

web4control System Overview

Introduction

Founded in 2018: Spin-off from the diploma project "serial2net" 2016 by hf-ict

- Aim: Manage existing hardware over the Internet
- Solution: Create software for serial protocols over TCP/IP



Introduction

Team

- Michael Ramstein: Project Manager ICT & Software Developer (hf-ict)
(20% and 80% Cyon Software Developer)
- Michael Mislin: Project Manager (HF-E/A)
Project Manager & Specialist ICT (hf-ict)
Certified CMSE & CECE
Electrical Project Manager (BPPL) in training
(20% and 80% NSNW Specialist ICT)
- Samuel Mislin: Sales, Finance & Marketing
(10% and 90% Skan AG Head Technician Services Pure Solutions)
- Daniel Grütter: MSR Specialist ATEX
(at cost)

— Introduce TECHDOCK GmbH

Services



M2M solutions (also as provider)



Remote Maintenance



Monitoring



System Monitoring & Integration



ATEX & SIL



Software Development & Service Contracts

— Introduce TECHDOCK GmbH

Environmental Sustainability

- Production in Switzerland
- Short production routes where possible
- No plastic in the device housing
- Right to Repair
- Open-Source Hardware
- Open-Source Software
- Reduced commutes via remote maintenance



Product

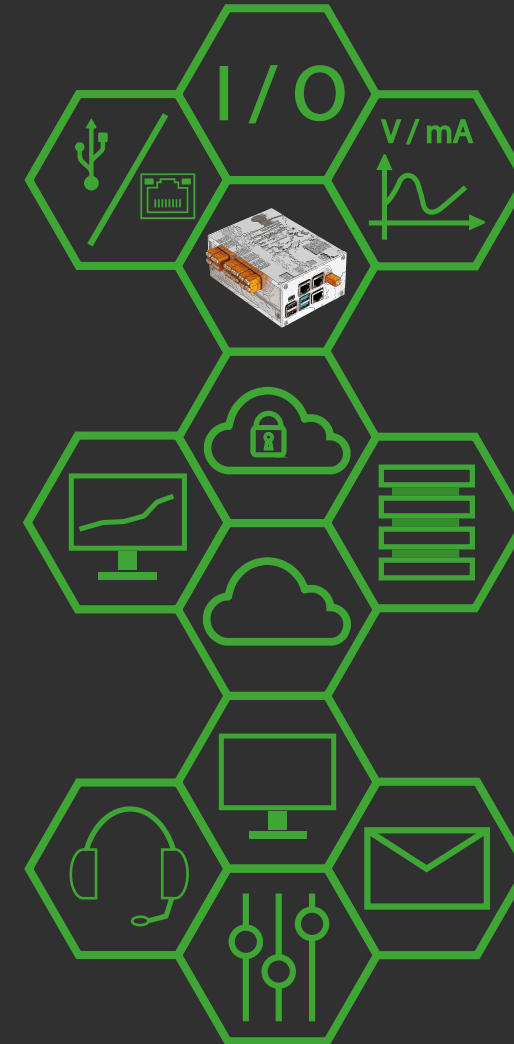
Idee

The ability to operate an M2M Complete Solution without in-depth knowledge of ...

Information & Communication Technology
Automation
Software Development
IT Security

... based on proven protocols such as...

Open-Source Projects
TCP/IP Protocol
Secure Shell Protocol
Virtual Private Network Protocol



Product

web4control

Complete Solution web4control consists of ...

