# AutomationML Analyzer: A Linked-Data Browser for Engineering Data

Cross-Disciplinary Analysis Activities ngineering Tools & Disciplines & Integration ņ Ŷ Project Manager ņ ĥ Electrial Eng Project omationML Analy Ŷ Other Too Domains Ŷ Ň Knowledge Engin Tool Domain Process Engineer

The cross-disciplinary analysis of *Auto-mationML* files that together represent a complex system is difficult. The *AutomationML Analyzer* enables efficient integration, browsing, querying, and analysis of *AutomationML* files.

#### Goal

The engineering of complex production systems (e.g., power plants) uses diverse engineering tools. If these tools exchange data on engineering results point-topoint, cross-disciplinary data analysis is difficult to automate (e.g., consistency management, test automation).

AutomationML is an emerging standard, IEC 62714, for facilitating uniform data exchange between engineering tools.

However, even when tool networks use AutomationML, exchanged data may still not be available for querying via a unified interface, and cannot easily be linked across disciplines to support advanced applications that rely on querying projectlevel data. Ideally, project-level access to

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Automation MI Analyzer

engineering data should be possible both for navigation and querying.

# Implementation

The AutomationML Analyzer uses Linked Data technology to create an interlinked engineering data space. It automatically transforms AutomationML files into Linked Data formats, making implicit links across disciplines explicit. This leads to the integration of engineering data from different disciplines. Additionally, AutomationML Analyzer provides an intuitive access gateway to this project-level data through browsing and querying facilities.

In a representative standard example, the storage of *AutomationML* data was evaluated by cooperation partners from the *Otto-von-Guericke University Magdeburg*. The example shows how data from three engineering disciplines and from run time can be provided as a *Linked Data* structure that can be browsed and queried efficiently.

Advance Quencing AutomationMI Ontology

## **Technical Specification**

- Linked Data technologies (explicit links between data elements); easy to integrate with Linked Data on the Web.
- Sesame semantic store.
- SPARQL queries.
- Data analytics.

### **Benefits for Customers**

- Engineers can more intuitively browse engineering data from different disciplines by following links made explicit as Linked Data.
- Domain experts can automatically transform engineering models.

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Model Navigation



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