



IdeaFlex

Engineering the future

IdeaFlex™

Founders of Ideaflex



Aleksander

Founder & Co-owner CEO
IdeaFlex,
dyr. R&D INTEGER till
8.2017



Bartłomiej

Co-Owner IdeaFlex, –
Founder of Ars Thanea,
ATGames
autor of XRHumanity.net



Piotr

Senior Mechanical Designer
IdeaFlex Co-owner in Ideaflex
Before :
Polish Automotive (Jelcz Beskid ,
FSO Lublin)
EUROPEAN Automotive
, OPEL Tigra, OPEL Corsa, Opel
Zefira, Opel Vectra, BMW ,
VOLVO, VW, Fiat, FORD
Senior designer in INTEGER.pl
till 2017

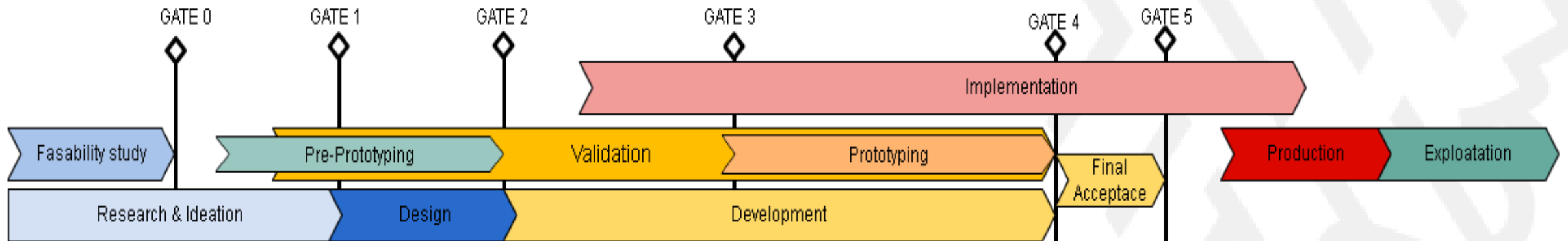


Tomasz

Senior Automatics & Electronics
designer / Embedded programist
, Co-owner w IdeaFlex
Before reaserch Worker Krakow
University of Technology ,
SubContractor for Fiat, Huta
Stalowa Wola
Validation manager in
INTEGER till 2017

Processes & practised product life cycle

Mechanical, electrical, software design & development from idea to serial production