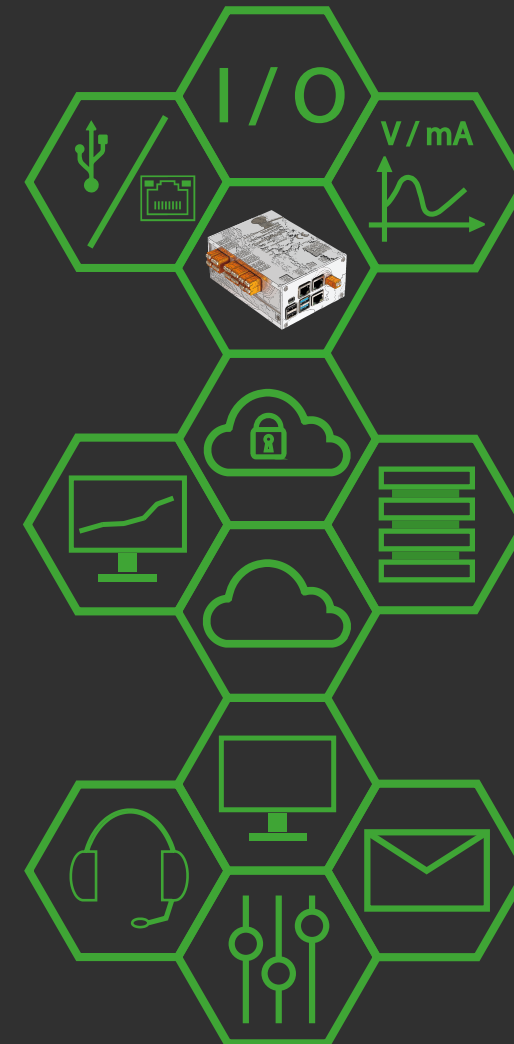


web4log (Software Cloud)



control4log (DataLogger)

... and everything licensed Open-Source (MIT).



Product

web4log

M2M-Cloud Software bietet ...



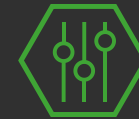
Secure TCP/IP Communication via SSH and/or VPN



Autosaving in MySQL database



Web-Applikation in PHP 8



Automated Queries



Automated Alerts via Email

... and more!

— Product

web4log

Additionally ...

- Define logo and application names
- Combine attachments into groups
- Build queries as an independent data point
- Group queries into datasheets
- Create contracts with alert conditions
- Create inspections with alert conditions
- Automatically create reports
- User administration (user and admin)
- Two factor authentication using TOTP
- Capture granular email addresses for alerts

... etc.

Product

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DataLogger Hardware offers ...



Digital and analog peripherals (4 DI, 4 DO, 2 AI & 2 AO)



Analog peripherals in V and mA (0 – 10 V & 0 – 20 mA)



Automated alerts with email via SMTP

... and more



USB over IP



Local database MariaDB

— Product

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Additionally ...

- CE Conformity
- Made in Switzerland
- Configuration via USB stick or TCP-IP
- Virtual Network Computing Set-Up
- Desktop preinstalled
- Administrative access
- Extensive configuration options
- Switch function
- Open-Source hardware (incl. CAD drawings)
- Open-Source software (incl. software source code)
- Platform for own development(s)

... etc.

Product

control4log

CE Conformity ...

2014/30/EU: EMC Directive (*)

- 61000-6-2: Interference immunity for industrial areas
- 61000-6-3: Interference emission for living areas

2011/65/EU: RoHS-II ()**

- 2015/863/EU: Extension RoHS
- 1907/2006: REACH Regulation

EN 62268-1: Security Requirements (*)

- Facilities for audio/video, information and communication technology

(*) tested by the notified body QUINEL in Switzerland!

