Product Service

Choose certainty.
Add value.

Industrial Additive Manufacturing

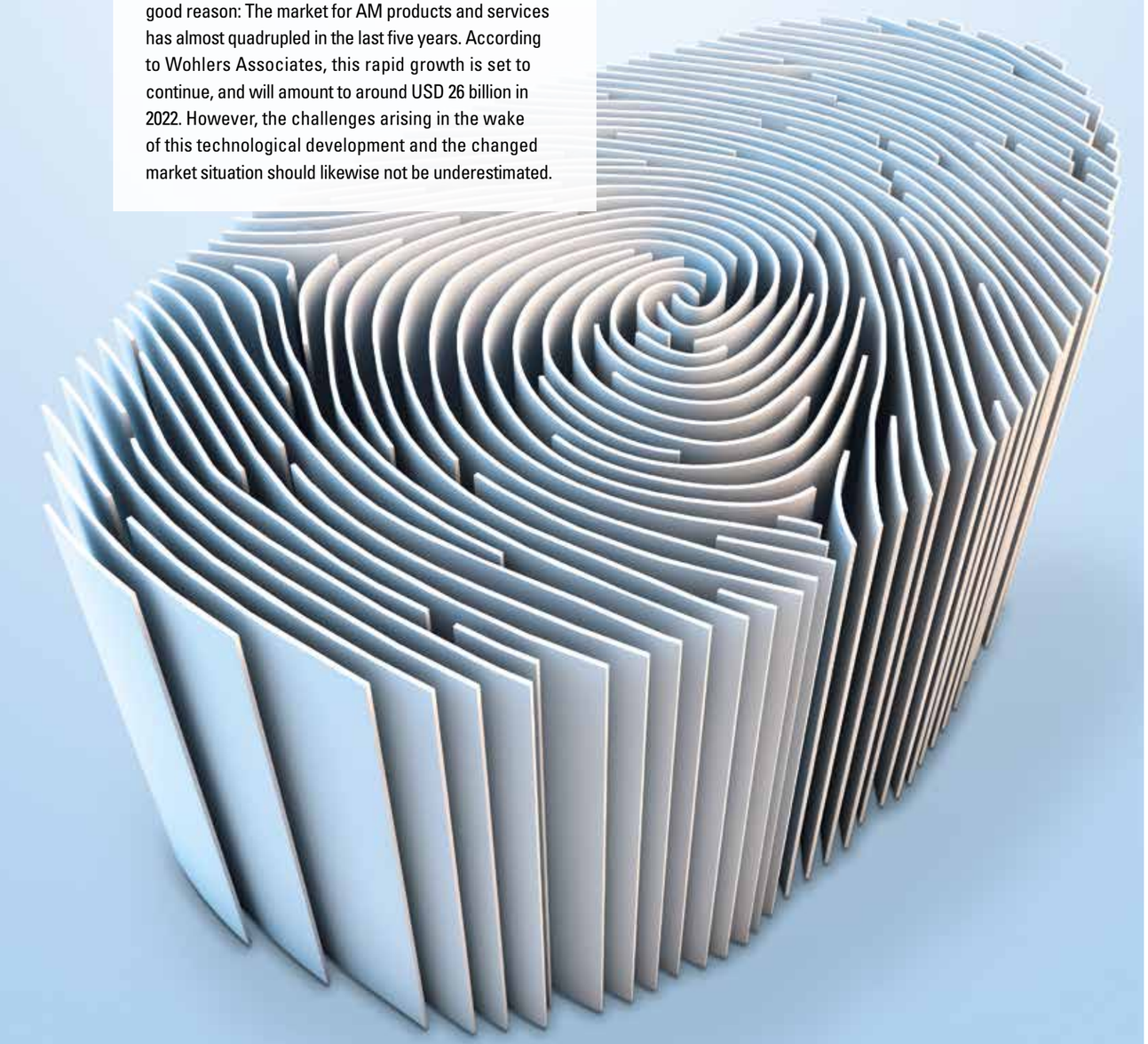
Our portfolio of services
in additive manufacturing

TÜV SÜD Product Service GmbH

TÜV®

Bright prospects for additive manufacturing

Additive manufacturing (AM) and the underlying 3D printing technology are currently at an exciting stage in their development. While 3D printers have mainly been used to manufacture single units, e.g. in prototyping or toolmaking, the industry is now increasingly moving towards serial production. The stakeholders have high expectations of this new mode of production, and for good reason: The market for AM products and services has almost quadrupled in the last five years. According to Wohlers Associates, this rapid growth is set to continue, and will amount to around USD 26 billion in 2022. However, the challenges arising in the wake of this technological development and the changed market situation should likewise not be underestimated.