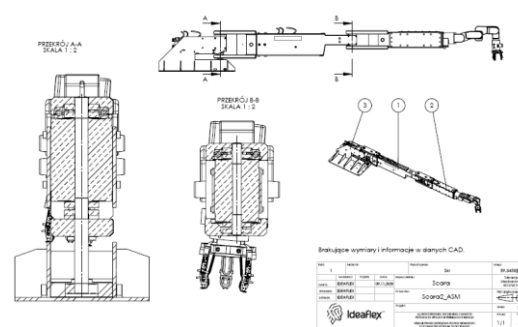
Competences and technologies in use

Mechanical Engineering

3D modeling



Production documentation

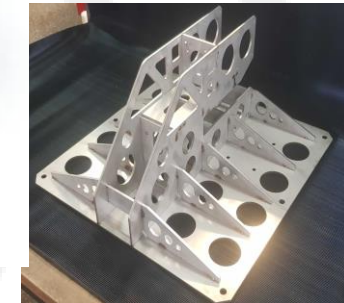


Product data management



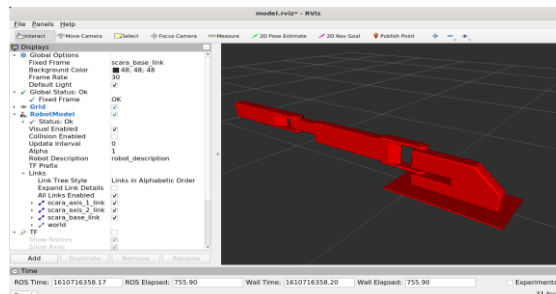
In house prototyping

- Milling
- Turning
- Welding



Kinematics Simulation

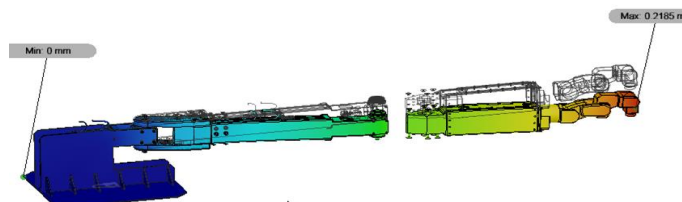
ROS.org



Simulation

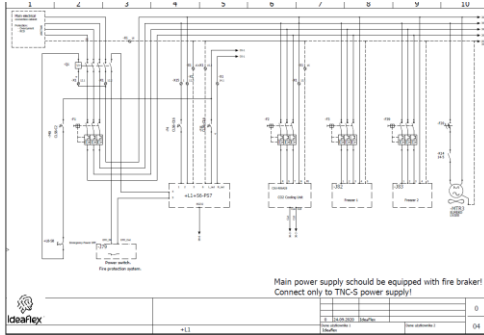


Fusion 360®

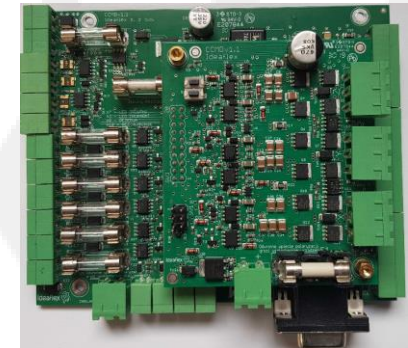
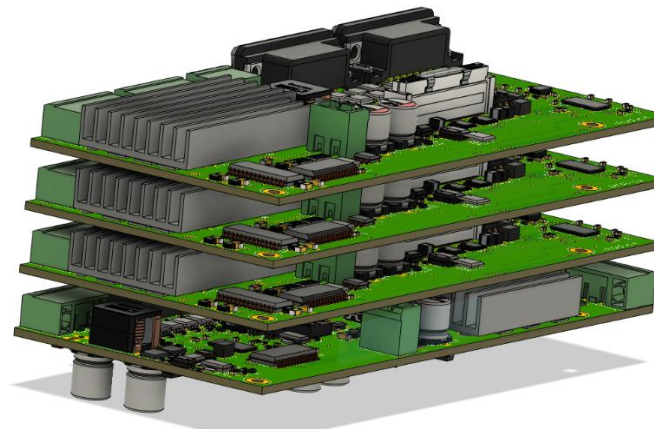
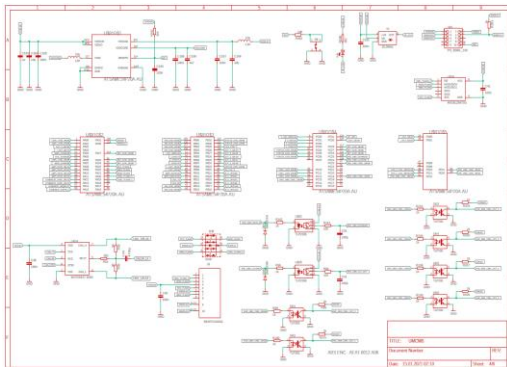


Competences and technologies in use

Electrical Engineering



Electronics Engineering

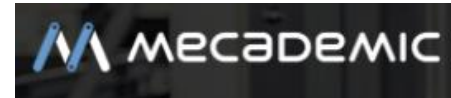


Competences and technologies in use

Automation PLC / Robot programming



FATEK®



ABB

KUKA

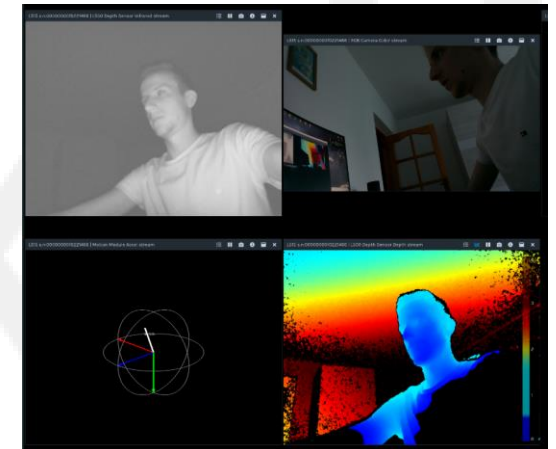
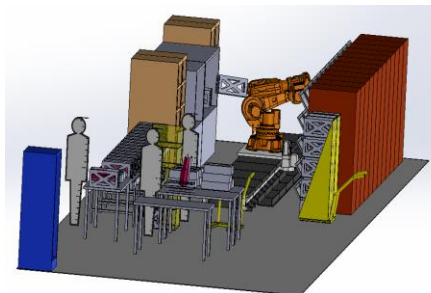
intel
REALSENSE™



Multi Axis kinematics trajectory shaping

Proces optymalizacja

Graph				
Cam No.	1	2	3	4
Setting Method	Stroke Ratio (Cam Curve)	Stroke Ratio (Cam Curve)	Stroke Ratio (Cam Curve)	Stroke Ratio (Cam Curve)
Cam Resolution/ Coordinate Number	256	256	256	256
Cam Data Starting Point	0	0	0	0



Competences and technologies in use

Software Engineering

Embedded C for Cortex/ARM processors and 8,16,32 bit mikrokontorlers

- ST
- Micro Chip
- Atmel
- AnalogDevices
- Freescale
- Texas Instruments

FreeRTOS implementation.



