Deutsches Biomasseforschungszentrum
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DBFZ

Digitalization and Automation of Technical Infrastructure in Biorefineries Research

Thomas Hirsch[1], Alexander Feist[1], Dr. Marco Selig[2], Isis Paola Núñez Franco[2]

Abstract

This KIDA subproject aimed to digitalize technical and experimental data from biorefinery research at DBFZ, especially its Pilot-SBG plant. Existing systems were upgraded for smooth data collection, processing, and storage, and a unified control architecture was developed for standardized and traceable data handling. 17 research systems were integrated into a central process control system with real-time monito-ring capabilities, automation systems operating at 1 Hz resolution, and data stored in an SQL database. Milestones included the implementation of automation for several systems and stable 24/7 data operation of the Pilot-SBG plant. The approach provides a robust foundation for managing complex experimental data environments, supporting data acceleration and AI training pipelines for more intelligent experimentation in biorefinery research.

Fig.1: Images of Digitalization and Automation Infrastructure

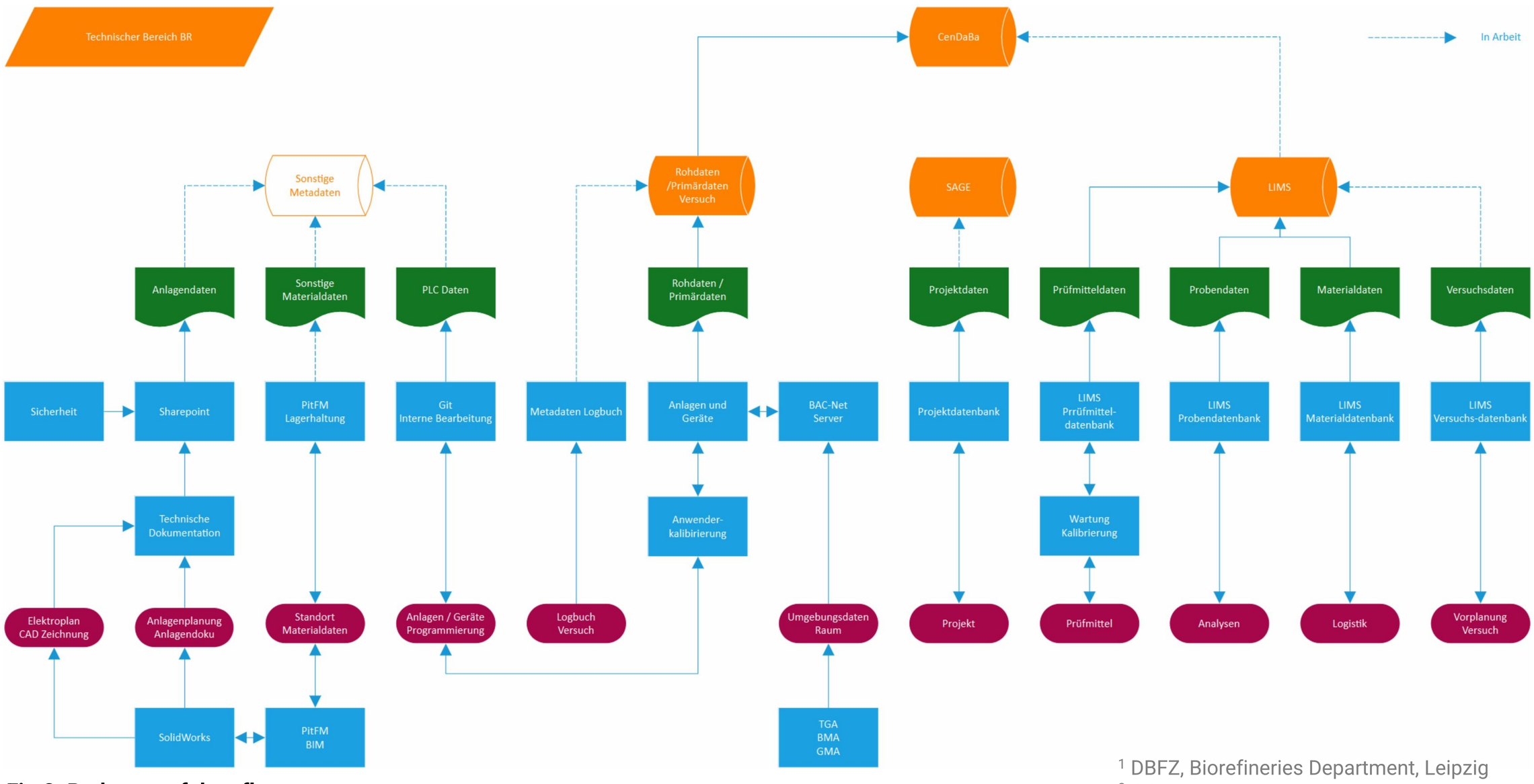

Fig.2: Pathways of data flow

[1] DBFZ, Biorefineries Department, Leipzig
[2] DBFZ, Bioenergy Systems Department, Leipzig

DBFZ Deutsches Biomasseforschungszentrum gemeinnützige GmbH
Torgauer Straße 116 | 04347 Leipzig | www.dbfz.de
Kontakt: Isis Paola Núñez Franco
Isis.Paola.Nunez.Franco@dbfz.de | Tel.: +49 (0)341 2434-602

DataLab

KIDA
AI for Food and Agriculture