Risks and opportunities of a disruptive technology

Additive manufacturing ushers in innovative designs and significantly shorter supply chains, which offer time and cost-efficiency – particularly for complex and highly individual products. However, it also involves requirements that need to be fulfilled, and many market players do not yet have the benefit of plentiful experience to fall back on.

In this situation, our technical expertise and comprehensive portfolio of services make us the perfect partner for all types of stakeholders:

- Users of hardware and software in 3D printing
- Customers of 3D print services
- Suppliers of machinery, materials, and software

Key requirements for individual market players

Users of hardware and software in 3D printing generally struggle with the framework conditions of small-volume production: Short delivery cycles make it harder to implement defined manufacturing processes – a basic requirement for ensuring reproducibility and traceability. The new special materials used in additive manufacturing pose further challenges.

Customers of 3D print services are not fully familiar with what they can demand of individual suppliers. To nevertheless achieve consistent quality in demand-driven production, manufacturing centers would need to have standardization. At present, however, this is as rare as targeted training of skilled employees. Given this, the design expertise necessary for commissioning components suitable for additive manufacturing is one of the missing factors.

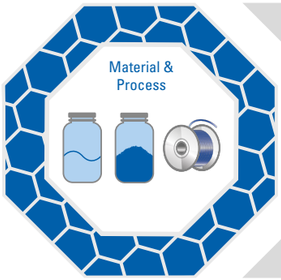
Suppliers of machinery, materials, and software are experiencing a market in transformation. The implementation of integrated production solutions poses particular challenges to small- and medium-sized companies: Manufacturers need to comply with mechanical engineering standards, meet country-specific marking requirements, ensure explosion protection, measure emissions, etc. On top of this, they face the need to fulfill Industry 4.0 criteria in the future.

Our services in additive manufacturing

To offer tailored support to all market players, TÜV SÜD Product Service has defined eight service areas throughout the value chain, from training to certification.

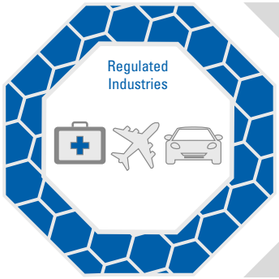
Our portfolio of services in detail

Hardware & Software: Industrial companies focus on employee health and safety: All equipment must be safe and in conformity with the standards. We assist you in establishing security for critical data streams, ensuring the safety of your electrical systems and compliance of explosion protection, and carrying out the necessary emission tests.



Material & Process: Additive manufacturing uses a variety of machinery, some of which makes high demands on the material used. Our third-party certification system assists you with launching new materials quickly on the market and/or provides you with the necessary certainty regarding their quality. We also validate the printing process, taking into account the interaction of material, machine, and energy inputs.

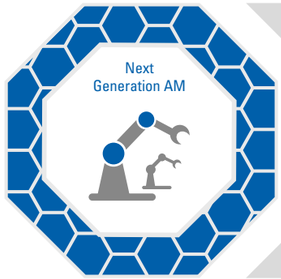
Process Chain Certification: For high-volume production, products must be designed for manufacturability and reliably lie within the defined specifications. On your behalf, we verify the error patterns such as distortion, dimensional accuracy, tightness, crystalline structure, and tightly control the numerous influencing factors. To do so, we define and monitor the critical parameters along the entire process chain.



Regulated Industries: Critical applications always require a particularly high level of safety. With over 150 years of experience in certification, our company is the ideal partner in this field: we support you in applying all industry-specific standards and in achieving conformity with them.