C/ C++

- For Windows and Linux
- HAL layer for machines

Our Computational Station for AI Machine Learning & Simulation

Dell Precision T7920

2x Xeon GOLD 6140
(2x16 cores =72 Threads)

4X RTX NVIDIA GPU (64GB VRAM)
192GB RAM

NVMe SSD Dives

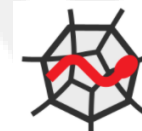
Python

- User Interfaces in Qt 5
- Scientific computation and simulation
- Video detection with openCV & YOLO
- Machine Learning
- LLM finetuning and practical RAGs applications

Java



- HMI on Android Mobile tablets
- Simple Servers applications



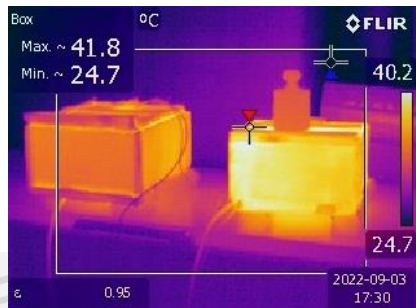
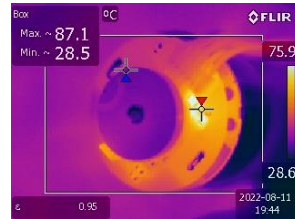
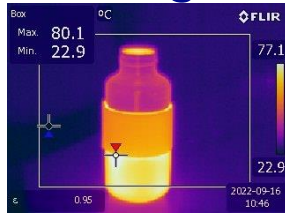
SPYDER

The Scientific Python Development Environment

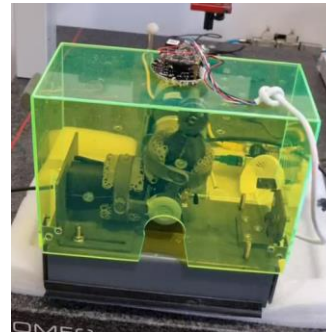
Competences and technologies in use

Testing & Validation

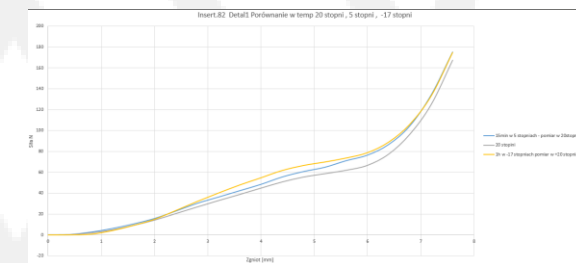
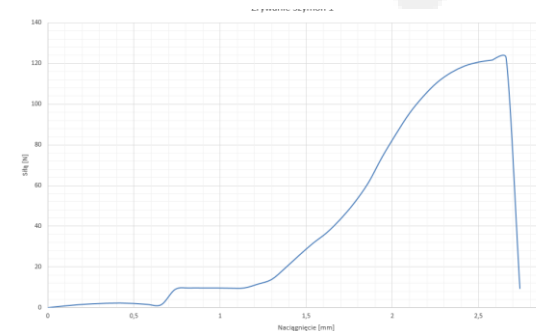
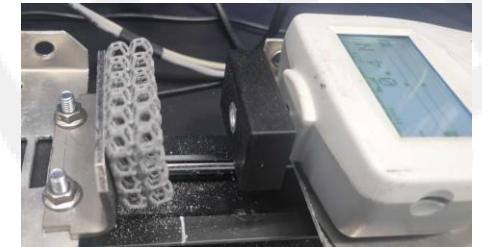
Climate & Thermal Isolation Testing



