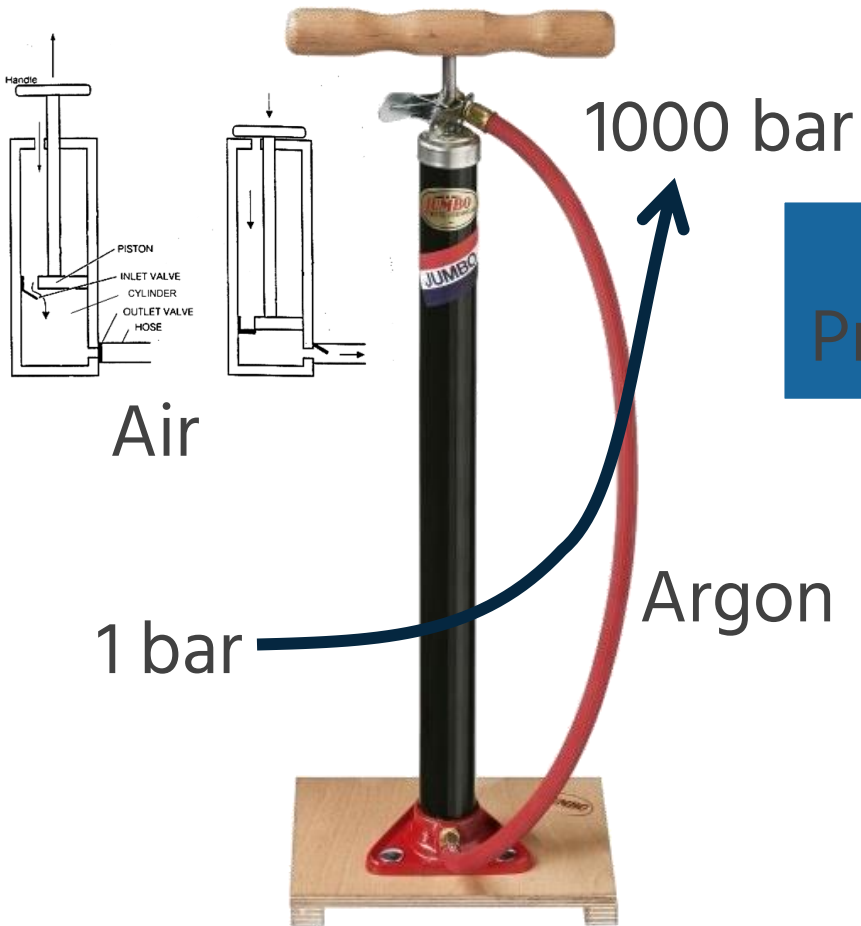


How to use AI to improve productivity. Or not to use?

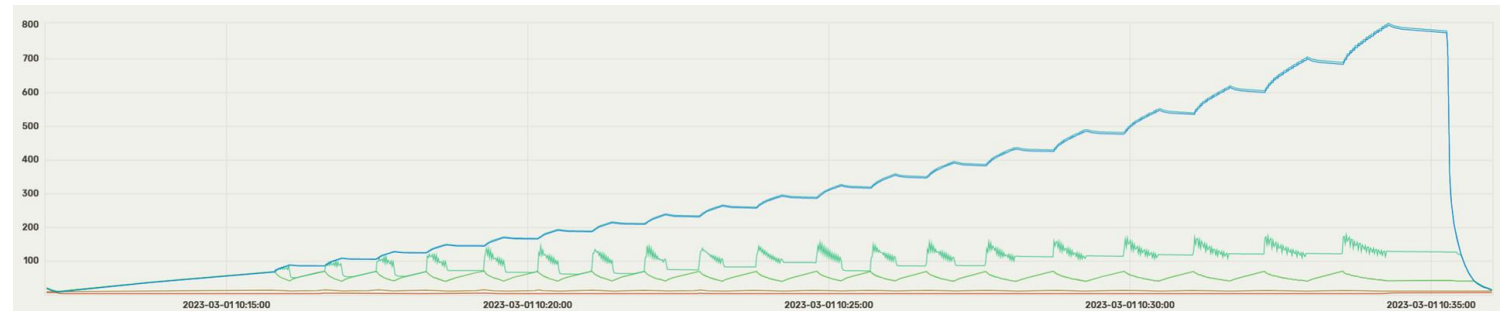
Ivo Hamersma, System Architect | Settels Savenije

