



**FPINSTRUMENTS**

Electronics and embedded systems design

*2020 III*



# FP Instruments - Your creative **hardware design partner**

[www.fp-instruments.com](http://www.fp-instruments.com)

 **TEXAS  
INSTRUMENTS**  
Design Network

## • Presentation plan

1. Who we are and what we do
2. Selected projects – problems we have solved
3. Mission, Unique Selling Point and Key values – why we do it
4. Company structure
5. Project management and quality assurance
6. Corporate Social Responsibility



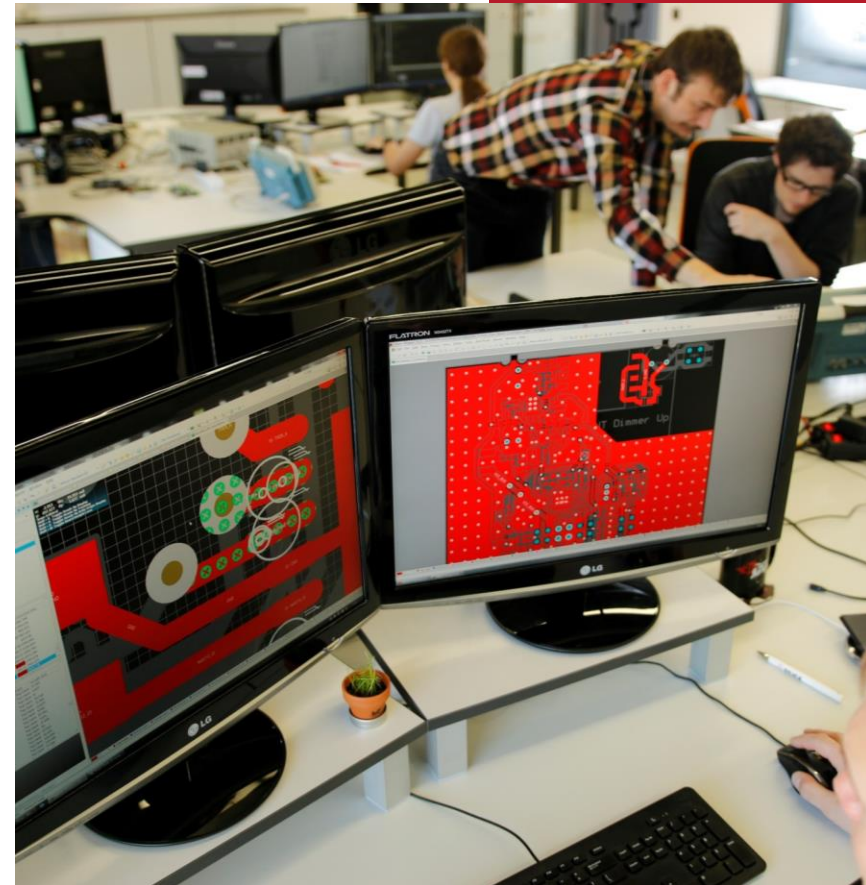
## Who we are

We are a hardware and embedded systems research and development house based **in Poland**.

We are a subsidiary of **Future Processing** employing together over **840 people**.

