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Performance, Speed, New Usage Scenarios – Modernisation of Total Architecture Secures Sustainability of the DDB

The Deutsche Digitale Bibliothek (German Digital Library) has put into operation a completely renewed system architecture on the basis of sustainable technologies and thus has thoroughly modernised its technical basis.

Now, millions of data can be loaded and updated via cultural objects such as digitalised museum objects, texts, notes, file material or music and audio documents in a considerably shorter time. For example, the time required for the transformation, ingest and indexing of the currently more than 24 million objects is reduced significantly. Now, the system is also prepared much better for new usage scenarios – such as automated analyses of the database, visualizations and data enhancements.

The considerably improved performance was achieved mainly through the use of distributed technologies, the parallelization of calculation steps and the isolation of the previously monolithic process chain.

One important factor besides this is the enhanced support of operating processes: with DDBdash, a web-based process control console with which data deliveries and transformations as well as data recordings are planned, initiated and monitored in a distributed manner was developed. The new surface is available to the technical operator as well as the service centre and the specialist units, the contact points for the DDB's data partners located throughout Germany, and will also be used directly by the data partners in the future.

"With the modernisation of the total architecture and the system based on consistently modern and scalable technologies, we have created essential prerequisites for functional innovations and considerable quantitative increases and thus have improved the DDB's sustainability as a whole," Uwe Müller, managing director for technology, development and service, summarises.

Apart from the comprehensive modernisation of the basic architecture, innovations that are also visible to users were implemented in the DDB's portal, including the development of an integrated viewer as well as improvements of the search function such as an extended proposal function and the consideration of German flexion forms.

A considerable added value is also represented by the newly introduced organizational pages: analogous to the already known personal pages, they form junctions for the semantic networking within the total portfolio documented in the DDB. They demonstrate connections between corporations such as firms, associations or parties with cultural objects – for example, the participation in the manufacturing process of an industrial product or the content-related activity in a publication.

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Finally, the DDBjournal makes it possible to summarise the editorial offer and present it more clearly – partner portraits and collection presentations, interviews, announcements or background articles but also virtual exhibitions and calendar sheets can now be found more easily and controlled by means of the introduced internal navigation.

The adjustment to new, modern technologies and the associated fundamental new conception of the system architecture became necessary since the basic system developed in 2010 noticeably reached its limits due to the rapidly increasing object and process numbers as well as the usage scenarios that have not been considered until now. The special project supported with funds provided by the Bundesministerium des Innern (Federal Ministry of the Interior) (BMI) was implemented together with the technical operator of the DDB FIZ Karlsruhe – Leibniz-Institut für Informationsinfrastruktur (Leibniz Institute for Information Infrastructure) and other partners, and its results were put into operation at the end of May in 2018. After a test phase in parallel operation, the new system has been adapted now.

Six questions about the DDB's new architecture are answered by Dr. Uwe Müller, managing director for technology, development and service and Stephan Bartholmei, responsible for product development and innovation at the DDB and project manager for the adjustment of the architecture.

Further information, photographic material and graphics for download are available in the press area at

https://www.deutsche-digitale-bibliothek.de/content/eine-neue-architektur-fuer-die-ddb-6-fragen-ihre-antworten

Deutsche Digitale Bibliothek

The Deutsche Digitale Bibliothek networks the digital collections of cultural and knowledge institutions in Germany and makes them accessible for the public. It offers everyone free access to digitalised museum objects, books, musical pieces, memorials, films, certificates and many other cultural treasures via the Internet. The Deutsche Digitale Bibliothek serves as a network. It networks and presents the digital offers of its partners and contributes to the democratization of knowledge and resources.

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