Ionuț Barbu, Lead Data Science | Bright Cape

Problem description



Challenge for the product:
Pressurize a volume from 0 to 1000 bar in 15 minutes



Challenge for the test setup:
Find, identify and quantify failure modes

Pre-setup Root Cause Analysis

■ Car

- Requirement: velocity of 100 km/h
- What is cause requirement not reached?
 - Gastank empty?
 - Road going uphill?
 - Throttle actuator failing?

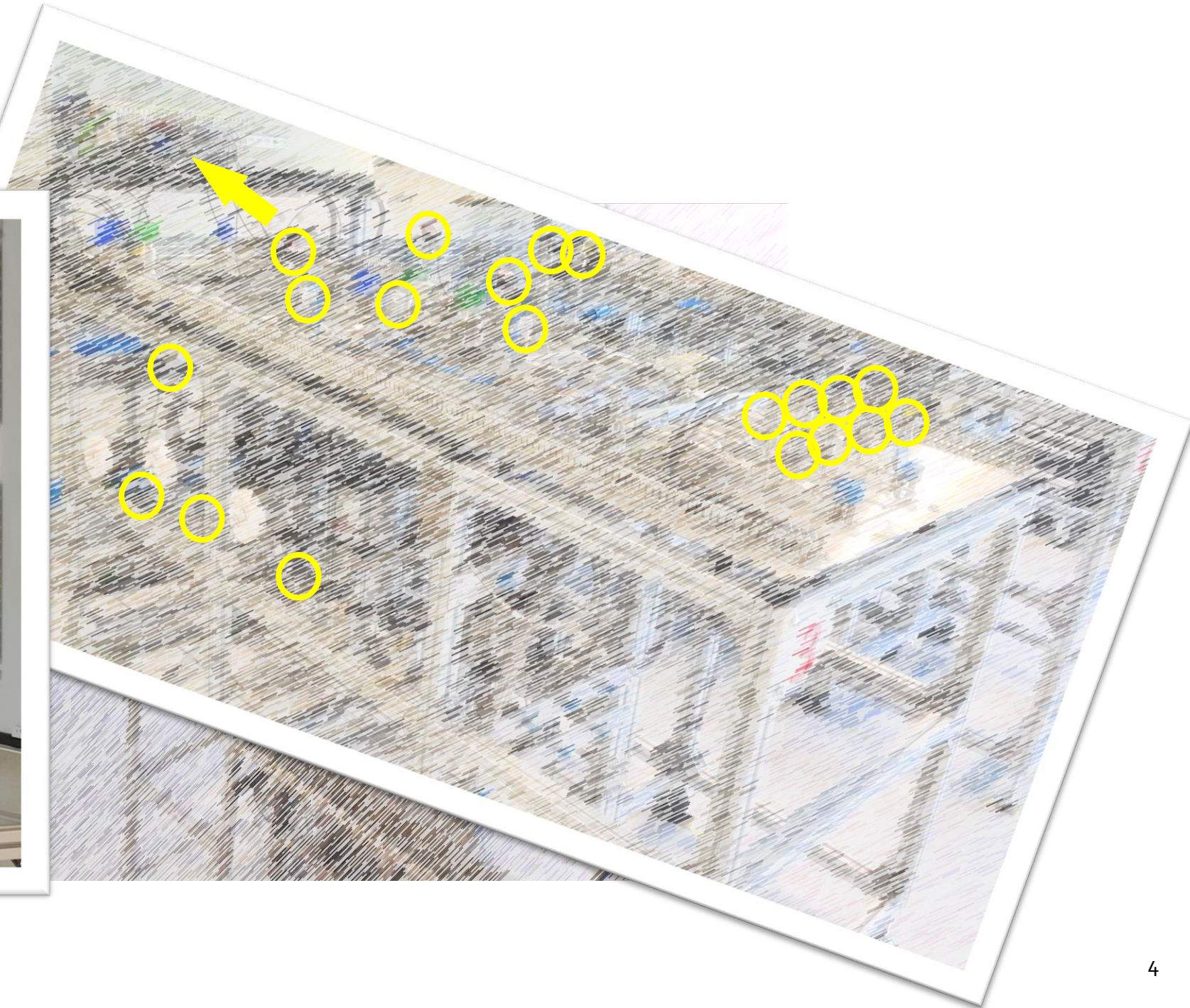
■ Pump

