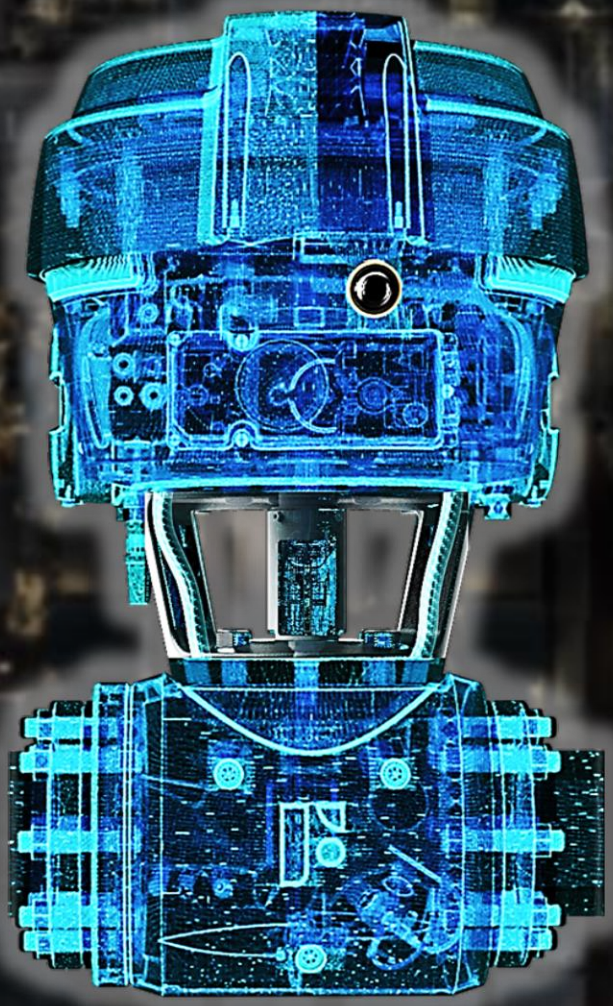
WELCOME TO THE WORLD OF

FOCUS-ON



FOCUS-1 Case Studies

Enabling simplification across the automation pyramid to create value, in brownfield today and greenfield tomorrow

FOCUS-ON VoF

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Customer Case Studies : 2021.12.12

CASE STUDY 3 - A Global Steel Company

FOCUS-1 supports simplification, which in turn starts with accepting change

APPLICATION

Control of Cooling Water in Steel Mills

PROCESS LOOP as of today

The perfect granular structure of steel being produced is the most important factor for steel manufacturers. For this, an appropriate amount of cooling in steel rolling mills is of prime importance. The cooling is done using cooling water spraying at the front and rear end of the steel rolling mills. Currently, only manual valves are used for this process, which are adjusted manually according to the "feel" of the roller.

KEY Revamping drivers

- Modernization of plant
- Automation
- Capacity increase
- OPEX (Operating expense) reduction
- Higher output, better product quality
- Shorter ROI (Return on investment)

PROPOSED Upgrade from customer

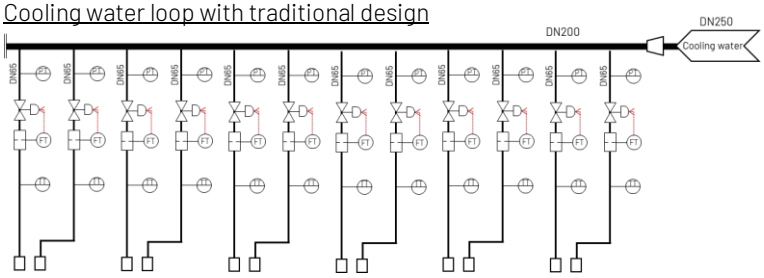
The cooling water from the sub-headers on the rolling mill stands is to be regulated and monitored in future pre-mill using automated control valves and flowmeters.

