AKRODYN

Boutique Engineering Consulting

Our services. Your Advantage.

We offer
- Electrical Engineering
- Firmware & Apps
- Mechanical Engineering

Experts in drive technology. We build customized motor controllers and algorithms.

Develop your product with us or get **ad interim support for** your team. Our structured three-step process brings your project to success.

Visit www.akrodyn.com to find out more about how we can become your reliable engineering partner.

Engineering
Focus: Electrical / Mechatronics / Mechanical Design

Everything electrical engineering related such as PCB-Design, EMC and simulations. Mechanical engineering focused on CAD, mechatronic systems, sheet metal constructions and housings. concepts, product development, testing and supply chain management.

Client example:
German company, deveöpüomg low cost portable ECG and SpO2 device for stress analysis, communication over Bluetooth Low Energy (BLE).

Firmware & Apps
Focus: Embedded Systems / Wireless Communication / Apps

Microcontroller programing (Nordic, TI, STM32, ESP32 or similar). App programming for Android, iOS and PC mostly to control devices / machines. AI integration and wireless communication.

Client example:
Swiss Startup, field of nerve stimulation for medical application, multi device wireless communication. Written in C on Nordic Semi chip, advising in safety and certification.

Drive Technology
Focus: Custom Made Controllers / Algorithms / Integration

Building servo / brushless motor controllers and algorithms since 2016. We adapt our product to your application or advise and support the 3rd-party drive technology of your choosing.

Client example:
Swiss company, field of high intensity strength training. Building a customized motor controller and firmware with specific training modes, selection of motion hardware.

Consulting & Reviews
Focus: Technical advice / risk analysis / project lead

We only advise in the field of engineering. We review design choices, lead ideation processes and workshops, identify cost reduction possibilities, lead projects, check standards, perform risk analyses and take responsibility.

Client example:
US company, advisors since 2021, helping to overcome challenges in complex cost sensitive mechatronics system to strengthen market position in US consumer market with new product.

Engineering

Electrical / Mechatronics / Mechanical Design

- Electrical Engineering
- Mechanical Engineering
- Ideation & Concepts
- Testing & Reviews

Experts in PCB design. We build customized electronics and algorithms.

Develop your product with us or get ad interim support for your team.

Electrical engineering
- PCB-Design
- EMC
- Simulations
- Reverse Engineering
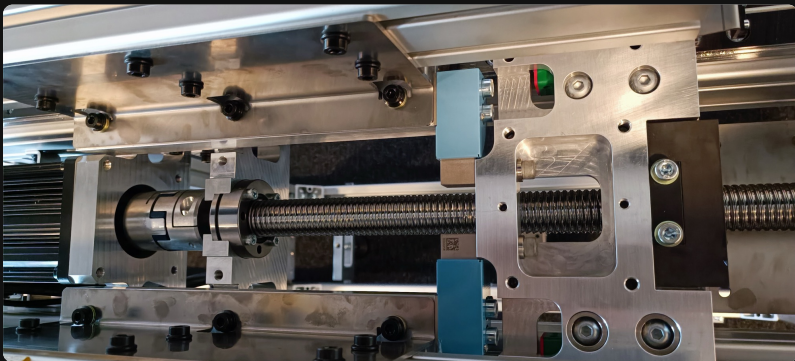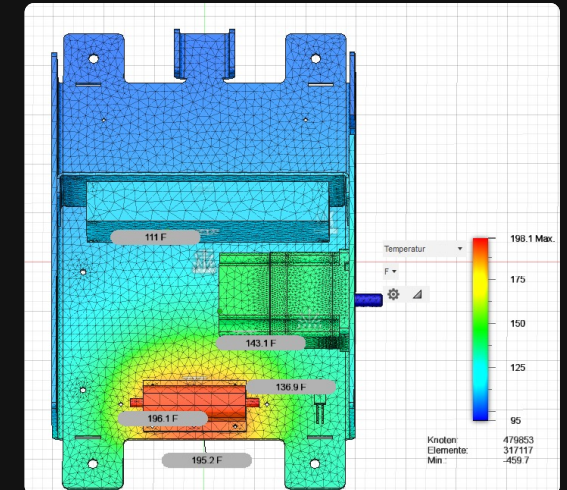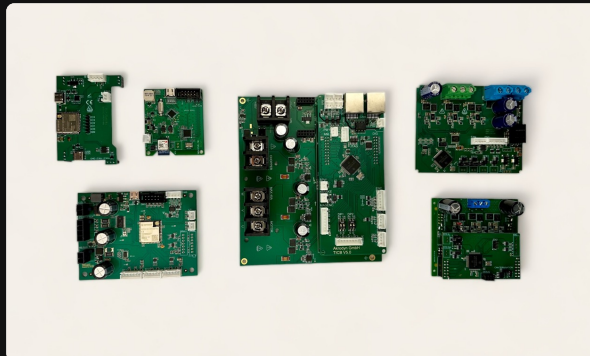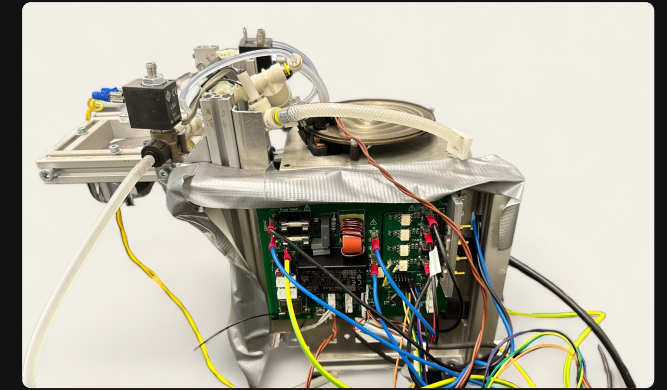
Mechanical engineering
- CAD & Calculations
- Mechatronic systems
- Sheet metal constructions
- Housings