Live time test design & Development



Mechanical characteristics

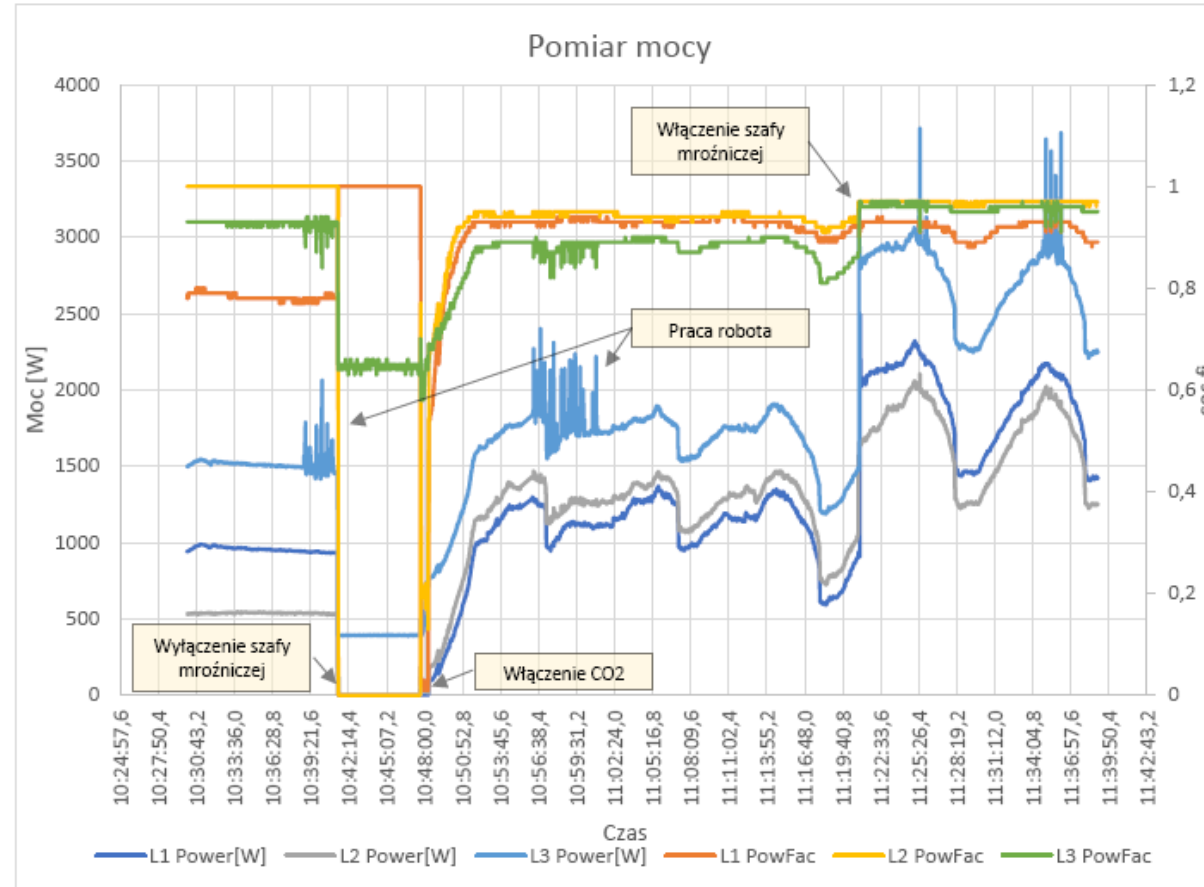


Competences and technologies in use

Testing & Validation

Long Term & mixed stage
energetic consumption
mesurment

Praca robota oraz włączanie i wyłączanie układów chłodniczych



Project „Soczewkomat” for Szkła.com

Offer looks like that :

In two weeks after winning tender we a pass fotorealistic renderings

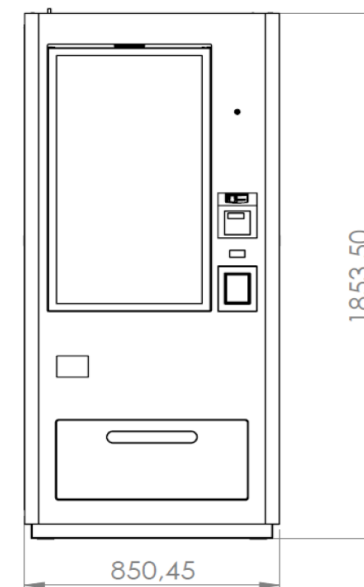
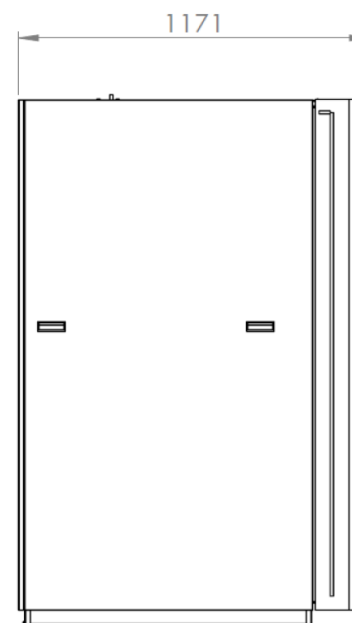


