

AM Industrialization Initiative

Industrial 3D Signing of a MoU for the foundation of the “Bavarian AM Cluster”

Munich, Germany and Pfäffikon, Switzerland – October 12, 2022 – Representatives of seven companies and the Technical University of Munich (TUM) signed at the AMTC conference in Munich a Memorandum of Understanding with the aim of establishing/founding the “Bavarian AM Cluster” (BAMC).

Representatives from the companies AUDI AG, EOS, GE Additive, Linde, MTU Aero Engines, Oerlikon and Siemens and the TUM have agreed to establish the “Bavarian AM Cluster” (BAMC) as a non-profit association in spring 2023. The purpose is to facilitate a state-supported, close consortium cooperation between companies and the university to overcome technical and economic hurdles on the way to the industrialization of additive manufacturing. Additive manufacturing technology, also known as 3D printing, allows metal components to be produced in a “layer-by-layer” manufacturing process. Thanks to its ability to create significantly lighter structures with the same function using less raw material and also to set up production in a decentralized manner, additive manufacturing can make an important contribution to the sustainability of industrial products.

The members of the cluster decide on research priorities and projects that are implemented jointly or as part of research contracts with TUM. In addition to initiating new integrative research and development approaches, the cluster also aims to establish partnerships with other commercial enterprises and academic partners, develop innovative education and training concepts and launch lighthouse projects to demonstrate the benefits of additive manufacturing.

Unique about this cooperation is the immediate proximity of all partners and institutions to each other as the association’s premises will be located on the Garching campus in the same building as those of the relevant chairs at TUM, as well as those of the TUM-Oerlikon AM Institute. “With the Bavarian AM Cluster, the industry in Bavaria is clearly preparing for the future,” explains Prof. Michael Süß, Executive Chairman of Oerlikon. “In addition to the AMTC congress and the AM Institute founded in February between Oerlikon and TUM, this is the third initiative for joint cooperation for the industrialization of AM that we are launching. I am convinced that with the cluster, we are taking a decisive step towards the full integration of additive manufacturing into the industrial process.” Prof. Thomas Hofmann, President of TUM adds, “With the AM Cluster, we are further expanding research and development activities in the field of additive manufacturing here in Munich, thus maintaining Bavaria’s leading position in this technology field.”

In the building on the TUM Campus Garching, teaching, research and development are carried out on around 10 000 square meters and transferred directly to the production of economically attractive, technologically advanced products. The special feature here is that the university and the company conduct research together under one roof. This means maximum efficiency through the mutual provision of state-of-the-art research infrastructure and a rapid exchange of knowledge along the value chain and across all stages of maturity. Currently, final construction activities are taking place so that the Chair for Materials Technology of Additive Manufacturing (Prof. Mayr), the Chair for Laser-based Additive Manufacturing (Prof. Wudy), the TUM-Oerlikon-AM Institute, Siemens and Oerlikon can move into the building promptly. It is planned to start research operations this winter, and the “Bavarian AM Cluster” will be founded in spring 2023.

About Oerlikon

Oerlikon (SIX: OERL) is a global innovation powerhouse for surface engineering, polymer processing and additive manufacturing. The Group's solutions and comprehensive services, together with its advanced materials, improve and maximize the performance, function, design and sustainability of its customers' products and manufacturing processes in key industries. Pioneering technology for decades, everything Oerlikon invents and does is guided by its passion to support customers' goals and foster a sustainable world. Headquartered in Pfäffikon, Switzerland, the Group operates its business in two Divisions – Surface Solutions and Polymer Processing Solutions. It has a global footprint of more than 12 000 employees at 202 locations in 37 countries and generated sales of CHF 2.65 billion in 2021.

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The founding members of the Bavarian AM Cluster

AUDI AG

The Audi Group is one of the most successful manufacturers of automobiles and motorcycles in the premium and luxury segments. The brands Audi, Ducati, Lamborghini and Bentley produce automobiles and motorcycles at 21 locations in 13 countries. Audi and its partners are present in more than 100 markets worldwide.

