


IT meets OT: Guidelines for Efficient, Scalable Hybrid Solutions in Industry



Florian Gramß, Siemens AG

Manuel Kreutz, Siemens AG (ext. Pacon Experts)

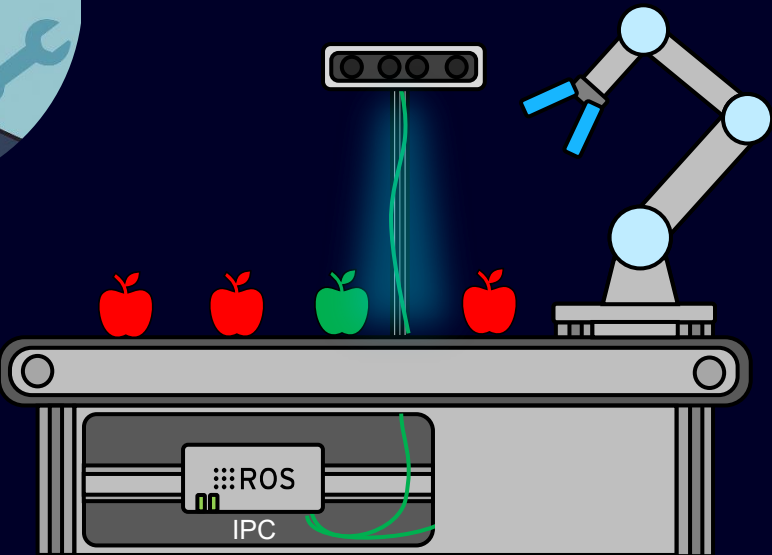
Philipp Weeger, Siemens AG (ext. Pacon Experts)

This is John Jr. who owns an Apple Sorting Company

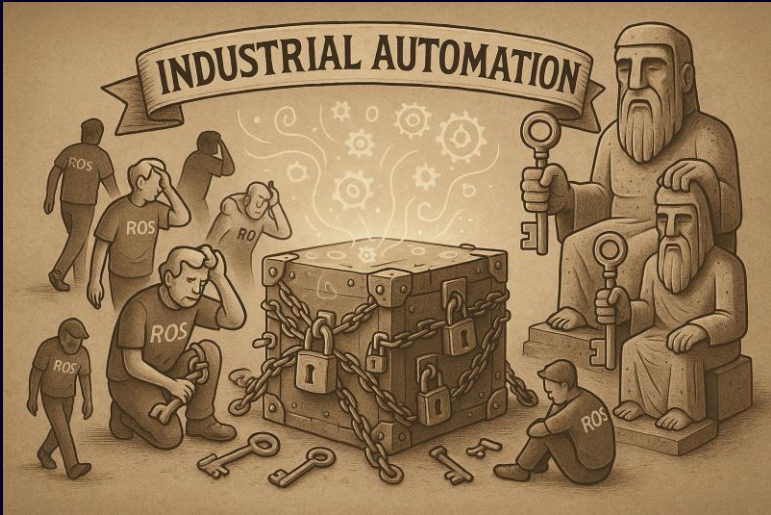
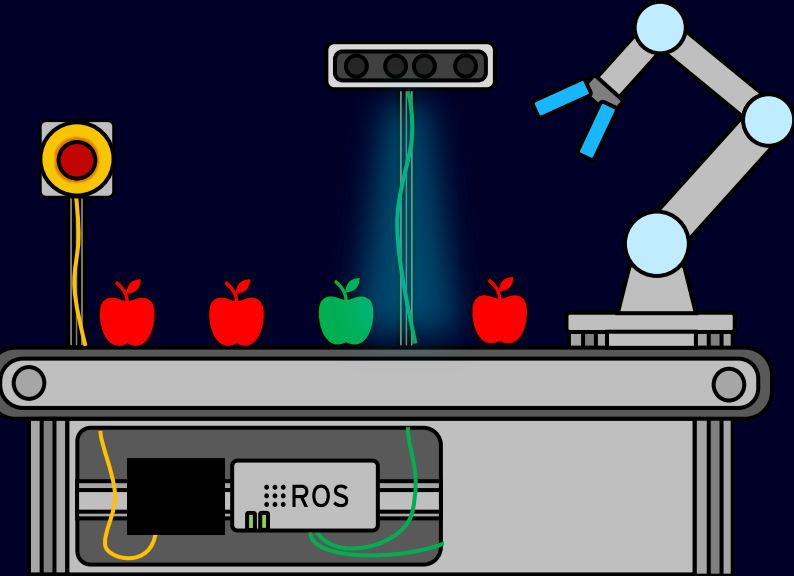


John Jr.

