SOFTAFF

COOPERATION OFFER

Automation, controllers and switchboards – end to end

From design and prefabrication, through PLC/SCADA software, to commissioning and service

Marcin Taff
Founder | Software & Automation Engineer
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WHO WE ARE

SOFTaff – automation and software for industry



Marcin Taff

FOUNDER

Electrical, automation and IT engineers

Gdańsk University of Technology · Gdynia Maritime University

SEP E + D licences

Operation, supervision and testing & measurement work

PLC · SCADA · HMI

Controllers, visualisations and applications

In-house OpenCPLC controllers

Designed to customer order

Marine and industry

Ships, shipyards, industrial plants

Facilities in Gdynia

Switchboards, testing, 3D printing, CO_2 laser

WHO WE WORK FOR

A partner for manufacturers, integrators and installers



Machine builders

Controls, HMI panel and documentation for your products



Water, pumps, aquaculture

Pump stations, treatment, aeration, parameter monitoring



Agriculture and processing

Dryers, transport and storage, sequences and monitoring



Buildings and BMS

HVAC, heating, lighting, energy monitoring



Marine & offshore

Marine equipment, IAS integration, class requirements



Integrators and installers

Subcontracting: programming, switchboards, commissioning

TURNKEY SERVICE

One partner – from idea to a working system

Consulting

requirements, solution selection

Design

schematics, I/O, functional description

Switchboard

prefabrication and testing

Software

PLC, HMI, SCADA, drives

Commissioning

FAT / SAT, training

Service

remote access, support

Single responsibility

No need to coordinate several subcontractors – design, cabinet and software come from one source.

Flexible scope

We can join at any stage: software only, switchboard only, or the whole package.

Faster on site

Switchboard tested with the software in our workshop – shorter commissioning.

SAMPLE PROJECT

What a typical project for a machine includes

FROM THE CLIENT

Input data

- P&ID diagram and process description
- List of sensors, pumps, valves
- End-user and standards requirements

SOFTaff

design
prefabrication
programming
testing
commissioning

CLIENT RECEIVES

- **Electrical schematics**
- **Automation switchboard**
- **PLC program / controller**
- **HMI / SCADA application**
- **VFD configuration**
- **FAT procedure and report**
- **As-built documentation**
- **Training and support**

