



HESSEL



History:

"From wiring harness through switches production, plastic- and metal processing – company Hessel follows the requirements and specifications of the customers."

1972

foundation Hessel Gerätebau GmbH in Heiligenhaus, Germany by Reinhard Hessel
production and sales of area meters for agriculture

1987/ 88

start of first cable harness production in cooperation as IGS for Leoni

1990/91

extension of wiring harness business with Siemens and Temic (AEG-Telefunken)

1993

own cable harness factory established in Vrable, SLOVAKIA

1995

Hessel only IGS for Daimler motor cable harnesses for Temic – than Delphi

2001

own cable harness factory established in Volovec, Ukraine

2005

Foundation of independent family owned Carbon fiber company C2i

2007

Vrable plant set-up as lead plant for process engineering and QS

2009

dislocation of complete IGS Delphi production to Delphi plants

2011

Acting as full service supplier with commercial center for sales, marketing & purchasing in Heiligenhaus

2012

change of name for Vrable plant to Hessel Slovakia s.r.o.

2013

sale of cable harness plant in Volovec, Ukraine

2016

establishing an independend in-house testing technology production

System solutions for cable harnesses, product development





"From wiring harness through switches production, plastic- and metal processing – company Hessel follows the requirements and specifications of the customers."

Today Hessel employs approx. 400 qualified people in Germany and Slovakia at product areas:

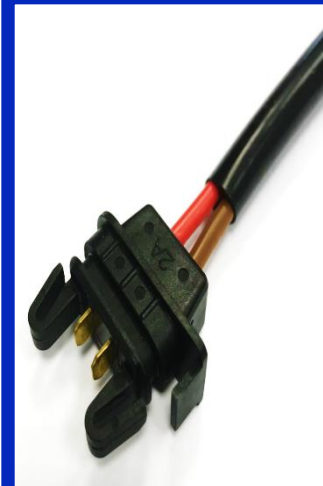
*wiring
harness*

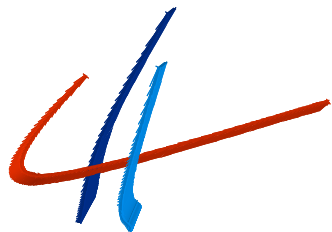
*switches
assembly*

Overmolding

*advanced
assembly*

*testing
technology*

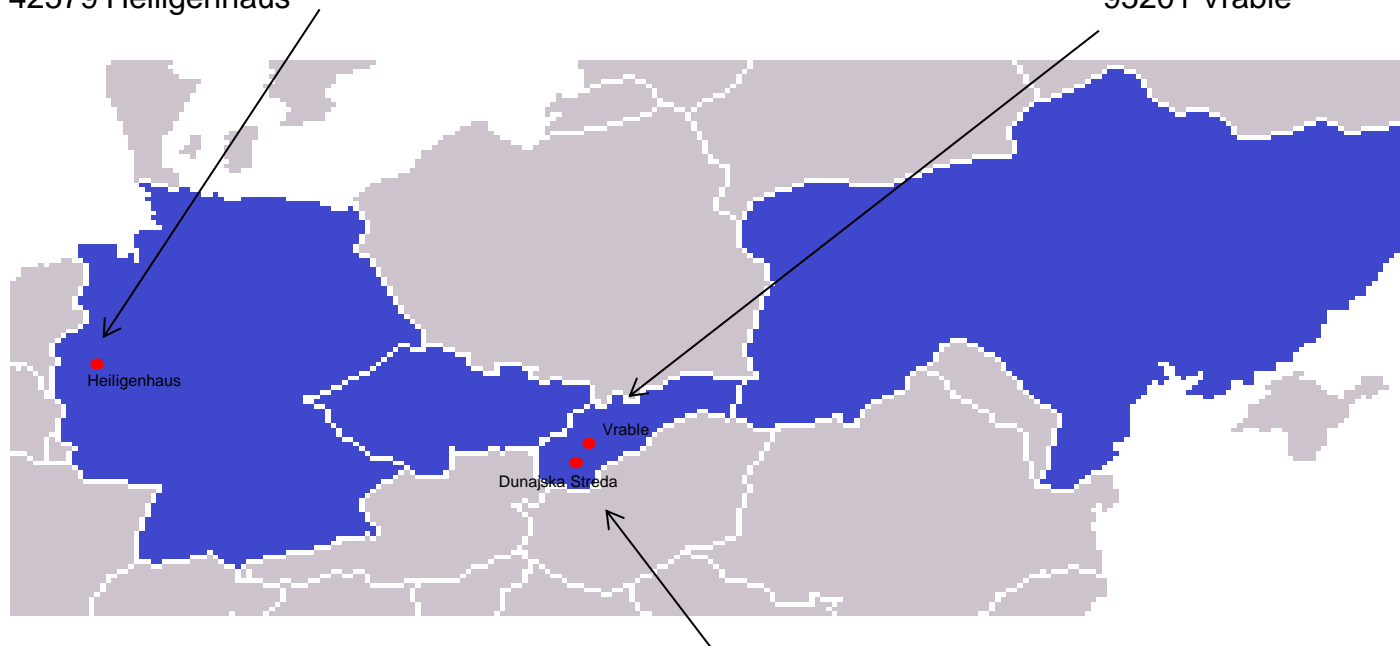




Hessel Gerätebau GmbH
SALES & MARKETING CABLE HARNESSES PRODUCTION
Brügelweg 6
42579 Heiligenhaus



Hessel Slovakia sro
CABLE HARNESSES PLANT
Stanicna 502
95201 Vrable



C2i s.r.o.
CARBON FIBER DEVELOPMENT AND PRODUCTION
Kračanská cesta 51
929 01 Dunajská Streda



Established: 01.08.1993
Production place: SK - Vrable - industrial park
CEO: Mrs. Zuzana Hessel

