

PRESS RELEASE

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AIMS – Applying Interoperable Metadata Standards

New Research Project to assist in the Creation of Metadata Standards in Mechanical Engineering and Led by Prof. Dr.-Ing. Robert Schmitt Approved

Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University

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To ensure that research data can be found and interpreted in the long term, a precise and comprehensible documentation using metadata is of crucial importance. This applies first to the active use of data during the research process, but also afterwards, when the data has already been archived. It is particularly important for retrievability, that metadata follow documented standards that are tailored to the specific requirements of, for example, the data type and scientific discipline. In addition, scientists need not only suitable standards but also appropriate tools, methods and an infrastructure that supports the creation and use of metadata. Currently, these requirements are only fulfilled for a very limited number of scientific disciplines.

The term metadata covers all additional information, such as details of the data format or publication, which is necessary for the interpretation of research data. However, for most disciplines, including mechanical engineering, no adequate metadata standards are available. Furthermore, the management of research data in the field of mechanical engineering is usually based on simple file systems and relies on the manual organization of directories, files and metadata. As a result, metadata is created only on a case-by-case basis and is often stored inconsistently and untraceably.

Interoperable Standards for a successful Research Data Management

The research project “AIMS – Applying Interoperable Metadata Standards”, which is carried out by the Chair of Production Metrology and Quality Management of the WZL, led by Prof. Dr.-Ing. Robert Schmitt, together with the IT Center of RWTH Aachen University, the Institute for Fluid Systems of TU Darmstadt and the University and State Library of TU Darmstadt, therefore pursues two main goals: On the one hand, the creation of an environment that enables scientists to create, exchange and reuse metadata standards that meet the specific needs of the discipline of mechanical engineering. On the other hand, tools and workflows are to be developed that can be used for the effortless creation of standardized metadata.

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For a successful research data management, interoperable standards for discipline-specific metadata are to be created. The WZL focuses on the development of a uniform metadata standard for the engineering sciences as well as the vocabulary required in this context.

This includes the description of the project and the project results as well as a description of the raw data, the data formats and the technical components for generating and storing the data. Furthermore, the WZL provides the “Virtual Metrology Frame” (VMF) as a use case for the research project. In the VMF, data from and about distributed measuring systems are brought together, stored and processed. In the AIMS research project, the VMF is to be extended by the metadata standards.

Please visit our website for [further information on the research project “AIMS – Applying Interoperable Metadata Standards”](#).



The “Virtual Metrology Frame” as use case in the AIMS research project (© Photo: WZL)

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Laboratory for Machine Tools and Production Engineering

The Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen University enhances the innovative strength and competitiveness of the industry with trend-setting basic research, applied re-search and the associated consulting and implementation projects in the field of production technology. In the research fields of manufacturing technology, machine tools, production engineering, gear technology as well as production metrology and quality management, practical solutions for rationalizing production are developed with industrial partners from a broad range of branches.