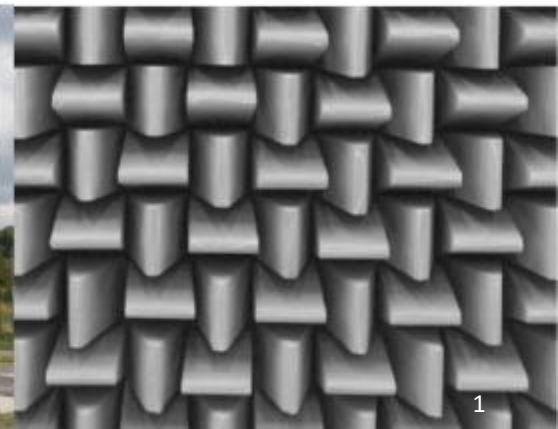




# VÚTS, a.s. Liberec, CZE

Jan Marek, 01/2018



# KEY COMPANY DATA

- **ESTABLISHED 1951**
- **200 employees**
- **Turnover : 15,5 Mio EUR (2016)**
- **ISO 9001 certification**
- **More than 750 patents**
- **Private company, owned by management**



YOUR PARTNER FOR RESEARCH, DEVELOPMENT AND INNOVATIONS

VISION UNLIMITED



**CRSV**  
CENTRE OF ENGINEERING RESEARCH AND DEVELOPMENT

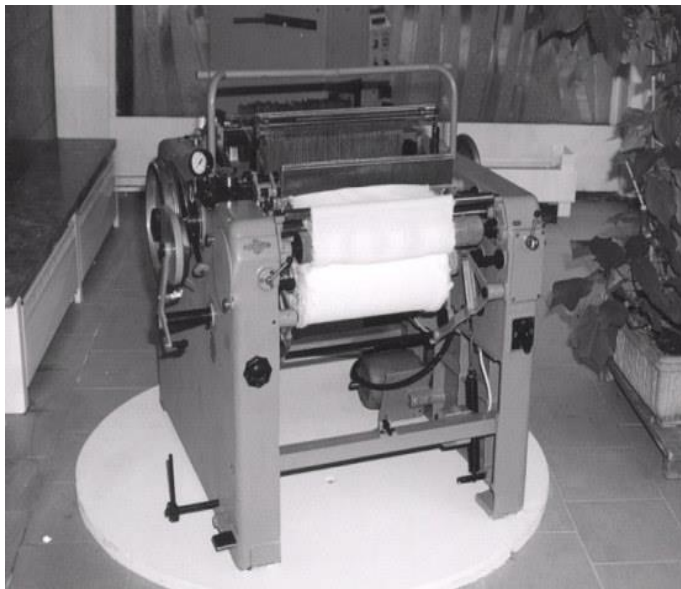


**LAC**  
LASER APPLICATION CENTER

**REALIZATION AND PRODUCTION**



# FIRST WORLDWIDE



P 45  
Airjet weaving machine - 1952



DIFA  
Weaving machine for 3D textiles with  
flexible distance - 2017



# 9x R&D DEPARTMENT

- **3x DEVELOPMENT AND CONSTRUCTION FOR MANUFACTURING INDUSTRY**
- **1x WEAVING TECHNIQUE AND APPLICATION**
- **1x SPECIAL MEASUREMENTS**
- **1x MECHATRONICS**
- **1x COMPUTING AND SIMULATION**
- **1x LASER APPLICATION CENTER**
- **1x ADVANCED MANUFACTURING**



