

# VAPS

## Visual Analytics for Production Systems



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## MOTIVATION & GOALS

The goal is to help in the **digitalization** of the steel industry by using **visual analytics** tool such as **Microsoft Power BI** to enhance the understanding of the whole production process. By interactively exploring and analyzing e.g., surface defects through knowledge-based decision-support systems, the time from data to action can be reduced. Thus, we aim for a

- Unification of the reporting architecture (static and interactive)
- Fast and frequent visual analysis of the process parameters across the whole production chain
- Exploratory analysis of surface defects

### Project FactBox

**Project Name** VAPS  
**Project ID** MFP II 3.1.1 VAPS  
**Duration** 48 Months  
  
**Area 3**  
Cognitive Decision Making  
  
**Project Lead**  
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## APPROACH

For unifying the system architecture, we use **Microsoft Power BI** to statically and interactively show process parameters. The interactive exploratory process is supported via the development of process-specific custom visuals within the Power BI framework. This enables the user to visually detect defects on their products more readily using a direct connection to the database and specially designed data model.

## CONTRIBUTION

### Scientific contribution

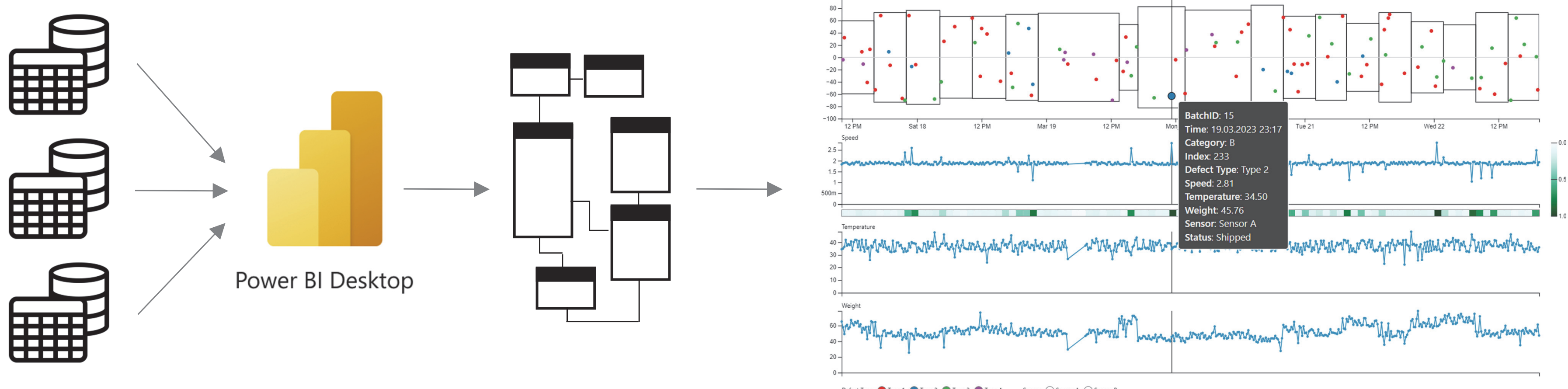
- Identifying barriers to adoption of a new BI landscape
- User-specific methods to onboard interactive dashboards
- Uncertainty visualization of production-based data
- Cause-effect analysis of empirical data

### Economic contribution

- Early detection of errors in slab and coil to save time and costs
- Fast and automatic generation of reports to save time
- Closed-loop and knowledge-based decision-support system

## SYSTEM ARCHITECTURE

Pre-processed data is added to Power BI, which provides an interface for creating a model and allows the user to explore the data interactively through graphs and other interactive features.



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