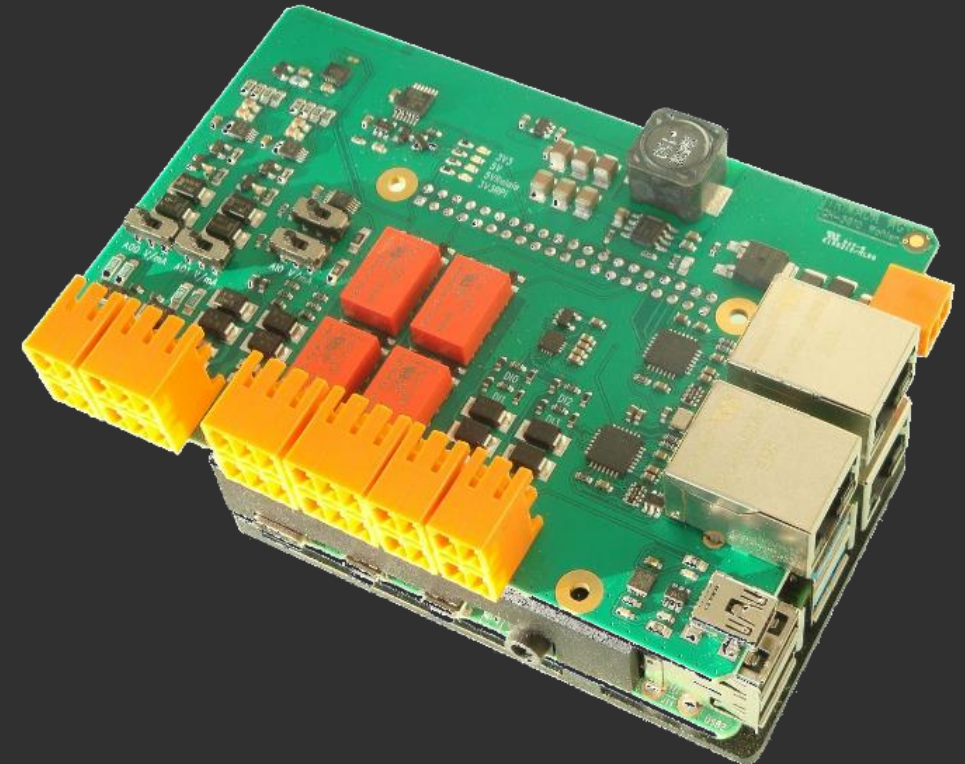
(**) confirmed by electronics manufacturer TRIMADA in Switzerland!

Product

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Hardware Info ...

- Based on Raspberry Pi 4
- Power supply 6 to 30 V DC
- DIN rail mounting possible on three sides



Product

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Hardware Interfaces ...

- DI: 24 V DC Level freely adjustable
- DO: 24 V DC Potential-free changeover contact
- DO: 100 mA Potential-free changeover contact
- AI: 0-10 V Conversion via DIP switch
Level freely adjustable
- AI: 0-20 mA Conversion via DIP switch
Level freely adjustable
- AO: 0-10 V Conversion via DIP switch
Level freely adjustable
- AO: 0-20 mA Conversion via DIP switch
Level freely adjustable
- ETH: 1GB/s
- ETH: 10MB/s adjustable as a switch
- USB: 2.0 und 3.0
- HDMI: Micro



Product

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Software Functions...

- Configuration:
 - USB-Stick or Software
- Alerts:
 - Generate SMTP on DI, DO, AI and AO
- DI:
 - Signal-doubling on DO Counter
- DO:
 - Switch and button with timer function
 - Pulse generator
- AI:
 - Signal-doubling on AO



