



DeMas individual, innovative and secure IT solutions

# Remote Terminal Unit (RTU)

- Microprocessor-controlled electronic device that interfaces objects in the physical world to a distributed control system or SCADA.
- Supervisory control and data acquisition - system by transmitting telemetry data to a master system.
- Using messages from the master supervisory system to control connected objects.
- Other terms that may be used for RTU is remote telemetry unit or remote telecontrol unit.

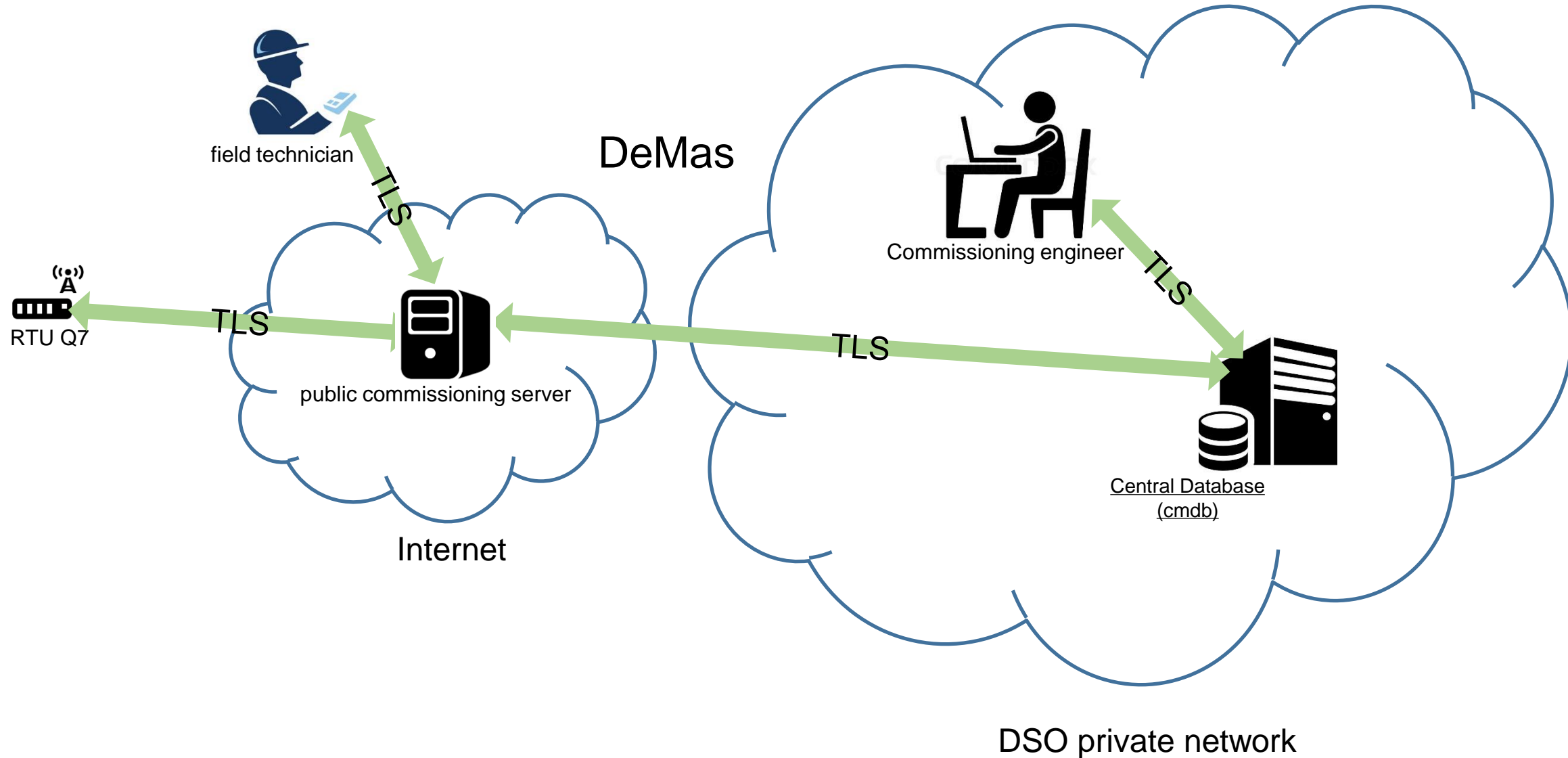
# RTU management tasks (overview)