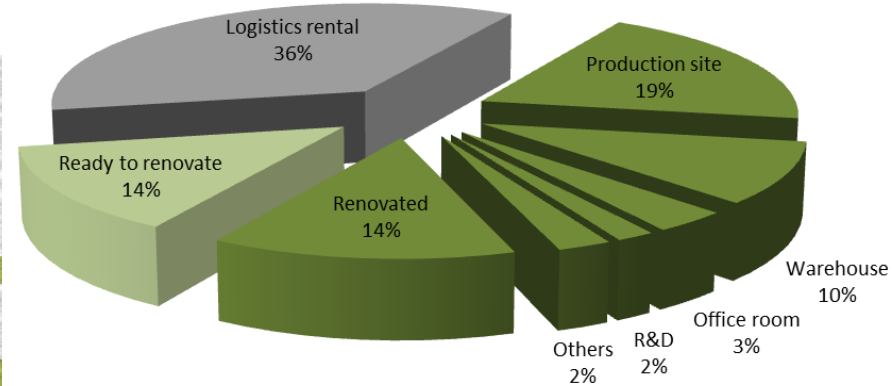


- very good high way connection, Bratislava/Vienna airport within 2hrs
- plant area of 20ts sq. metres
- wide Automotive management systems experiences
- in house engineering, tooling, testing technologies
- JIT, JIS, VMI, CONSI logistic systems
- automotive, Office technique, Motor sport, Agriculture
- Turn over growth from 4.7mio in 2011 to 15.3mio in 2018

„Our production facilities are full property of Hessel group.“



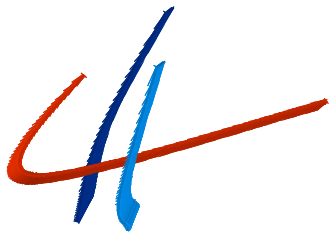
Production Location



„Our production facilities are full property of Hessel group.“



Production site	4 000 m ²
Warehouse	2 000 m ²
Office room	700 m ²
R&D	360 m ²
Others	500 m ²
Renovated	2 800 m ²
Ready to renovate	2 800 m ²
Logistics rentals	7 500 m ²



“ With our production locations in eastern europe we provide our customers competitive products in high quality.”



Automotive



**Commercial
Vehicles**



Non-Automotive

Hessel provides competitive products in all market segments



PORSCHE



STABILUS



WABCO



NEW SOP IN 2018:



Gebauer & Griller



END CUSTOMERS:

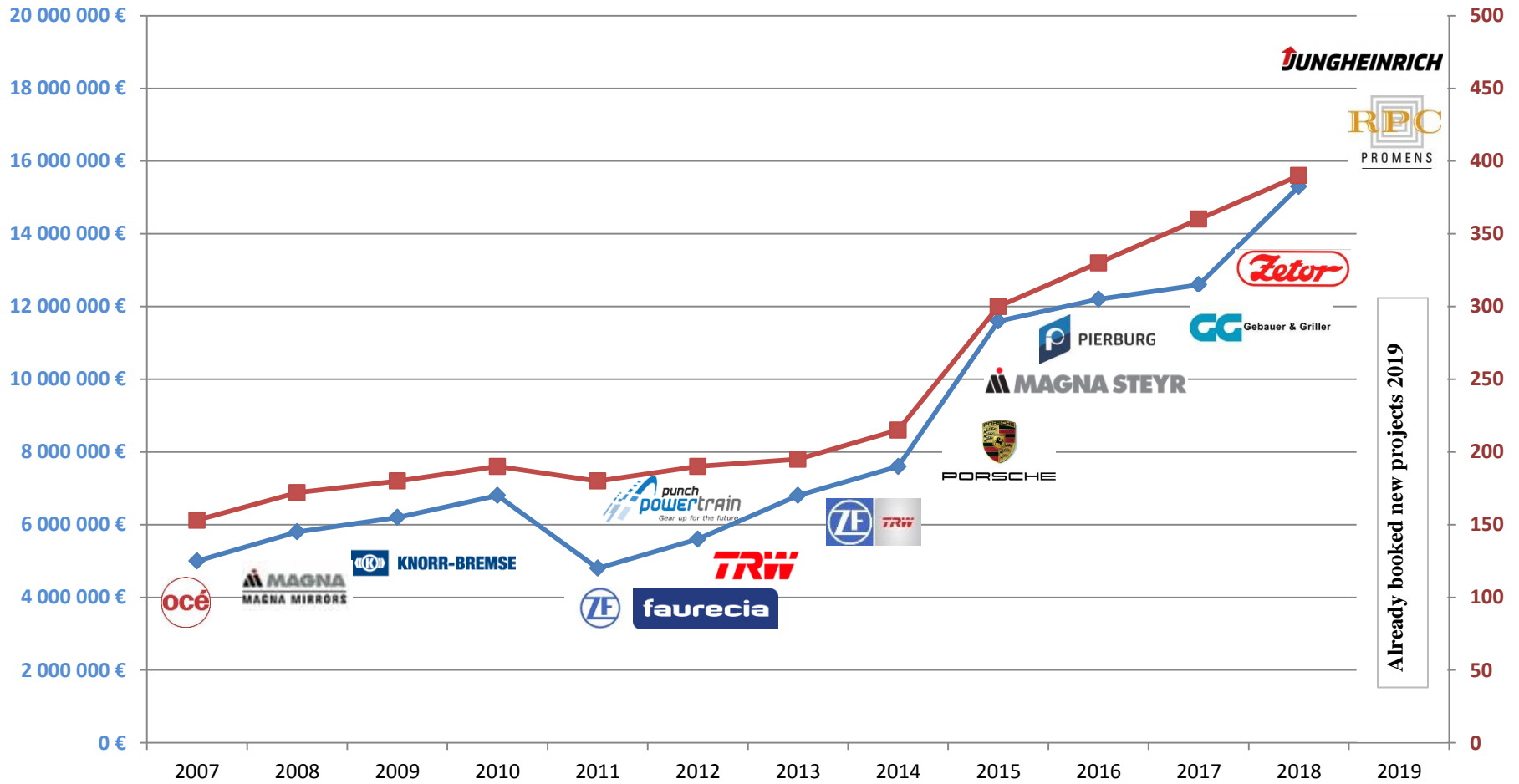


Canon





Company development





Integrated Supplier

Full-Service

Sub-Systems

System Supplier

1988-2001

- Mercedes engines
4-12 cyl.
- Car mirrors
- CAT cables
- DAF engine
- Dental RTG
- Solar systems
- Tyco medicine

2002-2011

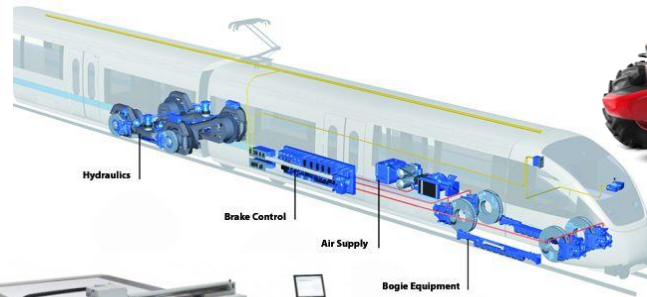
- Seatbelt
- Airbag
- Transmission
- Pump systems
- Steering
- Battery Cables
- Brake systems
- Printers

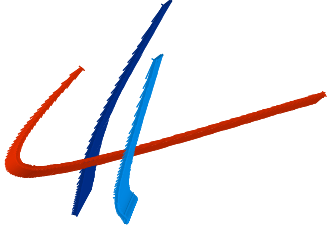
2012-2018

- Steering columns
- Center Console
- Train ABS sensors
- Light Systems
- Tractor Cabine,
dashboard, engine,
etc.