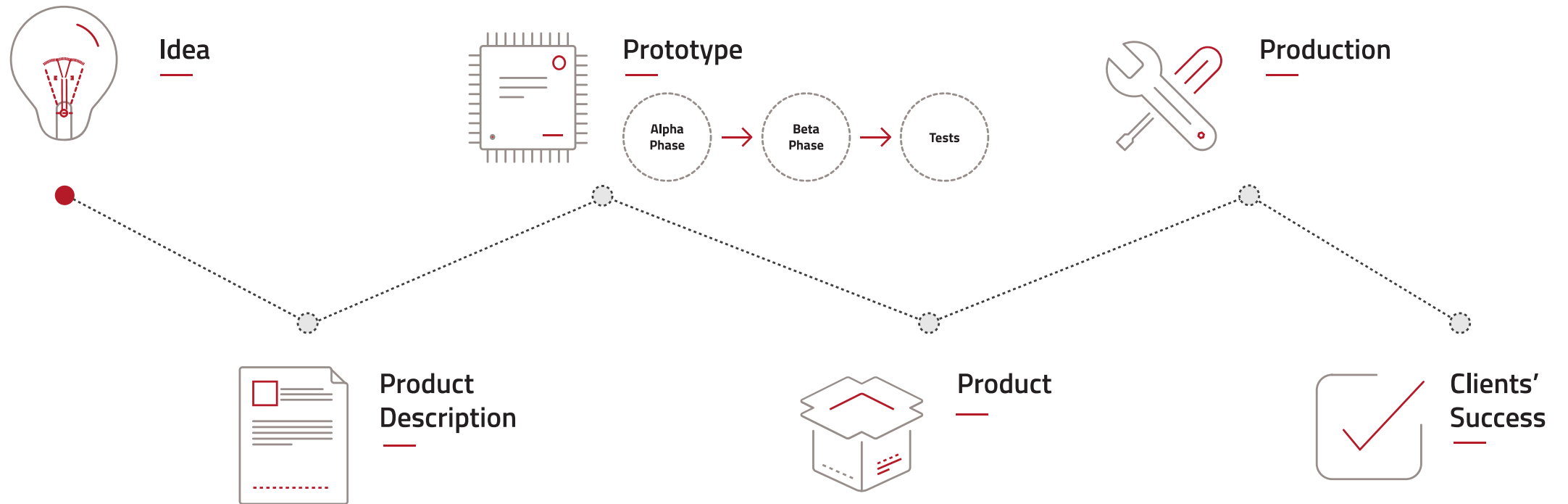
We provide **R&D** services for clients from:  
UK, Denmark, Netherlands, Norway, Germany,  
Austria, Switzerland, Poland.

Through **nearby airports** we have a very good connection with most of Europe's locations.



# What we do

*Fixed-price projects - from an idea to client's success!*



# • Other strategic activities

*Production, products and projects with partners*



## Production

- We have our own production facilities for prototyping only but of high quality.



## Products

- **Reviel** – on-wall control station
- **DiscovAir** – air quality measurement



## Projects with partners

- Space – with KP Labs
- Smart Home
- Smart City
- Agrotech
- Medical



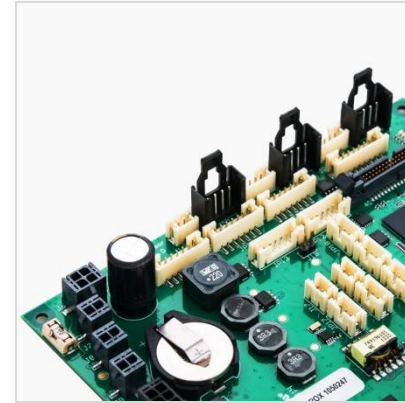
# Selected projects / problems



**Educational data logger**



**Super Secure SSD**



**Industrial controller**



**Dispenser controller**



**Gas measurement**



**Quad rotor camera system**



# Selected projects

## Data logger

### Client

Dutch company operating in the educational market.

### Challenge

To build a top model of a data logger for educational purpose.

### Result

The fastest data logging device available on educational market. Like modern consumer devices is equipped with two processors and capacitive touch panel.

### Status

In production in batches of 1000 units.





## Selected projects

### Secure SSD

#### Client

A UK-Polish company based in Poland providing secure SSD drives.

#### Challenge

The most challenging product we have done so far. The main challenges were: new data destruction technology, small factor size, a great deal of functionality, low power radio communication and data security.

#### Result

A production ready SSD Drive based on innovative data destruction technology. To be available for sales under SecureDrives brand.

#### Status

To be available for purchase in 2018. Large batch production capability.





# Selected projects

## Industrial controller

### Client

Danish company offering industrial controllers.

### Challenge

To rebuild a two-processor industrial controller using a new dual core processor from Freescale (Vybrid).