- Commissioning
- Administration
- System control
- Monitoring
- Provision of data for third-party systems (i.e. SCADA)

# RTU management user roles

- Commissioning engineer
  - preparing the configuration to be provisioned to the newly deployed device, e.g. by managing and linking an inventory database.
- Field Technician
  - deploying the RTU and identifying it in the system and attaching the relevant metadata to it.

# System process overview



# RTU management tasks (detail)

- RTU management (HW/SW)
- Configuration (i.e. mapping)
- Location management
- Installations order management
- Commissioning
- Change management
- Monitoring
- Decommissioning

# Process life cycle (1/3)

Step	Provisioning	RTU-Installation	Network-Connection
Who	Comissioning engineer	Field technician	System
Task	The commissioning engineer feeds the device management database with the inventory of RTUs ready for deployment.	The field technician installs the RTU at its designated location in the field	The RTU connects to the DSO's private network
DMSW/ CMDB State	Created	Created	Created



# Process life cycle (2/3)

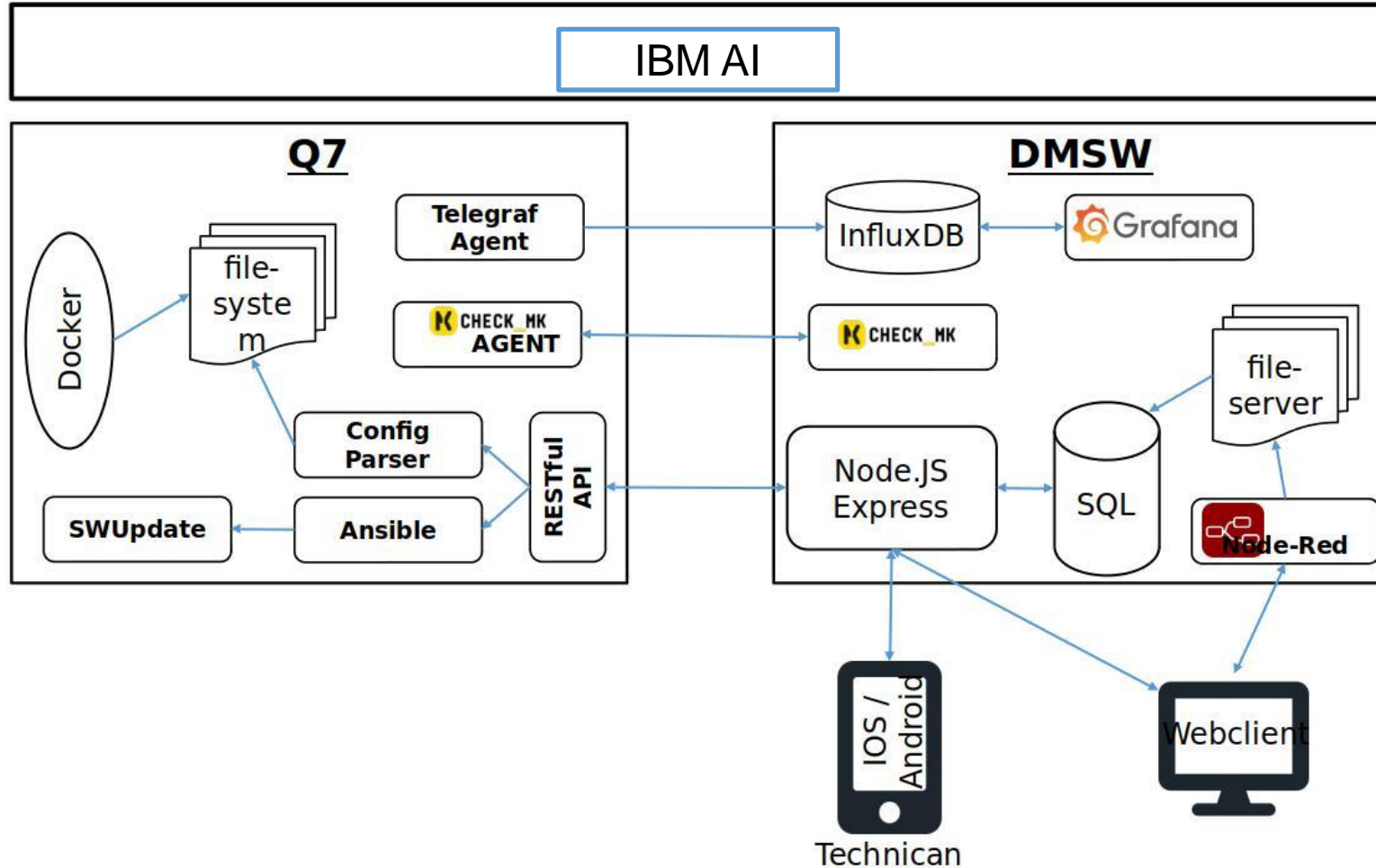
Step	Registration	Finalising Meta-Data	System-Connect
Who	Field-Technician	Field-Technician	System
Task	Scanning the RTU's barcode by using the mobile commissioning tool (Web/ App) for installation order.	Providing relevant meta-data in the mobile commissioning tool	RTU connects to the device management server and polls for available provisioning data.
DMSW/ CMDB State	Created	Commissioned	Activated



