

Uniform data bases as a driver for future process development (data, repositories and application examples)

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The chemical industry has an extensive pool of data as well as a broad knowledge of experience. At the same time, the use of data-driven methods is continuously increasing, which amplifies the need for a uniform and comprehensive data basis in order to be able to use the existing data effectively. In this context, standardized and uniform data formats as well as improved accessibility are of particular importance.

At TU Dortmund University, data generated in the process industry, especially during process development, are collected and prepared to be available for AI applications. The data can be made accessible in a common data platform not only for collecting, but also for enriching the data set with context information and made them available for later use. Here, the DEXPI [1] standard is used to describe the processing facility and provide the information about standardized description of piping & instrumentation diagrams (P&IDs). In combination with artificial intelligence methods, DEXPI enables acceleration in the construction of P&IDs. This involves learning the structures of P&IDs and using the results to generate equipment suggestions as well as AI-supported consistency checks.

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References:

[1] Manfred Theißen; Michael Wiedau (2020): DEXPI - P&ID Specification. Version: 1.2. Aachen. Online verfügbar unter <https://dexpi.org/specifications/>, abgerufen am 20.02.2020.