In 2021, the Audi Group delivered around 1.681 million cars from the Audi brand, 8,405 sports cars from the Lamborghini brand and 59,447 motorcycles from the Ducati brand to customers. In the 2021 fiscal year, AUDI AG achieved a total revenue of €53.1 billion and an operating profit before special items of €5.5 billion. More than 89,000 people all over the world work for the Audi Group, around 58,000 of them in Germany. With its attractive brands, new models, innovative mobility offerings and groundbreaking services, the group is systematically pursuing its path toward becoming a provider of sustainable, individual, premium mobility. <https://www.audi-mediacycenter.com/en>

EOS

EOS provides responsible manufacturing solutions via industrial 3D printing technology to manufacturers around the world. Connecting high quality production efficiency with its pioneering innovation and sustainable practices, the independent company formed in 1989 will shape the future of manufacturing. Powered by its platform-driven digital value network of machines and a holistic portfolio of services, materials and processes, EOS is deeply committed to fulfilling its customers' needs and acting responsibly for our planet. <https://www.eos.info/en>

GE Additive

GE Additive – part of GE (NYSE: GE) is a world leader in metal additive design and manufacturing, a pioneering process that has the power and potential to transform businesses. Through our integrated offering of additive experts, advanced machines, and quality powders, we empower our customers to build innovative new products. Products that solve manufacturing challenges, improve business outcomes, and help change the world for the better. GE Additive includes additive machine brands Concept Laser and Arcam EB3, along with additive powder supplier AP&C. [Press Releases | GE Additive](#)

Linde

Linde is a leading global industrial gases and engineering company with 2021 sales of \$31 billion (€26 billion). We live our mission of *making our world more productive every day* by providing high-quality solutions, technologies and services which are making our customers more successful and helping to sustain and protect our planet.

The company serves a variety of end markets including chemicals & energy, food & beverage, electronics, healthcare, manufacturing, metals and mining. Linde's industrial gases are used in countless applications, from life-saving oxygen for hospitals to high-purity & specialty gases for electronics manufacturing, hydrogen for clean fuels and much more. Linde also delivers state-of-the-art gas processing solutions to support customer expansion, efficiency improvements and emissions reductions. www.linde.com

MTU Aero Engines

MTU Aero Engines AG is Germany's leading engine manufacturer. The company is a technological leader in low-pressure turbines, high-pressure compressors, turbine center frames as well as manufacturing processes and repair techniques. In the commercial OEM business, the company plays a key role in the development, manufacturing and marketing of high-tech components together with international partners. Some 30 percent of today's active aircraft in service worldwide have MTU components on board. In the commercial maintenance sector the company ranks among the top 3 service providers for commercial aircraft engines and industrial gas turbines. The activities are combined under the roof of MTU Maintenance. In the military arena, MTU Aero Engines is Germany's industrial lead company for practically all engines operated by the country's military. MTU operates a network of locations around the globe; Munich is home to its corporate headquarters. In fiscal 2021, the company had a workforce of more than 10,000 employees and posted consolidated sales of almost 4.2 billion euros. www.mtu.de

Siemens AG

Siemens AG (Berlin and Munich) is a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, the company creates technology with purpose adding real value for customers. By combining the real and the digital worlds, Siemens empowers its customers to transform their industries and markets, helping them to transform the everyday for billions of people. Siemens also owns a majority stake in the publicly listed company Siemens Healthineers, a globally leading medical technology provider shaping the future of healthcare. In addition, Siemens holds a minority stake in Siemens Energy, a global leader in the transmission and generation of electrical power. In fiscal 2021, which ended on September 30, 2021, the Siemens Group generated revenue of €62.3 billion and net income of €6.7 billion. As of September 30, 2021, the company had around 303,000 employees worldwide. Further information is available on the Internet at www.siemens.com

Technical University of Munich (TUM)

The Technical University of Munich (TUM) is one of Europe's leading research universities, with more than 600 professors, 48,000 students, and 11,000 academic and non-academic staff. Its focus areas are the engineering sciences, natural sciences, life sciences and medicine, combined with economic and social sciences. TUM acts as an entrepreneurial university that promotes talents and creates value for society. In that it profits from having strong partners in science and industry. It is represented worldwide with the TUM Asia campus in Singapore as well as offices in Beijing, Brussels, Mumbai, San Francisco, and São Paulo. Nobel Prize winners and inventors such as Rudolf Diesel, Carl von Linde, and Rudolf Mößbauer have done research at TUM. In 2006, 2012, and 2019 it won recognition as a German "Excellence University." In international rankings, TUM regularly places among the best universities in Germany. www.tum.de