Our ROS solution is great,
but we need safety for
certification!



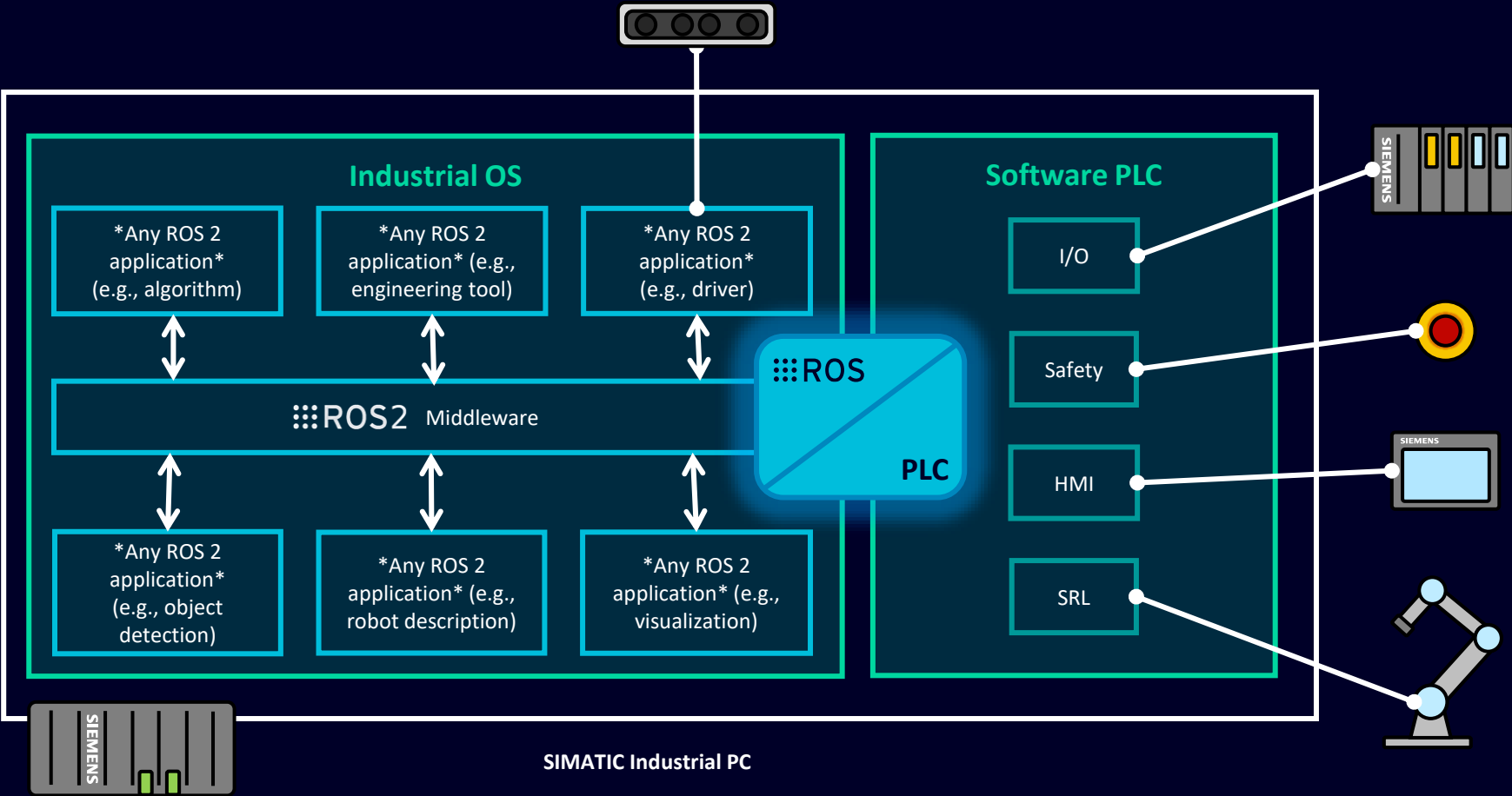
IT Specialist



John Jr. got the connection between ROS & PLC → Hybrid-OT System



John Jr.

