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71° Congresso Nazionale ATI 2016



Le collaborazioni Università-Impresa

**FEV ITALIA:  
UN CASO DI SUCCESSO**



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Politecnico di Torino, 15 092016  
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# About FEV

Founded in 1978, as a spin-off company by Prof. Franz Pischinger, Head of the Institute for Applied Thermodynamics at the RWTH University of Aachen

**FEV is the world's largest independent German engineering company for powertrain and vehicle development**

and employs a staff of over 4,500 highly skilled specialists



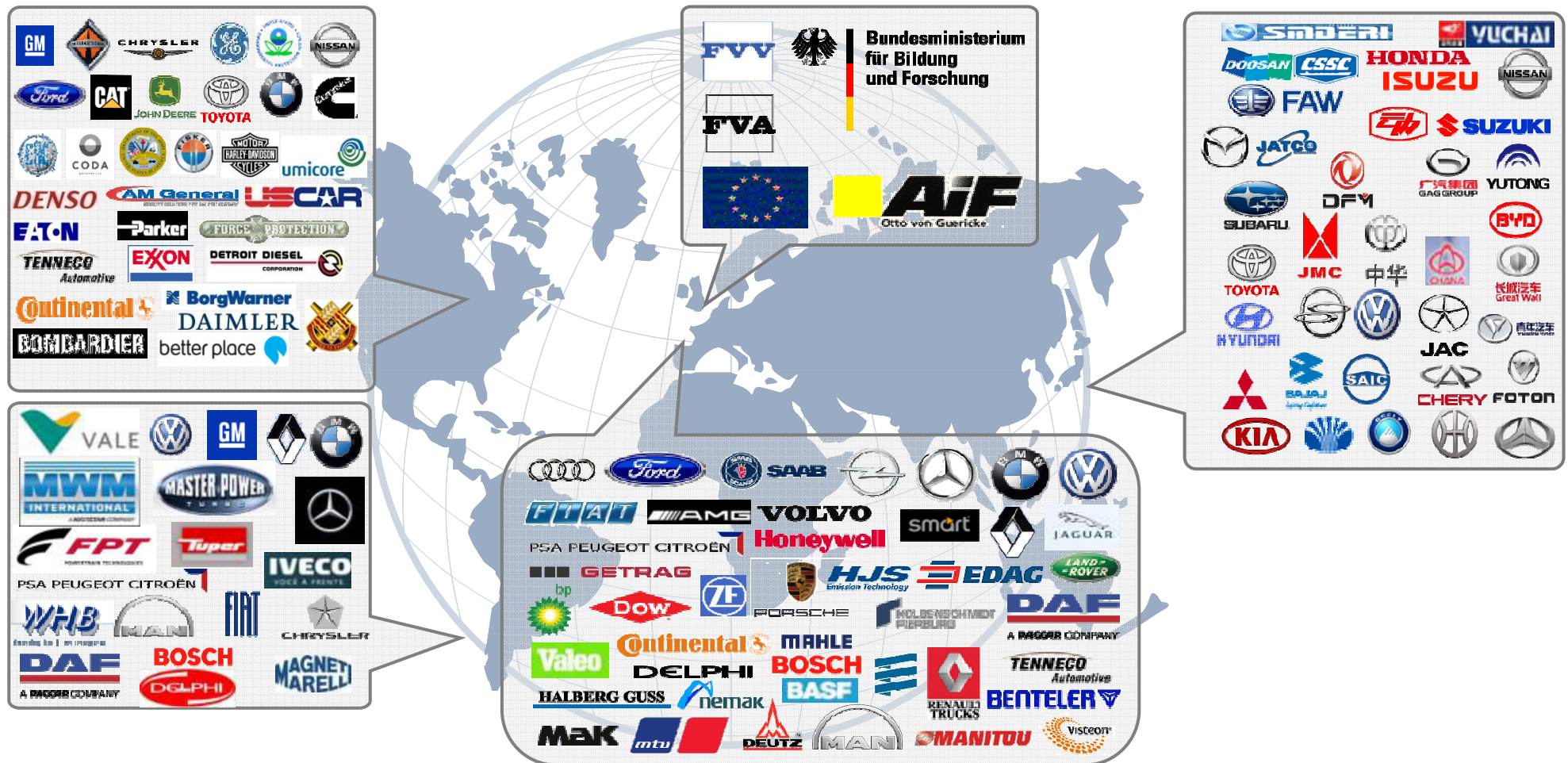
# From local start-up to international engineering partner

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- FEV offers a complete range of **engineering services**: design, analysis, prototyping, powertrain and transmission development, vehicle integration, calibration and homologation for advanced internal combustion gasoline, diesel and alternative fueled powertrains.
- FEV designs, develops and prototypes advanced vehicle / powertrain electronic control systems and hybrid-electric engine concepts .
- FEV also offers broad expertise in electronics, telematics and infotainment system engineering. The FEV Test Systems division is a global supplier of advanced test cells, instrumentation and test equipment

# FEV development worldwide



# About RWTH Aachen University

- RWTH is the **largest technical university in Germany**, with close links to industry and accounts for the highest amount of third-party funds of all German universities.
- RWTH Aachen is ranked among **the national top 3** in the field of mechanical and electrical engineering.
- Over 40,000 students enrolled in 130 study programs
- **More than 280 companies:** Interdisciplinary teams of scientists work closely with industry consortia in the new research buildings.



