

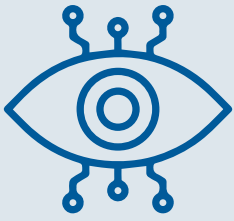
# SOLVING MANUFACTURING PROBLEMS

From product concept to  
finalized manufacturing solution  
with analytics



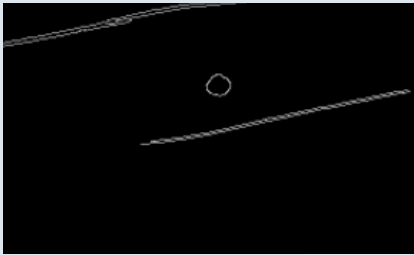
Analitica  
Labs

  
CAFUTA

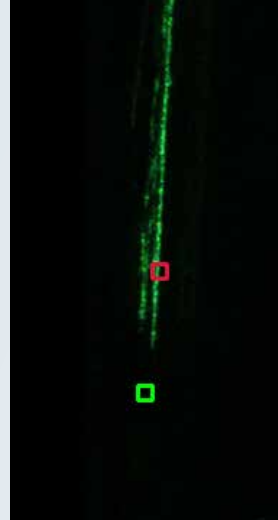


## Computer Vision

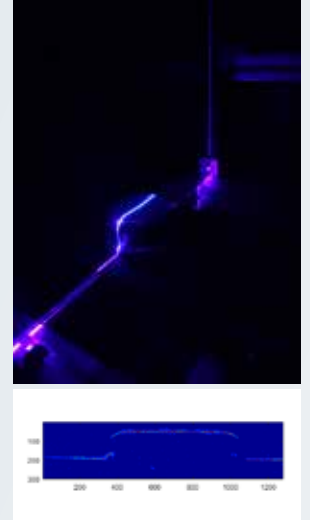
- object measurement and identification
- packaging control
- monitoring of the production process



wood quality grading

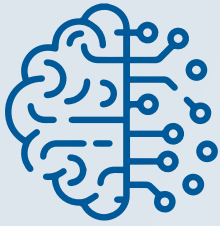


defects in pharmaceutical vials with solid contents



3D profile defects

USE CASES



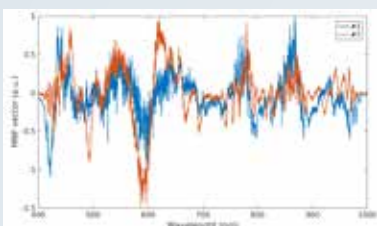
## AI and IoT

- adaptive machine control
- predictive quality and maintenance
- remote management of equipment
- EaaS platform

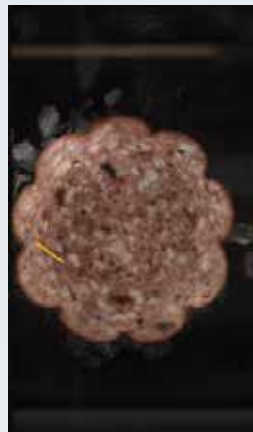


## Hyperspectral Imaging

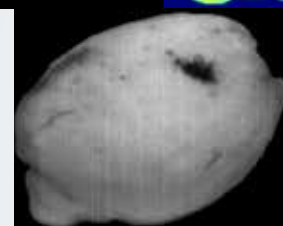
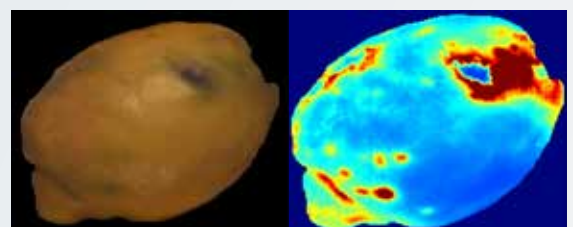
- detection of surface defects
- detection of surface contaminants (oils, detergents) or inclusions (oxides)
- detection of foreign bodies
- characterization of biochemical properties (food, pharma industry)



non-homogenous distribution of binder, metal inclusions and burns in stone wool insulation plates

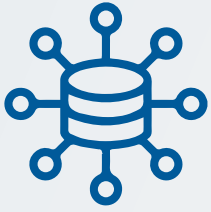


detection of plastic wrapping foil in meat spreads and salami



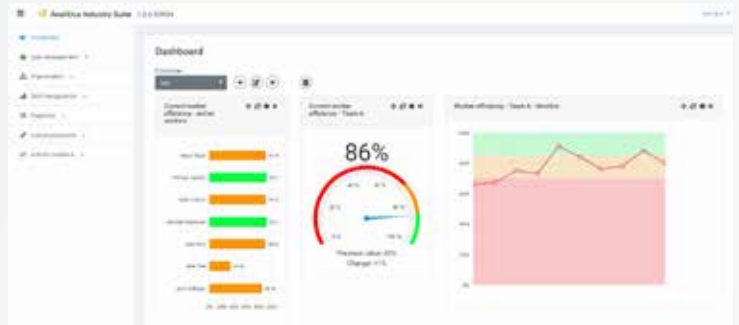
fruits & vegetables quality grading

USE CASES



# Manufacturing Analytics

- real-time shop-floor information
- ISO 22400 metrics
- analytics of historical activity