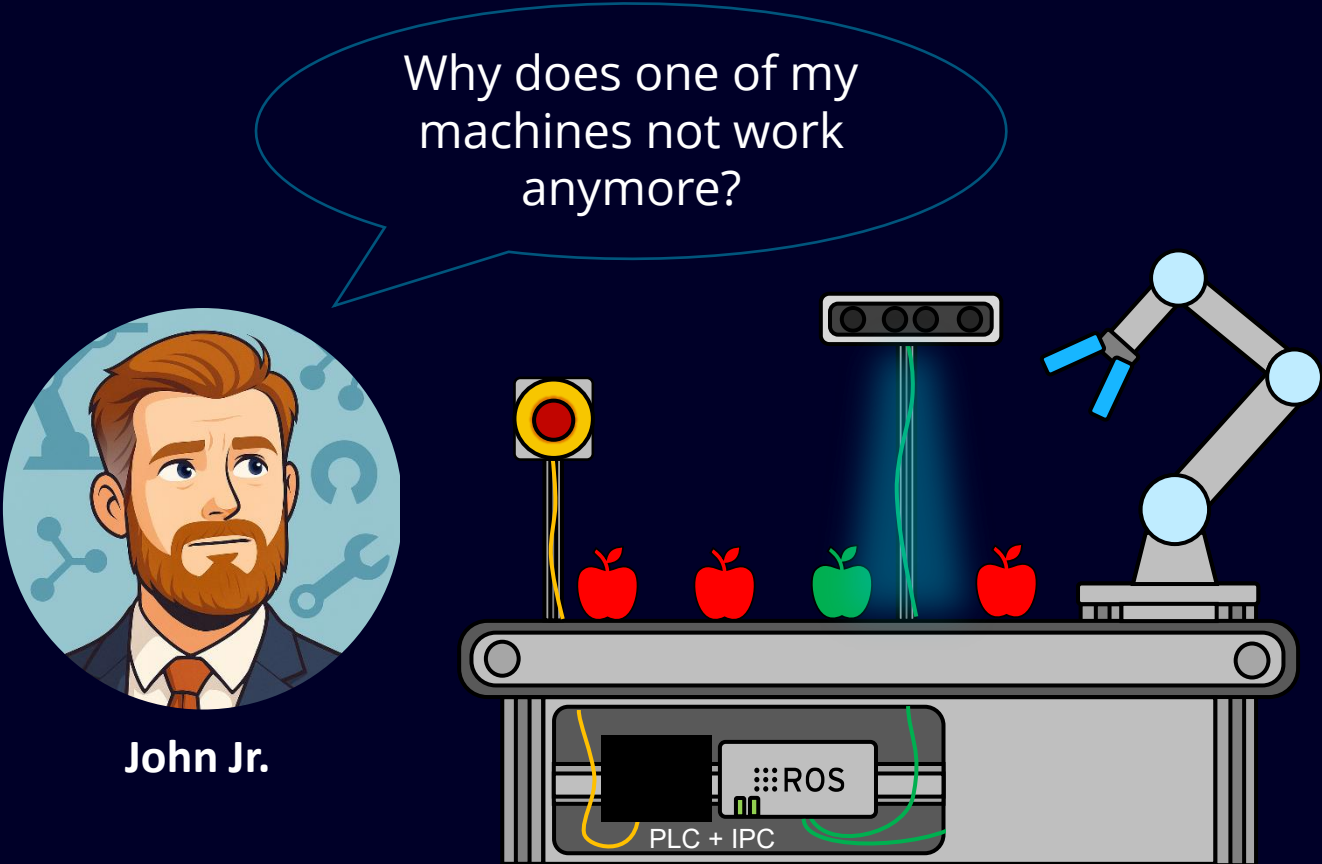


OT Expert

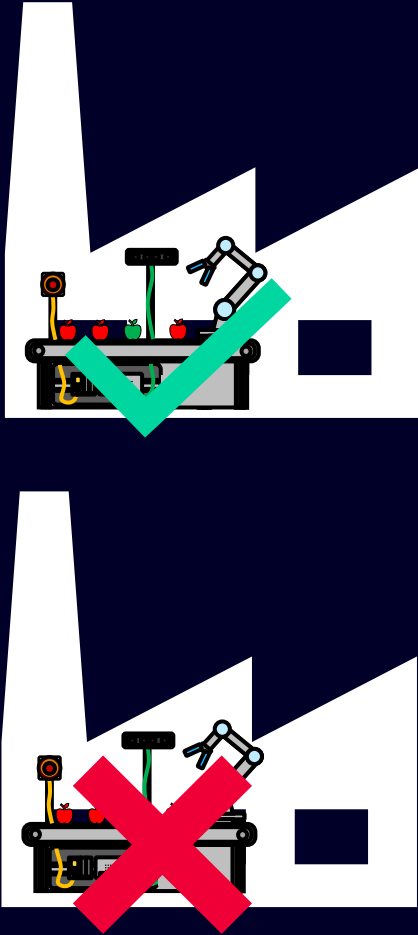


Siemens Hardware Siemens Operating Systems Siemens Assets ROS 2 Assets ROSIE (siemens.com/ros)