# Process life cycle (3/3)

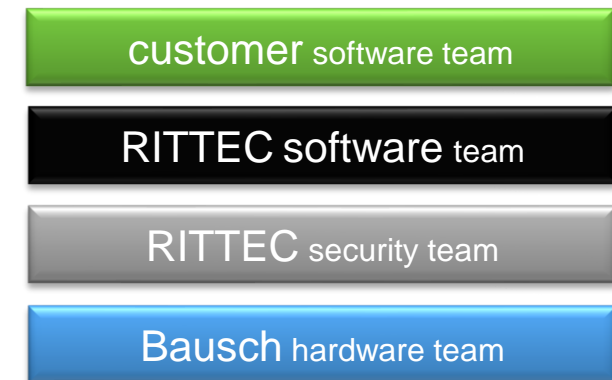
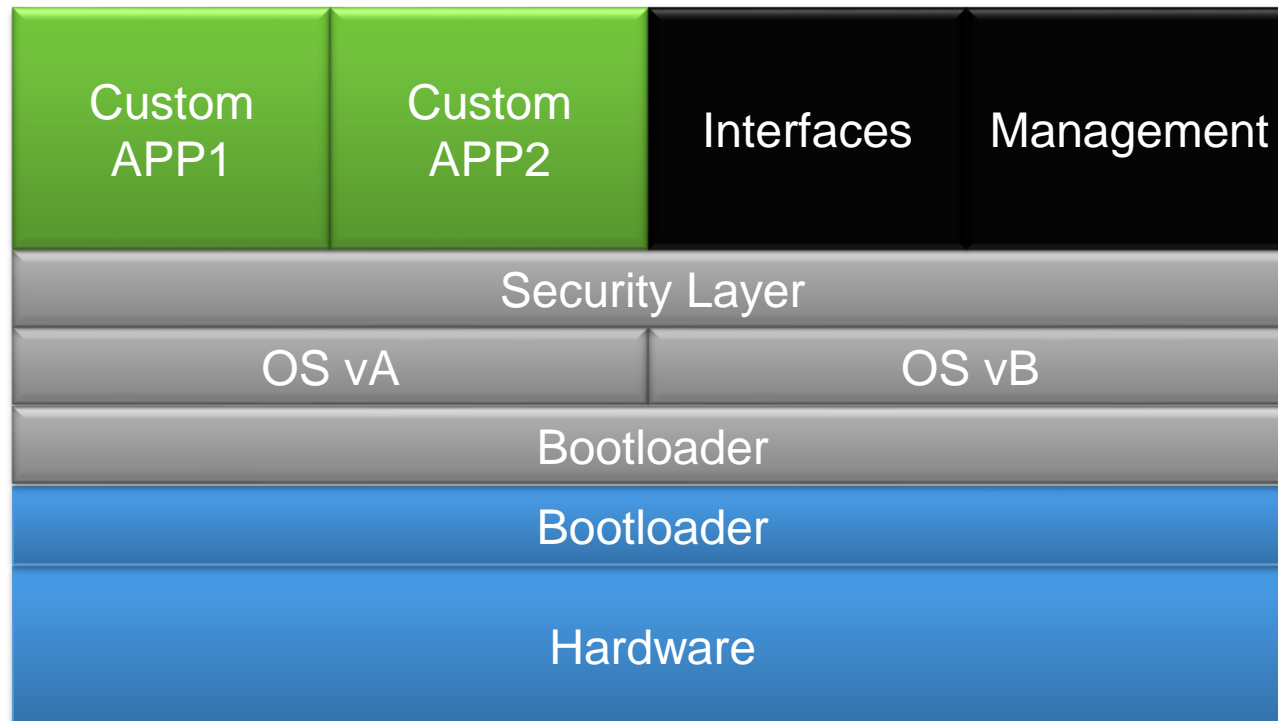
Step	Confirming	Changes	Deactivation
Who	3rd-Party System/ Engineer	Field-Technician	Field-Technician
Task	Confirming “operational” by 3 <sup>rd</sup> -Party System / Engineer	Fullfillment of changes	Scanning the RTU’s barcode by using the mobile commissioning tool (Web/ App) for deinstallation order.
DMSW/ CMDB State	operational	operational	Dectivated / other