### Result

A new PCBA working with a revised operating system and firmware.

### Status

In production in batches of 100 units.



# Selected projects

## Beverage dispenser controller

### Client

Austrian company operating on gastronomic dispensers' market.

### Challenge

Build a small, highly efficient gastronomic controller compatible with previous revisions.

### Result

A backward-compatible ARM-based controller for gastronomic dispensers.

### Status

Manufactured in batches of 400 since 2015.



## Selected projects

### Camera system for drones

#### Client

British company which offers solutions for agricultural market.

#### Challenge

To build 6 multispectral cameras system for photo imaging which can be operated remotely and which can autonomously trigger snapshots according to time lapse or position change (based on internal GPS receiver).

#### Result

Hardware module that drives up to 6 cameras built around Snapdragon SoC.

#### Status

In production since Q2 2017.





*„We design innovative electronic solutions to clients with original business ideas. **We deliver high quality products and strive to be a leading design house.**”*

# • Unique selling point and key values

- Fixed Price Projects focus and clients' needs oriented
- Economically attractive
- Flat structure with big agility and very quick reaction time
- Lead by PhD's with market and research experience
- Additional R&D skills – Industrial Control, Digital Signal Processing, Data Security
- Partnership with bigger players – Texas Instruments Design Network
- Work ethos, respect, trust, security and transparency