Ideation & Concepts
- Concepts
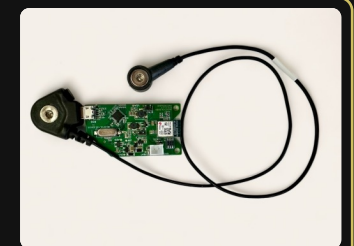- Prototyping
- Workshops
- System Engineering

Testing & Reviews
- Pre-Compliance / Endurance
- Mechatronic systems
- Safety & Compliance
- Cost reduction

Client example:
German company, building low cost portable ECG and SpO2 device for stress analysis, communication over Bluetooth Low Energy (BLE).

Firmware & Apps

Embedded Systems / Wireless Communication / Apps

- Embedded Systems / Embedded C
- Ultra Low Power Devices
- Mobile Apps
- Bluetooth® Low Energy (BLE)
- IoT & Mesh

powered by Akrodyn GmbH

00:21 — Time — **Close App**
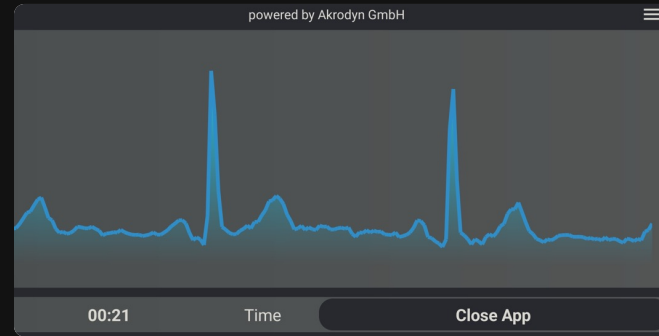
Microcontrollers
- Nordic
- Texas Instruments
- STM32
- ESP32

Embedded Systems
- Function Diagrams
- GSM / 4G / 5G
- FPGA
- Safety Controllers

We program apps to control devices and machines. Mobile and Desktop.
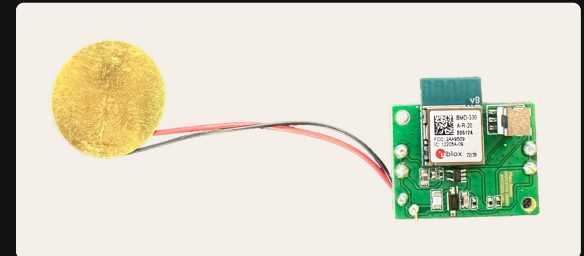
Apps
- Concepts
- Wireframes
- Wireless Communication
- AI Integration / Camera

Examples
- Apps to control machines
- Entrance Control Systems
- OCR / Computer Vision
- Qt

Client example:
Swiss Startup, field of nerve stimulation for medial application, multi device wireless communication. Written in C on Nordic Semi chip, advising in safety and certification.

