

Background

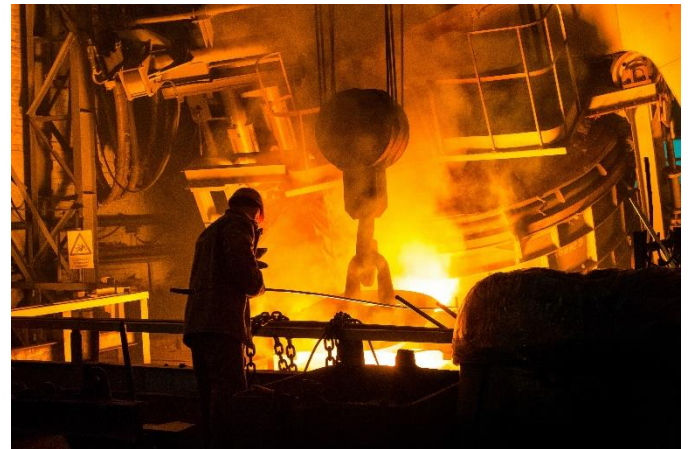
The production of steel, copper, nickel or their intermediates from ores is a highly complex process. Raw materials of the highest quality are produced. These find their way into batteries, cars or razor blades. The processing steps are as diverse as the end products. Some of the steps take place independently of each other, but previous process stages still influence subsequent processing steps. In order for a processing plant to achieve its maximum availability, thousands of process parameters must be combined and monitored in near real-time.

Goals

- Improve OEE by detecting problems in the process and with equipment in time, before quality issue or an unplanned downtime occurs
- Deliver information on from where issues arise

Challenges

- Complex production process where pure metals are extracted from raw products using thermal, chemical and mechanical processing steps with many unknowns.
- Depending on the operating parameters, there are different patterns in which valves and other components must interact
- High paced environment where the fraction of second makes a difference



Solution

- **Prexello's** AI is able to cover and monitor the entire process with all relevant process parts.
- In particular, the AI is able to isolate incorrect pressure profiles and isolate the source of the damage to specific valves
- In this case, due to three defective valves, pressure surges were no longer synchronized correctly.
- For the pneumatic transport of raw materials, pipes must be pressurized at a certain rhythm to ensure a continuous flow of material
- The defective vales resulted in a growing material jam. If it had not been fixed in time, the plant would have had an extended unplanned down time.

Results

There are many reasons for unscheduled downtimes in metal production. From mechanical problems to fluctuations in chemical treatment. All these can be predicted reliably thanks **Prexello** using existing sensors.

mi Solutions' Prexello detects 30 to 60% of potential problems in time. With a lost production hour costing up to 50,000 Euros, and with one to two weeks of unplanned downtime every year, **Prexello** generates a significant gain in operating profits.



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About Us

Often, a lot of unused potential is hidden in data from industrial plants. Only with experience and mathematical knowledge is it possible to uncover this value for companies. We offer these competences.