- Requirement: pressurize system < 15 min
- What is cause requirement not reached?
 - Leaking seals?
 - Leaking valves?
 - Check valve blocking?



And now, how to quantify which part is failing?

Test equipment



Setup(s) – 8 in total!

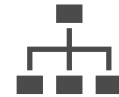
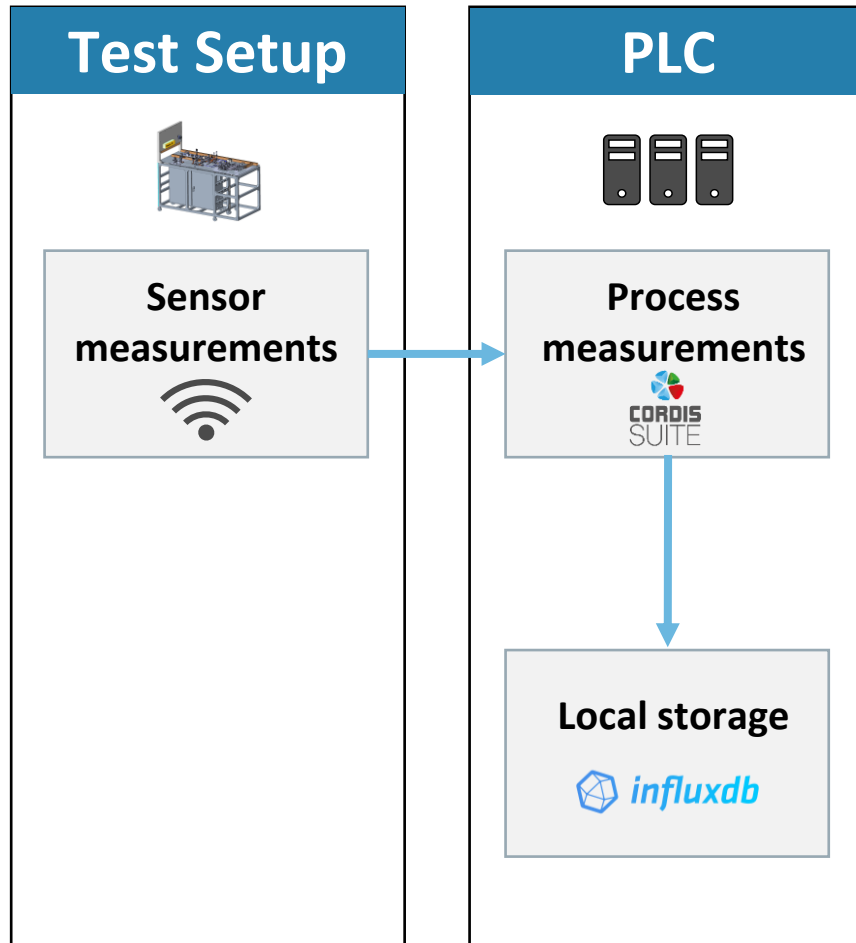
rs per setup
50 Hz, 24/7



216.000.000 datapoints,
= 1GB of data / setup / day

- [illegible]

How to convert the raw sensor data into something useful?