**+400m**

of PCB traces  
laid

**+400000**

vias placed on  
PCBs

**+1,5m**

lines  
of code

**56**

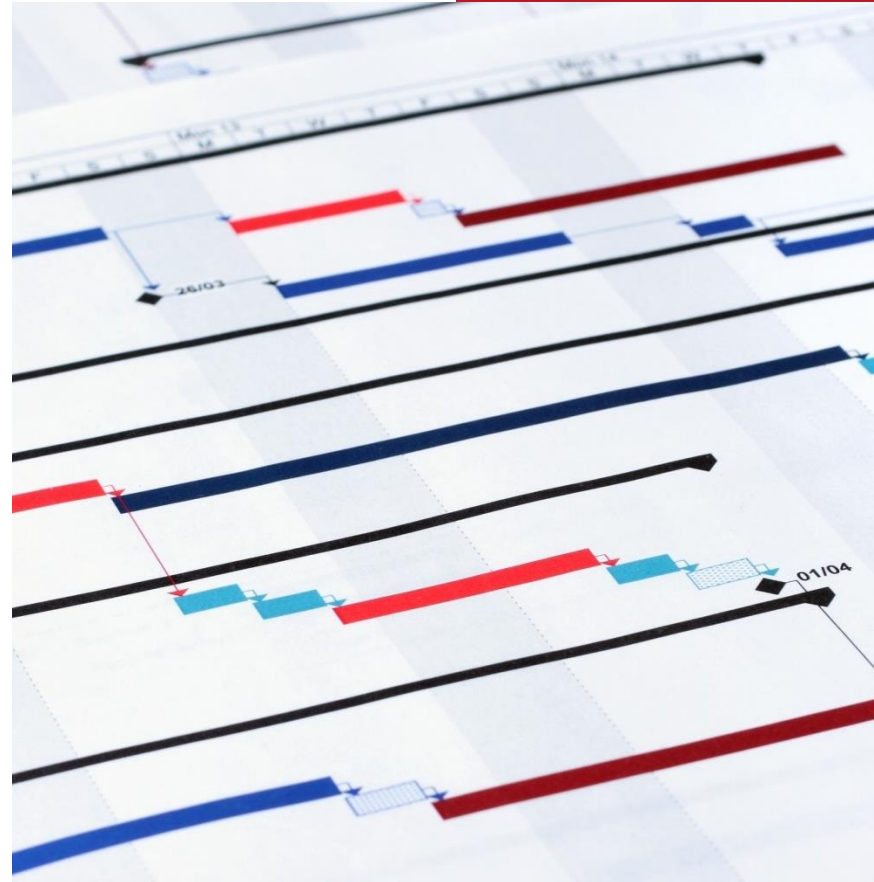
scientific  
publications



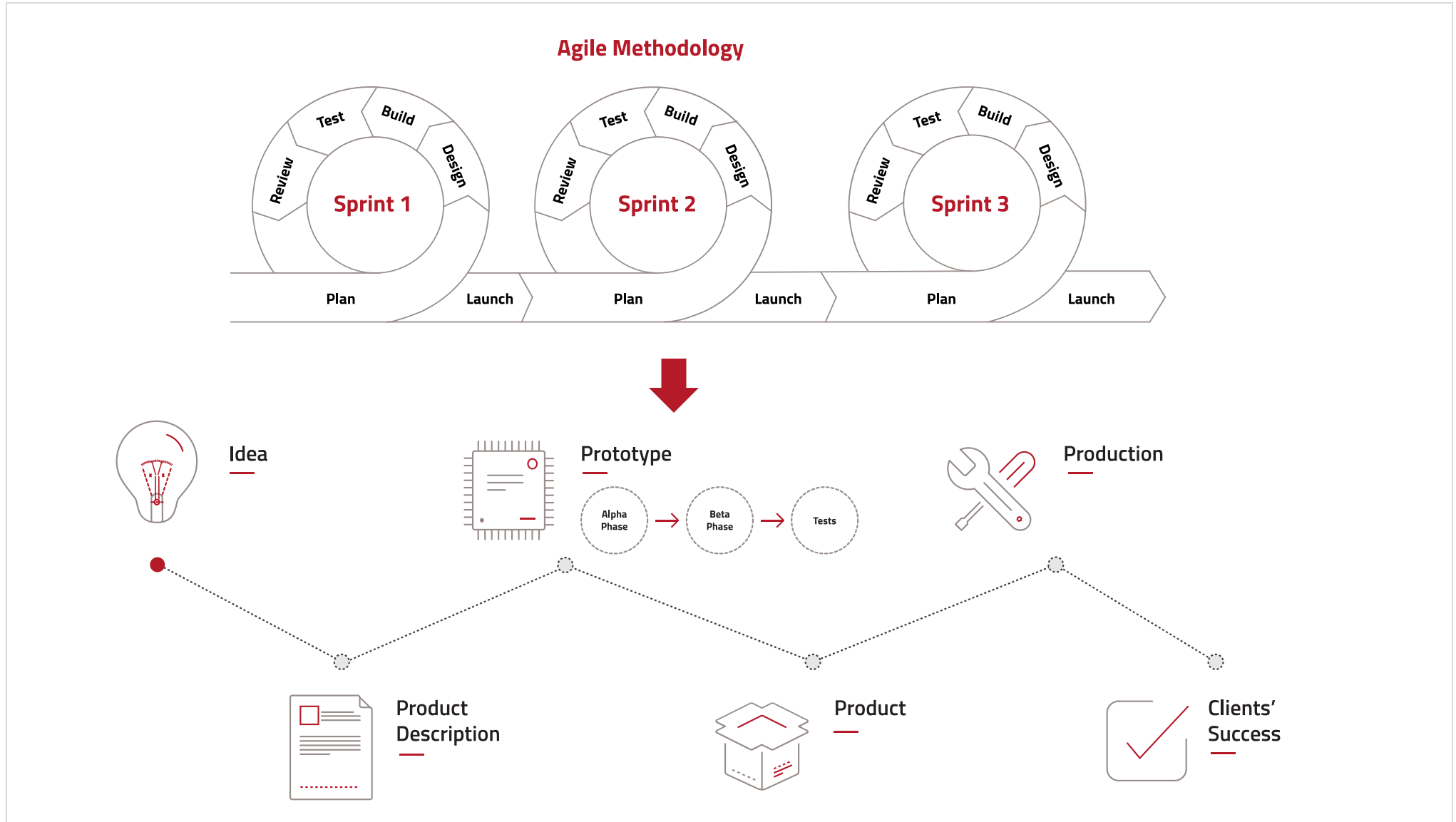
# Project management

## *PMI principles*

- Scope (Gantt – tasks, milestones and deliverables)
- Budget
- Stakeholders and communication
- Resource planning and Responsibility Matrix
- Requirements Traceability Matrix
- Tools for planning and progress tracing
- Advanced IT infrastructure provided by our mother company

