

# IAV's Electrolysis & Power-to-X Expertise

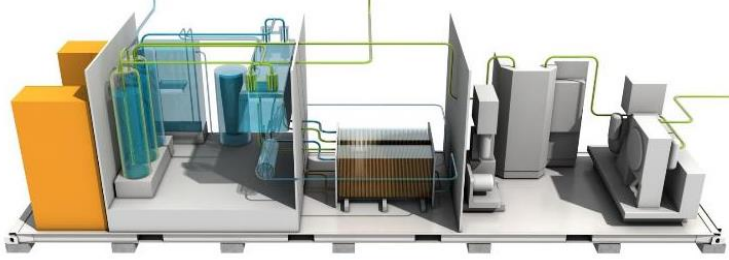
Dr. Jörn Brauns, October 2024



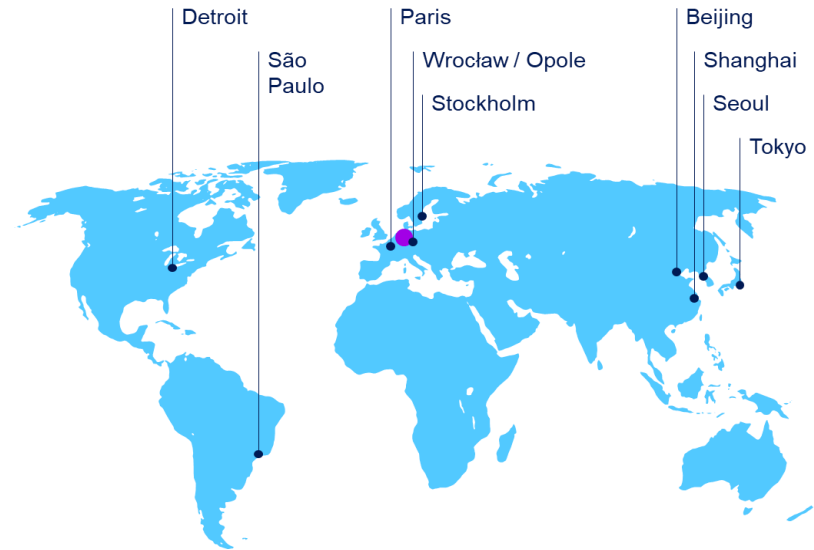


**For further information please contact:**  
**Dr. Jörn Brauns**  
**[joern.brauns@iav.de](mailto:joern.brauns@iav.de)**