# COMPETENCIES

## PROCESSING INDUSTRY

### AUTOMOTIVE INDUSTRY

ASSEMBLY MACHINES / LINES

TESTING MACHINES

ROBOTIC STATIONS

### TOOL MACHINE INDUSTRY

AUTOMATIC TOOL CHANGE

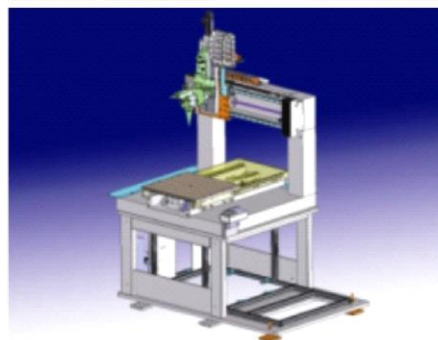
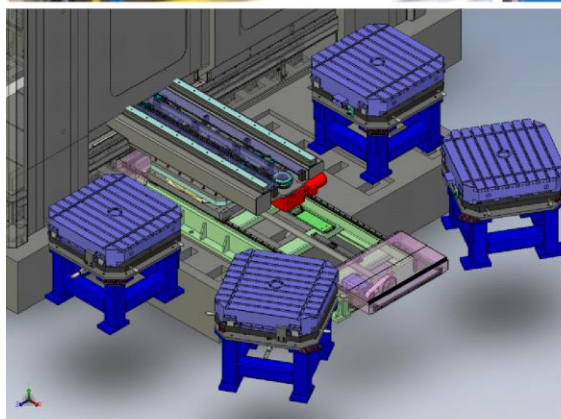
TOOLS MAGAZINES