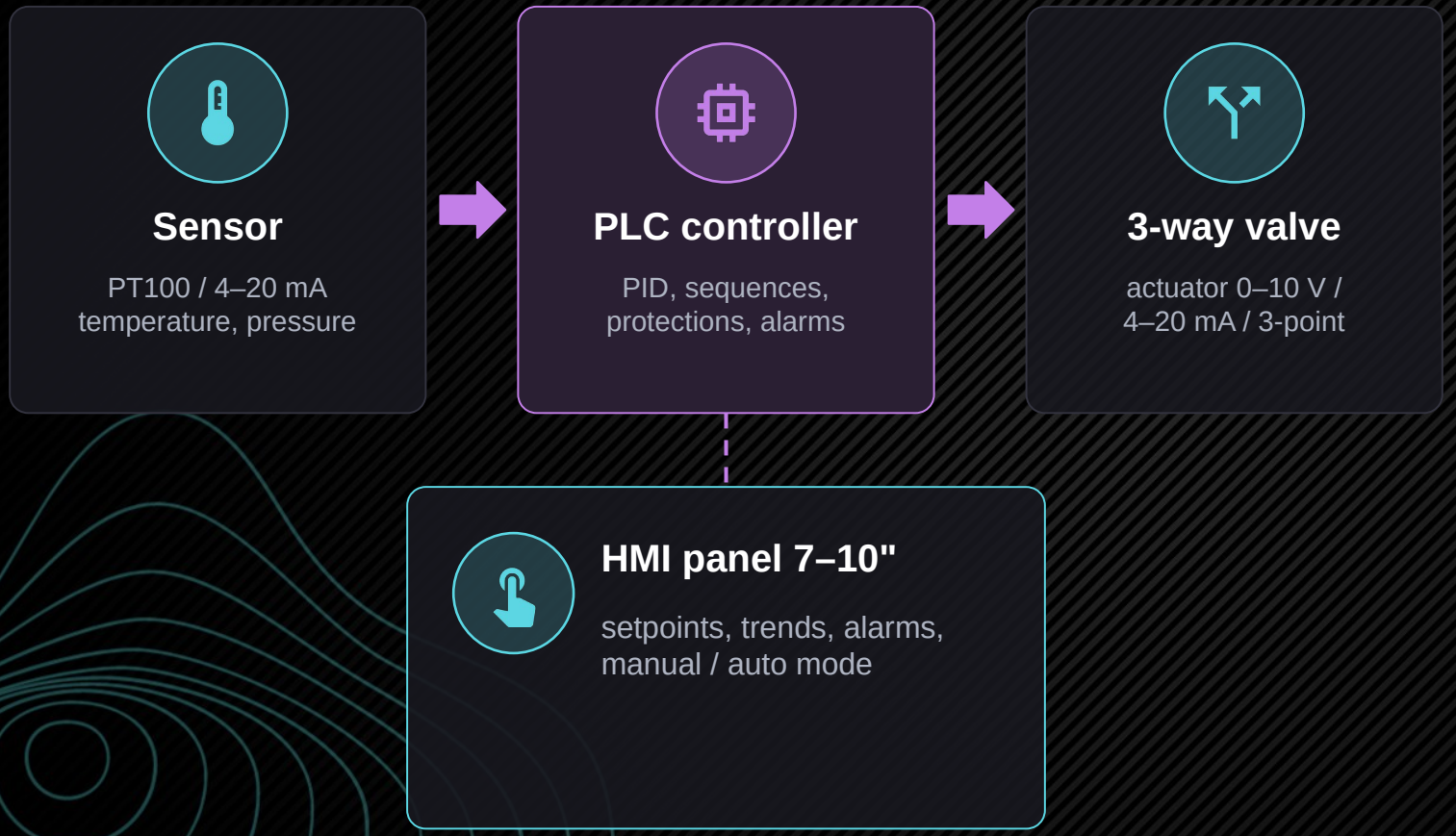
Scope tailored to your needs – from documentation to turnkey delivery.

VALUE FOR THE CLIENT

From a simple controller to a smart machine

	Today	With SOFTaff automation
Control	Single PID controller, local settings	PID in PLC, HMI setpoints, autotuning, recipes
Diagnostics	“Fault” lamp, no history	Alarm list with time, cause and history
Data	No record of machine operation	Trends, running hours, energy and media use
Integration	A few volt-free contacts	Full signal map via Modbus / Profinet / BACnet
Service	Site visit for every problem	Secure remote access and diagnostics

Example: 3-way valve control in a PLC



Benefits

- More stable control: PID with filtering, anti-windup, autotuning
- Setpoints and recipes changed from HMI, password-protected
- Interlocks and sequences (e.g. heater protection, pump dry-run)
- One hardware platform for many machines – only the app differs
- Brand-name hardware (e.g. Siemens, WAGO, Beckhoff) or OpenCPLC

Drives selected, configured and integrated with the PLC

PLC

logic, PID, sequences

VFD

parameters, protections

Motor

pump, fan, conveyor

Scope of work

- Selection of VFD and switchgear for the motor and application
- Configuration and parameter setup, ramps, protections
- PLC integration: communication, signals, diagnostics
- Pressure, flow and speed control (PID)
- Multi-pump systems and duty rotation
- Energy savings instead of valve throttling

