allows dealing with unexpected tasks effectively and reacting to change in the demands of business partners. Our machining capabilities and special chemical processes for heat treatment enable us to provide complete in-house services, which is an asset for most customers. All these attributes stand as a cornerstone in TURBOMECANICA's target to become a Civil Aviation MRO station.

### **Could you shed some light on your special processes and inspection capabilities? Also, illustrate the role of process and product certifications in ensuring the satisfaction of traditional customers and attracting new ones.**

We have a full capability for special processes, all NADCAP and customer-approved (heat treatment and chemical processes, welding, NDT) conformity control, chemical and metallurgical laboratories. Our heat treatment shop is fully capable of processing stainless steel, nickel, titanium and aluminium alloys, and superalloys. Additionally, we bring in inspection and quality control capabilities of CMM, conventional control, FPI, MPI, and level-3 X-ray. Our quality management system is aligned to the requirements of ISO 9001: 2015 and EN 9100: 2018, ISO 14001:2015 and EASA Part 21G; we are now working on adapting to the requirements of EASA Part 145. As the system defines the product, we have enhanced our QMS with specific customer requirements, especially with those imposed when working directly with OEMs.

### **To bring out the story, share one or two case studies where TURBOMECANICA has helped its clients accelerate their processes, and attain successful outcomes?**

We serve renowned names in the civil and defence aerospace, energy and other sectors. TURBOMECANICA constantly gets challenged by its customers to contribute to the issues they are facing. Recently, we were able to support Rolls Royce and Witzenmann with NPI for two different programs. In these cases, TURBOMECANICA served as the only supplier able to strictly respect all their documentation requirements without letting any quality concessions to be raised and time of the customer engineering team be lost. We successfully eradicated the existing stops on the customer assembly lines by delivering 100 percent quality.

### **What are the differentiating factors that give TURBOMECANICA a competitive edge in the industry?**

Given the fact the MRO is our main activity, we find an edge in the market with a unique mix of capabilities which are certified internationally and capable of manufacturing any part or assembly included in an aircraft engine or in a small or medium helicopter transmission gearbox. We excel at high complexity (sensitive/critical) parts up to 1 cubic meter and of low to medium yearly demand.



### **What does the future hold for TURBOMECANICA in terms of geographic or business expansion plans?**

A target for this year is to continue doing what we excel at and expand our machining capacities critical to the demand increase forecasted by our international customers—Leonardo Helicopters, Rolls Royce, Witzenmann, and Aerotech Peissenberg. In 3 years from now, we plan to deliver the first overhauled civil engine, under EASA Part 145 Certification. 