RADIAL CAM GRINDE

### TEXTILE INDUSTRY

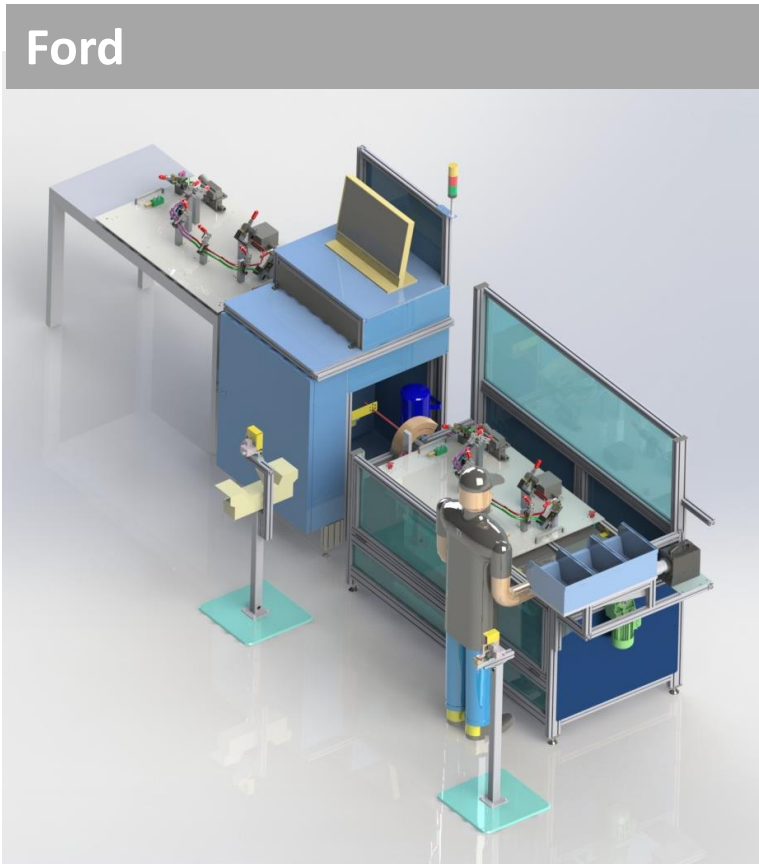
AIR JET WEAVING MACHINES

WATER JET WEAVING



# LEAK TESTING STATION

Ford

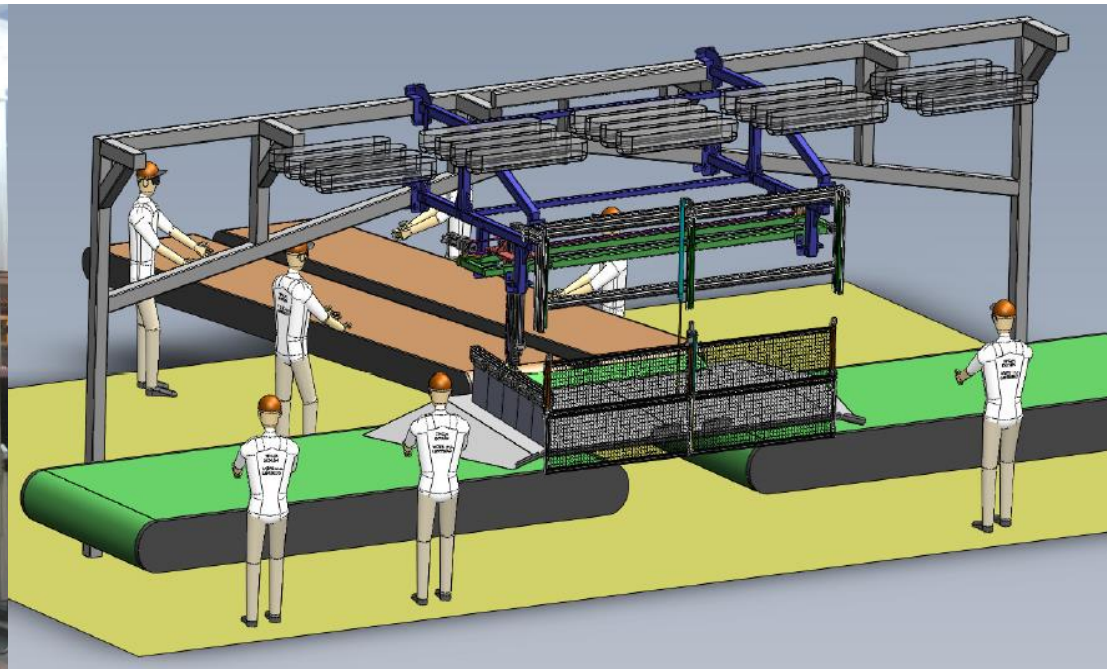




# Assembly stations/machines - AUTOMOTIVE

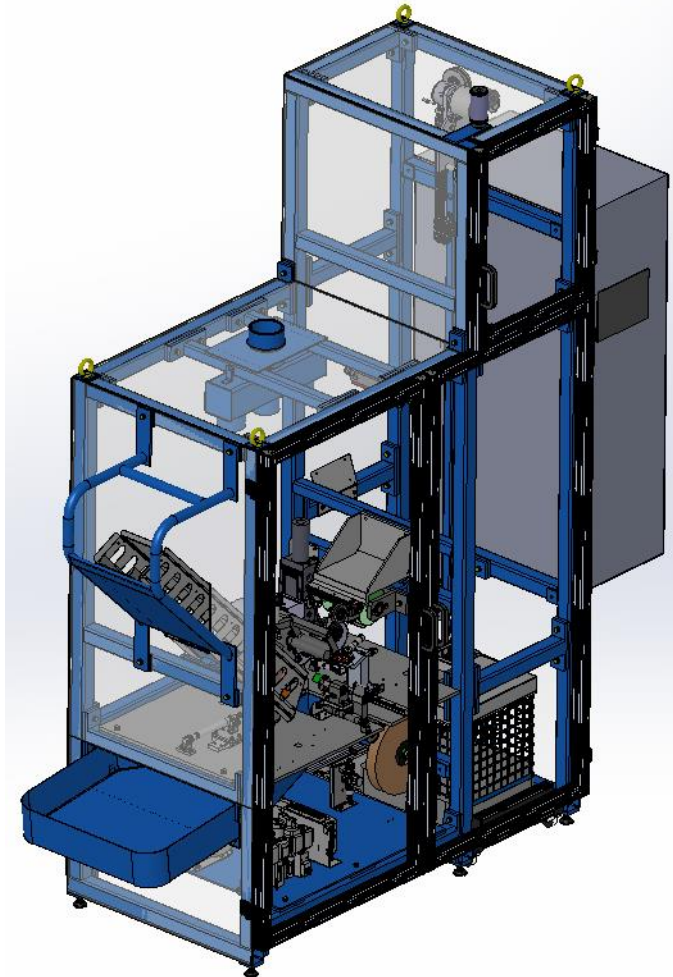
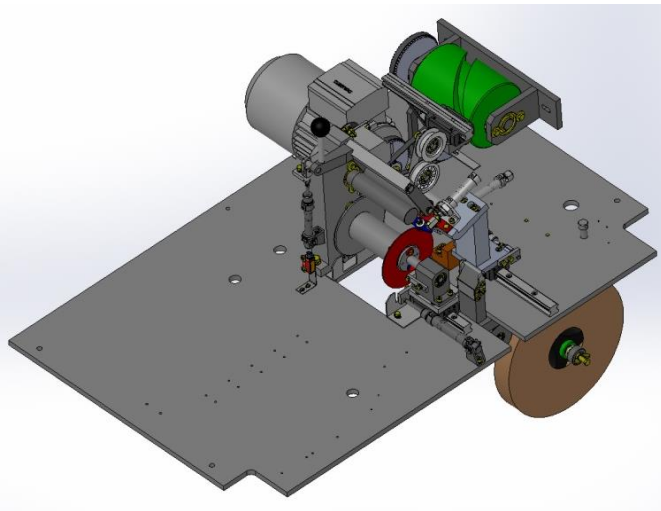