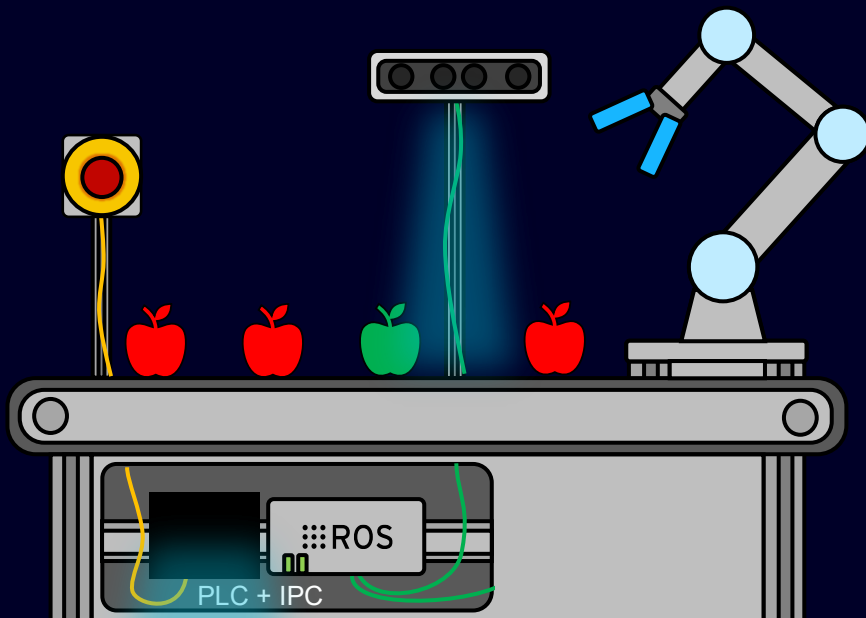
You successfully deployed your ROS robots in the industry



Machines running
at customers side



What is going on in the black box called PLC?