Modbus RTU / TCP

control and parameter readout

Profinet / EtherNet/IP

fast data exchange

Analog / DI/DO

0–10 V, 4–20 mA, start/stop

DATA AGGREGATION

A machine that knows how it is running

Process trends

Temperatures, pressures, flows – logged with history

Alarm history

Time of occurrence, acknowledgement, cause – a basis for service

Operating counters

Running hours of pumps, drives and heaters, cycle counts

Energy and media

kWh, water and other media usage, plant efficiency

Predictive maintenance

Reminders for inspections, replacements and sensor calibration

Reports

CSV/PDF export for the user and the service team

INTEGRATION

Communication with supervisory systems

IAS · BMS · SCADA · MES

Modbus TCP / OPC UA
Ethernet network, full data map

BACnet / Modbus RTU (RS-485)
standard in BMS and industry

Profinet / Profibus
when required by the integrator

Hardwired 4–20 mA / DI/DO
critical signals and common alarms

Communication standard for your product

- One standardised register map for each machine type
- Ready signal list (I/O list) for tender documentation
- Faster alignment with the supervisory system integrator
- Communication tests on a simulator before FAT
- Support in agreements with the end user and class society

REMOTE ACCESS

Service without sending a technician to site



Machine

PLC + HMI



VPN router

Segregated network, firewall



Secure tunnel

Encryption, on-demand access



Service

Diagnostics and updates

Cybersecurity

Designed with IEC 62443 in mind, and IACS UR E26/E27 for marine

User control

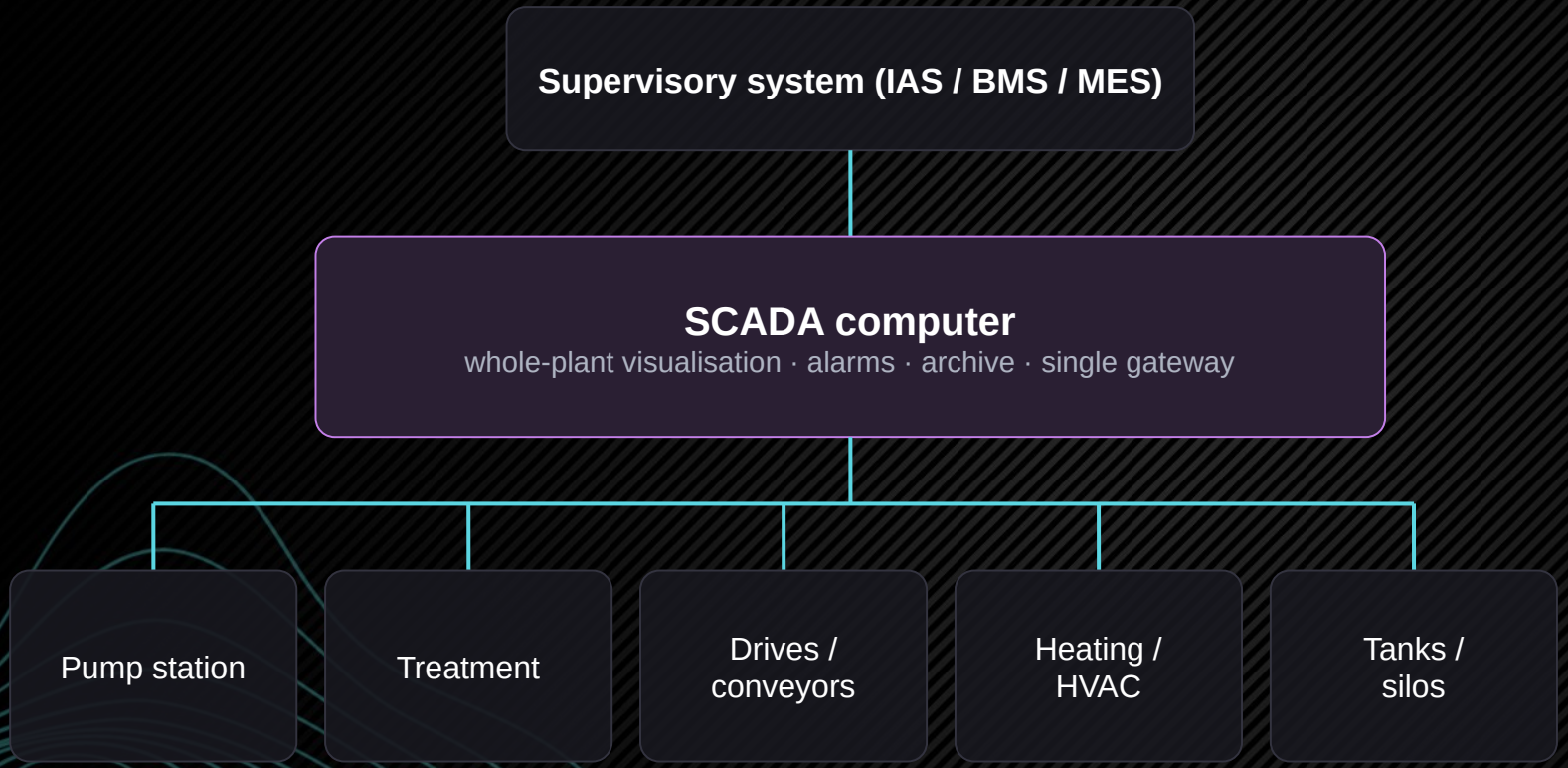
Access enabled by the operator – only for the service session