TOYOTA PEUGEOT CITROËN AUTOMOBILE



# Project: R&D of Re-Winding station

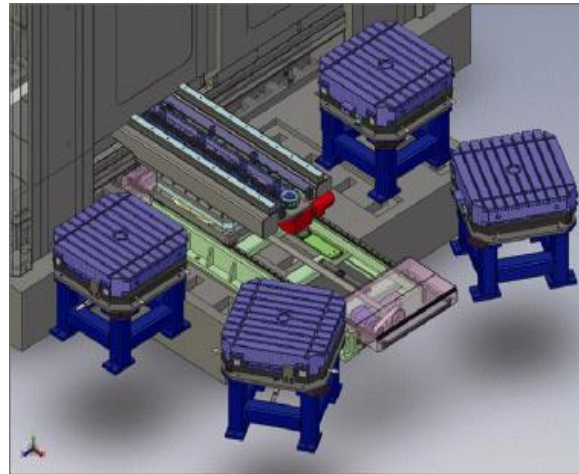
- Full automatically re-winding process
- Carbon & Glass Fibers
- From functional model to 3-shift operation station



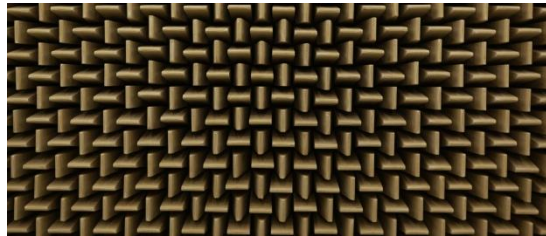


# TOOL MACHINE INDUSTRY

## R&D, CAD design, assembly, production



# SEMI-ANECHOIC ROOM



## SEMI – ANECHOIC ROOM

- Internal size 12×8,5×5,5 m
- Acoustic pressure measurement from 20 dB(A)
- Measurement of machines up to 10 ton
- Technological media supply

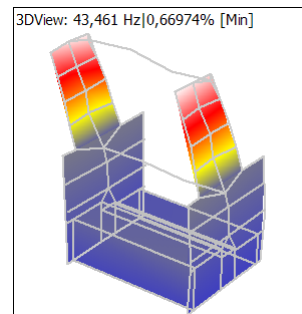




## HIGH SPEED PROCESS ANALYSIS



## MEASURING OF NOISE AND VIBRATIONS



## THERMOCAMERA





# LASER PROCESS

- Technology Development
- Prototype Manufacturing
- Small Series Production
- Parameter / Process Optimization