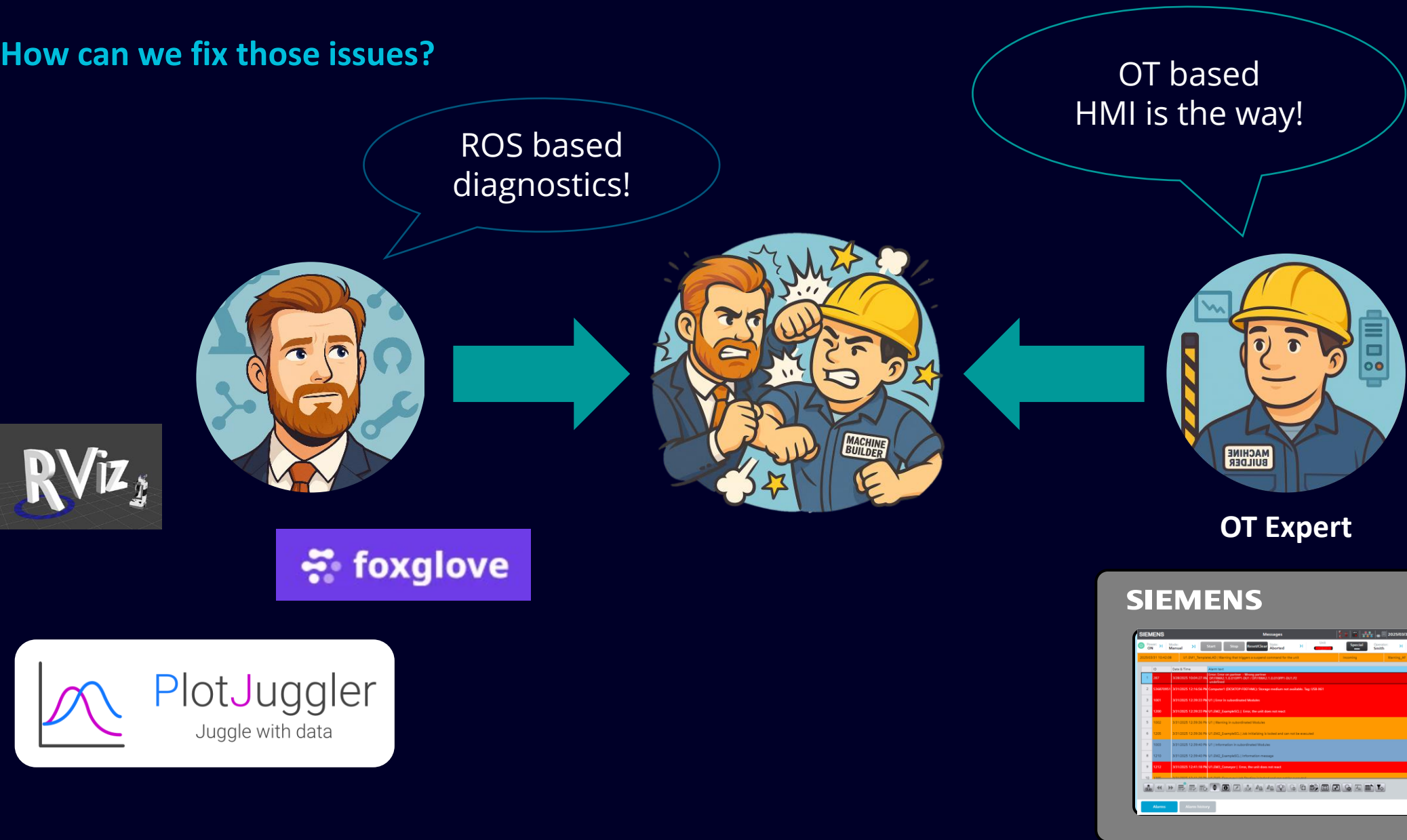
PLC



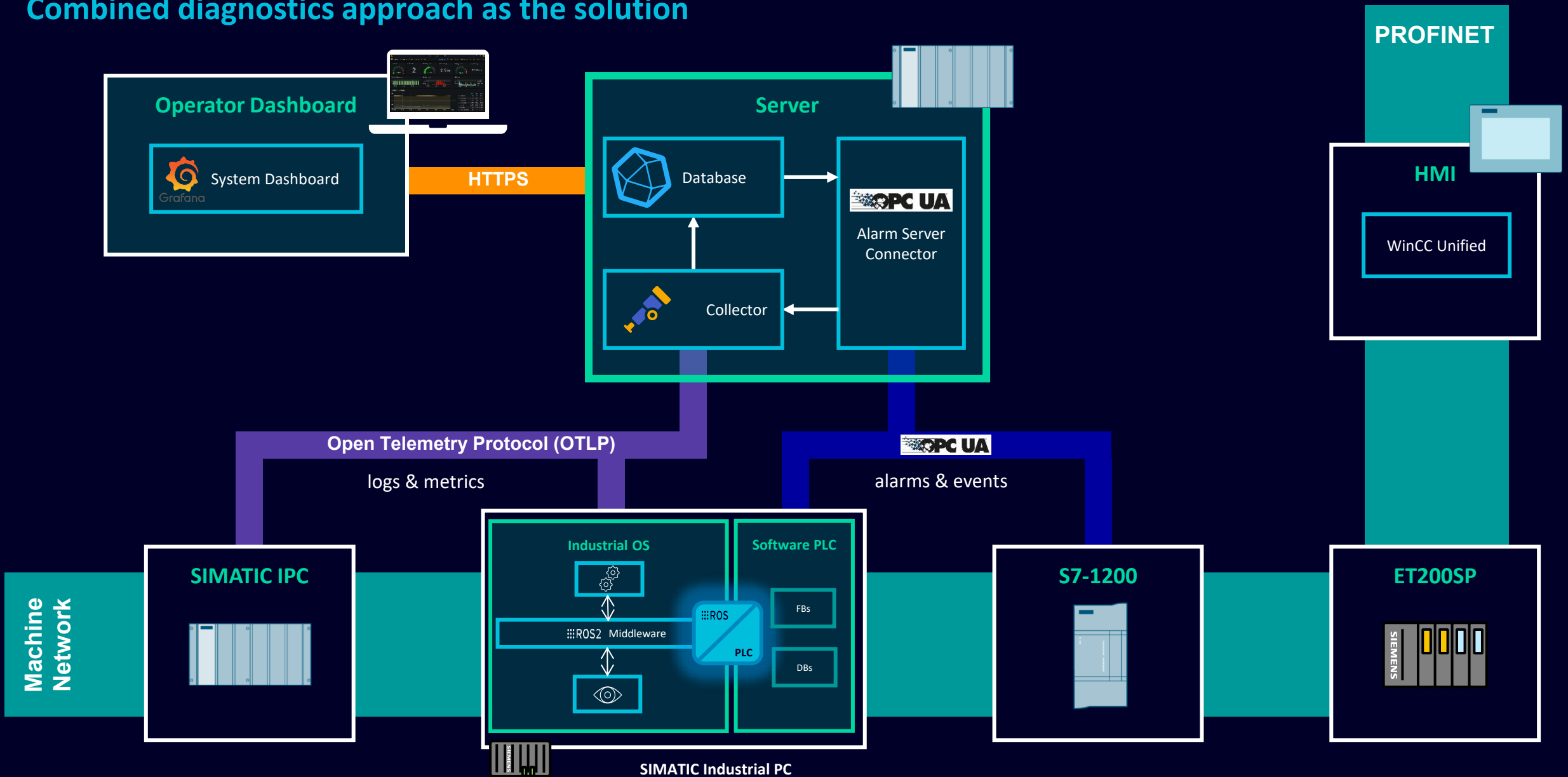
OEM
OT Specialist

PLC is okay!
But I don't understand
the IT stuff