Drive Technology

Custom Made Controllers & Motors / Algorithms / Integration / Breaking Coppers

- Experts in FOC / Brushless Motor Control
- Custom Made Servo Drives
- Custom Made Firmware
- Integration & Support
- Universal Breaking Choppers

We build customized motor controllers and algorithms. We advise you in any motor control questions, also with 3rd-party hardware!

If you need a custom motor, we help you source it or have the motor rewound for higher speeds or higher torque.

Use our modular standard parts for fast integration with firmware perfectly tailored to your application.

Modular Motor Controllers
24-48 VDC or 80-264 VAC
- up to 1.5 kW continuous for PMSM (BLDC), IPM motors, AC servos
- with STO PLe
- CAN (EtherCat coming soon)
- integrated brake chopper
- custom interfaces

Retrofit Brake Chopper
12-75 VDC or 80-650 VDC
- 100 W to 2 kW continuous
- 1-10 kW peak
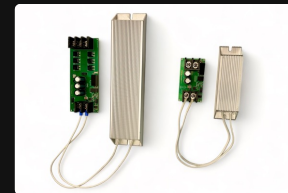
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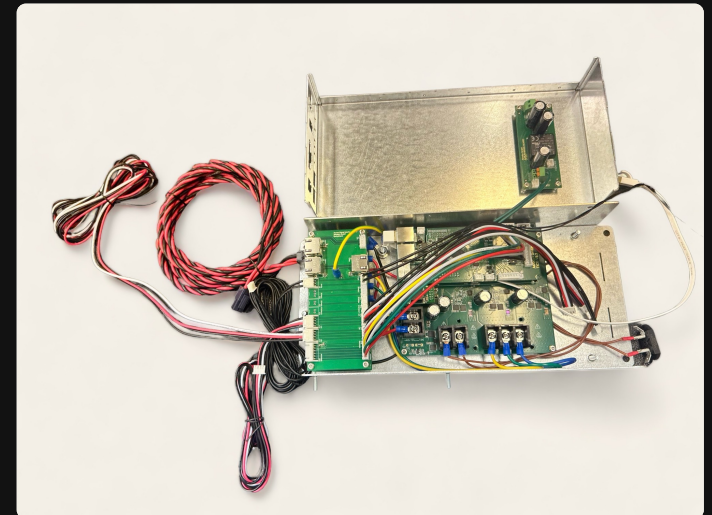
Consulting

Electrical / Mechatronics / Mechanical Design

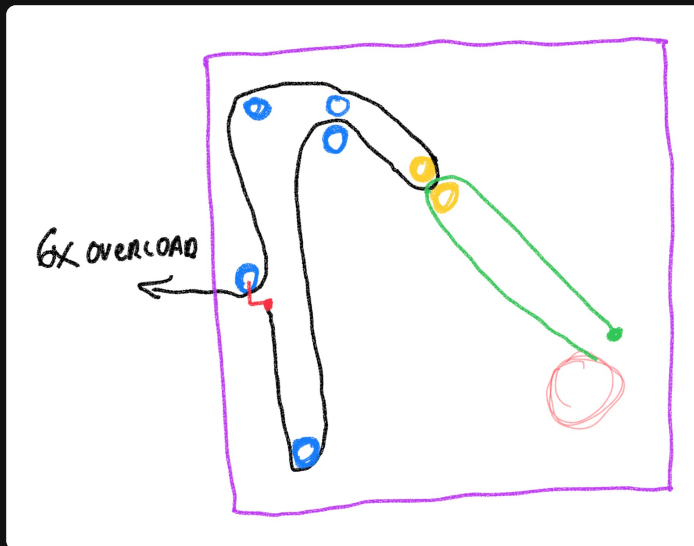- External Technical Experts overseeing the Product Development Progress in
  - Mechanical or Electrical
  - Design Choices
- Project Lead
- Servo / Brushless Drives & Control Systems

Whether your project is just a drawing or already on the market, we can support you with new design concepts, review your documentation, streamline your processes and reduce costs. Are you looking for an ad interim project support or project manager?