# IAV – Your Strong Partner for Automotive and Energy Solutions



 24 locations worldwide

 40 years of experience

 7600 staff

 65% engineers / MINT

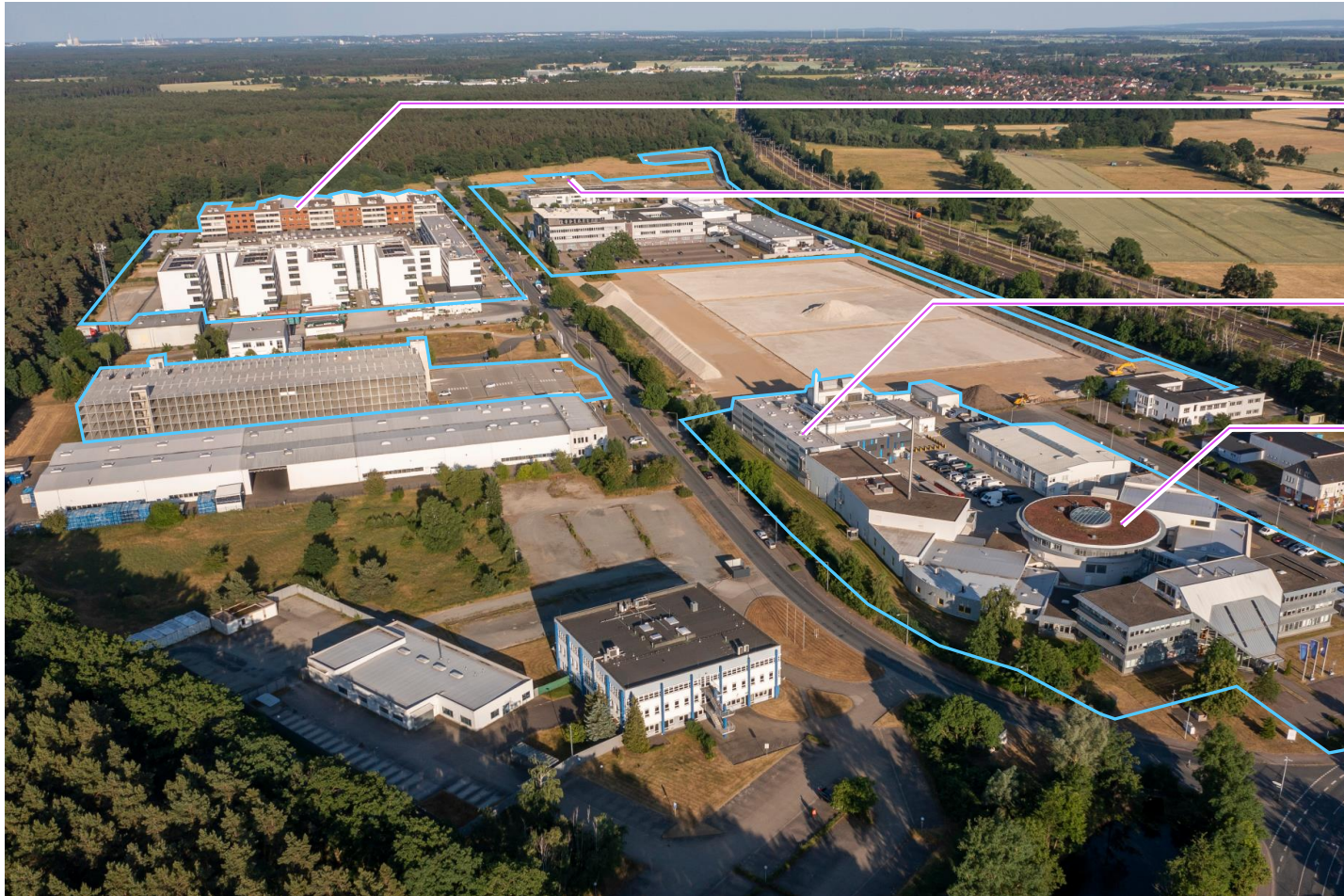
 837 M € turnover

→ Our DNA: Passion for technology



# IAV's development center in Gifhorn

## Fuel Cell development and Hydrogen Mobility



H<sub>2</sub> and Fuel Cell development

Energy Campus with Electrolyzer

H<sub>2</sub> and Fuel Cell Test Station

H<sub>2</sub> Component development and validation

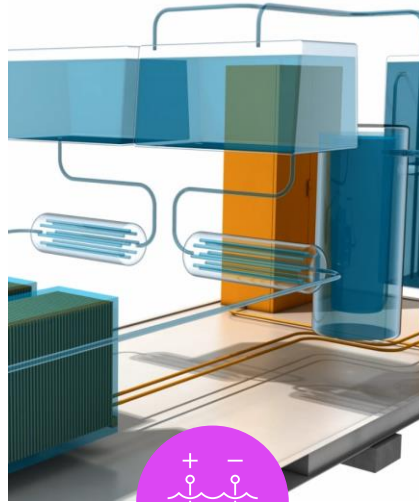




# Hydrogen Systems and Fuel Cell Development



**H<sub>2</sub> Energy system  
optimization and  
controls**



**Electrolyzer  
development**



**H<sub>2</sub> Infrastructure  
layout, consulting and  
engineering**

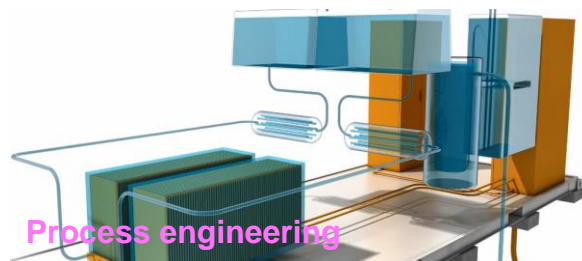
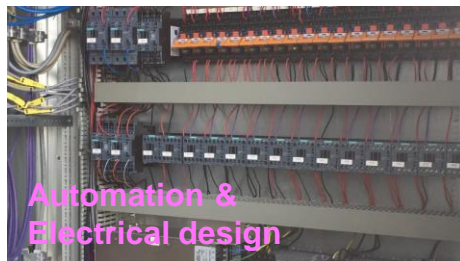