Project „Soczewkomat” for Szkła.com

42 weeks after signing the
contract fully functional and
certified

Dimensions 1171x850,45 1853,5

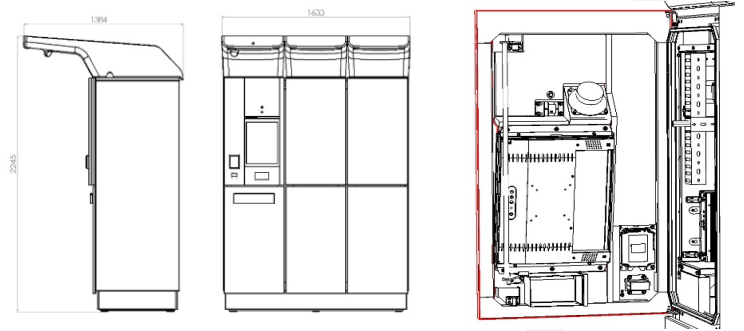
Today's 80 machines on field:
<https://soczewkomaty.pl/znajdz-swoj-soczewkomat>



Project for ASAPON (parcel sending machine)



Engineering Project



Serial
Production



Exploitation

170 Machines deployed over 1
year in whole Poland



Arctan dla Retail Robotics

75 tyg. 2018- 2020

W been part of the project responsible for :

Where specifically:

- Calculated and selected all drives (at least 15 motors in one Arctan)
- Designed and implemented all electrical installations
- Designed all mechanical structures
- Developed PLC programming
- Designed and created safety systems
- Designed and built, together with a subcontractor, a cooling chamber and refrigeration system
- Participated as the main subcontractor in the setup of two machines in France, in Paris, where the end client was Carrefour



[ARCTAN](#) Client Web site with that product

Pickup Hero dla Retail Robotics

45 tygodni 2019-2020

As part of the project, we were responsible for:

Where specifically:

- Calculations, drive selection, and PLC programming
- Design and execution of the entire electrical system
- Design and execution of the mechanical structure of the robot, shelves, casing, and user interface
- Safety system
- We installed the machine in Poznań at the headquarters of Żabka,