Lower costs

Many faults diagnosed remotely, with no site visit

SCADA FOR LARGER PLANTS

One system for many machines



Ethernet / Modbus TCP network – each subsystem with its own PLC

Why it makes sense

- One integration point instead of many
- Operator sees the whole plant on one screen
- Data archiving in a database, reports
- Optional PC and PLC redundancy
- Higher offer value on larger contracts

AUTOMATION SWITCHBOARDS

Complete control cabinets, fully tested

Design

Schematics (e.g. EPLAN), component selection, layout, BOM

Prefabrication

Component mounting, wiring, wire and terminal marking

Testing and FAT

Functional tests with software, measurements, report

Documentation

As-built documentation, manuals, spare parts list

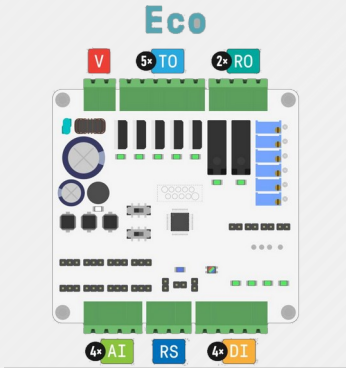
Turnkey cabinet

- Switchboard tested with the software before shipment
- Labels, tags and parts made with our own laser and 3D printer
- Compliant with EN 61439 and end-user requirements
- Short series for equipment manufacturers

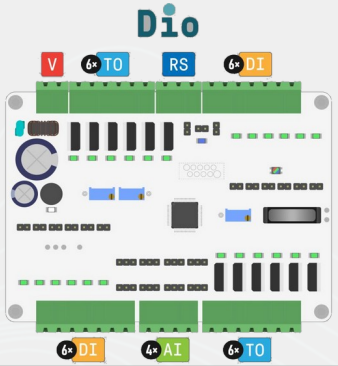
Controllers designed to customer order



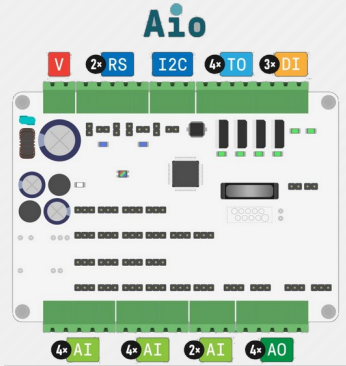
OpenCPLC Uno
universal: relays, triacs, RTD input



OpenCPLC Eco
compact, for standalone machines



OpenCPLC Dio
digital I/O expansion module



OpenCPLC Aio
analog measurements and AO outputs

STM32G0 · 24 VDC / 12 VDC · RS-485 Modbus RTU / BACnet · DIN rail · programmed in C