How can we fix those issues?



Combined diagnostics approach as the solution



OpenTelemetry with ROS



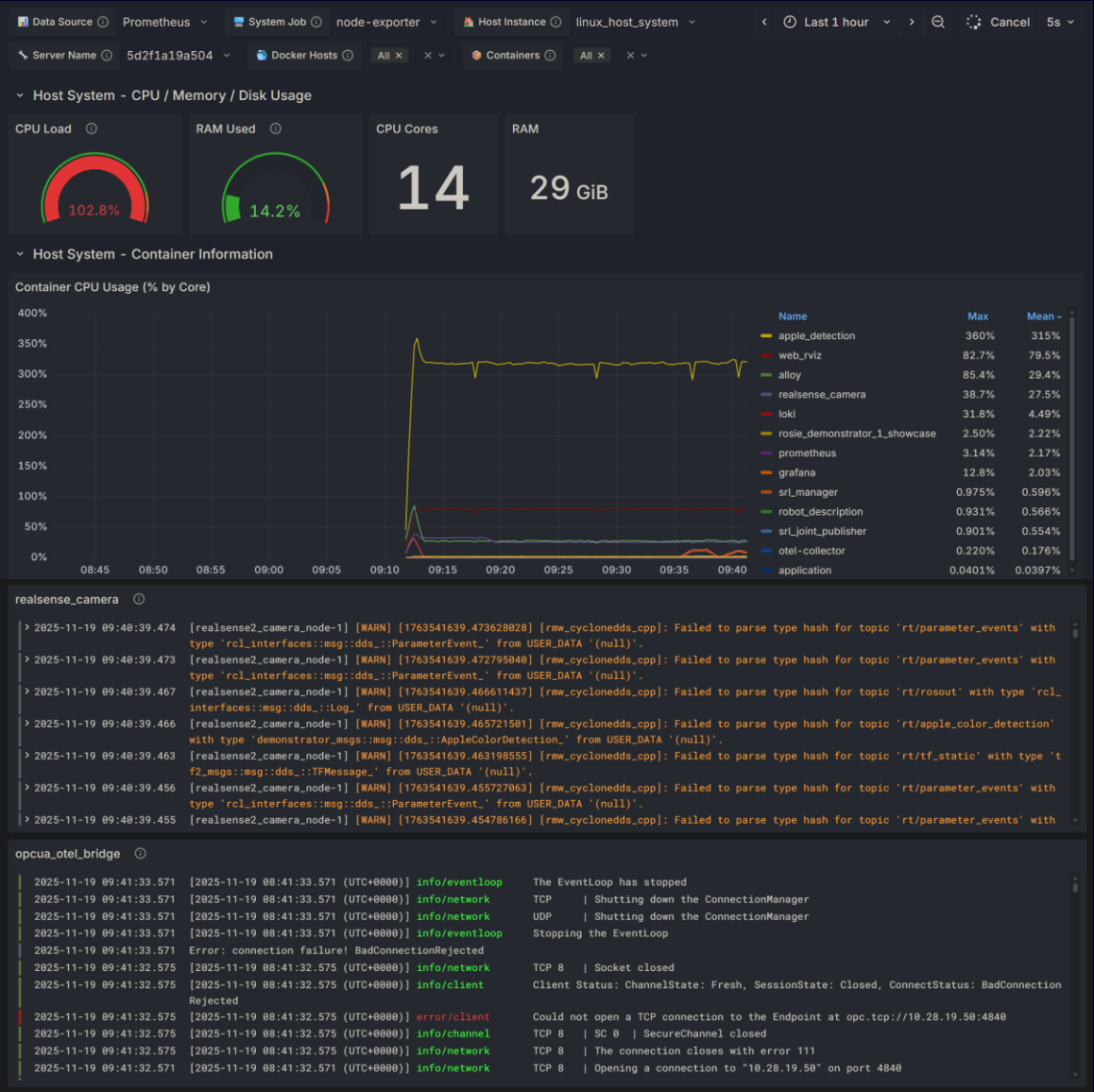
John Jr.