2019ff

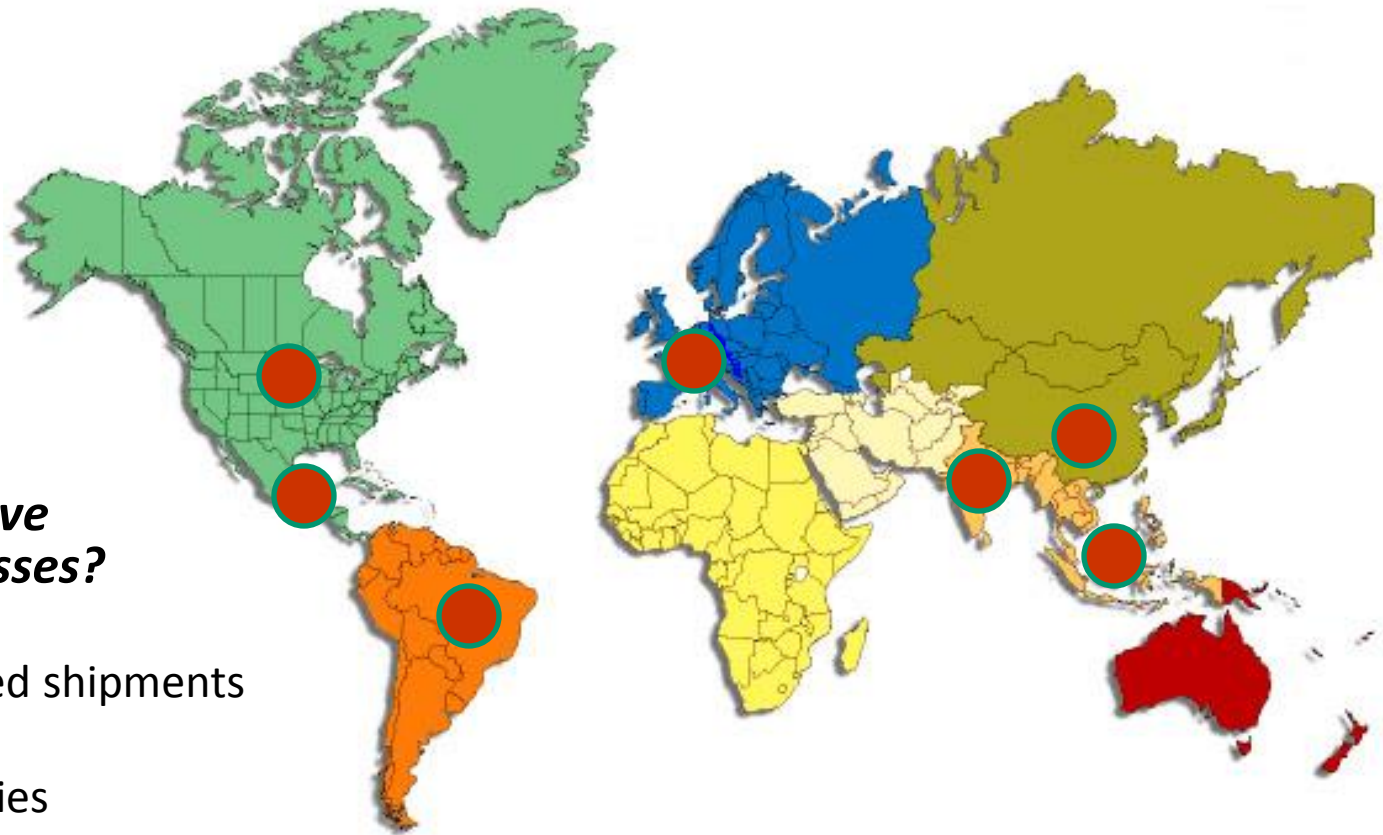
- Product
development
- Design Phase





How do we drive logistics processes?

- Sub-contracted shipments
- Direct deliveries
- Just-In-Time deliveries
- Vendor-Managed-Inventories





Connectors / Terminals



Cable / Wires



Cable protection



Tools / Equipment



KOSTAL 

 LEAR CORPORATION 

 molex 

 YAZAKI

 HIRSCHMANN
AUTOMOTIVE 

 DELPHI

 LEONI 
Gebauer & Griller

 KROMBERG
& SCHUBERT
Kromberg & Schubert GmbH
Cable & Wire  PRYSMIAN
 Draka

 LAPP KABEL

 HUBER+SUHRNER

 Raychem
from TE Connectivity 

 HellermannTyton

 Schlemmer
Our Technology. Your Success.