**Fuel cell vehicle  
development**



**H<sub>2</sub> test facility  
consulting /  
engineering**

# Electrolysis Engineering: Hydrogen Plants & Facilities

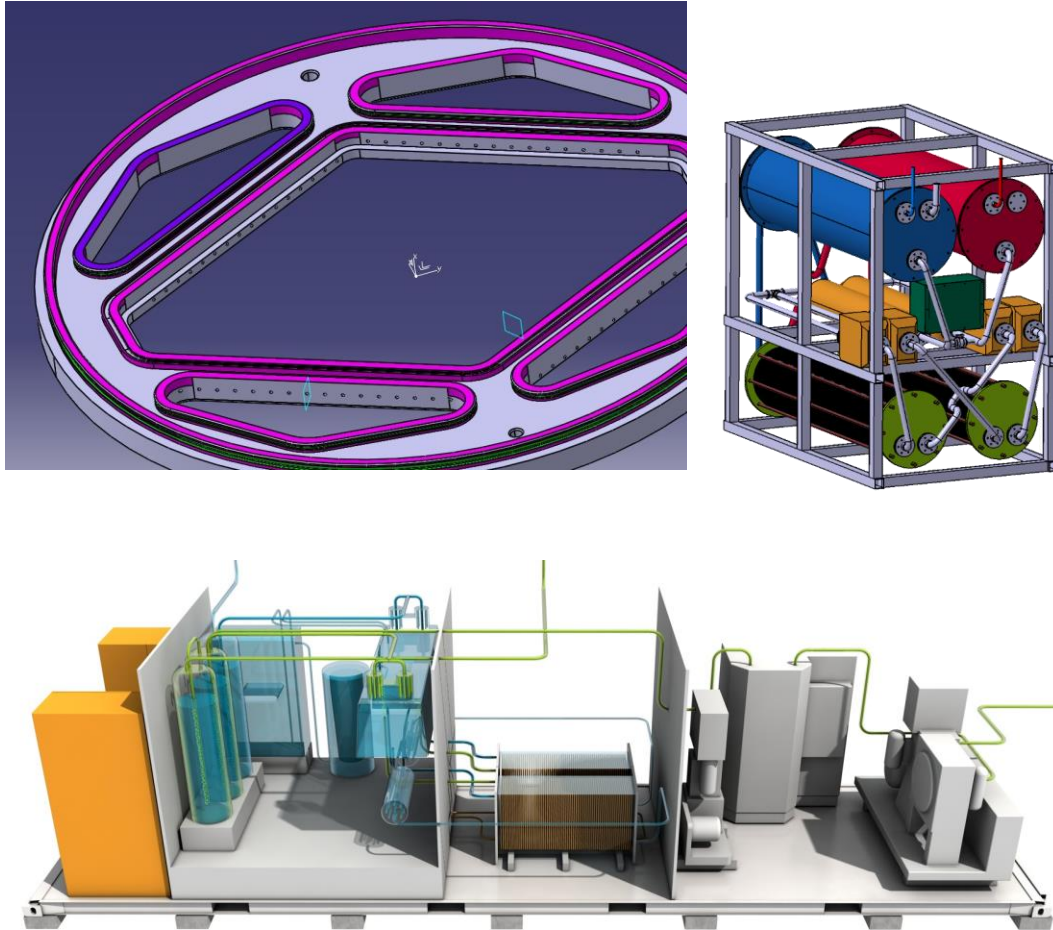


## Services

- Cost and requirements management
- Project and process management
- Functional safety: HAZOP, FME(D)A, safety concept according to IEC 61511 / EN ISO 13849...
- Component development
- Design for cost, especially with regard to stack design
- Thermal management
- Design of electrics, controls and power electronics
- Mechanical / electrical / functional, process integration
- Specialized simulation studies

