



# PTS-PRÜFTECHNIK

ENGINEERING | SIMULATION | TESTING

# Solutions. Engineered to validate.

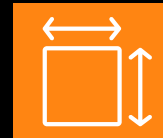
## ABOUT US



Founding  
**2005**



Experts  
**250**



m<sup>2</sup> area  
**30,000**



Locations  
**5**



Test rigs  
**> 300**



TISAX Label  
DIN ISO 9001/14001/17025/50001

# OVERVIEW COMPETENCES

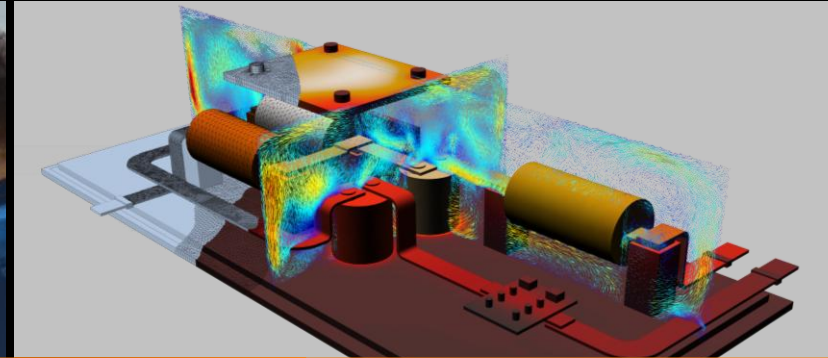
From the initial concept to a qualified system solution, we support our customers throughout the entire development process.



01

## ENGINEERING

- DESIGN/ CONSTRUCTION
- THERMAL MANAGEMENT
- DATA ANALYSIS
- APPLICATION



02

## SIMULATION

- 1D- & 3D-SIMULATION
- FEM-SIMULATION
- CASTING PROCESS SIMULATION
- MULTI-PHYSICS-MODELLING



03

## TESTING

- ENVIRONMENTAL TESTING
- ENDURANCE TESTING & FUNCTIONAL TESTING ON TEST RIGS AND IN REAL OPERATION



# ENVIRONMENTAL TESTING

# ENVIRONMENTAL TESTING FOR AVIATION

Reliable under extreme conditions - electrically active, flexible & all from a single source



## TEST BENCH DEVELOPMENT IN-HOUSE

- ✓ Flexible & scalable



## ELECTRICALLY ACTIVE

- ✓ Low & High voltage
- ✓ DUT control
- ✓ Signal logging



## ACTIVE COOLING CIRCUIT

- ✓ Customized & reliable

# OUR SERVICES

In accordance with standards such as DO-160G / ED-14G and MIL-STD-810H



**Humid Climate Zone Tests**



**Shock & Vibration Tests**



**Corrosion Tests**



**Combined Tests**



**High /Low Temperature & Temperature Cycle**



**Altitude Simulation**





# BATTERY TESTING

# BATTERY TESTING FOR AVIATION

Reliable under extreme conditions - electrically, flexible & all from a single source