 DELFINGEN

 FRÄNKISCHE

 ARaymond
MORE THAN FASTENING

 Coroplast 

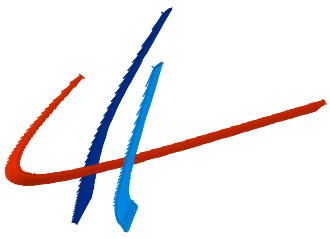
 komax

 Schleuniger

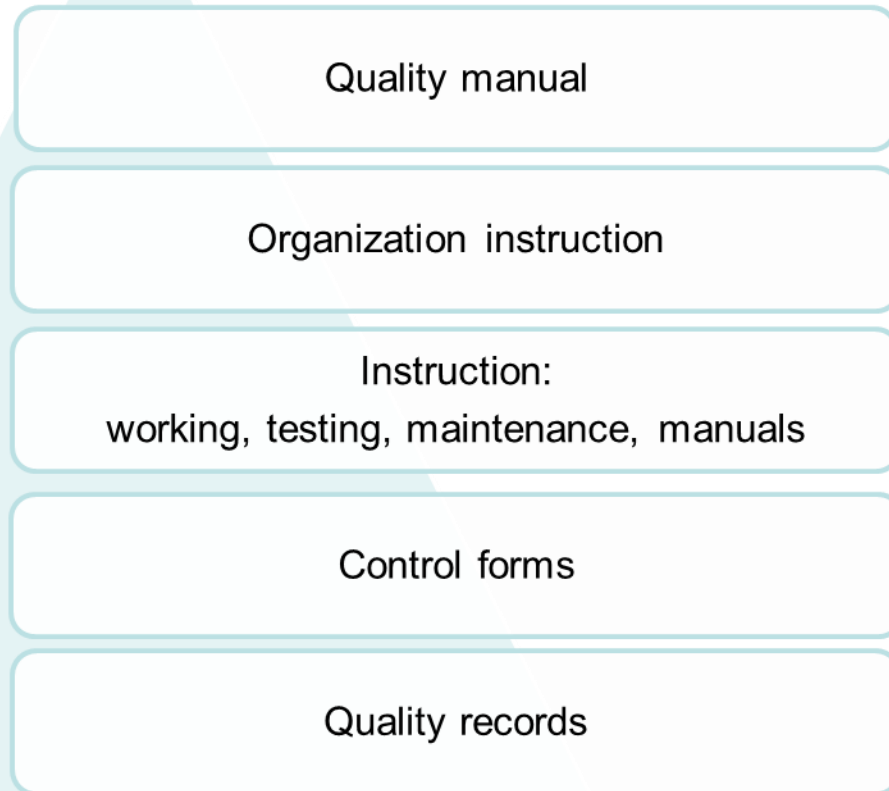
 SCHÄFER
 HASCO
Ermöglichen mit System.

 FESTO

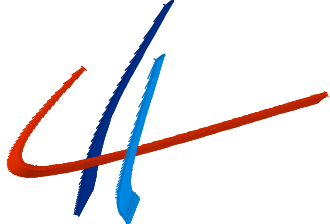
 TE
connectivity 



Quality control system structure:



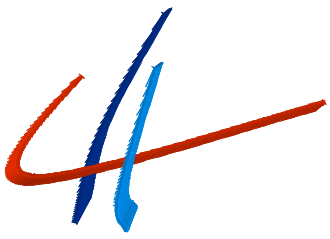
“Quality of our products and customer satisfaction is our permanent priority”



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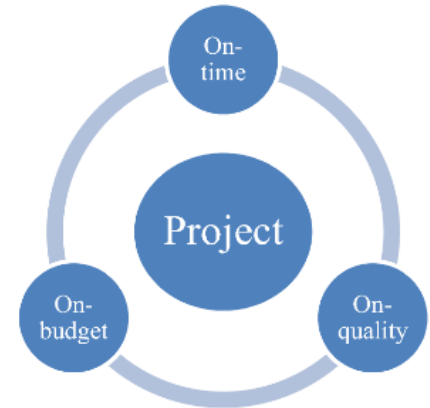
- ISO 9001:2015
- ISO 14001:2015
- ISO/IATF 16 949:2016
- UL Wiring harnesses



PPM 2018:

Number of claimed parts: 36 pcs
Number of shipped parts: 11.363.955 pcs

Total PPM : **3,18**

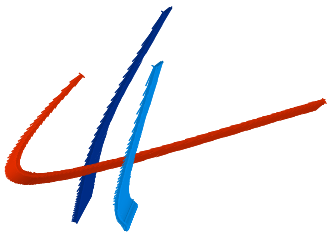


Delivery performance 2018:

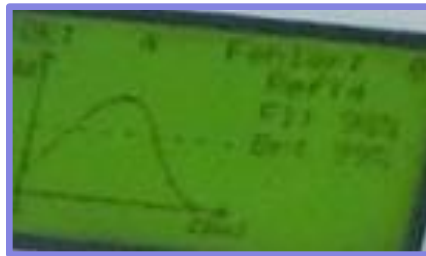
Total performance: **98,8%**



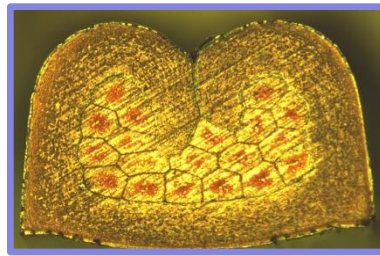
“Quality of our products and customer satisfaction is our permanent priority”



incoming inspection

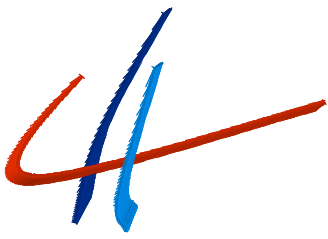


process control



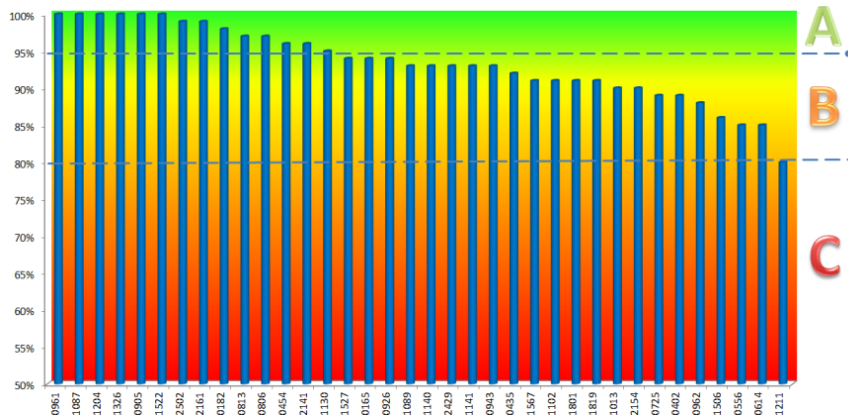
applicator service center

“Quality of our products and customer satisfaction is our permanent priority”