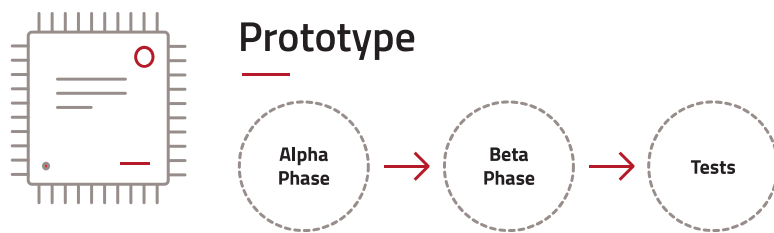
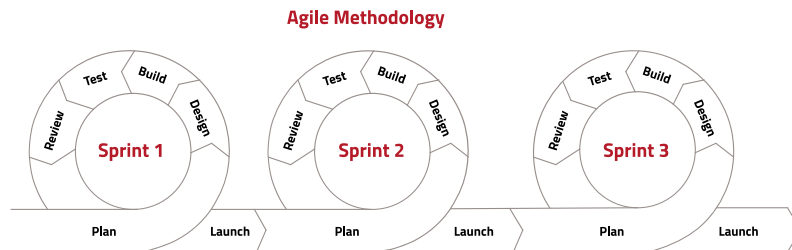


# Injecting agile methodology into management





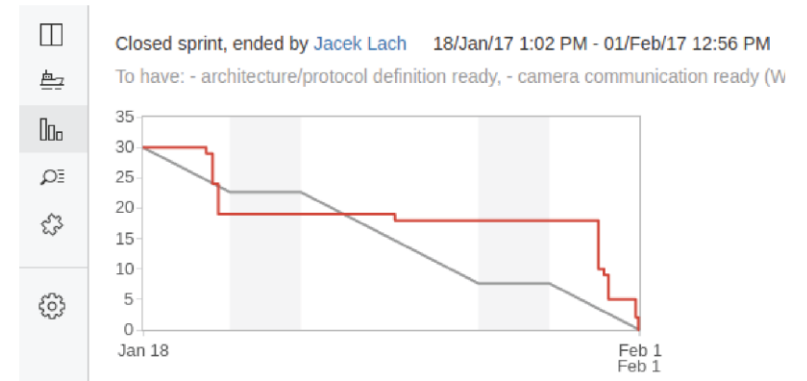
# Injecting agile into management – why?



- No true fixed-price projects, as elasticity and partial implementation is
- beneficial
- Waterfall management is not realistic
- Agile methodology and management tools advantages:
  - constant verification and deliverables testing
  - various plugins for development tracking and reporting
  - high quality and modern management tools (Jira, Confluence and Git)
  - high popularity among developers



# Injecting agile into management – tools



## Decision log

Created by FP Administrator on Jan 04, 2017

Decision	Status	Stakeholders	Outcome
Where should SD card status be displayed?	IN PROGRESS	@ Jacek Lach	
Camera type / resolution / settings (exposure, etc)	IN PROGRESS	@ Krzysztof Bartnicki @ Szymon Drabik	
Camera type identification	DECIDED	@ Krzysztof Bartnicki @ Szymon Drabik	Cameras are preprogrammed with names

# Quality Assurance

## Target

- internal standards compliant with **MISRA-C**, **IEC 61508** for code quality and source management, peer review, static and dynamic code analysis
- internal procedures compliant with **ISO 9001**

## Current procedures

- coding standard
- repository structure
- code peer review
- automated testing
- constant client communication, "live view" of progress
- code statistic analysis
- unit testing
- issue tracking
- functional testing