**WELDING**



**CUTTING**



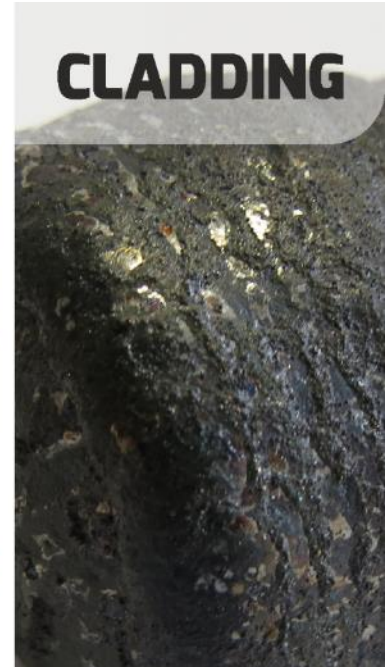
**DRILLING**



**HARDENING**



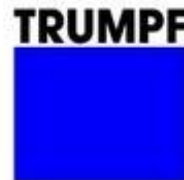
**CLADDING**



# CUSTOMER'S PORTFOLIO – *academic sektor*



# CUSTOMER'S PORTFOLIO – *industry sector*



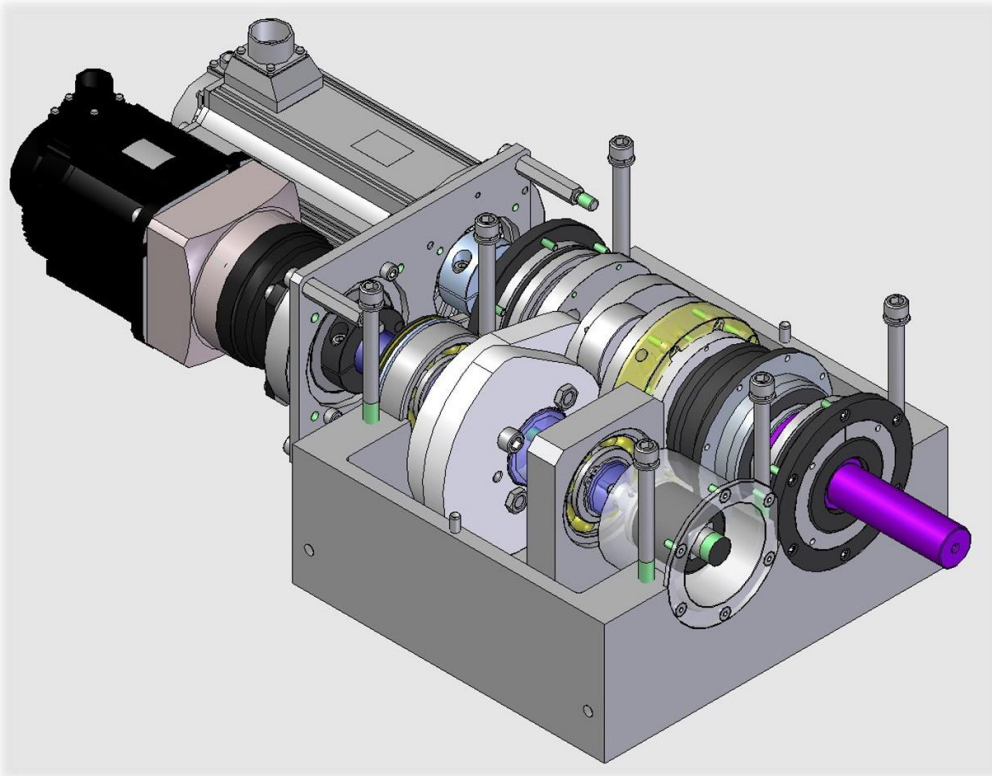


# LAST REALISATIONS FOR COSTUMERS FROM AUTOMOTIVE INDUSTRY



# PROJECT PROPOSAL I.

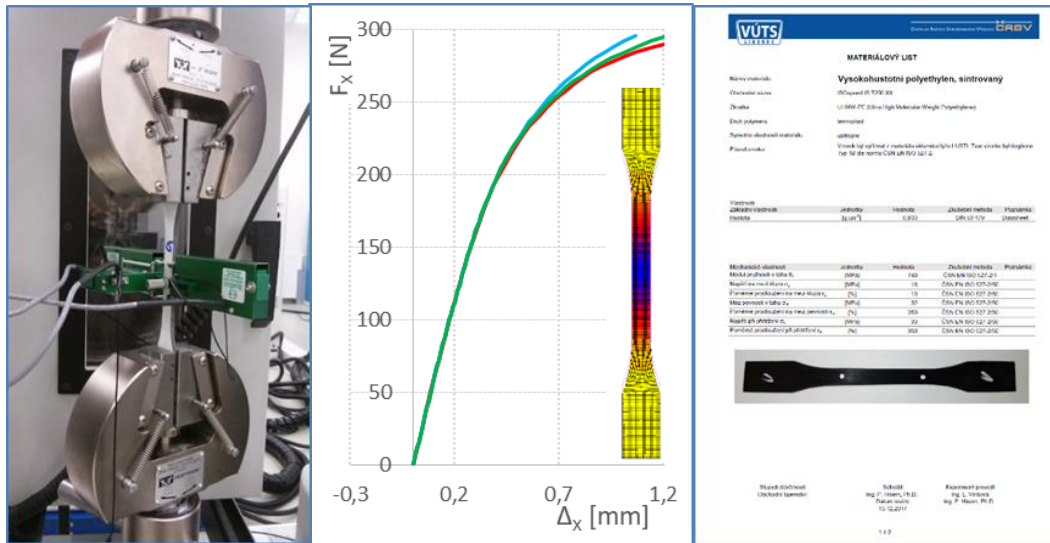
## Mechatronic differential



- For demanding dynamic applications
- Serial and parallel sequencing of conventional and electronic mechanisms.
- Looking for:  
Development of application of the principle

# PROJECT PROPOSAL II.

## Material databases for FEM analysis

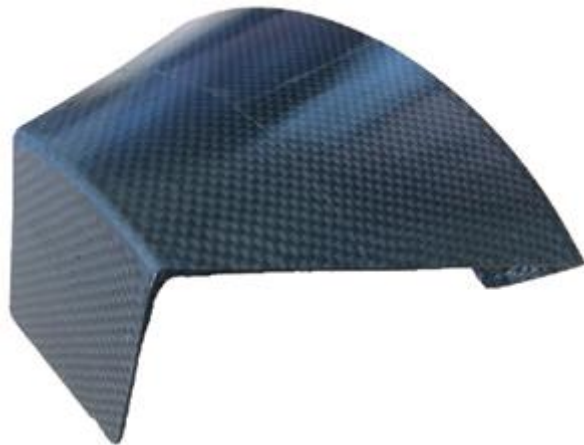


- Databases of data of non-linear materials
- Application of data for FEM simulation
- Looking for:
  - Partners for creation of material databases