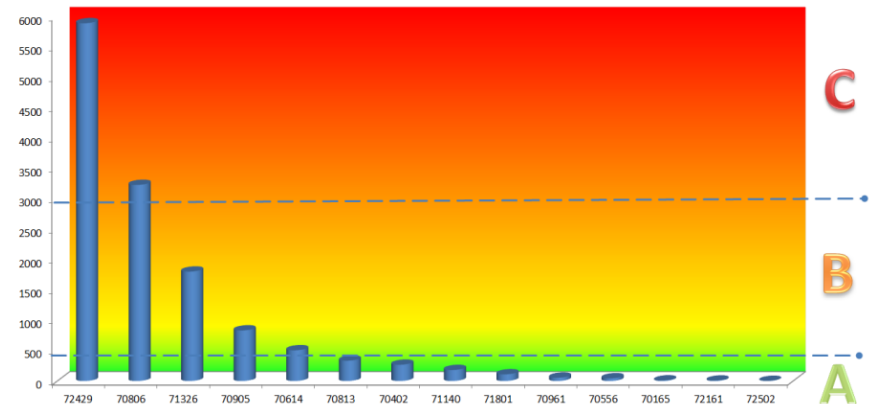


Supplier delivery/PPM performance tracker quarterly based

delivery performance tracker
actual Quarter + YTD



ppm performance tracker
actual Quarter + YTD



“Our quality starts with high level of supply chain “



"From wiring harness through switches production, plastic- and metal processing – company Hessel follows the requirements and specifications of the customers."

PRODUCTION SCOPE:

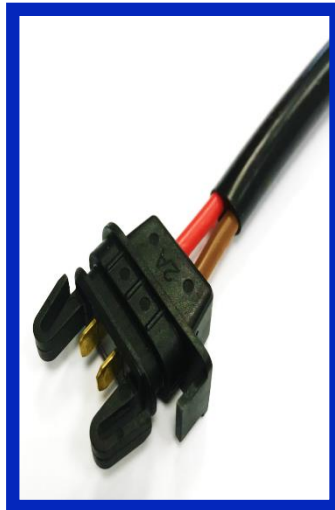
**wiring
harness**

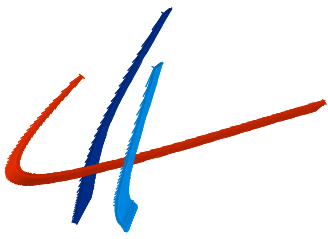
**switches
assembly**

Overmolding

**advanced
assembly**

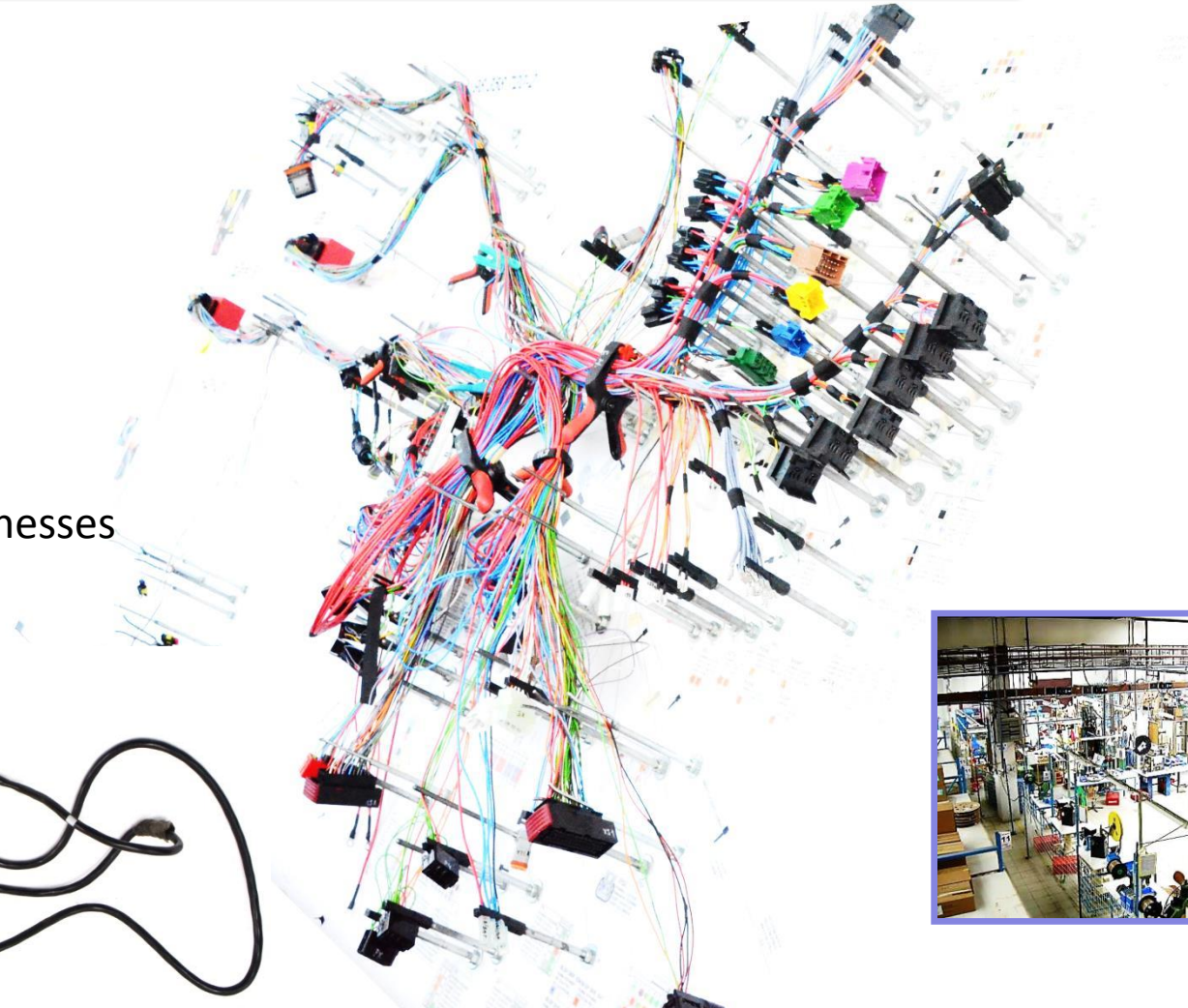
**testing
technology**





Cable Harness production fields

- safety
- airbag
- ABS sensors
- system
- battery
- complex harnesses

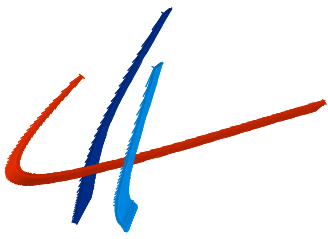




Switches Assembly

- steering column switches
- micro switches
- switches for door lock systems

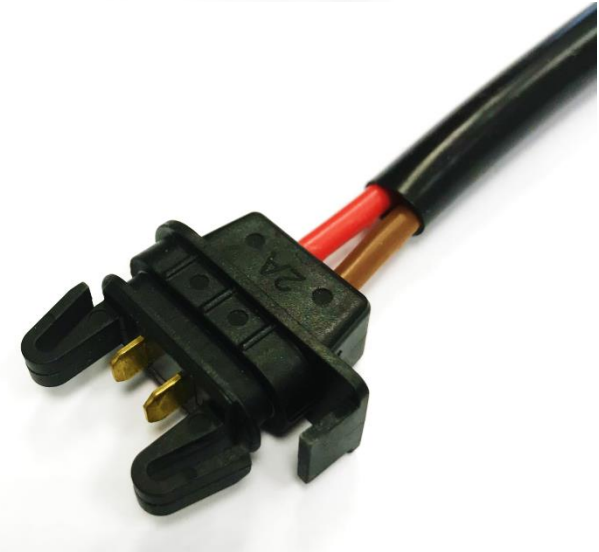
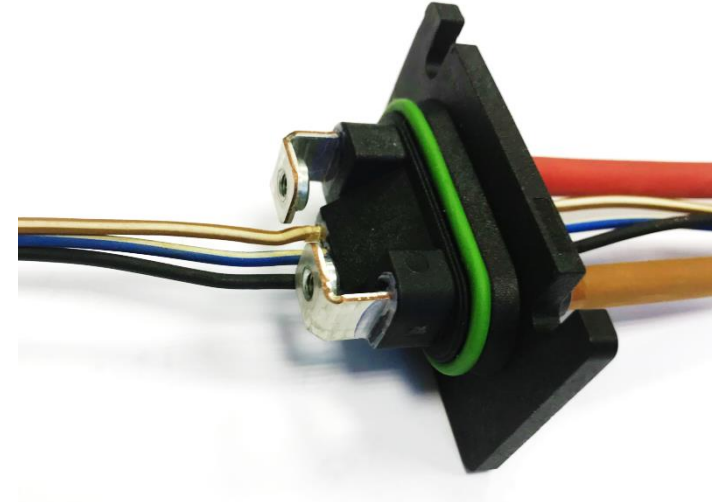


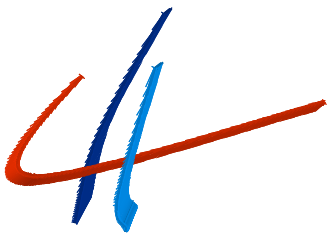


Overmolding

"We can process materials (PE, PP and PA) from 10g to 1kg."

- tooled moulded parts
- injection moulded inserts

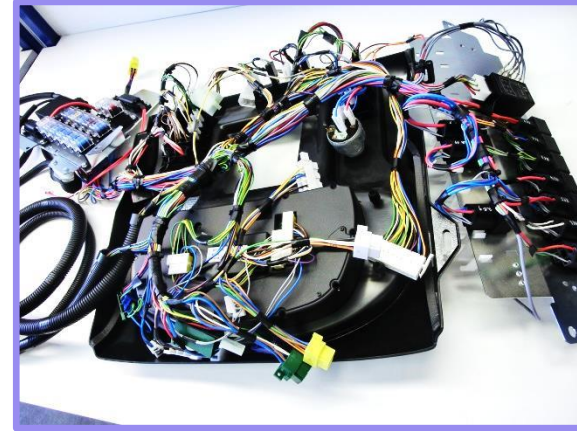




Advanced assembly units

“from wiring harnesses up to complex solutions”

- Hessel cable harnesses applications
- Cabin dash-boards
- Cabin side panels



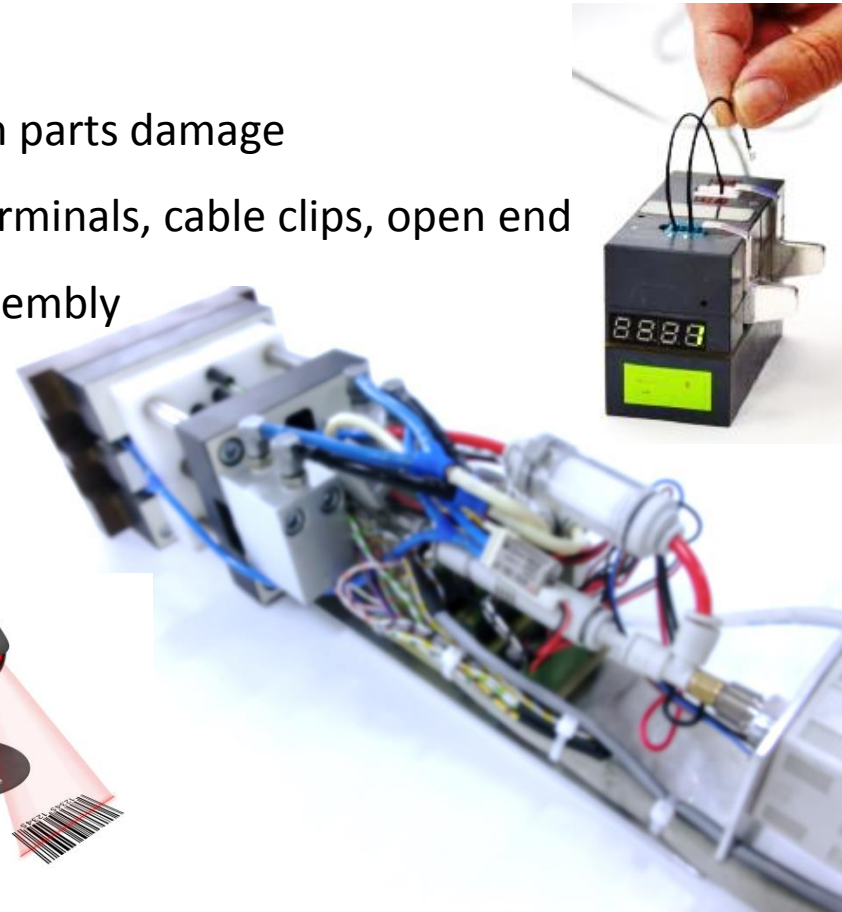


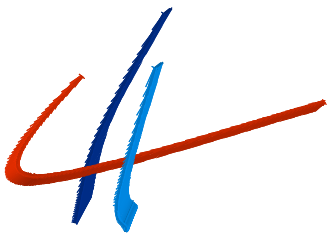
Testing system production:

“100% of our cable assemblies are proofed by final electrical test”

TESTING TECHNOLOGIES:

- Testing modules
- Test board, functionality approval, non-conform parts damage
- Assembly boards with modules for housings, terminals, cable clips, open end
 - active function – direct EK testing after assembly
 - passive modules – support for assembly
- Helping tools
- Poka-Yoke tools
- High Voltage units
- Leakage testing units





Cutting and crimping:

“More than 60 mio cutted leads per year”



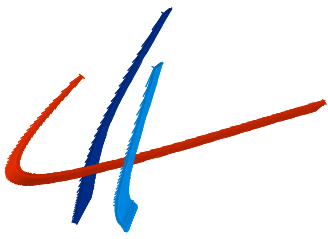
16 Komax cutting Machines



“Up to 10 mio single crimps”

Crimping Tools:

Schäfer, Hanke, Schleuniger,
Mecal, TE



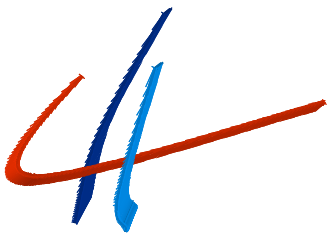
Cutting and crimping:

“ > 10mio manual crimps per year”



- simple crimp
- double crimp
- strip-crimp
- splice
- IDC





Other technologies:



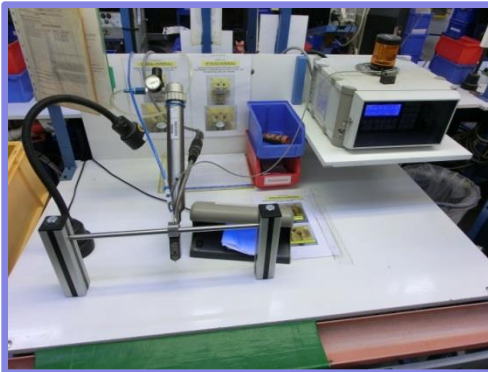
Inkjet datamatrix marking



Wire marking



Tube heat shrinking



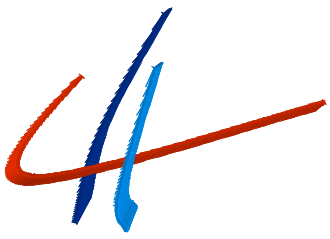
Gel application



Wires twisting



Braiding



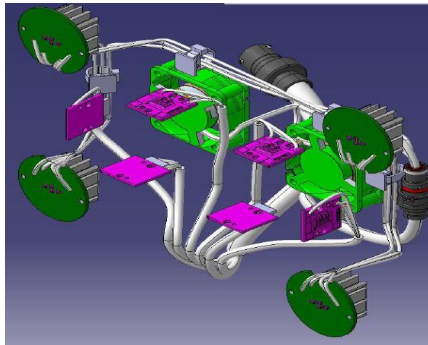
Design / Development:

PORSCHE CENTRE CONSOLE and STEERING WHEEL

- project driven among Porsche / Hessel / C2i
- Hessel cable harnesses design
- complete testing /simulation technology

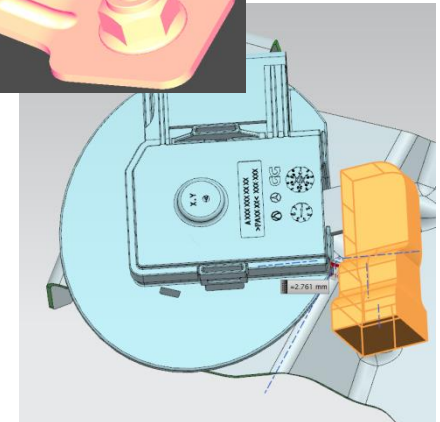
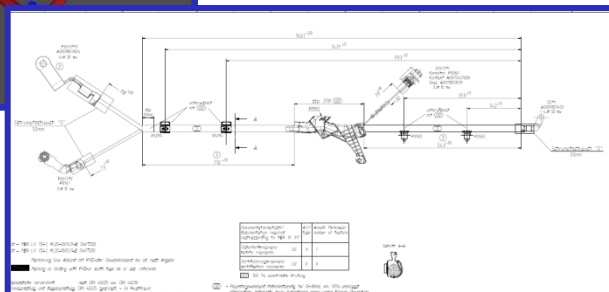
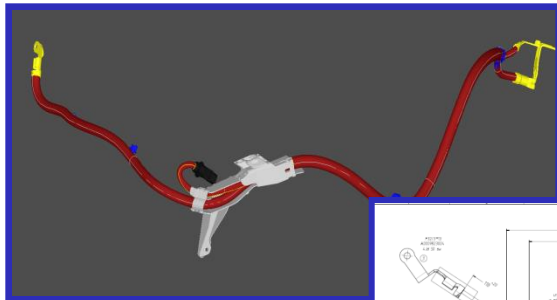
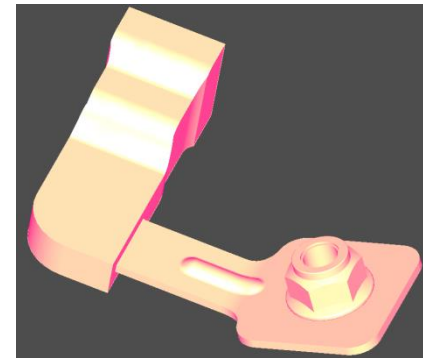
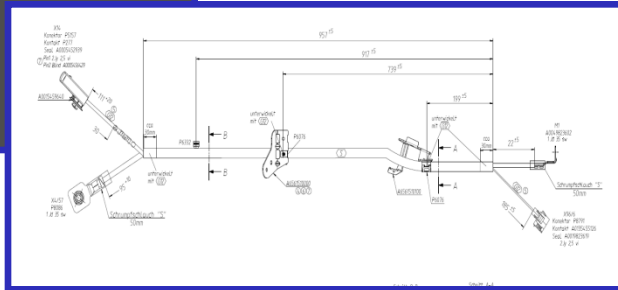