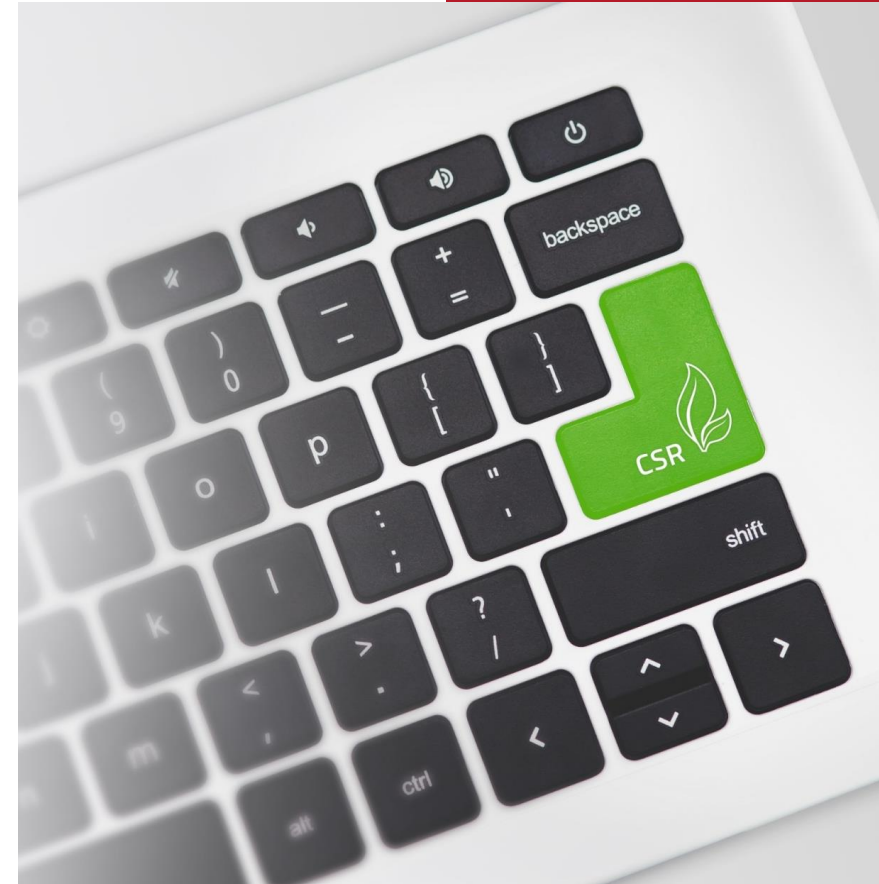


# Corporate social responsibility

It is important for FP Instruments to be ethical, honest, reliable and valuable business partner for all our customers and suppliers.

## Our implementations of CSR

- Ecological Philosophy
- Community Involvement
- Ethical Marketing
- Ethical Labor Practice
- No Discrimination



## • Testimonials

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*“FPI has developed an advanced data logger for science education for CMA, the VinciLab. FPI had the right competences to do this, hardware design, firmware development and desktop design (Linux). We experienced a good and effective working relation with the dedicated and well qualified management and staff of FPI, and can recommend FPI in case you want to create innovative complex products.”*

**Prof. Ton Ellermeijer**  
CEO, CMA, Netherlands

”

*“Armfield Limited have used FP Instruments to develop the software for one of our latest products and the collaboration has been very successful. Software development contracts can be extremely difficult for all involved, and it is very easy to get bogged down in details of how to interpret the specification. However, FP Instruments brought a refreshingly different approach to this.”*

**Ted Sansom**  
Technical Director, Armfield LTD, UK

”

*“We are very pleased with our cooperation with FP Instruments and we can recommend their services to whom it may concern. We especially appreciate their trust-based and autonomous way of executing projects combined with their very pro-active approach to product development.”*

**Sandra Lindell**  
R&D Project Manager,  
Dansensor, Denmark





**FPINSTRUMENTS**

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*"We combine experience with scientific background,  
high level of knowledge with great design skills and  
prototyping capabilities.*

*And we do it all with passion."*



# Thank You

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