

VECTOR > CSM

TECHDAY

2023

GRAZ

# Müller-BBM VibroAkustik Systeme

MÜLLER-BBM  
VibroAkustik Systeme





**WE CREATE  
SMART TESTING SOLUTIONS**

**MÜLLER-BBM VIBROAKUSTIK SYSTEME.**

**MÜLLER-BBM**  
VibroAkustik Systeme

# Müller-BBM VibroAkustik Systeme

**Know-how leader in testing for interpretation of dynamic and physical data with focus on NVH, strength and comfort**



Smart solutions for testing and data management

**Part of the internationally operating Müller-BBM Group**

**Spin-off of Müller-BBM in 1997 in Planegg, Germany**

**Worldwide network of subsidiaries and distributors**

**Memberships: ASAM ODS, openMDM®, EtherCAT, ...**

**Powerful tools for measuring and analyzing: PAK family**



**ABOUT US**

**MÜLLER-BBM**  
VibroAkustik Systeme

# Strong Partners: CSM & MBBM-VAS

The PAK live ecosystem allows us to integrate best-in-class, high-quality hardware for specific applications. With CSM, we have gained the partner that enables our customers to meet the current and future requirements for acoustics in electric vehicles.

# Our Focus Areas

The PAK family consists of smart components for the acquisition, analysis and management of dynamic data