Company Certification: As additive manufacturing continues to develop rapidly, the number of standards is rising, and sales revenues and company headcounts are keeping pace. We work with you to ensure successful entry into new technologies and the scalability they involve. Certification provides you with a sound basis for serial production with additive manufacturing.

Education Programs: Recruiting accredited experts in additive manufacturing is a challenge. We support newcomers and specialists by providing tailored training offers, and issue the corresponding certificates.



Next Generation AM: Additive manufacturing is not yet at the end of its development. We evaluate the current status of companies in terms of system security, interconnectivity, and degree of automation. Besides, we guide you through the transformation process towards Industry 4.0, defining essential parameters for digital processes and implementing them in digital monitoring solutions.

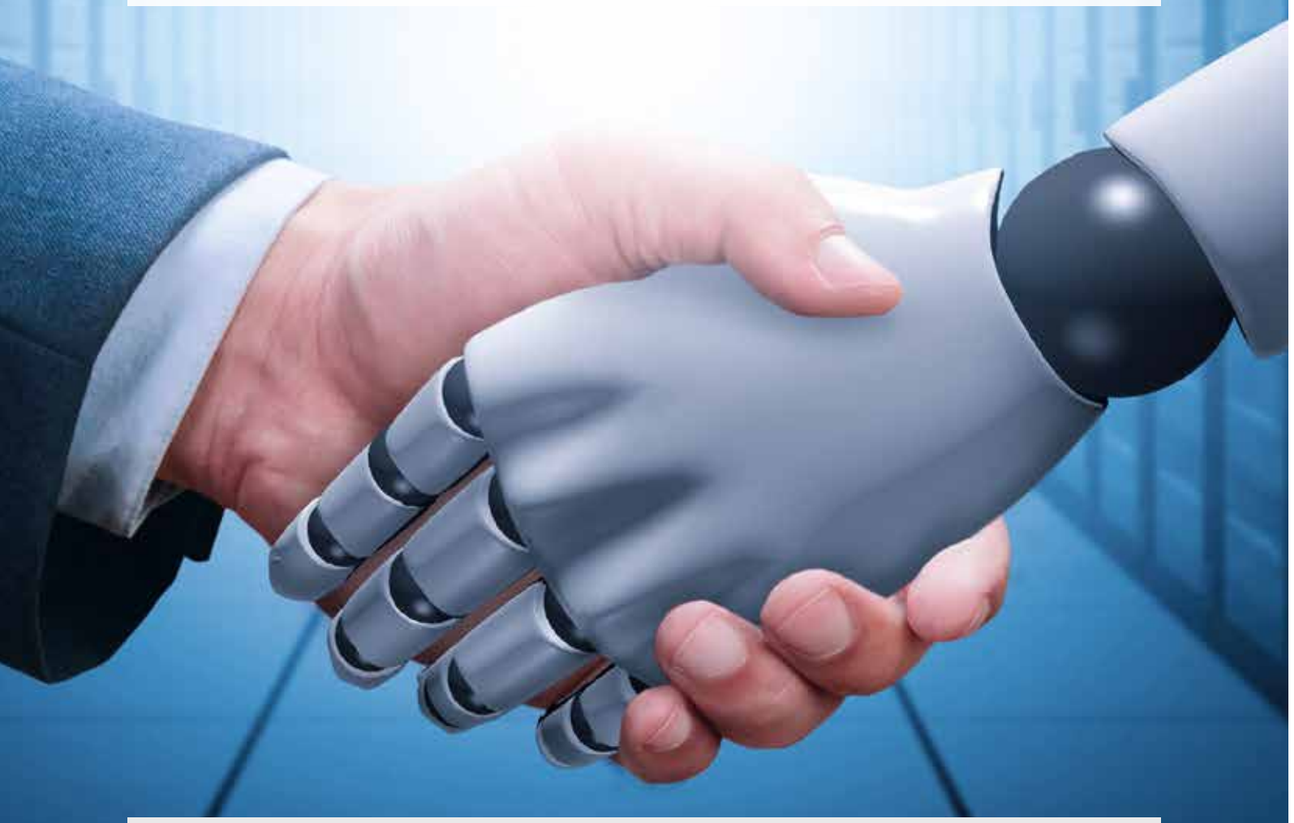
AM Standards: Establishment and documentation of international standards are part of our core business. We presently play active roles on the ISO/ASTM 261 and CEN/TC 438 committees. As standards are developed by various partners from industry, we act as mediator to achieve the best possible result. We help you implement these standards in your company.