We only advise in the field of engineering. We tackle every problem in a structured phase-based approach.

Consulting
- Concepts
- Workshops
- Knowledge Transfer
- Manufacturing
- Supply Chain
- Process Optimization
- Automatization
- Certification

Reviews
- Risk Analysis
- Re-Calculations
- Choice of Standards
- 2nd opinion
- Tolerance Analysis
- Cost Analysis

Client example:
US company, advisors since 2021, helping to overcome challenges in complex mechatronics system to strengthen market position in US consumer market with new product.
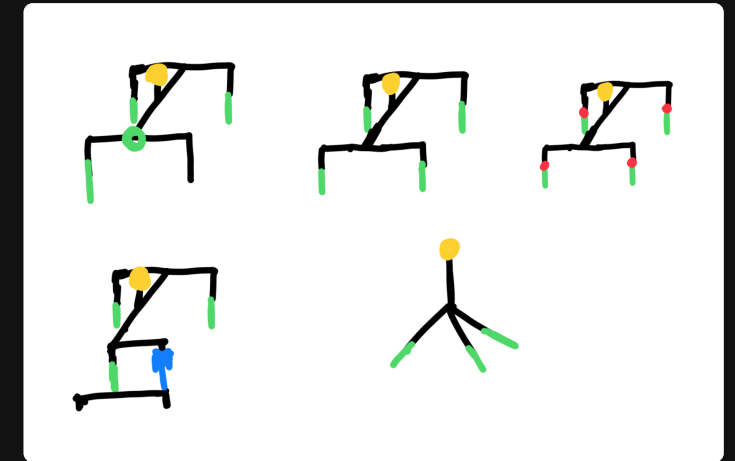
Risk Assessment Matrix

	Severity			
	Catastrophic - 4	Critical - 3	Marginal - 2	Negligible - 1
Frequent - 4	High (16)	High (12)	Serious (8)	Medium (4)
Probable - 3	High (12)	Serious (9)	Serious (6)	Medium (3)
Remote - 2	Serious (8)	Serious (6)	Medium (4)	Low (2)
Improbable - 1	Medium (4)	Medium (3)	Low (2)	Low (1)

Probability

How we work

Creative, transparent, professional

Concepts → Workshops → Development → Testing → Certification
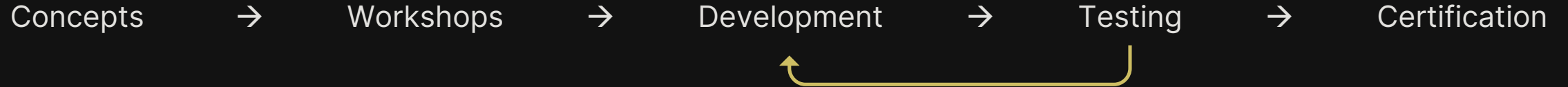
Alignment

First, we develop a shared vision - our concept - so that we can work together towards the same goal. We rely on you. No one else knows your area of expertise and your wishes better than you. We need a specification sheet with all your requirements so that we can set out our project specifications, provide you with a cost estimate and define a project road map.

Implementation

We divide the development into structured packages. We call these phases. Each phase ends with an agreed work product. This means you have full control over the development process. We start with workshops to come up with ideas for technical sub-functions and test these using rapid prototyping in so-called functional models. You will quickly receive a proof of concept prototype from us that works, but looks very different from the end product.