Production line monitoring

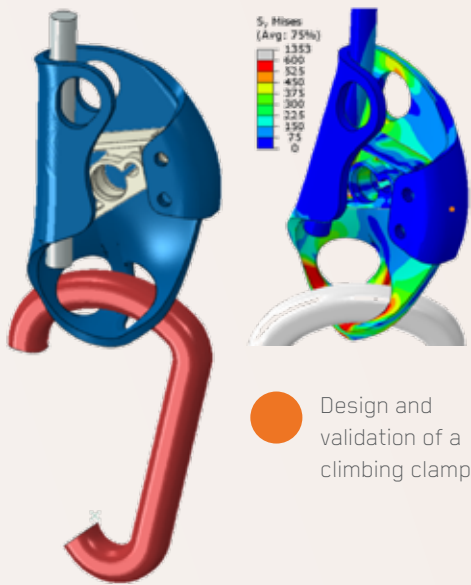
USE CASES

## HOLISTIC DESIGN APPROACH



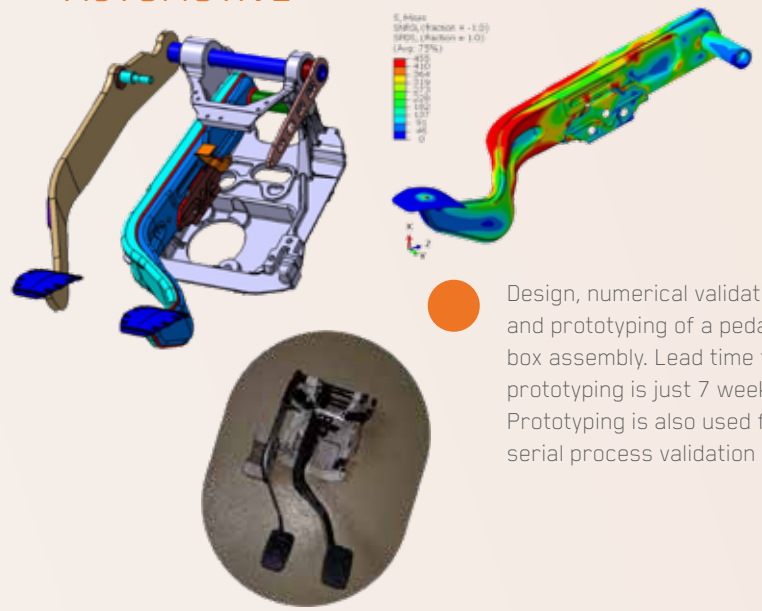
# PRODUCT DEVELOPMENT

## SPORTS EQUIPMENT



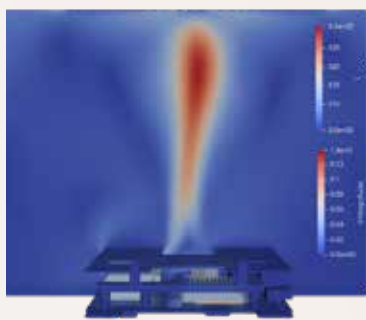
Design and validation of a climbing clamp

## AUTOMOTIVE



Design, numerical validation and prototyping of a pedal box assembly. Lead time for prototyping is just 7 weeks. Prototyping is also used for serial process validation

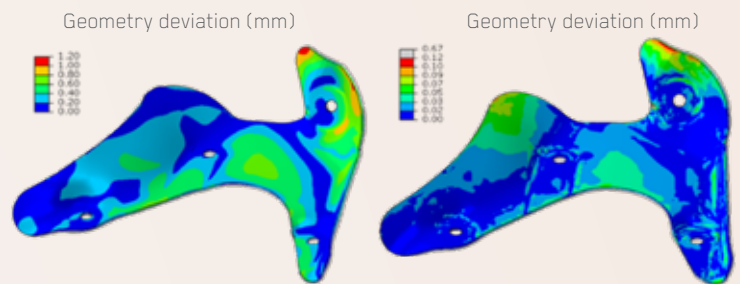
## ELECTRONICS



Numerical validation of an electronics cooling system by natural convection

## SIMULATIONS

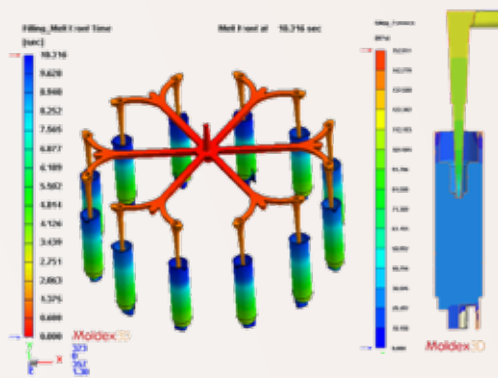
### METAL FORMING



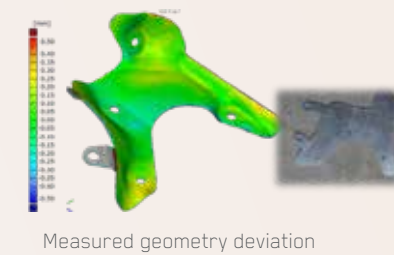
Before optimization

After optimization

## INJECTION MOLDING



Optimization of injection molding of duroplast material. Increased cycle time by 50%.



Measured geometry deviation

Tool and blank shape optimization by advanced numerical simulations of the sheet-metal forming process

## TOOLS AND PROTOTYPES



# REFERENCES

aluminium kety   
**emmi**

 **KFAK**  
AUTOMOTIVE

**exact**  
Pipe Cutting System

 **CIMOS**

**KOLEKTOR**

 **elaphe**

**TALU** 

 **AD Plastik**

**hidria**

**Danfoss**

  
**KOVINOPLASTIKA LOŽ**

Complete manufacturing solutions  
for Industry 4.0

Equipment design

Machine and process simulation  
& optimization

Data integration/IoT, manufacturing  
analytics, EaaS platform

Custom optimized quality  
control solutions



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