[Pickup Hero](#) Client Web site with that product



Pierwszy prototyp w siedzibie zarządu Żabka Polska w Poznań



Pierwsza maszyna w sklepie Żabka



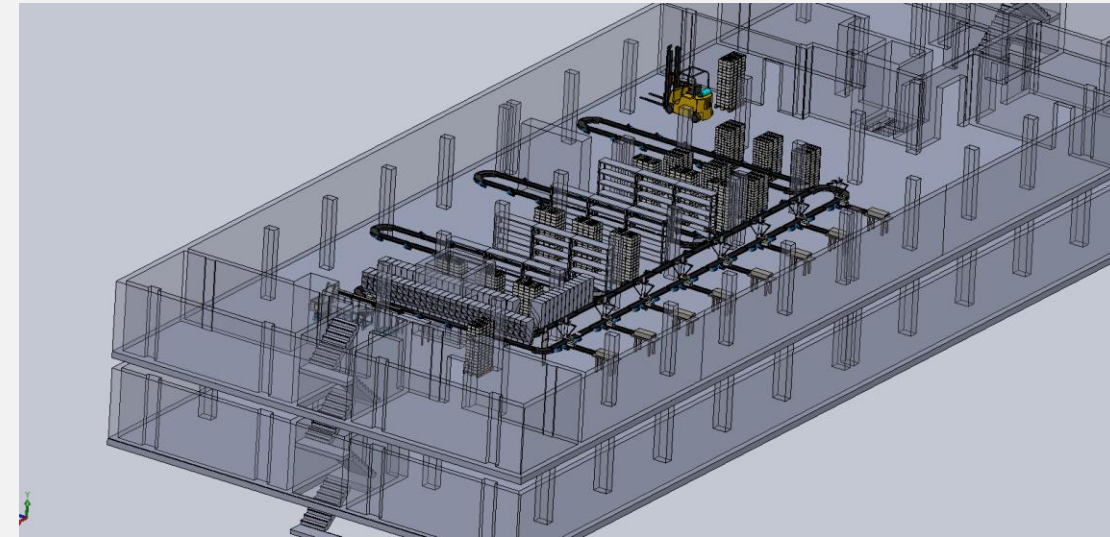
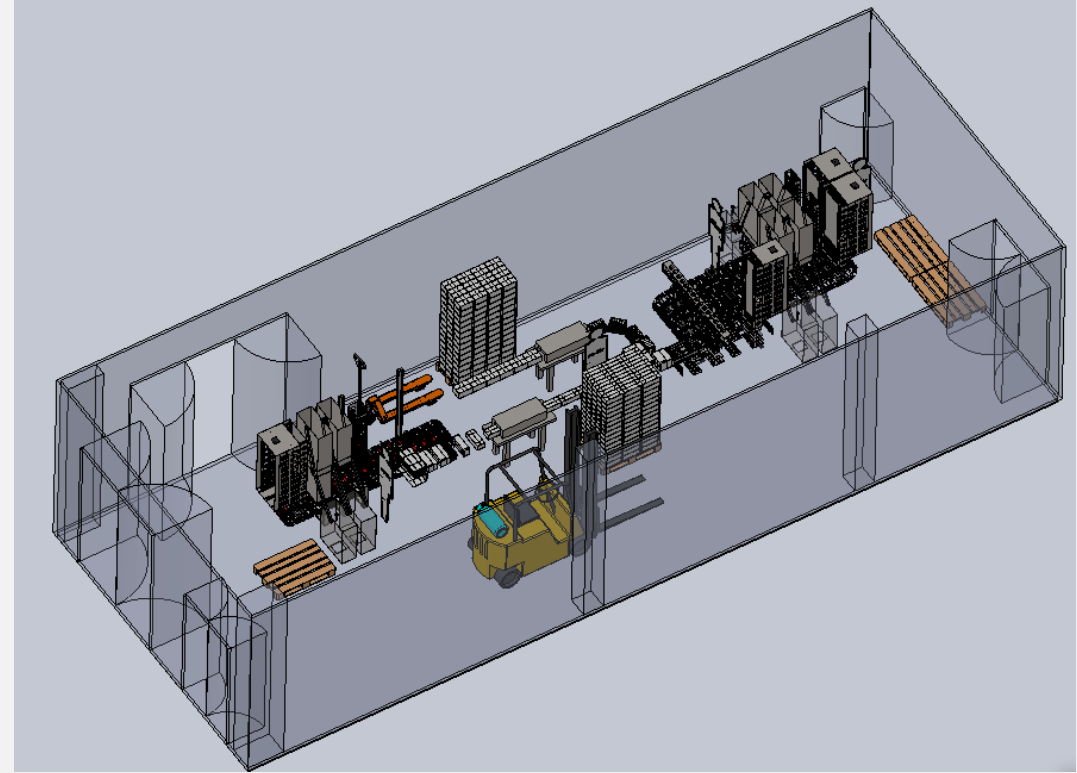
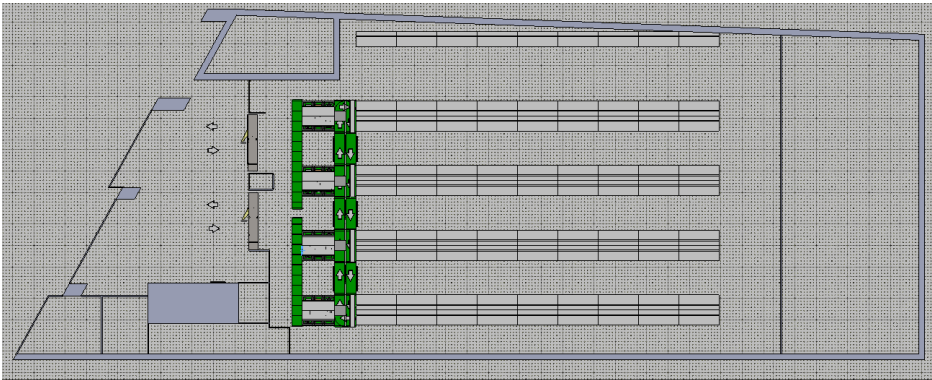
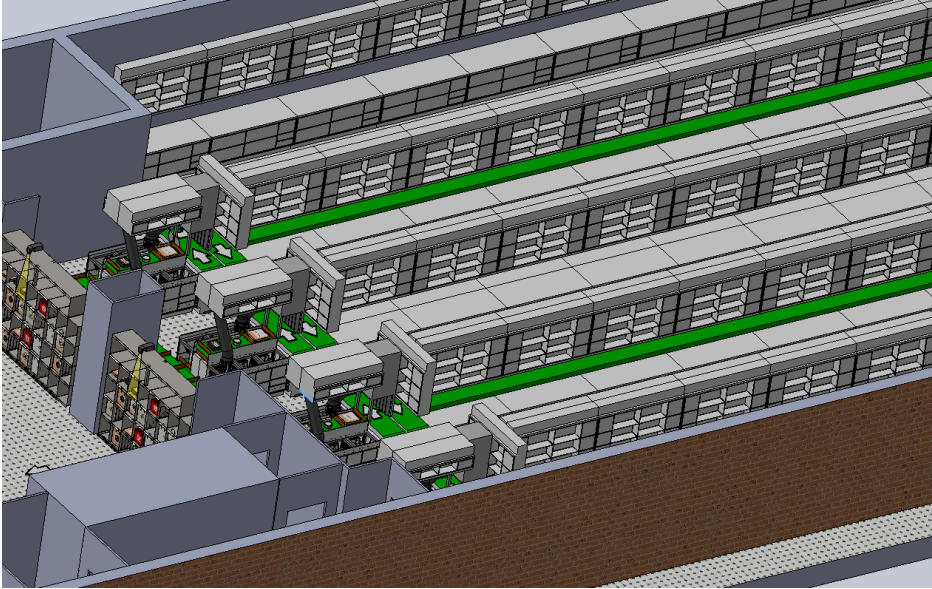
Inpost Paczkomat Pro w sklepie Duży Ben