Key reasons for choosing TÜV SÜD as your partner!

To offer the best possible support to our customers in additive manufacturing, we pursue an integrated approach and support you throughout all stages.

Your benefits

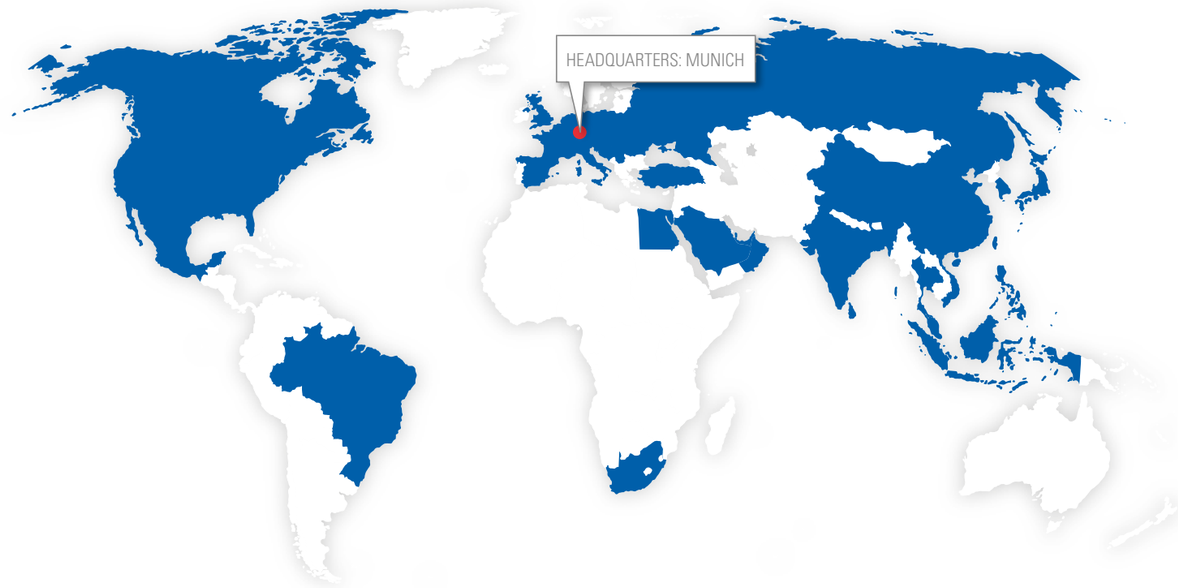
- **Ensure quick market access** – by building on our experience and general standards to avoid loss of time in the preliminary stage.
- **Speed up improvement cycles** – through target-focused development of your 3D print solution or 3D print manufacturing line.
- **Save time** – we are represented throughout the world, allowing you to schedule testing and certification more conveniently and thereby accelerate your processes and speed up the market launch of your products.
- **Minimize risks** – with our support, you will avoid hazards and quality problems that might damage your brand reputation.
- **Gain competitive edge** – by using the standards we have developed and distinguishing your products with the TÜV SÜD certification mark for additive manufacturing, you demonstrate your commitment to premium quality and safety.
- **Save costs** – we make sure you meet your customer's requirements and comply with international standards right from the start. This saves you additional efforts.



Advocating product quality – throughout the world

With 800-plus staff in Germany and 5,000 throughout the world, TÜV SÜD Product Service supports you in maximizing the safety and quality of your products, enabling a successful market launch. We offer customer-focused solutions and bundle expertise and know-how, thus ensuring that our experts offer the skills that match your needs.

The certification marks and certificates issued by TÜV SÜD Product Service are excellent marketing tools; our test reports give you the confidence to use your products' safety, quality, and sustainability in advertising.



Product Service

Talk to an experienced partner: TÜV SÜD

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Each company faces slightly different challenges in additive manufacturing. We will be happy to assist you in reliably managing your problems in the future. Simply visit our website or contact us directly. We look forward to meeting you!

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