  - Mathematical modelling of non-linear materials



# PROJECT PROPOSAL III.

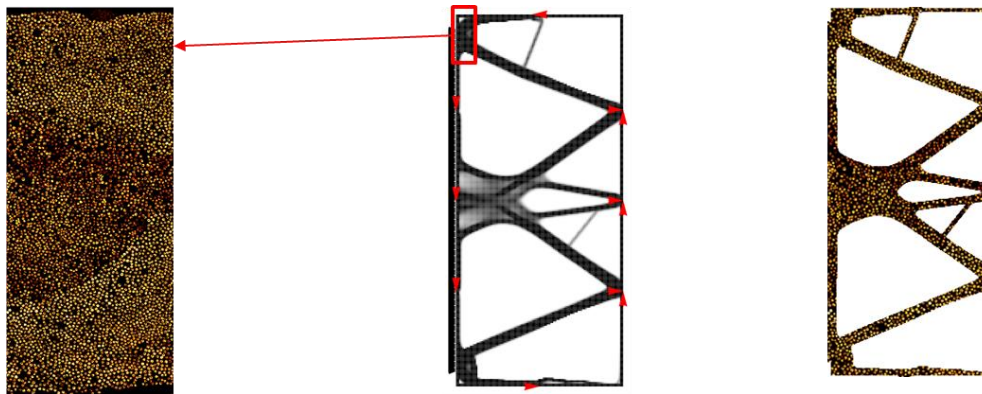
## Automatization of composites production



- Current production of composite components mostly hand made
- Healthy risks
- High production costs
- Experience with glue coating robot
- Looking for:  
Partners in: automatization of prepreg handling, resin application, manipulating, finalization

# PROJECT PROPOSAL IV.

## Topological optimization of composites



- Composite frameworks for windows
- Thickwall composite has high thermal conductivity
- Reduce thermal conductivity by internal structures
- Looking for: Partner with competencies in production of structural composites

# THANK YOU FOR YOUR ATTENTION.

**Jan Marek**  
Project manager

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CZECH REPUBLIC

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