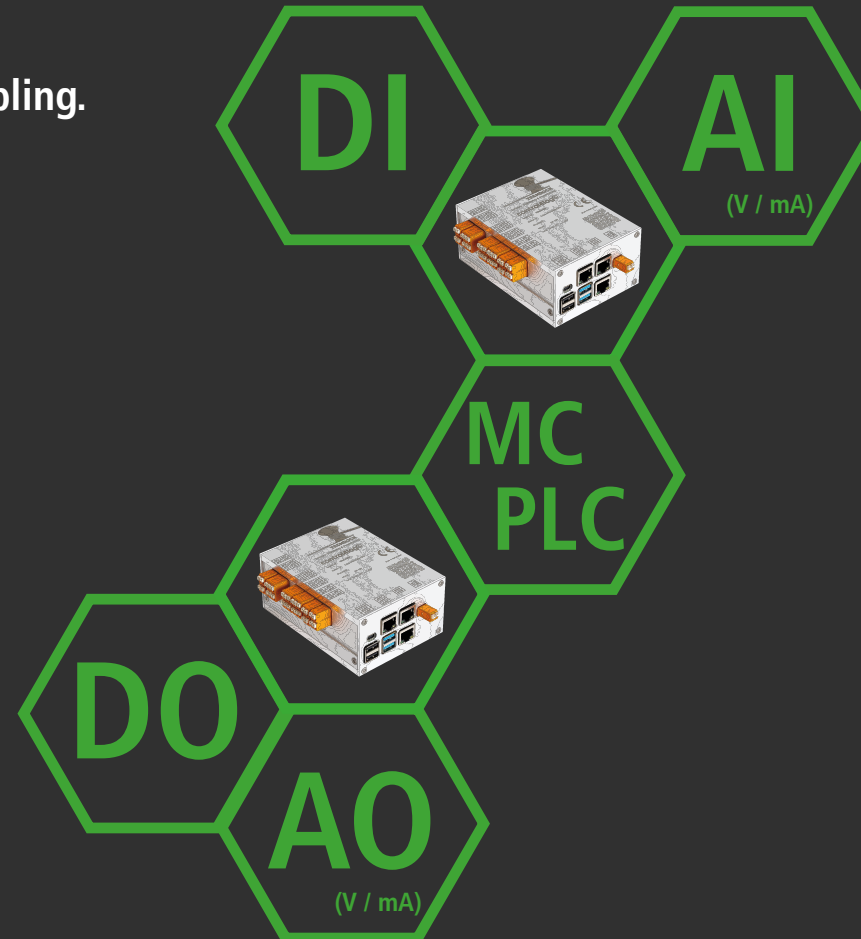
Product

Structure of the Control System



Product

Structure of Control System with Sensor Value Doubling.



Product

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USB Mediation via Internet & Secure Shell ...



Product

Monitoring

Grafana Software Analysis & Visualization Offers ...



Dashboard creation...

- With desktop and mobile option
- With many types of graphics
- With flexible construction
- With modern user interface
- With export option
- Is Open-Source

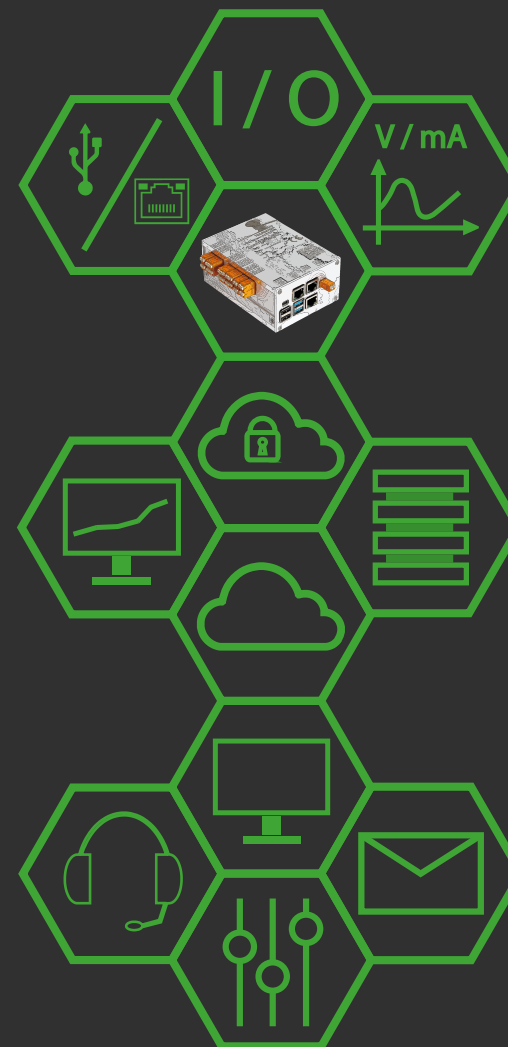
... etc.



Target Audience

For web4control

- Devices and systems that are to be easily and securely monitored and maintained with an M2M Complete Solution on a limited budget.