FOCUS-1 drives automation & simplification

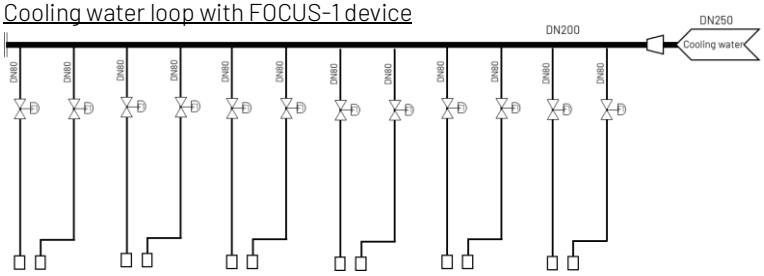
As this is a revamp project, rather than adding 12 control valves, 12 flowmeters, 12 temperature and 12 pressure sensors it makes more sense to install 12 FOCUS-1 devices.

FOCUS devices can work on flow as a set-point resulting in faster and efficient controls. **Also, by analysing the set-point deviation the process can be optimized for better steel quality and grade.** With Digital Twin functionality, in case of any malfunction of sensor, the device keeps working and planned maintenance can be scheduled. This does not result in loss of productivity.

Cooling water loop with traditional design



Cooling water loop with FOCUS-1 device

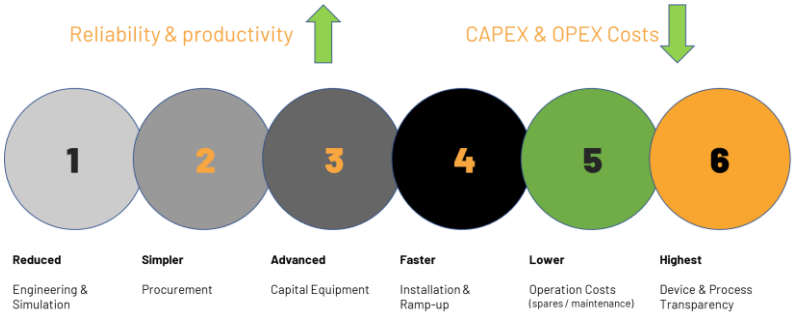


PROCESS OPTIMIZATION WITH FOCUS-1

Prediction and control of roll and strip cooling are necessary in modern steel mills because they not only affect the process efficiency but also strongly influence the quality of rolled products. By analyzing process data from FOCUS-1, the pressure-temperature and flow values can be evaluated and optimized for increasing steel productivity and quality.

FOCUS-1 Benefits

- Multi-communication possibilities
- Valuable alarms based on powerful on-board diagnostics
- Flow behavior available for process optimization needs
- Digital Twin for redundancy



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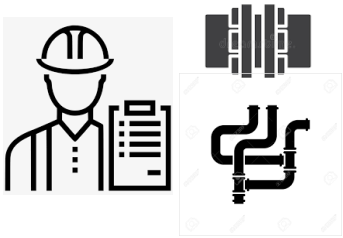
FOCUS-1 Journey starts early in the plant to drive maximum value.

1 Integration of components

- allows reduced engineering and specification effort
- less flanges, shorter piping

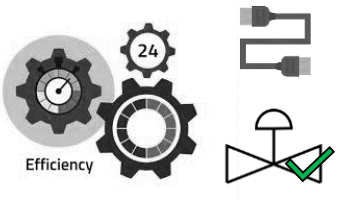
→ up to 33% savings vs. traditional solution



2 Communication matters

- novel control philosophies reduce I/O & PLC/PID costs
- a valve 'finally' controls flow