Agrobot 2019-2022

In consortium with:

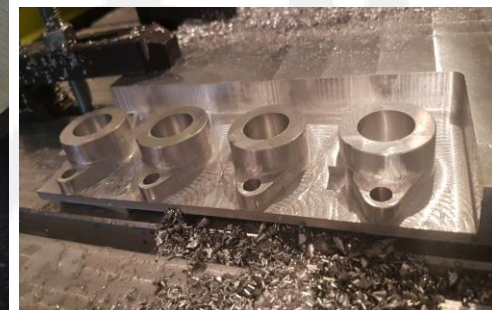
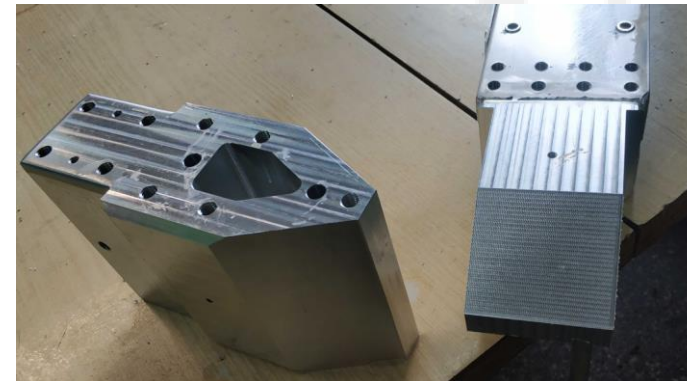
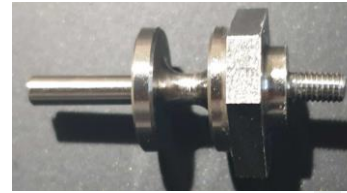
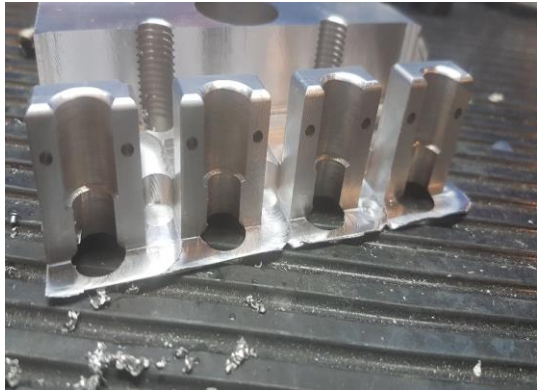