# RTU Q7 - Architecture



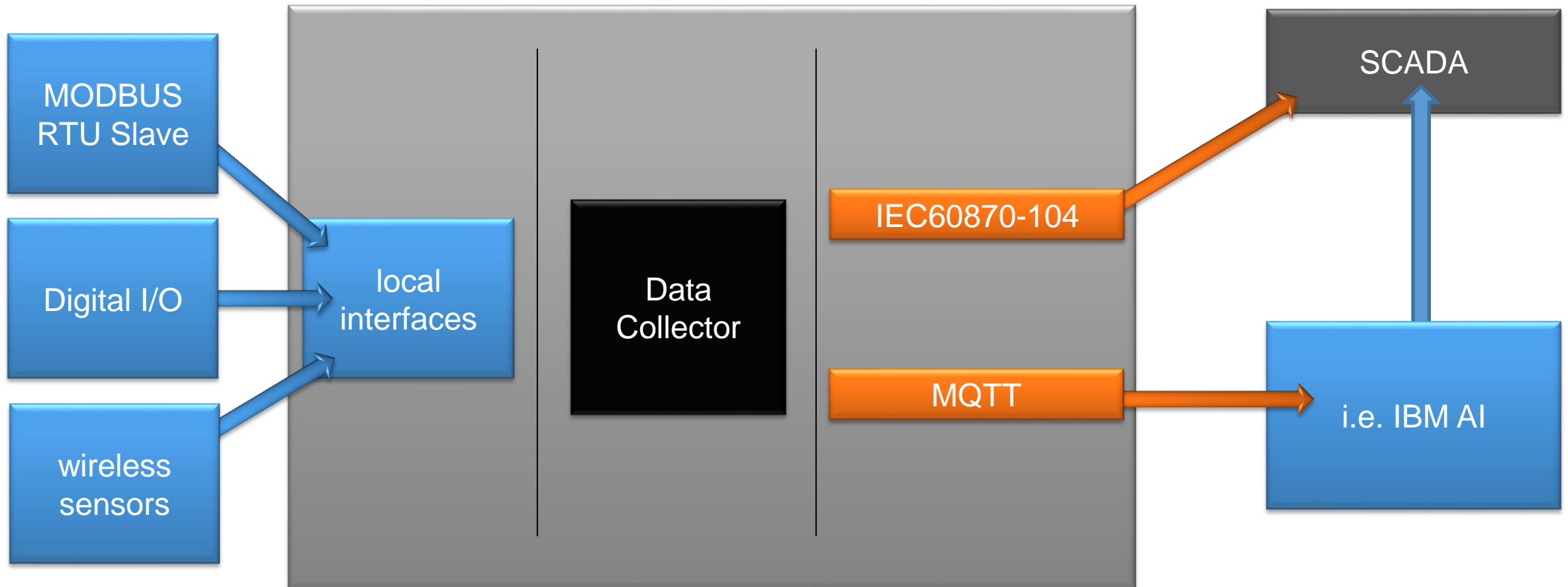
# RTU - Stack

Schematic representation of the RTU System Structure



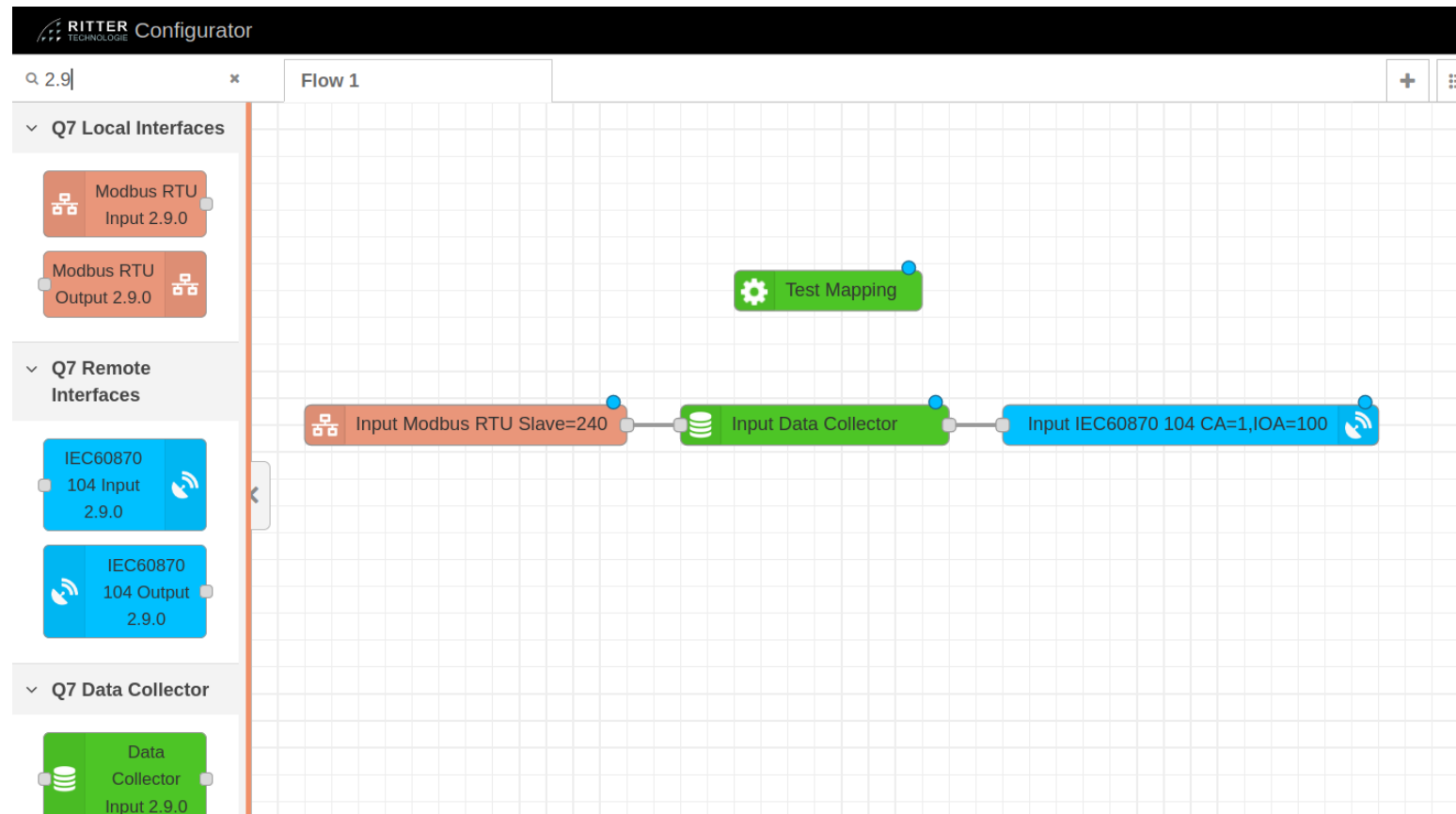
# RTU – Protocol Converter

Q7 System



# Mapping Concept Node-Red

## Mapping over Node-Red Export

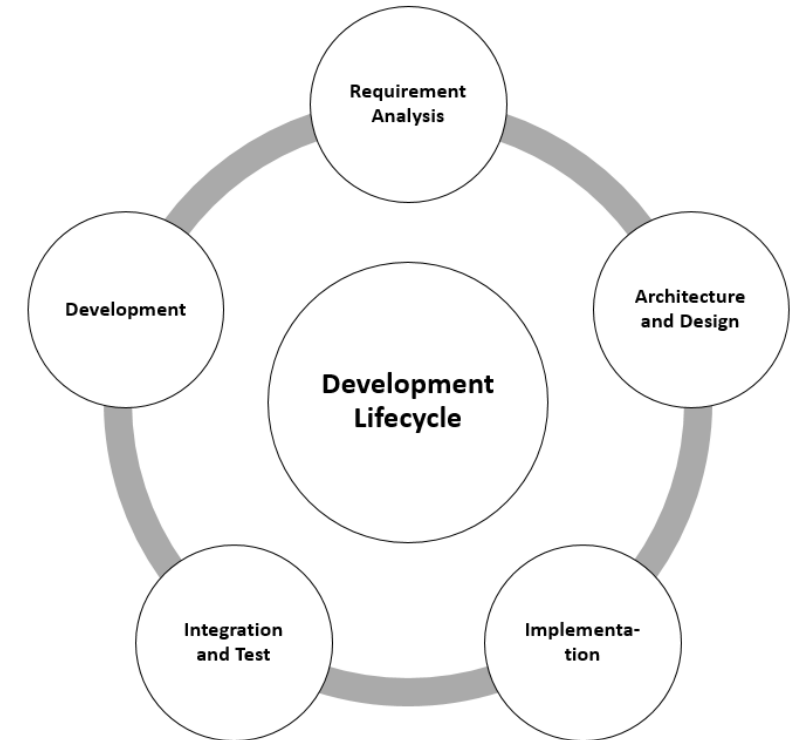


# Advantages of RTU & AI

- the existing infrastructure can continue to operate unchanged
- connect the additional sensors to Q7 RTU
- monitoring always has too much or too little information  
artificial intelligence delivers the right information at the right time and the right place
- make the right decision based upon predictive AI informations

# Security-First-Design-Lifecycle (SDLC)

- Secure Concepts:  
e.g. → XSS, → SQL Injections
- Using BSI Standards 2020
- Manual and Automatic Tests  
e.g. Cypress
- 27K certified Data Center and  
Hardware/Software Development





# Simple Process, Strong Result

- Full integrated Atlassian Jira and Confluence based Processes for System und Software Development
- CVE
- Scrum
- Documentation Standards



## Contact Person



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