→ IAV develops from concept to turnkey

# Electrolysis Engineering: Mechanical / Hydraulic Detail Design



## Services

- Mechanical design using state-of-the-art CAD tools
- Established design process and toolchain, including
  - Electrolysis-specific part numbering schematics
  - BOM management
  - Calculation tools for concept design (e.g., MATLAB)
  - CAD file database for revision management
  - CAE-based validation of detailed design
  - Tolerance & cost analyses
- Design-for-manufacturing / Design-for-assembly
- Long-term experience in stack assembly (for prototype applications)

→ Significant experience from various projects



# Electrolysis Engineering: Test Facilities



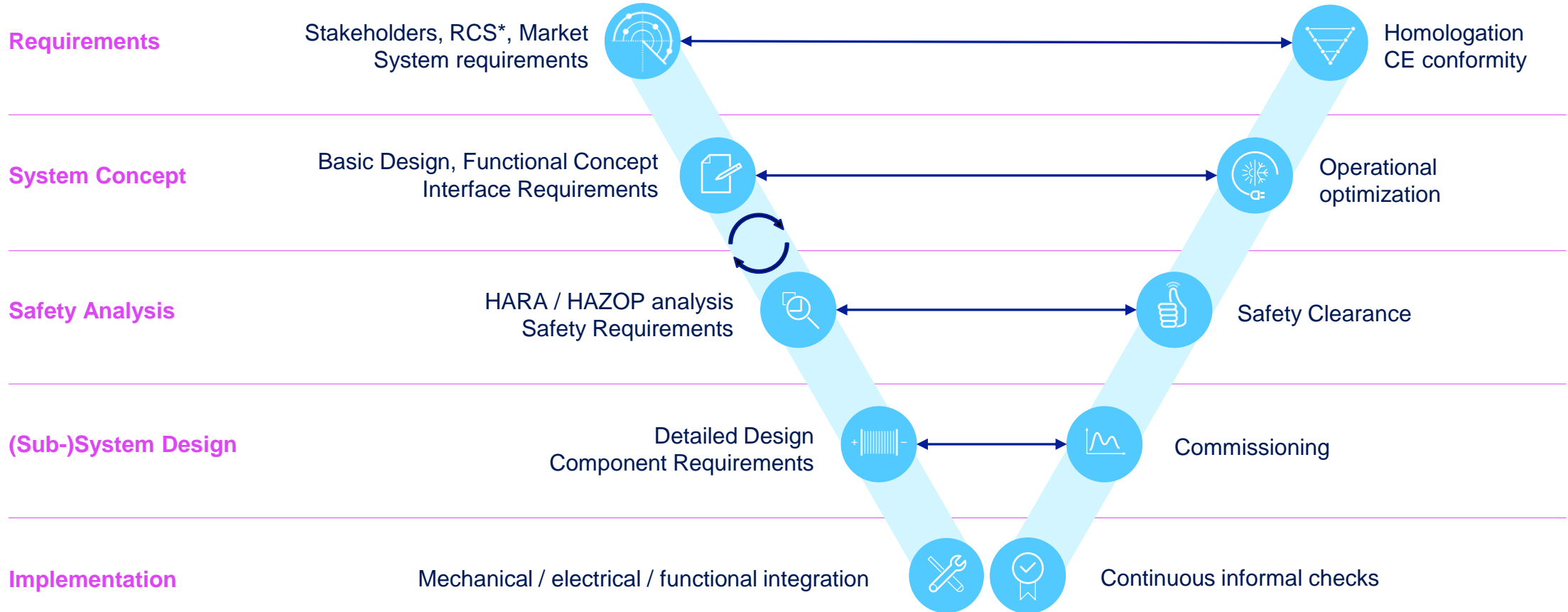
## Services

- Requirements analysis for both the supply / plant and the test stations / users
- Feasibility studies: technical concepts, cost and time estimates
- Layout planning, workflow analysis, 3D visualizations
- Safety concepts, especially explosion protection
- Measurement technology, sensor technology, data acquisition and storage
- Detail engineering of gas handling, building automation ...
- Supplier evaluation and component selection
- Project management

→ Many years of experience in planning, implementation & operation of test facilities



# Electrolysis Engineering: Development Process



# Contact

Dr. Jörn Brauns

IAV GmbH

Rockwellstr. 16, 38518 GIFHORN (GERMANY)

Phone +49 5371 80-51063

[joern.brauns@iav.de](mailto:joern.brauns@iav.de)

[www.iav.com](http://www.iav.com)