# Partnership between FEV and RTWH



## The new Center for Mobile Propulsion in cooperation with RWTH



# ATC: Aldenhoven Testing Center Siersdorf

In cooperation with the University and the local Municipality

Rough Road



Hill Section



Excerpt of testing areas

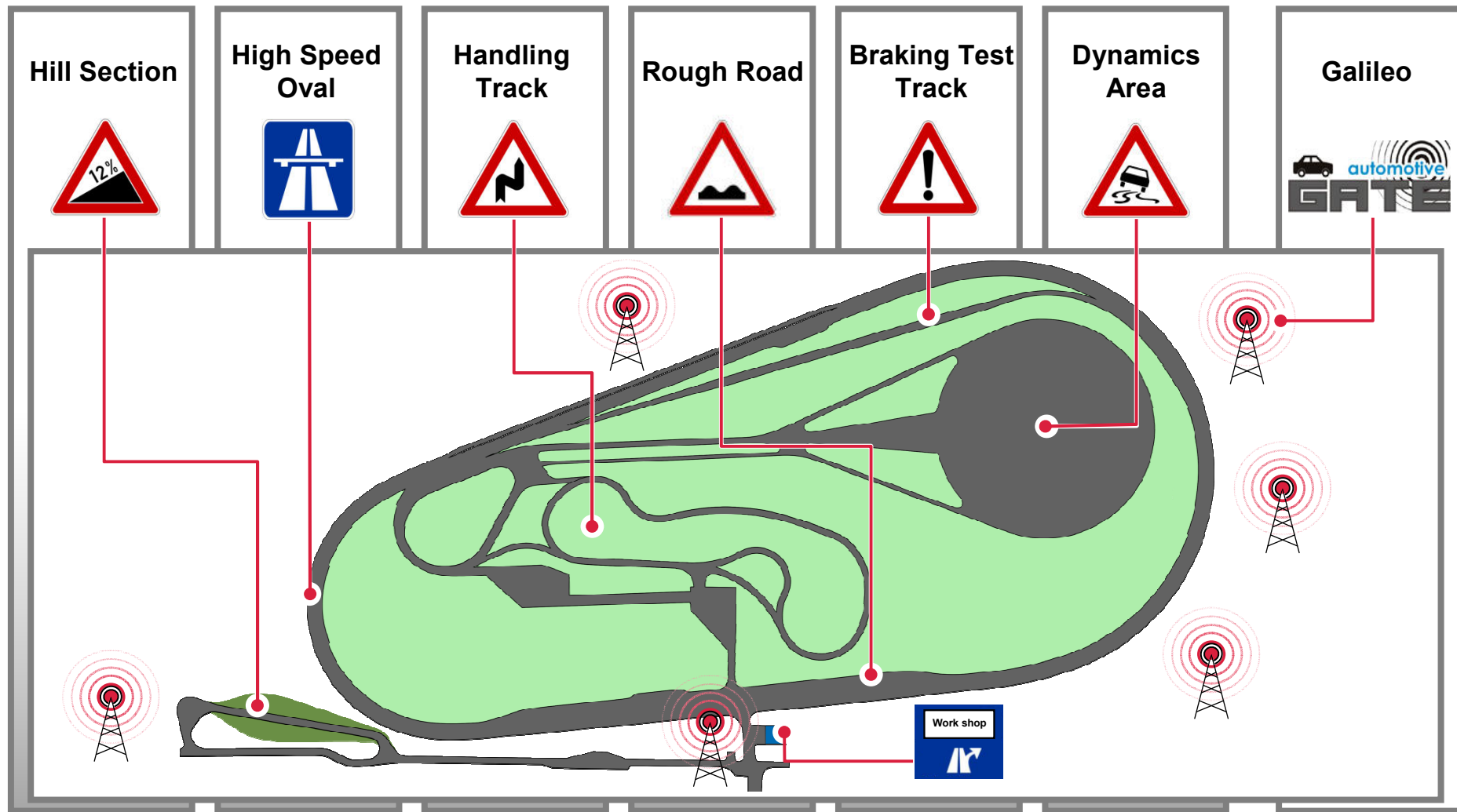
Handling Track



High Speed Oval



# ATC: Aldenhoven Testing Center Siersdorf





# World headquarters and European technical center



# Vehicle application center

## Engine and transmission calibration



# China Technical Centers



Since more than 20 years,  
FEV has established **3 Development Centers:**

2004: Dalian - was selected because of its technology base,  
**university background**, the international sea harbor



2008: At Shanghai/Anting the Vehicle application center

2016: FEV has further expanded its facilities in China with an additional powertrain Development Center at Beijing

# India Technical Center in Pune

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Since 2009, it satisfies all requirements in the field of automotive **powertrain, development of hybrid and electric vehicles** and vehicle development.