## TEST BENCH DEVELOPMENT IN-HOUSE

✓ Flexible & scalable



## ELECTRICALLY

✓ Functional and safety tests for cells, modules & battery systems



## DEVELOPMENT VALIDATION TESTS

✓ Customized & reliable

# OUR SERVICES

In accordance with standards such as UN 38.3 and RTCA DO-311A



**Climate Cycling Tests**



**Functional & safety tests for cells, modules & systems**



**Development validation tests**



**Tab welding on battery cells & modules**



**Analysis & disassembly of battery systems**



**Prototype construction of modules incl. BMS**





# COMPONENT TESTING

# COMPONENT TESTING FOR AVIATION

Reliability from material and component testing through to structural testing



## TEST BENCH DEVELOPMENT IN-HOUSE

- ✓ Flexible & scalable



## ELECTRICALLY ACTIVE

- ✓ Low & High voltage
- ✓ DUT control
- ✓ Signal logging



## ACTIVE COOLING CIRCUIT

- ✓ Customized & reliable

# OUR SERVICES



**High-Speed-  
Testing**



**High-Torque-  
Testing**



**Structural mechanics  
tests**



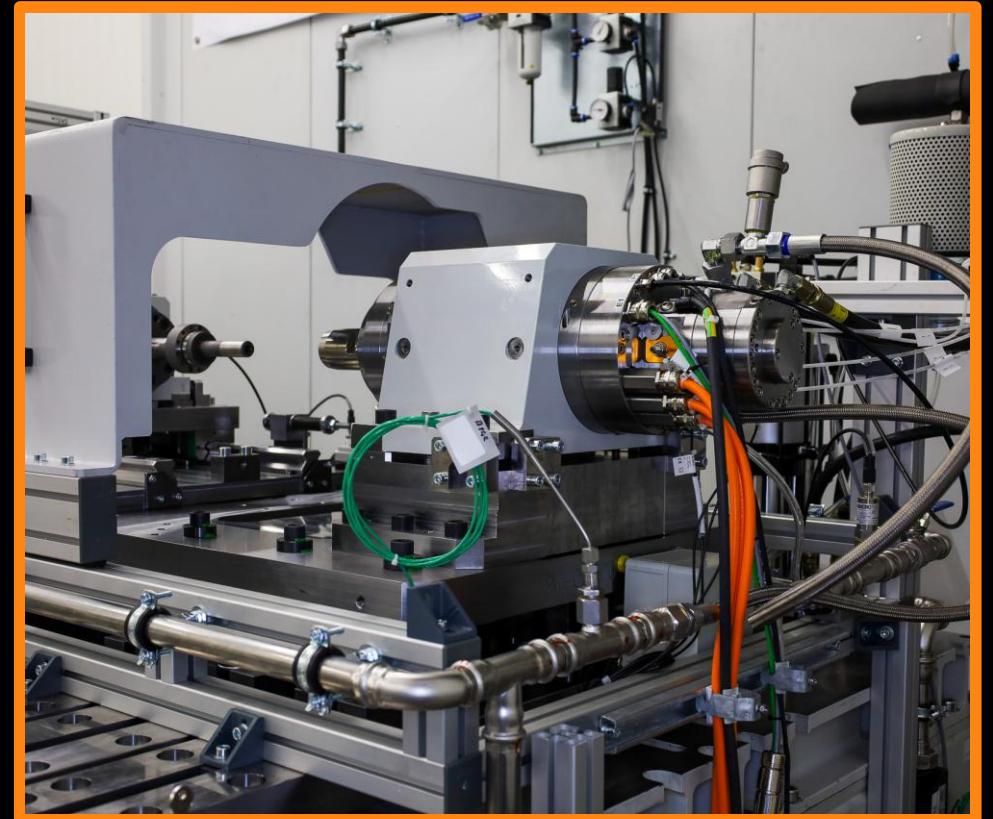
**Combined Tests**

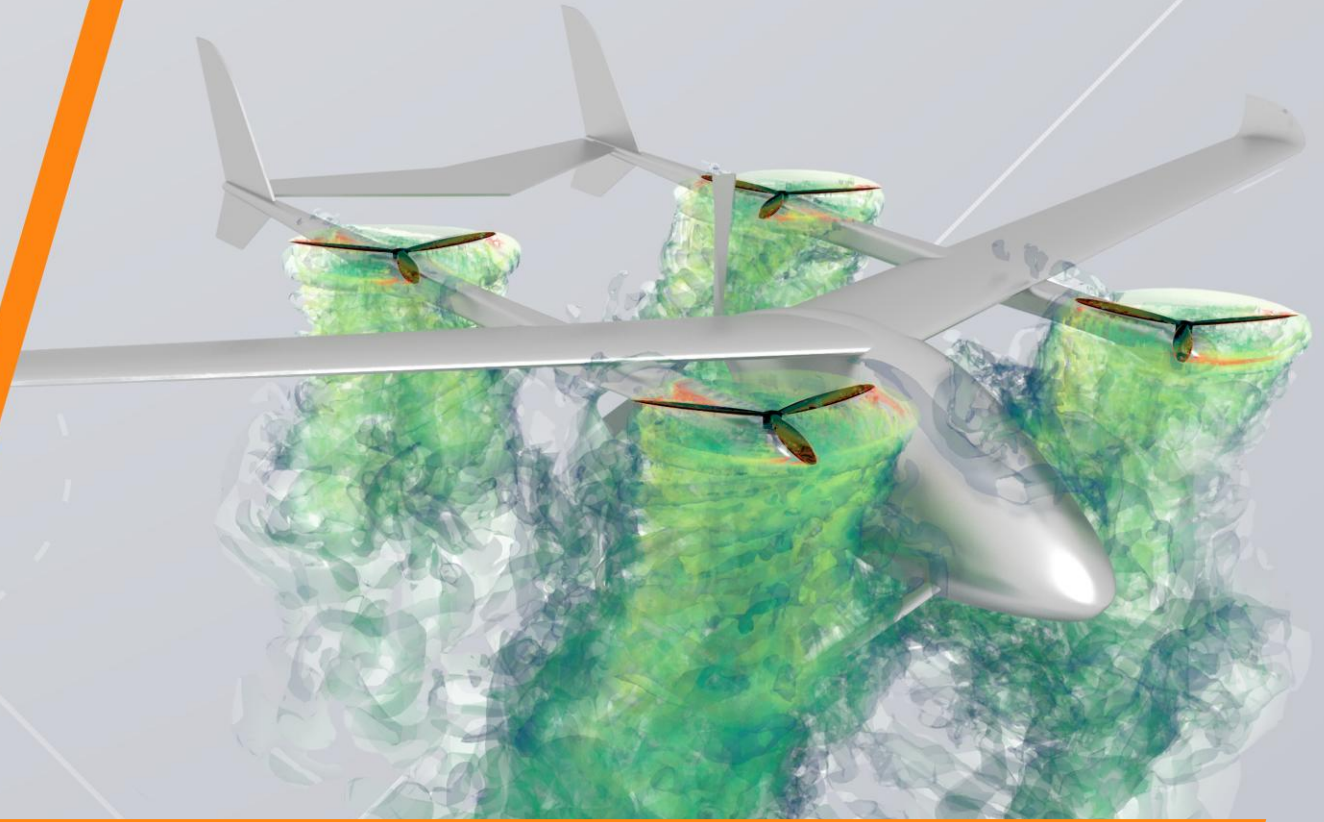
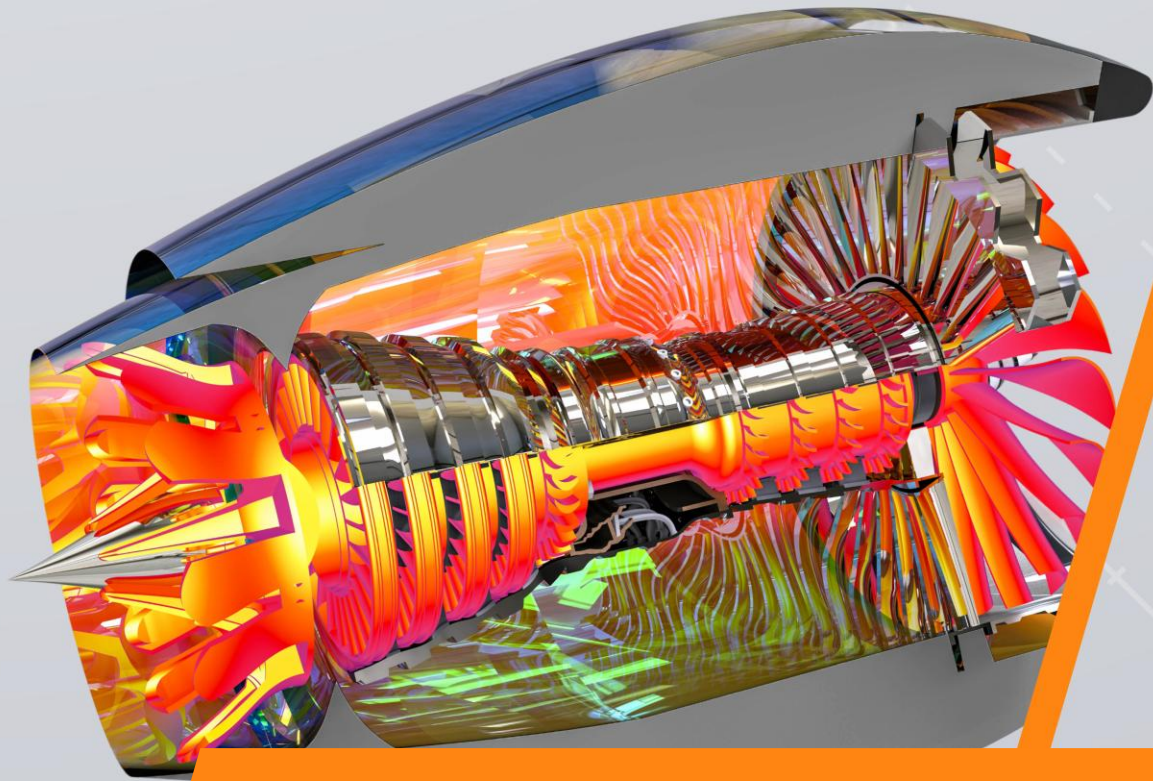