When it makes sense

- Machine series where a brand-name PLC is too costly or too big
- Non-standard I/O, dimensions or 12 V supply
- Custom electronics and firmware tailored to the product
- Open platform – no licences, no closed environment

ELECTRICAL AND AUTOMATION DESIGN

Complete documentation for new machines

Electrical schematics

Power and control circuits, cable lists, I/O lists (e.g. EPLAN)

Drives and switchgear

Selection of VFDs, protection devices and switchgear

Functional description (FDS)

Operating modes, sequences, alarms and interlocks – basis for the code

Test documentation

FAT/SAT procedures, reports, support with approval documents

Design basis

- IEC 60204-1 – electrical equipment of machines
- EN 61439 – switchgear and controlgear assemblies
- IEC 60092 / IEC 61892 – ships and offshore
- Class society rules (e.g. DNV, PRS) and end-user specification

Applicable standards agreed for each project.
Documentation approval remains with the client / end user.

ENGINEERING SUPPORT

Support from the first talks with your customer

Technical meetings

Joining talks with the end customer and clarifying requirements

Concept and selection

Proposed control architecture, hardware and communication

Tender support

Technical description, signal list, scope of work and automation quote

Class and approvals

Agreements with the classification society and approval bodies

Expert opinion

Assessment of existing automation, upgrade recommendations

Start-up and acceptance

Attendance at FAT/SAT and acceptance at the end customer

SOFTaff facilities – skills and workshop

Team

design & build:
automation, electrical,
electronics, software

Gdynia

production facility
and test bench

3D + CO_2

3D printing and laser cutter
on site

Team competences

- Automation, PLC/HMI/SCADA programming and applications
- Industrial and marine electrical work, on-site commissioning
- Switchboard prefabrication, assembly and measurements
- Electronics and custom OpenCPLC controllers to client requirements
- Apps and IoT: remote monitoring, data collection, cloud integration

Workshop in Gdynia

- Switchboard production and testing
- 3D printing: enclosures, brackets, prototypes
- CO_2 laser: labels and tags
- Tests with process simulation

COMMISSIONING AND SUPPORT

From specification to operation on site

1 **Analysis**
requirements, I/O list, standards

2 **Design**
schematics, cabinet, functional spec

3 **Build**
switchboard, PLC, HMI, drives

4 **FAT**
tests at our site or the client’s

5 **SAT / start-up**
on-site commissioning

6 **Support**
warranty, remote service, changes

Pomerania
Bojano / Gdynia – quick access to sites in the region

Warranty
12 months on software, response within 48 h

Service contract
Ongoing care of delivered systems after warranty

COOPERATION MODEL

Three levels – we start with the smallest

PILOT

One machine or retrofit

- PLC + HMI panel
- Communication with supervisory system
- Data, trend and alarm logging
- FAT and commissioning

Low entry threshold

STANDARD

Standard for a product family

- Common PLC/HMI base
- Switchboard in short series
- Functional descriptions (FDS)
- Reports and service data
- Remote access option

Highest long-term value

SYSTEM

Package with a SCADA computer

- Integration of several subsystems
- SCADA with database and archiving
- Optional PC and PLC redundancy
- Support for large projects

For large contracts

SUGGESTED FIRST STEP

A pilot on a single machine

Together we choose one machine or installation – e.g. a controller-based system, a pump station or a VFD drive – and demonstrate the full path on a working unit.

Week 1	Workshop at the client, documentation review, I/O list
Week 2–3	Electrical schematic, selection of controller, HMI and drives
Week 4–5	Switchboard, PLC/HMI program, communication
Week 6	FAT, report and recommendations

Client receives

- A working solution on a real machine
- Complete machine documentation
- A quote for rollout to further machines
- A decision based on facts, not slides

Let’s talk about cooperation

We will gladly visit, look at your machine or installation and prepare a proposal.



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