Inconvenient data format



Limited storage



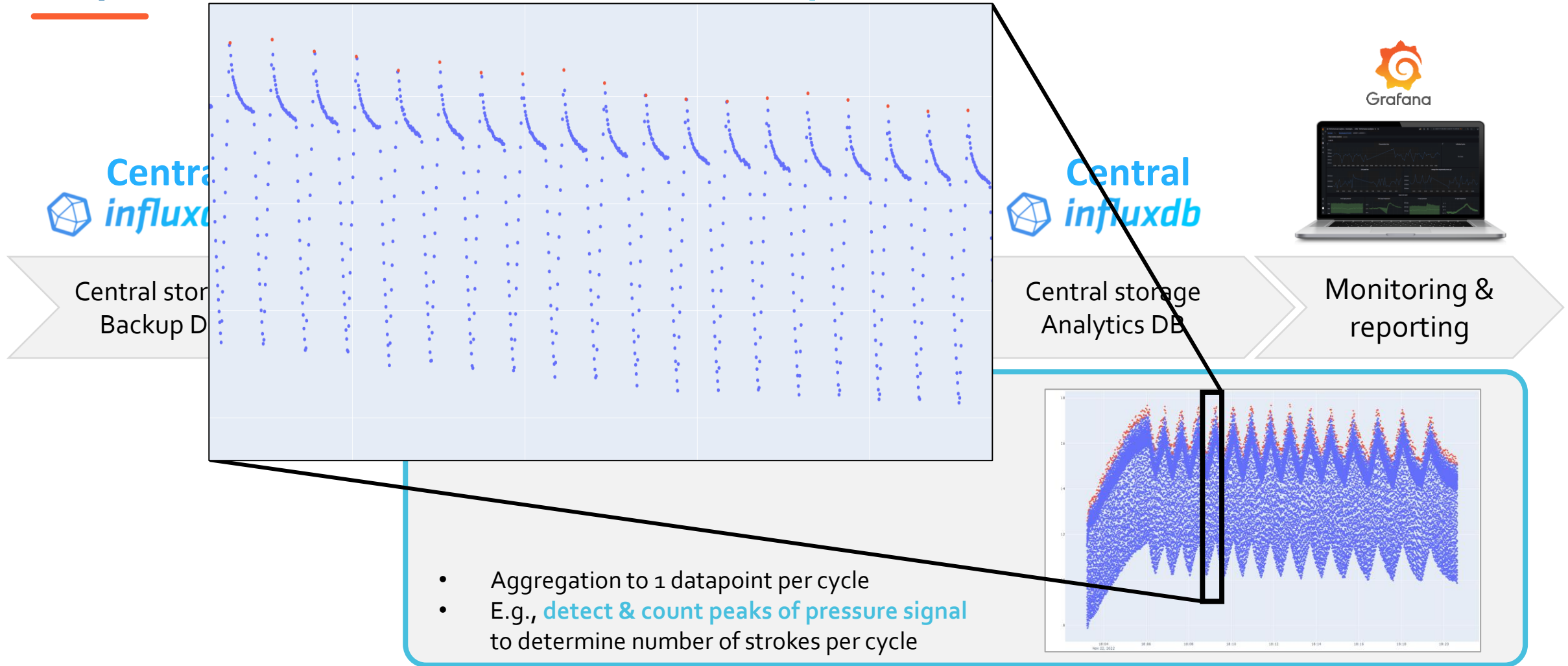
Dependency on PLC

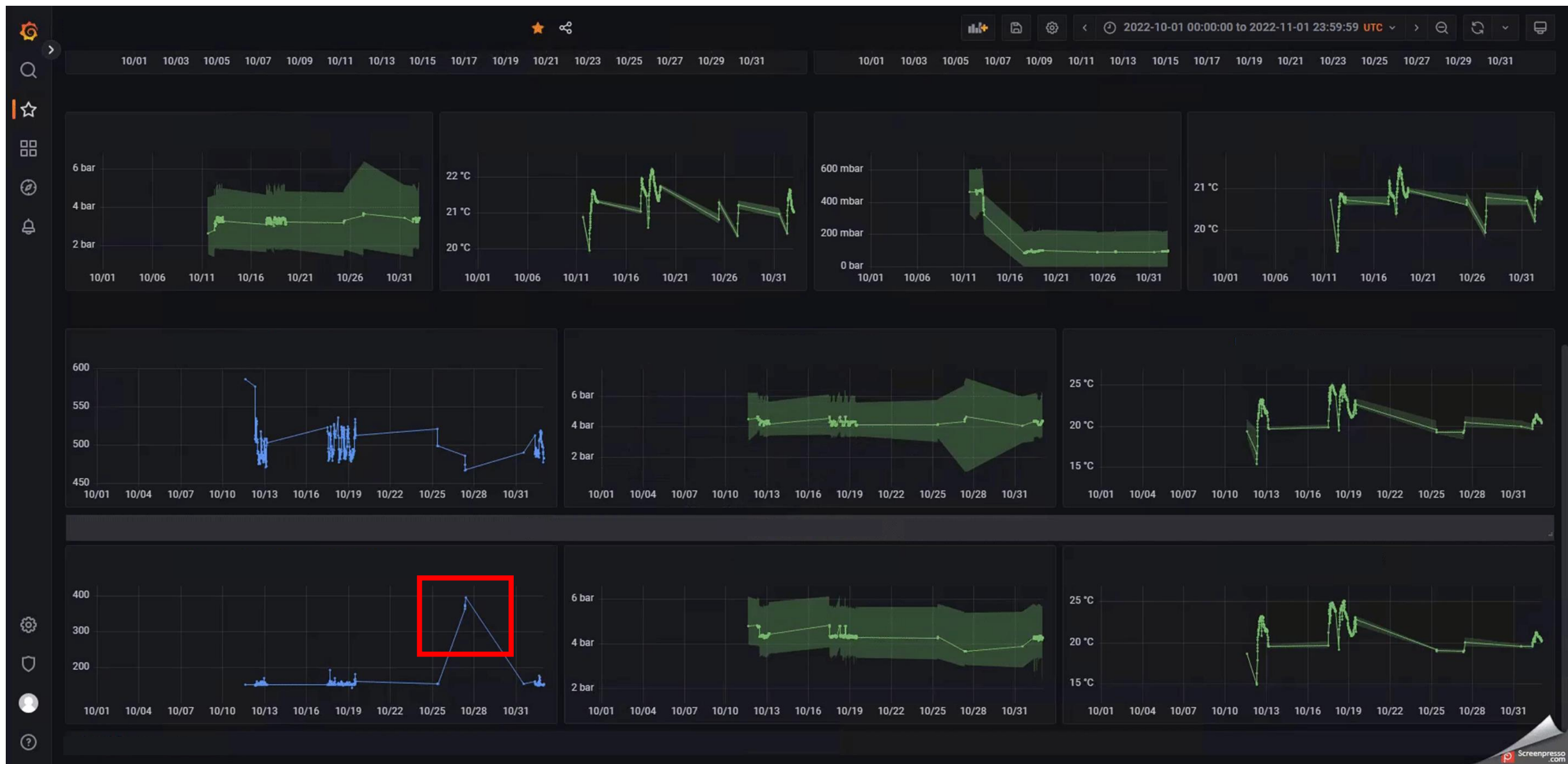


A modular, parameterized data wrangling and analytics pipeline was created to monitor performance of the equipment



E.g., monitor the performance of a bicycle pump by counting the required number of strokes to blow up a tire





Successful collaboration between engineering & data knowledge



- Physical knowledge
- Complex equipment
- Software & systems



- Data infrastructure & storage
- Raw data into insights
- Operational data solution

The client

- System lifetime increased from 2.5 years to 8+ years
- No AI solution (predictive maintenance) required!

Q & A



▶RS./0211 SEARCH...A01
▶RS./0211 SEARCH...001

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