# North American facilities: Engineering center powertrain development & integration

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**FEV's Center is located in Auburn Hills, Michigan, a region of high-tech businesses and the University that are driving force for technical innovation in the automotive industry**



# FEV Italia: A strong growth in a couple of years



- Established in Dec **2004**
- Offices and in **Technical Centers in 3 Italian Regions:** Rivoli (TO), Cherasco (CN), Pianezza (TO), Torino, Sant'Agata (BO), Angeli di Rosora (AN)
- **:R&D center in Politecnico di Torino**
- **New labs and a win-win cooperation with Politecnico** set the roots for a further sharp growth

**80** skilled engineers: developing R&D Projects, supporting all major OEMs, providing:

- Calibration
- Benchmarking
- Testing
- Engineering services
- Simulation
- Design



# Since 2103: a strong cooperation with PoliTO

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## R&D PROJECTS and R&D Infrastructures

- Pre-development activities carried out in PoliTO Labs thanks to **3 Service Contracts** in subsequent periods
- **Revamping and upgrade** of dyno test bench equipment
- **Partnership in iDEA**, R&D Automotive Platform Project, funded by Regione Piemonte
- **Partnership in Contratto di Inseadimento**, under evaluation
- **Partnership in IR2**, R&D project under definition to be funded by Regione Piemonte

## TRAINING ACTIVITIES

- **2014-2015: Implementation of a 2nd level Master** “Energy Management for Powertrains” in cooperation with FPT, sponsored by Regione Piemonte
- **2016-2017: New Edition** under discussion with GMPT-E, FCA, CNH, Bosch
- Launched in November, 2015 the **1<sup>st</sup> PhD course**, **2<sup>nd</sup> PhD under definition**
- Specialized courses, **internships** and collaboration with PoliTO for **Academic**,



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## **INTERNATIONAL COOPERATION**

- **Strengthening the relationship with RWTH and top European and US Universities**
- **Papers at Aachen Colloquium, Papers at SAE International**
- **International PhD Master Courses and training activities**
- **Partnership in H2020 R&D Projects**



# 2015: Partnership Agreement for R&D, traineeships and training with PoliTO

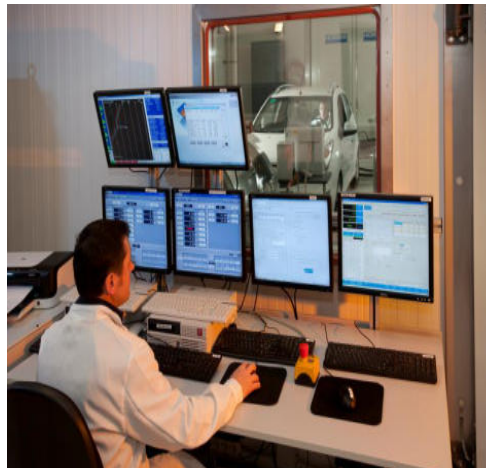


## SECTORS OF PRIORITY INTEREST

Energy Engineering; Mechanical, Automotive, Aerospace; Chemical and Materials, Electrical, Electronics and TLC, Management, Production Engineering

## SPACES FOR R&D

FEV Italia identified an area to create new labs and perform activities and testing. The area is located in Denerg, within the Politecnico



# 2015: Partnership Agreement for R&D, traineeships and training with Politecnico

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## INVESTMENT

- The construction of a dynamic test cell (FEV)
- The revamping and upgrading of Denerg Labs to develop challenging R&D Projects and fulfil future targets
- R&D infrastructures to carry out the planned activities

**DURATION:** 8 – 12 Years

**CONDITIONS:** 8<sup>th</sup> year machinery and equipment loaned free for use

12<sup>th</sup> year machinery and equipment donated to Politecnico

# Turning innovative ideas into reality: a win-win cooperation



Among the International and Italian Academic partnerships



UNIVERSITÀ DEGLI STUDI  
DI MODENA E REGGIO EMILIA



UNIVERSITÀ DEGLI STUDI  
DI NAPOLI FEDERICO II



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA



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**Thank you for your attention!**

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