**Endurance, fatigue, &  
functional tests under  
realistic load conditions**



**Mechanical and electro-  
mechanical components**  
e.g. highly stressed structural & bearing





# NUMERICAL SIMULATION

# NUMERICAL SIMULATION FOR AVIATION

**Simulation meets reality – for better products and faster development from a single source**



**FAST & RELIABLE  
RESULTS**



**FROM INDIVIDUAL  
COMPONENTS TO  
COMPLETE SYSTEMS**



**SEAMLESS  
CONNECTION BETWEEN  
SIMULATION & TESTING**

# OUR SERVICES

In accordance with standards such as VDI 2230 and FKM



**Structural Mechanics & Strength Analysis (FEM)**



**Fluid Dynamics & Thermal Management (CFD)**



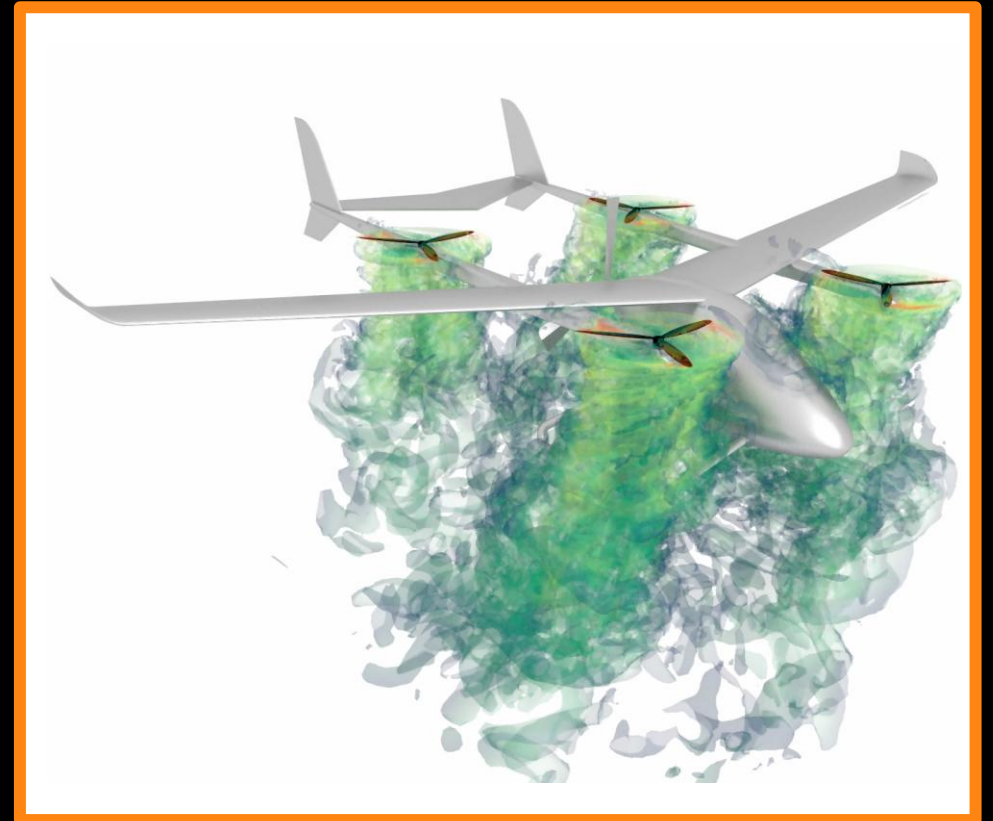
**System Simulation & Functional Modeling (1D)**