→ better control quality and loop efficiency



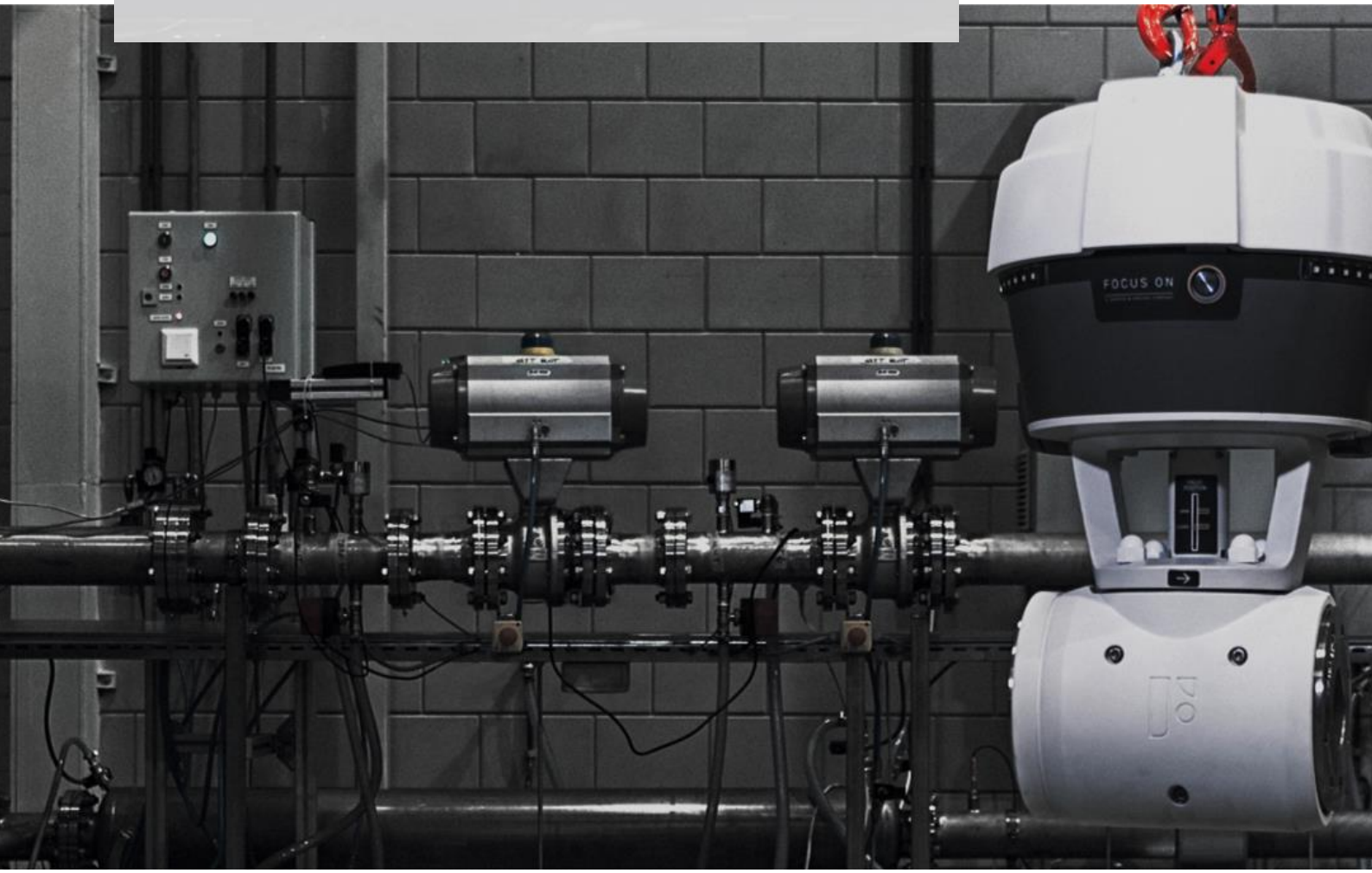
3 Higher transparency on field

- customized alarms
- digital models need for mechanical redundancies in cases

4

- real-time view of device & process

→ powerful information enables optimization

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