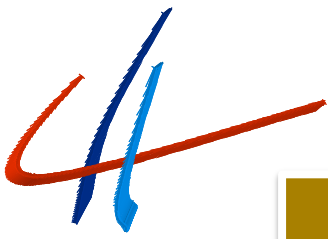
Design / Development LED lamps:



Design / Development:

-
- PL
 Kapsle #037
 Konekt #02
 Ser. #0000009
 #0013 0.0 x
 #Pig Bait #0000009
-
- 10x10mm
 10x10mm
 10x10mm
 10mm

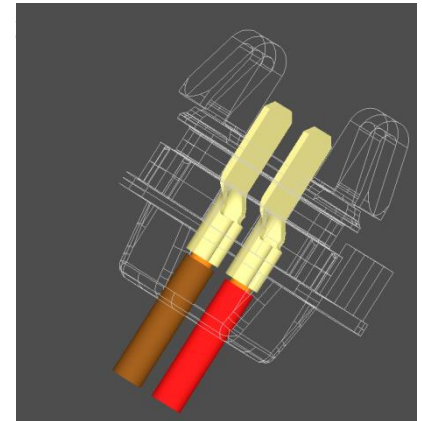
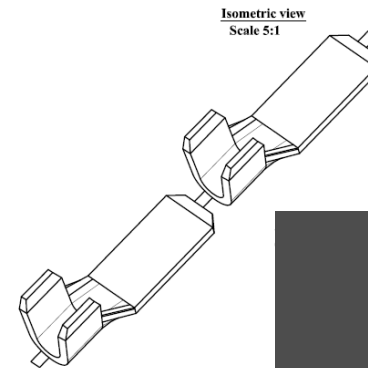
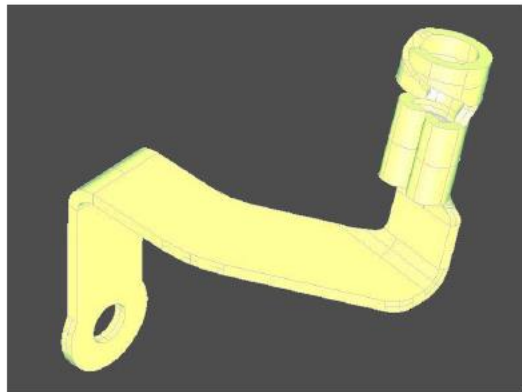


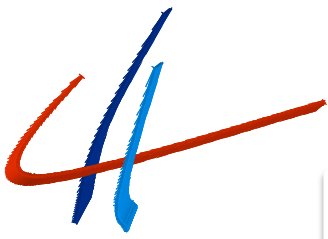


Design / Development special terminals:

design and construction of unique terminals

- customized dimensional solutions
- material thickness up to 2.5mm²



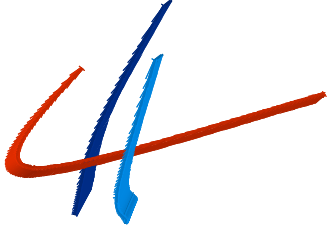


Assembly - expansion possibility:

- C2i based 60km south of Hessel Slovakia, Hessel family ownership
- C2i is a one stop shop for development and production of advanced composites components
- C2i has a 400 international staff, with over 10 years of experiences with carbon fibre production for top worldwide automotive and aerospace customers

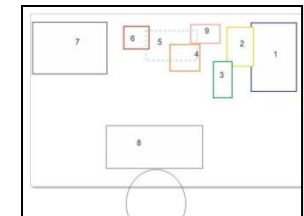
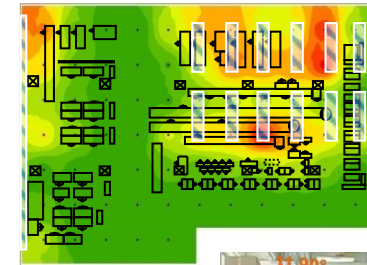


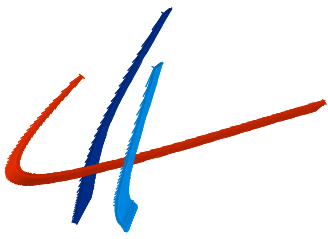
www.c2i.com



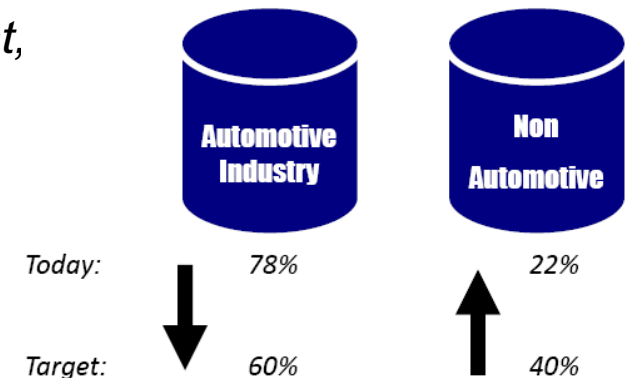
Company cooperation partners:

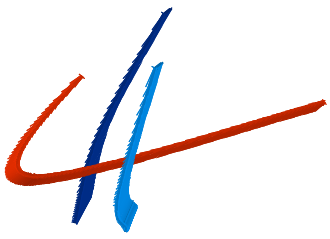
- **Faculty of Engineering, SUA Nitra**
 - Co-supervision of MSc thesis
 - Input in educational process
 - Final thesis projects
- **High school of technicals, Zlate Moravce**
 - Dual education – practical placements
 - Training of future technical positions
- **CERTOS institute**
 - System advisory
 - Training courses





- ✓ *sustainable high quality of products and customer satisfactory as a permanent priority*
- ✓ *expanding new markets and product portfolio with complex process requirements*
- ✓ *involvement in product and parts development, designing and construction solutions*
- ✓ *acting as a system supplier on market*





Key Strenghts:

- ✓ *close to customer*
- ✓ *Slovakia location enables to offer competitive pricing*
- ✓ *short ramp-up phase*
- ✓ *Automotive experienced management*
- ✓ *Flexibility (4-shift production, JIT, JIS, VMI active systems)*
- ✓ *High Know-How and full independence in cable harness testing equipment*
- ✓ *in house design and development of customized unique parts*
- ✓ *system assembling*



www.hessel.eu

