

Workshop »Digital Data creates value – recognising and exploiting opportunities«

i-TRIBOMAT – How to digitalize your services – TaaS Tribology as a Service

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The potential for saving energy and reducing costs was the key reason to define tribology as its own scientific discipline. 55 years after the birth of tribology, digitalisation and the Green Deal are the drivers and challenges at the forefront of industrial development and take first place on the agenda of the European Commission. How can tribology position itself in the age of digitalisation? Which new digital tools and possibilities should be taken advantage of? What examples from other fields are there? In mobility, MaaS („Mobility as a Service“) is a good example of employing digital technology to develop a service that satisfies the needs of the population as well as the demands of resource efficiency and CO₂ reduction. Additional requirements for the success of such services are a digital business model and the cooperation of different stakeholders. In the area of simulation and software, new business models and services are already well established – SaaS („Software as a Service“) being a prime example. The trend goes away from one-time purchases towards needs-oriented usage and the appropriate payment systems.

With the European research project i-TRIBOMAT¹ („Intelligent Open Test Bed for Tribological Materials Characterisation“), the path towards TaaS – Tribology as a Service – is presented.

i-TRIBOMAT's new digital services, facilitate the rapid and cost-efficient selection of materials, as well as the prediction of the tribological performance of products regarding efficiency and lifetime. I-TRIBOMAT connects the entire tribological characterisation infrastructure of five European research centres and links it to an IT-platform using IoT technology. This allows the client to choose between over 100 different tribometers and additional characterisation possibilities. The data is centrally stored and further processed in a newly developed cloud-based tribological material database. The clients can access their data any time and can easily request a specific analysis or create their own reports. Without needing a particular expertise, clients can carry out simulations in virtual workrooms, allowing them to use their material data to rapidly and cost-efficiently predict operational characteristics without constructing a prototype. All digital services can be customised and booked by the client on the web-based platform.

The connection of infrastructures and the new digital services result in the emergence of Europe's largest tribology centre (a joint venture -i-TRIBOMAT GmbH), which offers all services on a web-based platform.

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