Test

Testen web4control

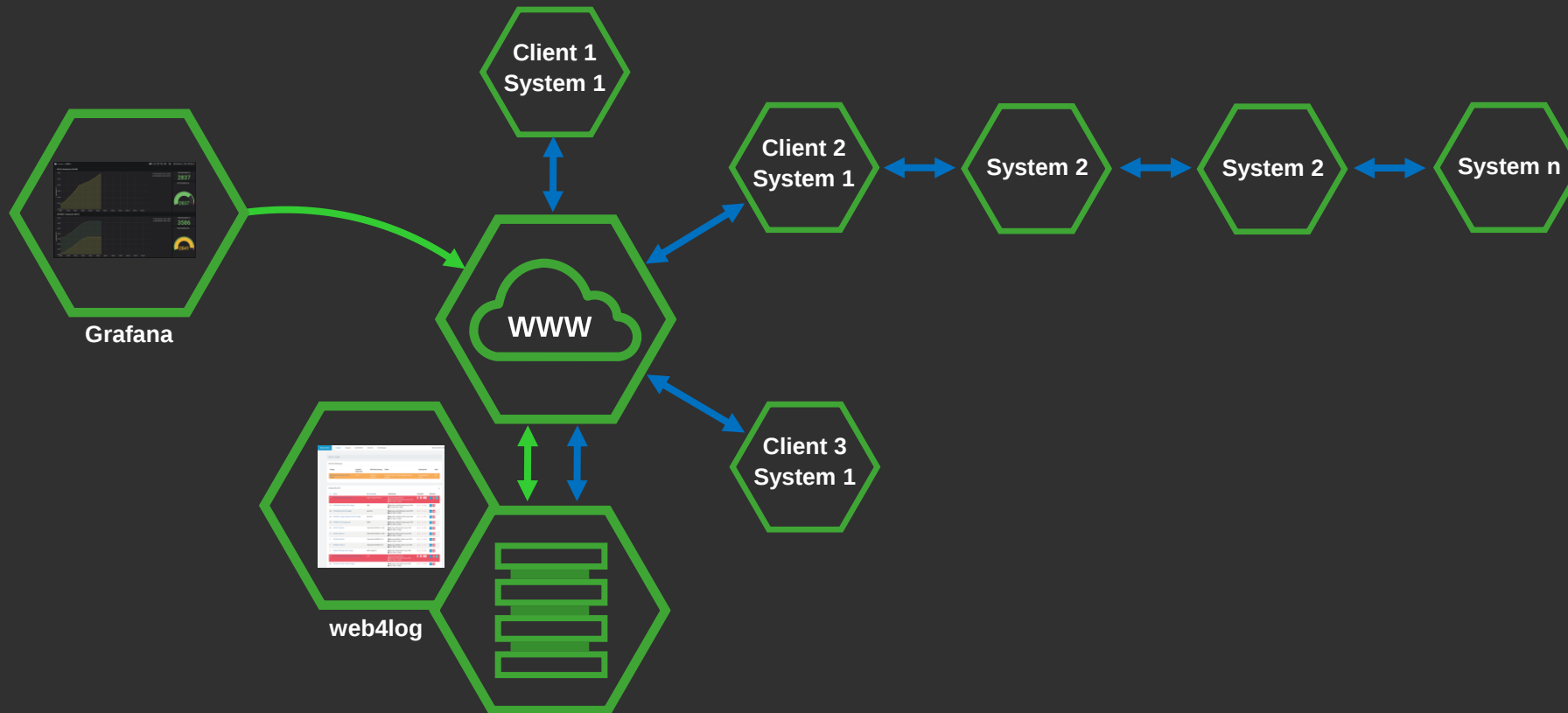
Upon client interest, TECHDOCK offers...