I heard OpenTelemetry before!
Ah yes, there is already a nice framework
for using OpenTelemetry with ROS 😊



ROSCon talk by Sergei Zobov (Circu Li-on):
ROS 2 x OpenTelemetry: End-to-End Observability for Robotics

Look and Feel

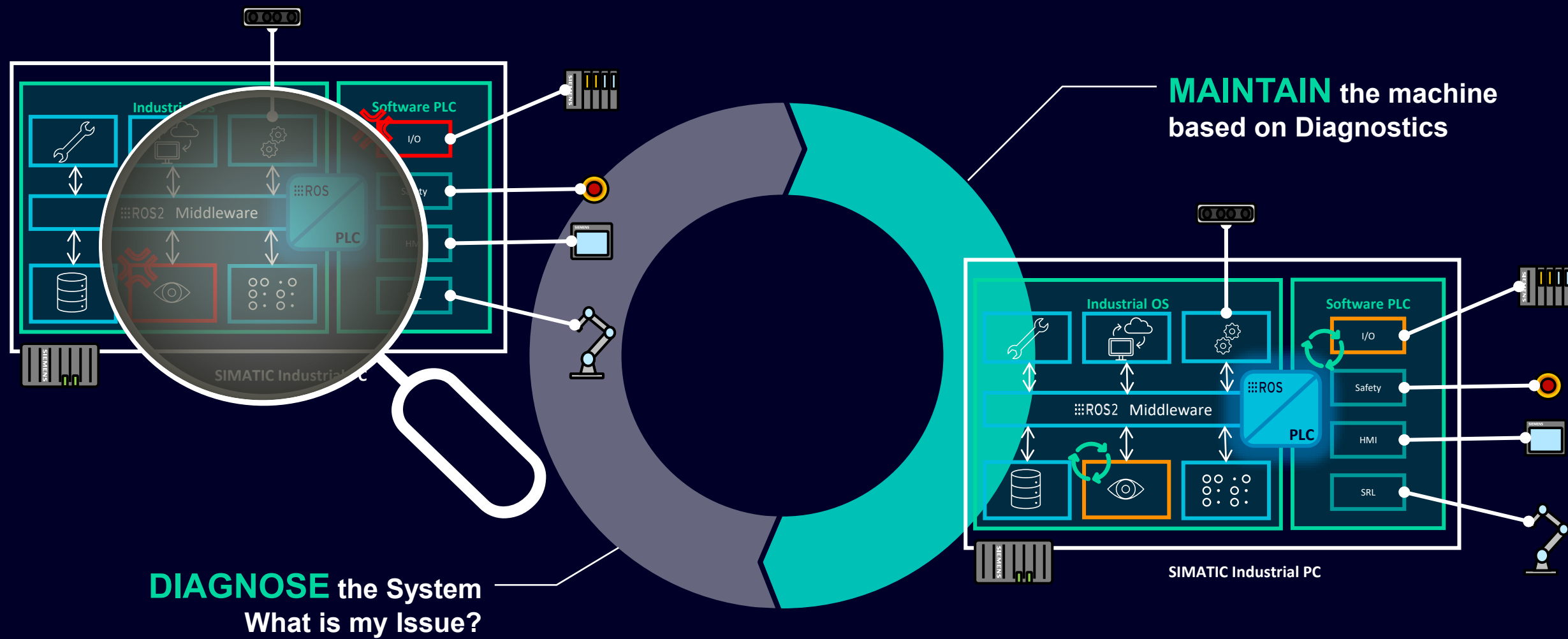


Dashboard example based on Grafana:

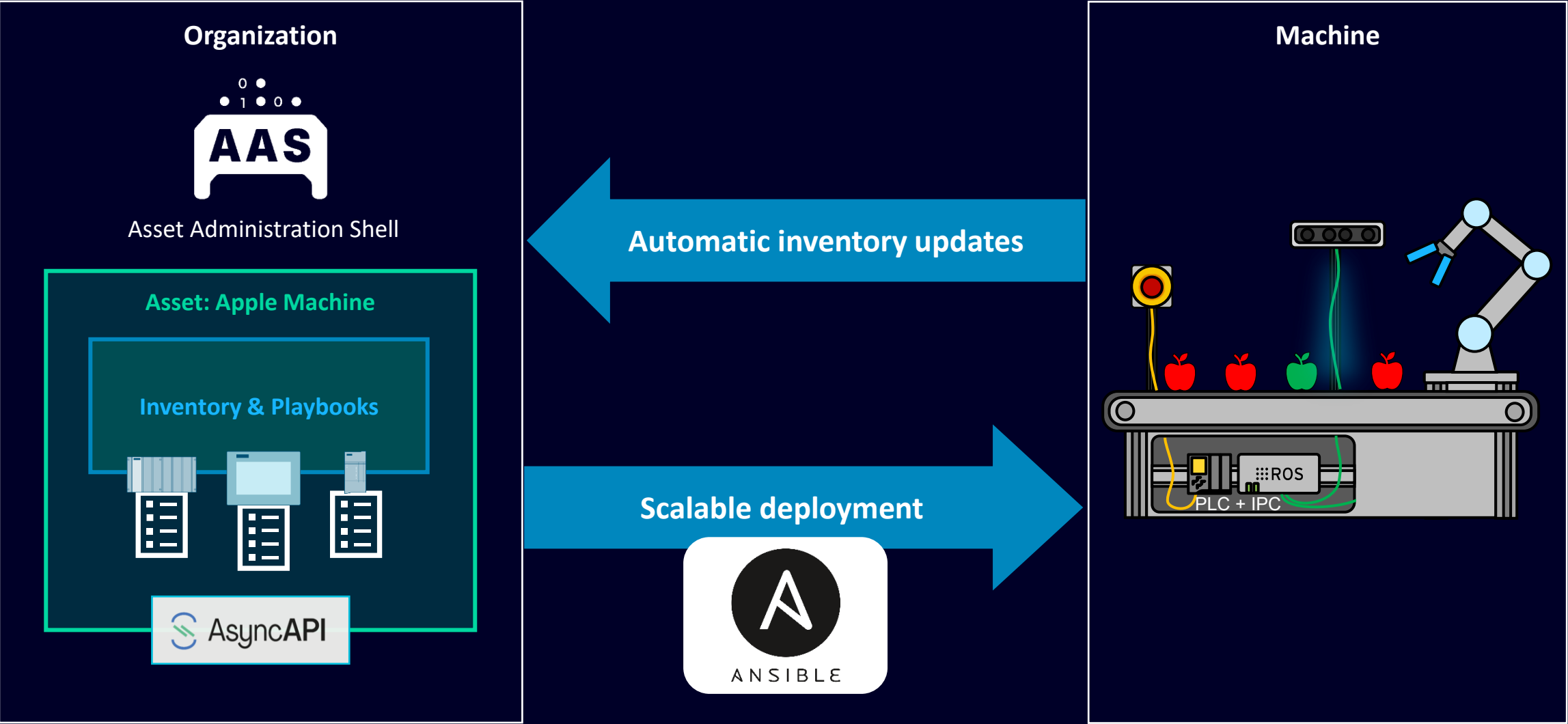
- Performance insights on the IPC
- Docker based logs
- PLC Alarms
- Temporal relation to different errors
- Status of all Docker Containers & PLC



Hybrid-OT – Main Challenges during Operation



Better use Standardization & well-known Tools



Experience with ANSIBLE



- Comes from cloud deployment
- **Agentless** (only SSH and Python needed)
- Deploys containers
- **Open Architecture** for further modules
 - ✓ PLC Firmware
 - ✓ Network
 - ✓ Drives
 - ✓ Sensors
 - ✓ ...



Even less risk?
Use Ansible + Industrial EDGE
from Siemens
→ CRA is coming!

Guidelines for a happy machine

1. Reduce risk for your business (Cyber Resilience Act , Safety, hardware availability) → ROXSIE
2. Focus on your USP
3. Holistic use case view
4. Diagnose everything! – Your machine is more than ROS (Linux, PLC, Network, Scanners, Drives, ...)
5. Track installed inventory – Asset Administration Shell



What now?



- Try out our Hybrid-OT stack at our booth
- Collaborate with us in EU projects
- Get ROXSIE





What Industrial Automation Needs from ROS

ROSCon FR & DE
Strasbourg 2025

From chaos to clarity: ROS 2 meets AsyncAPI

Our Team

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Are you interested to learn more or buy it? Contact us!