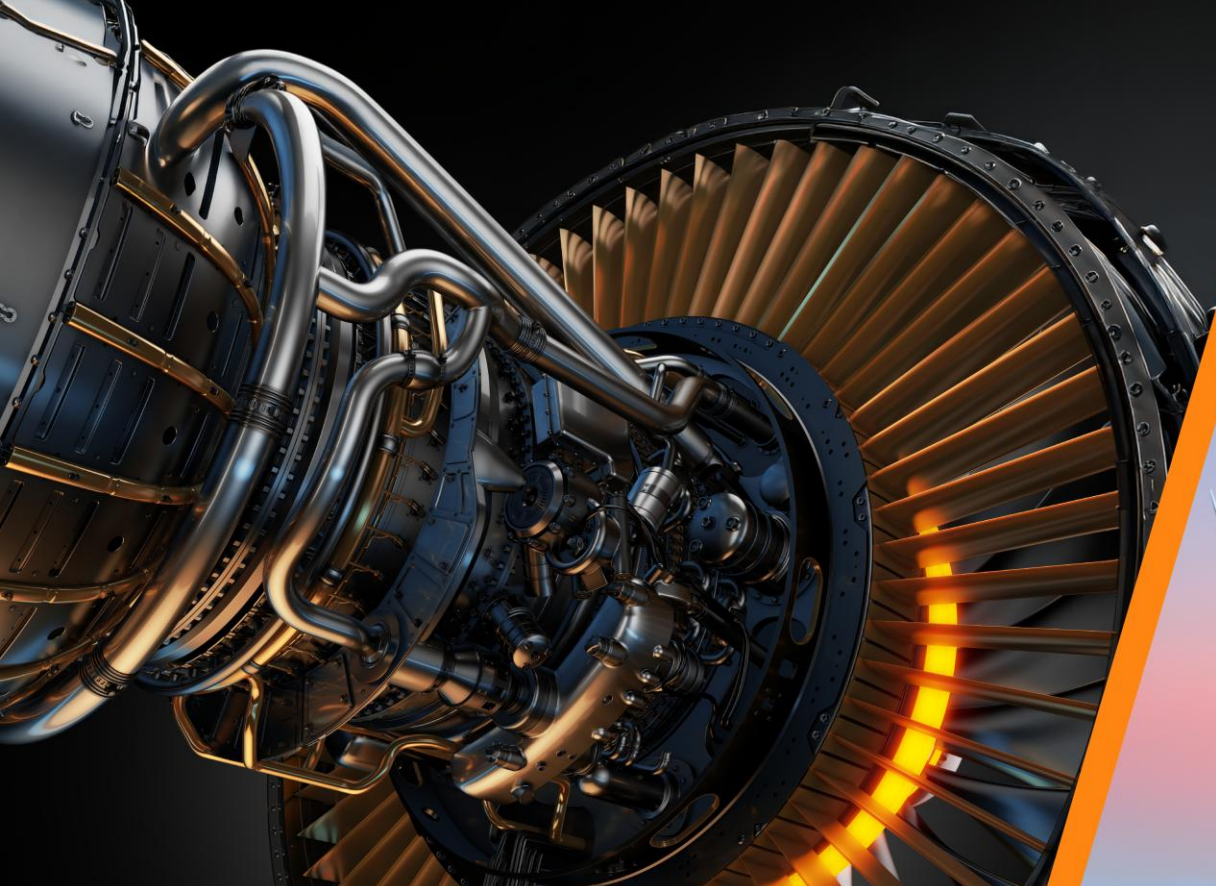


**Coupled multiphysics simulations for realistic operating conditions**



**Combined simulation & testing for high-precision & reliable model development**





# THERMAL MANAGEMENT

# THERMAL MANAGEMENT FOR AVIATION

Reliable under extreme conditions - customized, flexible & all from a single source



## TEST BENCH DEVELOPMENT IN-HOUSE

- ✓ Flexible & scalable



## ELECTRICALLY ACTIVE

- ✓ Low & High voltage
- ✓ DUT control
- ✓ Signal logging



## CUSTOMIZED TEST ENVIRONMENTS

- ✓ Pressure, humidity, temperatures, etc.

