

## Data Safe for Research

**“Alliance for Research Data Storage” Develops Strategies for Long-term Storage of Valuable Data/  
Test of Storage of Particle Physics, History of Literature, and Climate Research Data**

Information from former times survived centuries on stone and paper. Modern hard disks, DVDs, and magnetic tapes are less stable and lose reliability after a few years already. However, they are used for the storage of data that have been gathered by modern research projects funded by millions of Euros. In the “Alliance for Research Data Storage” established in the beginning of this year, computer scientists of KIT develop strategies to overcome this dilemma in cooperation with colleagues from Cologne and Göttingen.

“Nowadays, vast amounts of digital information data are produced by research projects. From them, major findings are derived for science and industry,” explains Rainer Stotzka from the Institute of Data Processing and Electronics of Karlsruhe Institute of Technology (KIT). For the data to be available to future generations of researchers even upon the completion of the project, strategies and tools are needed to store these data over several decades in a safe and retrievable manner. For this purpose, KIT, the University of Cologne, and the Society for Scientific Data Processing, Göttingen, have started a cooperation project.

The strategies to be developed will be based on joint standards for long-term data storage, the generation of describing meta data, and data storage at distributed locations. Contrary to valuable books, the circulation of which is to be limited in order to prevent their wear, digital data are to be copied and distributed regularly in order to be able to cope with a failure of the storage medium. “Research and development work is required to make the tools fit for reliable operation over several decades and generations,” Stotzka says. To develop interdisciplinary strategies, work of the alliance focuses on data from astroparticle physics, climate research as well as the history of literature.

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“Experiments, observations, and simulations produce increasing data volumes,” emphasizes Achim Streit, Director of the Steinbuch Centre for Computing of KIT. Top research, such as the discovery of the Higgs particle, extensive genetic and pharmacological studies in life sciences, or measurement series in materials research are no longer feasible without efficient data processing. Consequently, KIT is pooling its competences in the handling of large data volumes by effective acquisition, storage, distribution, analysis, visualization, and archiving in the project “Large Scale Data Management and Analysis” (LSDMA). “In this field, the newly established Alliance for Research Data Storage is one element to sustainably secure research results for the future,” Streit adds.

More information on the research conducted by Dr. Rainer Stotzka:

<http://ipelsdf1.lsdm.kit.edu/cms/>

More information on LSDMA:

<http://www.helmholtz-lsdma.de/>

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