Process Automatisation



CNC Services in our park

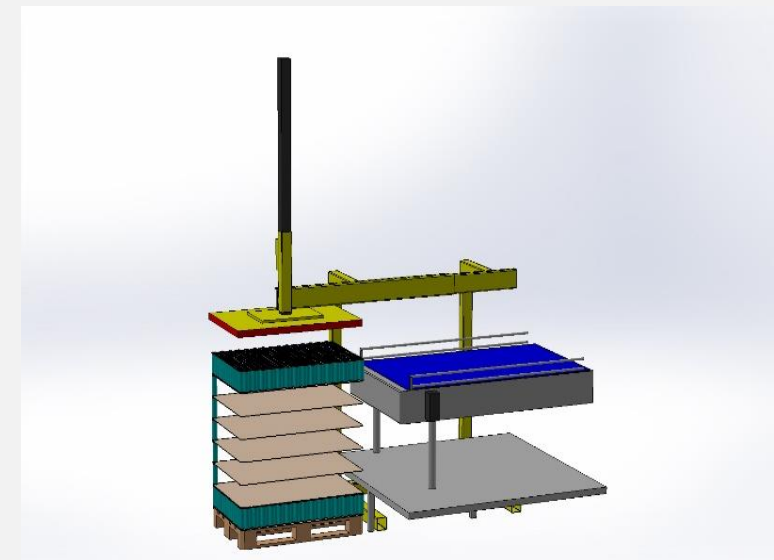
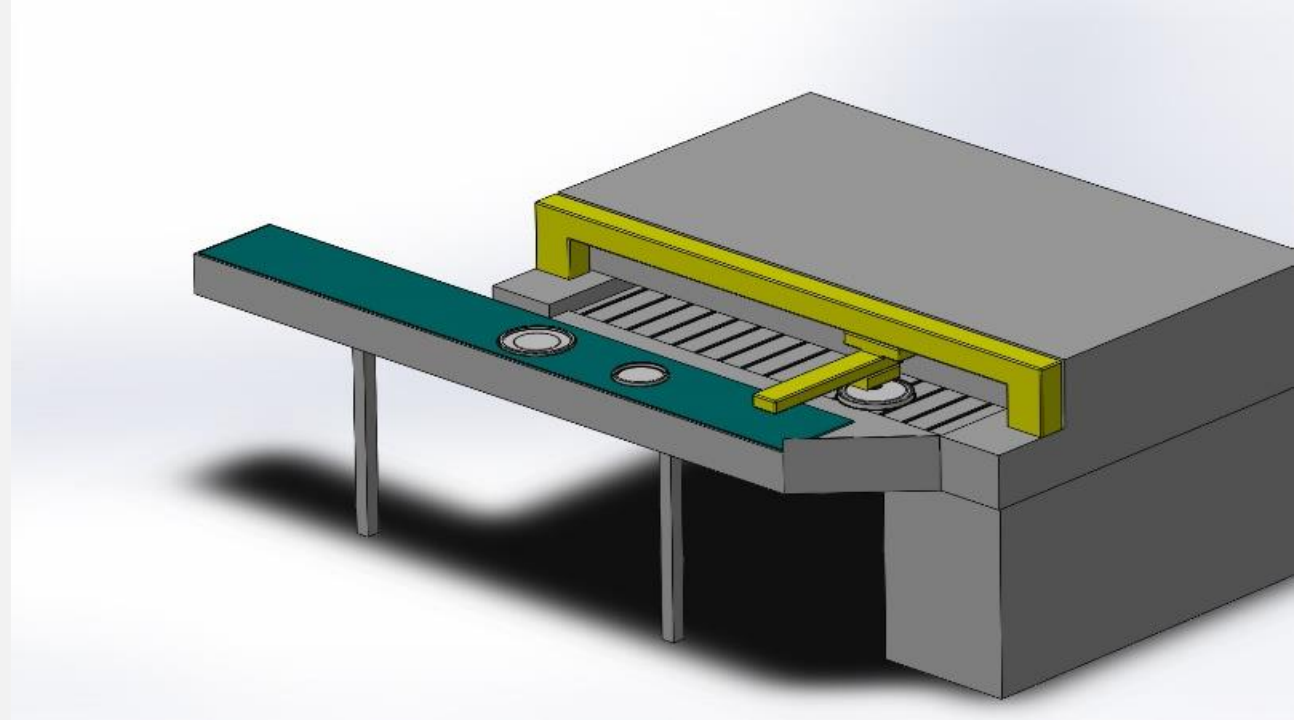
Frezujemy
Toczymy
Znakujemy laserowo



Corporation with Industry

IdeaFlex is a contractor for:

- Trivium Packaging (Ardagh Group)
- Inpost SA
- Integer SA
- Szkła
- Retail Robotics
- Sieć Badawcza Łukasiewicz
- ASAPON
- Kamaz Polska
- APCOM
- Allegro.pl
- Frachton
- TelTed –telekomunikacja
- Cellomaty
- Drukarnia Ceris
- Wimba Poland





IdeaFlex

Thank you!

IdeaFlex™