# OUR SERVICES

In accordance with standards such as DO-160G / ED-14G and MIL-STD-810H



**Thermal Management  
System Design**



**Component Testing**



**Thermal Management  
Applications**



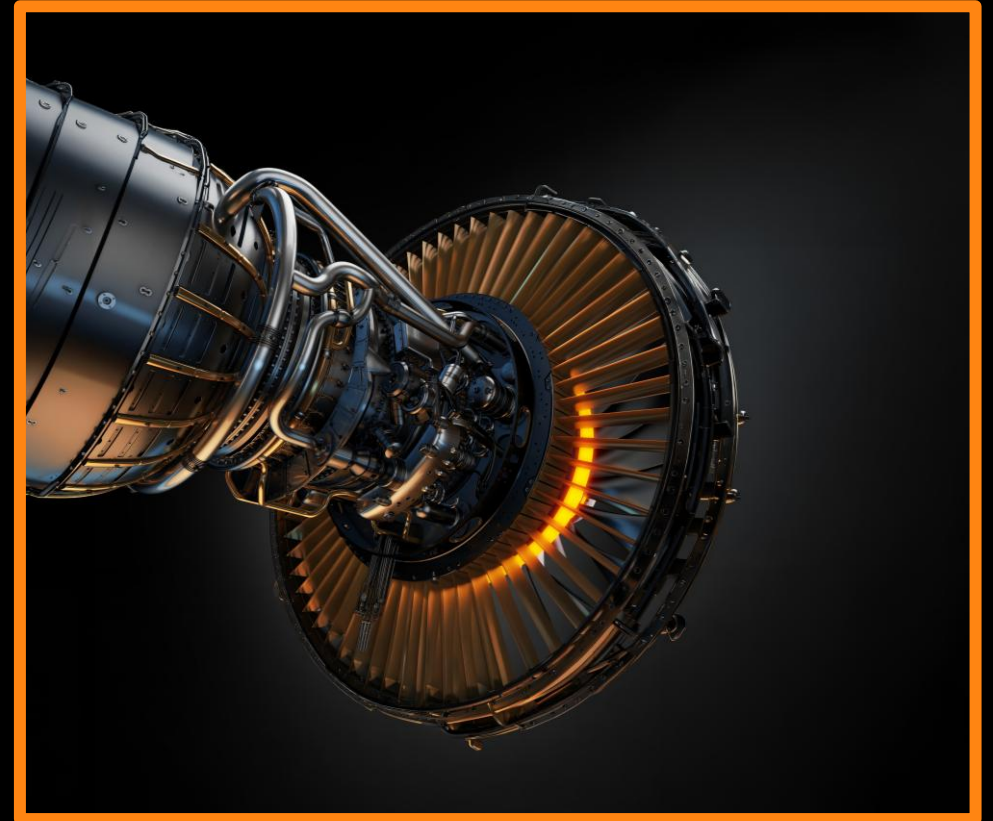
**Test Design and  
Validation**



**High /Low Temperature &  
Temperature Cycle**



**Altitude Simulation**



# YOUR PARTNER AT 5 LOCATIONS

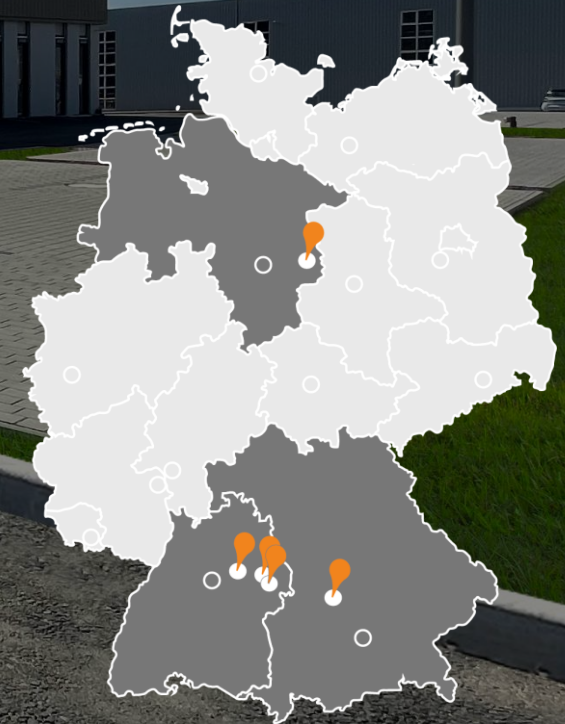
Waldstetten

Schwäbisch Gmünd

Remshalden

Ingolstadt

Wolfsburg



# FACING THE FUTURE TOGETHER

**PTS-PRÜFTECHNIK**

YOUR PARTNER IN  
DEVELOPMENT AND TESTING



**CONTACT**

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