

# SINPRO

## Predictive Maintenance for Production Environments Application on Sinter Machines



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### MOTIVATION & GOALS

- **SINTERING** is a process with **significant energy consumption** in the steel and iron production process.
- Nature of main drivers of research efforts is mostly **economical** but often **environmental** and **regulatory**.
- Due to the increasing pressure to **reduce conversion costs**, the iron- and steel-making industry is continuing the efforts to **optimize the production** and the processes.
- **Use case 1:** Understanding **influence parameters** for optimizing the harmonic Diameter
- **Use case 2:** **Optimizing the BTP** towards the end of the sinter strand

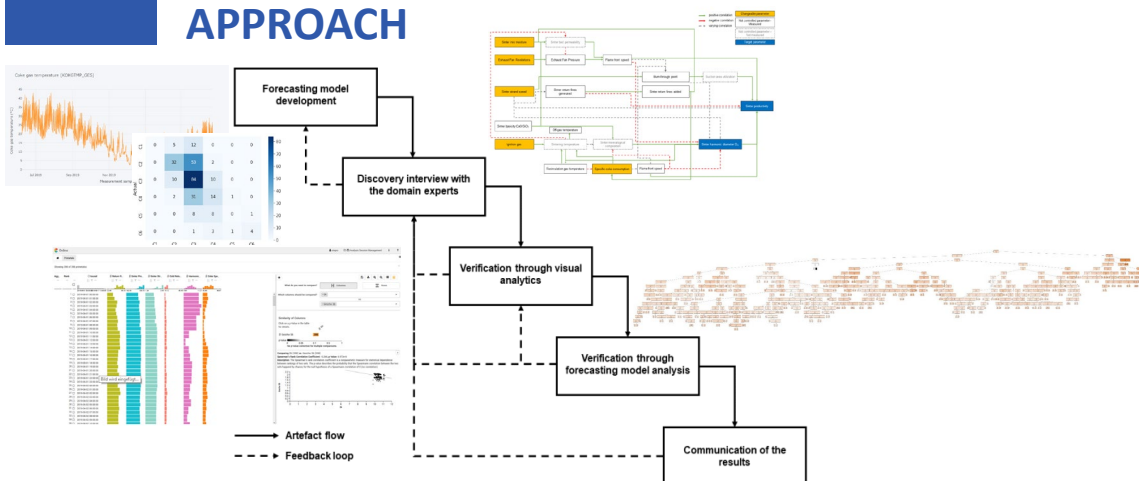
### Project FactBox

Project Name SINPRO  
Project ID MFP 3.1-5  
Duration 27 Months

Area 3  
Cognitive Decision Support

Project Lead  
Dr. Belgin Mutlu

### APPROACH



### CONTRIBUTION

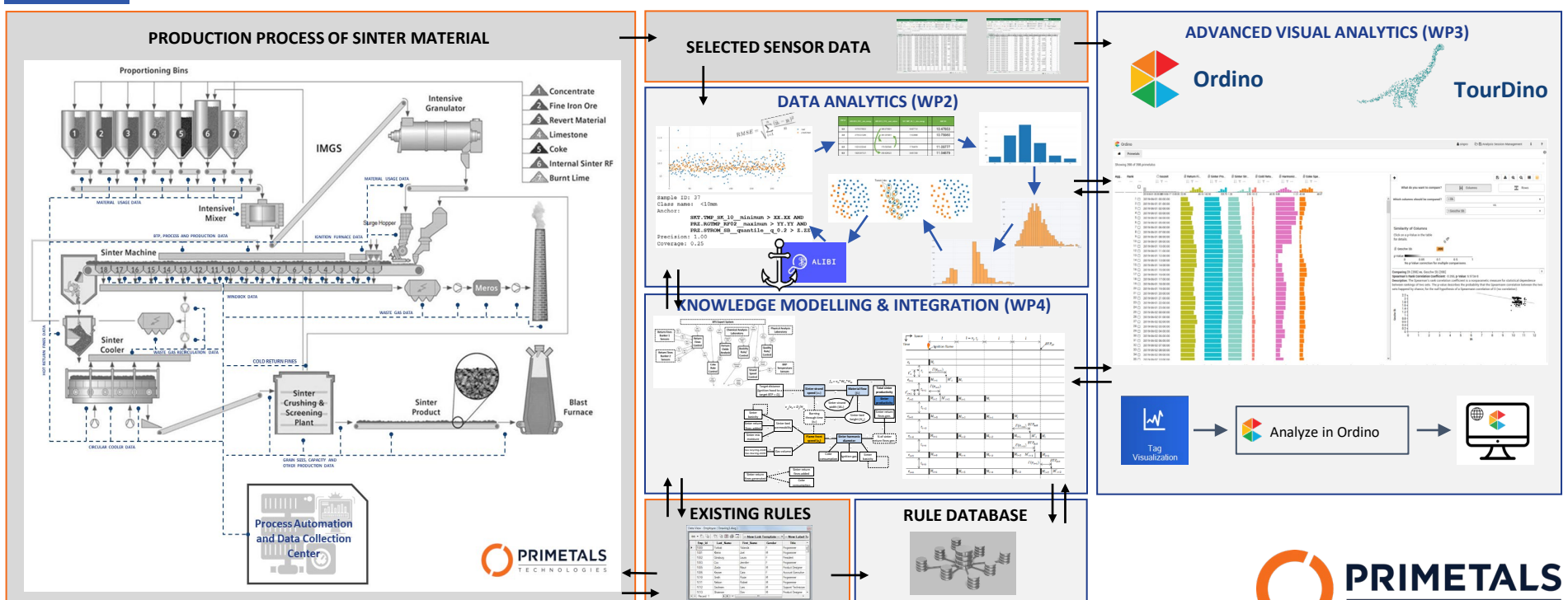
#### Scientific contribution

- ML based forecasting model
- Verification of the model and correlation information through visual analytics
- Automatic strand speed control for optimizing the concentration of BTP around the BTP setpoint

#### Economic contribution

- Gained insights from the production process
- Delivered fully functional visual analytics prototype for better insights into the process data
- Improved approach for the process control

### SYSTEM ARCHITECTURE



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