- Test environment web4log and Grafana for 6 months (without VPN)
- Test hardware control4log incl. LTE router with CH-SIM without roaming
- Introduction via 4 hour video conference
- Hosting for web4log and Grafana
- Construct Grafana dashboards as desired
- Autonomous Grafana dashboard screens with WWW access via LTE
- Service contracts for hosting if desired (cancellable annually)
- Provider presence for control4log with LTE via VPN within the EU

... more upon request

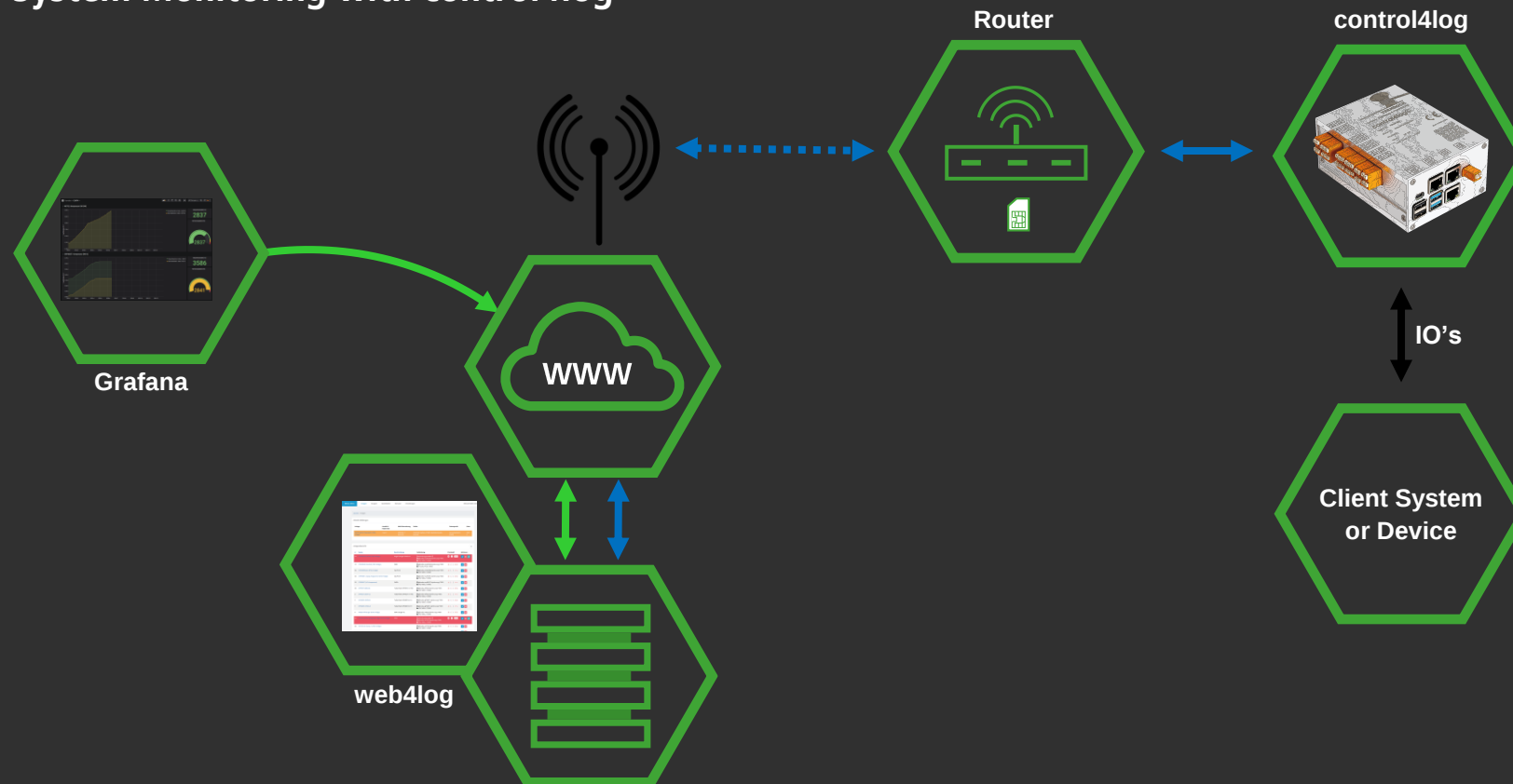
Example

System Monitoring on Third-Party Products / Controls



Example

System Monitoring with control4log



Beispiele

Remote Maintenance with USB Mediation via control4log