Making sure we deliver

We live by the motto "What hasn't been tested doesn't work". Your device and crucial functions are put through rigorous testing early on to ensure that there are no unexpected failures once on the market.
We help you research standards and find the relevant points. If necessary, we can put you in touch with external testing bodies such as TÜV and provide you with the necessary documents.
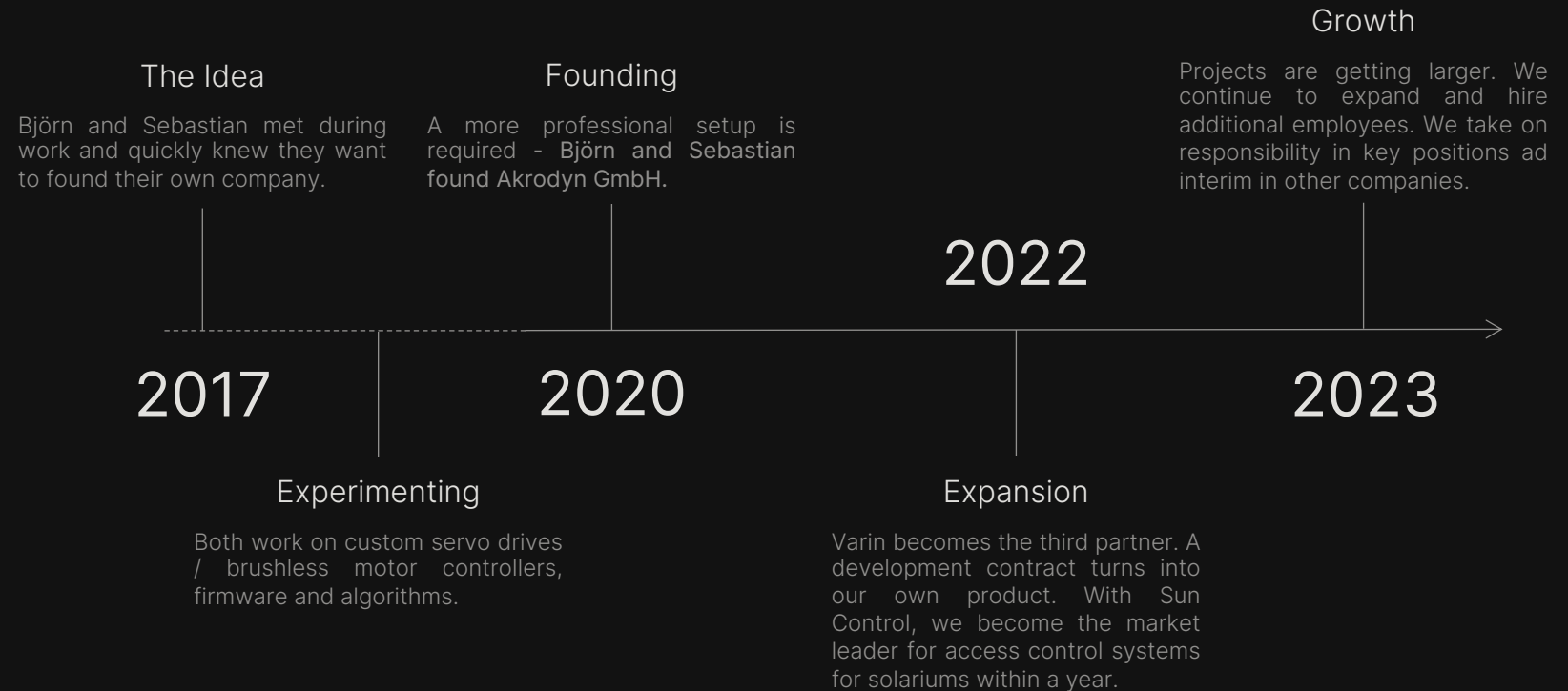
Our Story

Young, but experienced.

Our team is around 30 years old, but we are not inexperienced. A multidisciplinary skill set is our DNA. We didn't learn it over night. We learned it because we relentlessly challenged ourselves in the field of servo drives.

The two founders have been working on our own brushless motor controllers since 2016. To achieve such goals a deep physical understanding was required as well as electrical and mechanical engineering, firmware, embedded systems, simulations and industrial processes.

Today, we are a team of interdisciplinary engineers from electrical to mechanical to communication. Diversity is important for us.

The Idea
Björn and Sebastian met during work and quickly knew they want to found their own company.

Founding
A more professional setup is required - Björn and Sebastian found Akrodyn GmbH.

Growth
Projects are getting larger. We continue to expand and hire additional employees. We take on responsibility in key positions ad interim in other companies.

2022

2017

2020

2023

Experimenting
Both work on custom servo drives / brushless motor controllers, firmware and algorithms.

Expansion
Varin becomes the third partner. A development contract turns into our own product. With Sun Control, we become the market leader for access control systems for solariums within a year.

Let's meet

Come by for a coffee, give us a call or send us an e-mail.

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