IoT-Concept Schema

Edge Device e.g. IPC

Security VM (headless Linux): Acts as gate keeper, firewall and security instance. Performs authentication- and authorization checking and granting.

Applikation VM (headless Linux) — Only necessary if hypervisor has no native Container Support

Container Environment e.g. Docker:
- Visualization App - Container
- SCADA App - Container
- Database App - Container
- Control-Logic
- ...

MQTT / HTTP / OPC-UA / TSDB

(Modbus as Backup if PLC dies)

Hypervisor-Web-Control-Panel (if existent)

SoftPLC VM (Windows Server): Contains only rudimentary logic for singal routing via onboard OPC-UA Server and minimal program logic for emergency operation and safe shutdown.

HTTPS / HTTP / OPC-UA / Modbus

Hypervisor Type 1 or 2 e.g. Linux KVM idally with native Container Support

Bare Metal / Hardwareplattform

Legend
- Modbus (TCP/IP) ————
- Backend Datanetwork (TCP/IP) ————
- Backend Applicationnetwork (TCP/IP) ————
- WWW-facing Applicationnetwork (TCP/IP) ————

Primary protocol

(fallback connection for emergency)

I/O BUS-Controller (e.g. ET200SP)

Other BUS-Actuators e.g. FC, Valves, ... — Modbus

BUS-Controler — Modbus

I/O | I/O | I/O ...

4...20 mA / +24 V

Sensor e.g. PT100

Actuators e.g. Solenoid-Valve

Open WWW

Router — Multiple / HTTPS

NAS or USB-Storage (can also be Cloud) — e.g. NFS

20.07.2020

SWITCH

Modbus