Hardware  
Software

PAK

Smart Data Networks  
Interdisciplinary Workflows

PAK live.hub

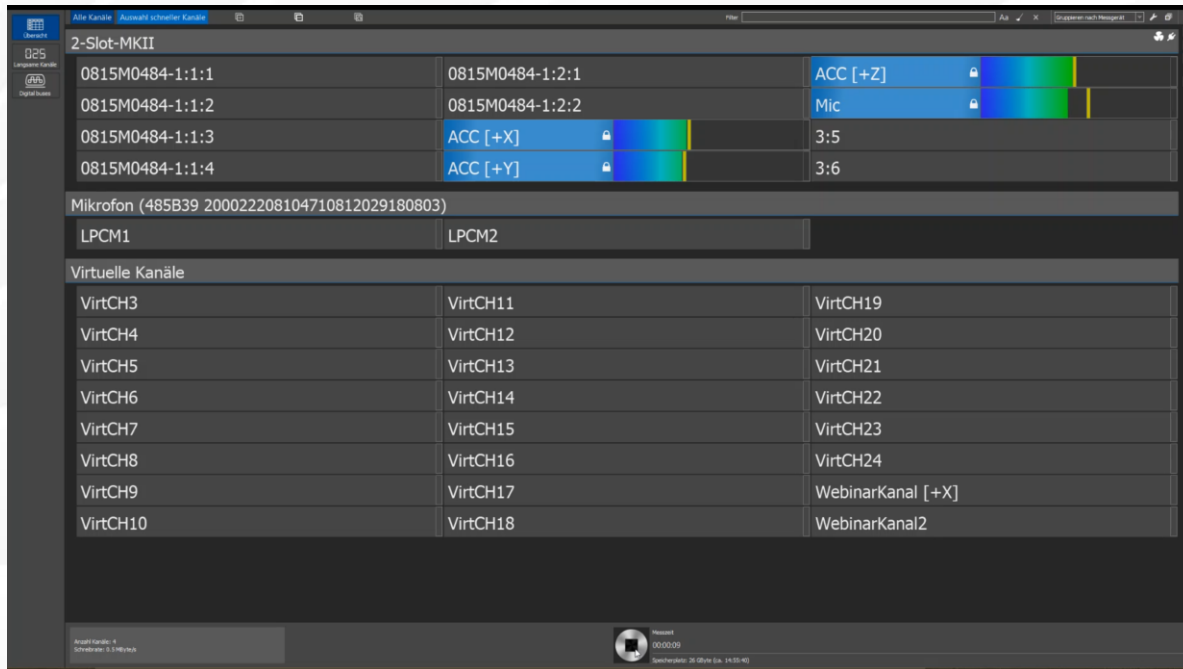
PAK cloud  
Cloud Services

PAK<sub>cloud</sub>

**INNOVATIVE MEASUREMENT TECHNOLOGY**

# Easy Data Recording

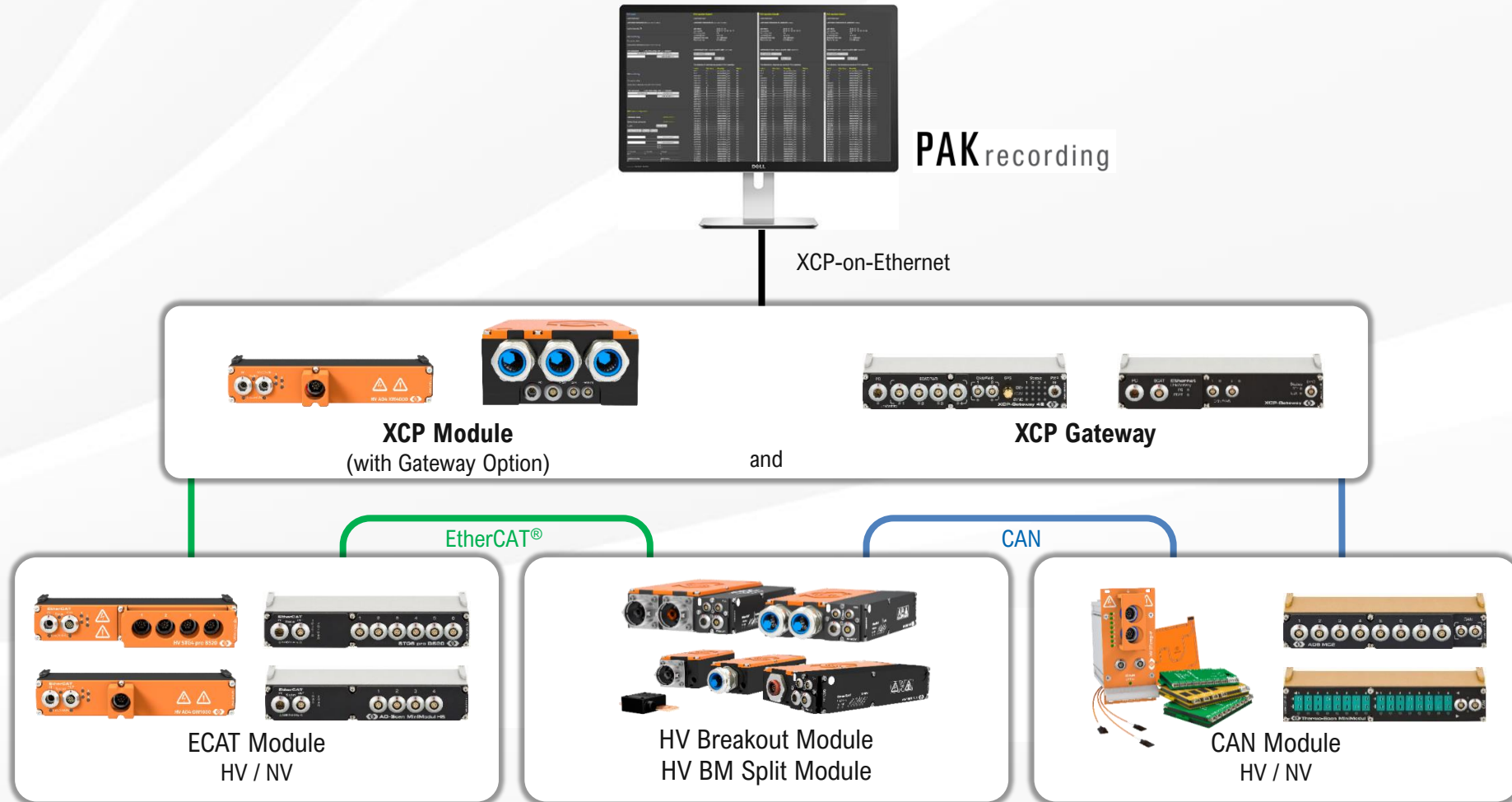
## PAK recording Application



- Simple recording at any testbench or in mobile environments
- Full integration into any other software
- No dedicated user interface required
- Very specialized user interface possible
- Parallel rocket stable recording of almost any channel count
- Backup for very crucial measurements
- ATFX data format

## USE CASE I

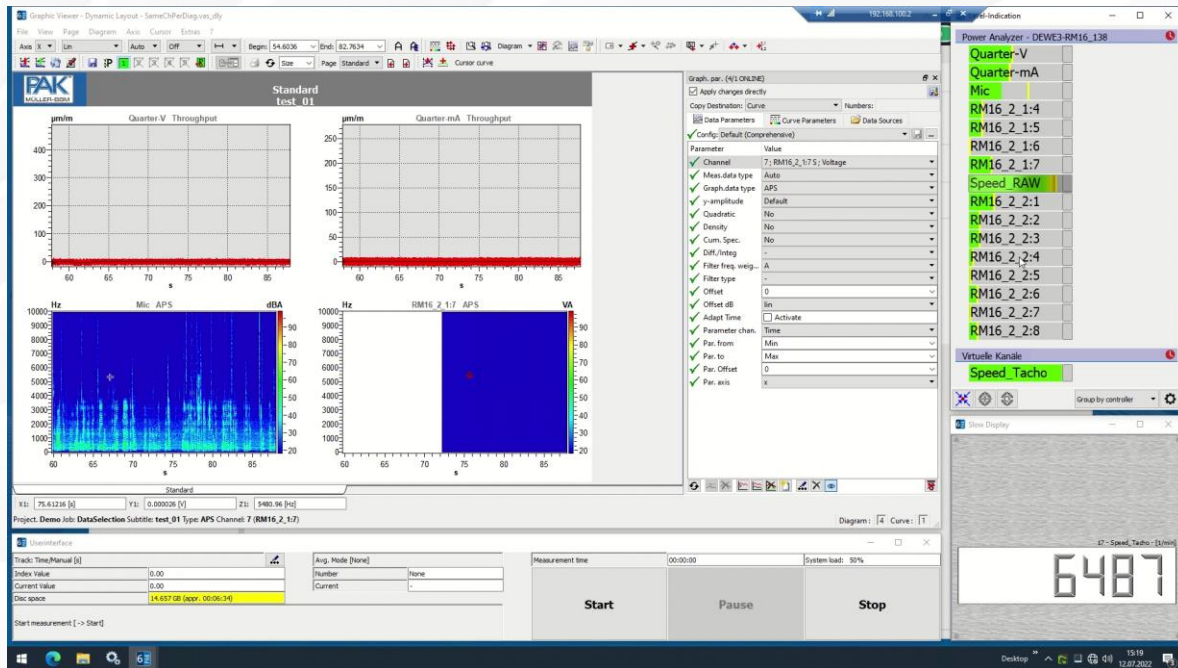
# CSM Measurement System with PAK recording App



## USE CASE I: EASY DATA RECORDING

# Online Analysis & Reporting

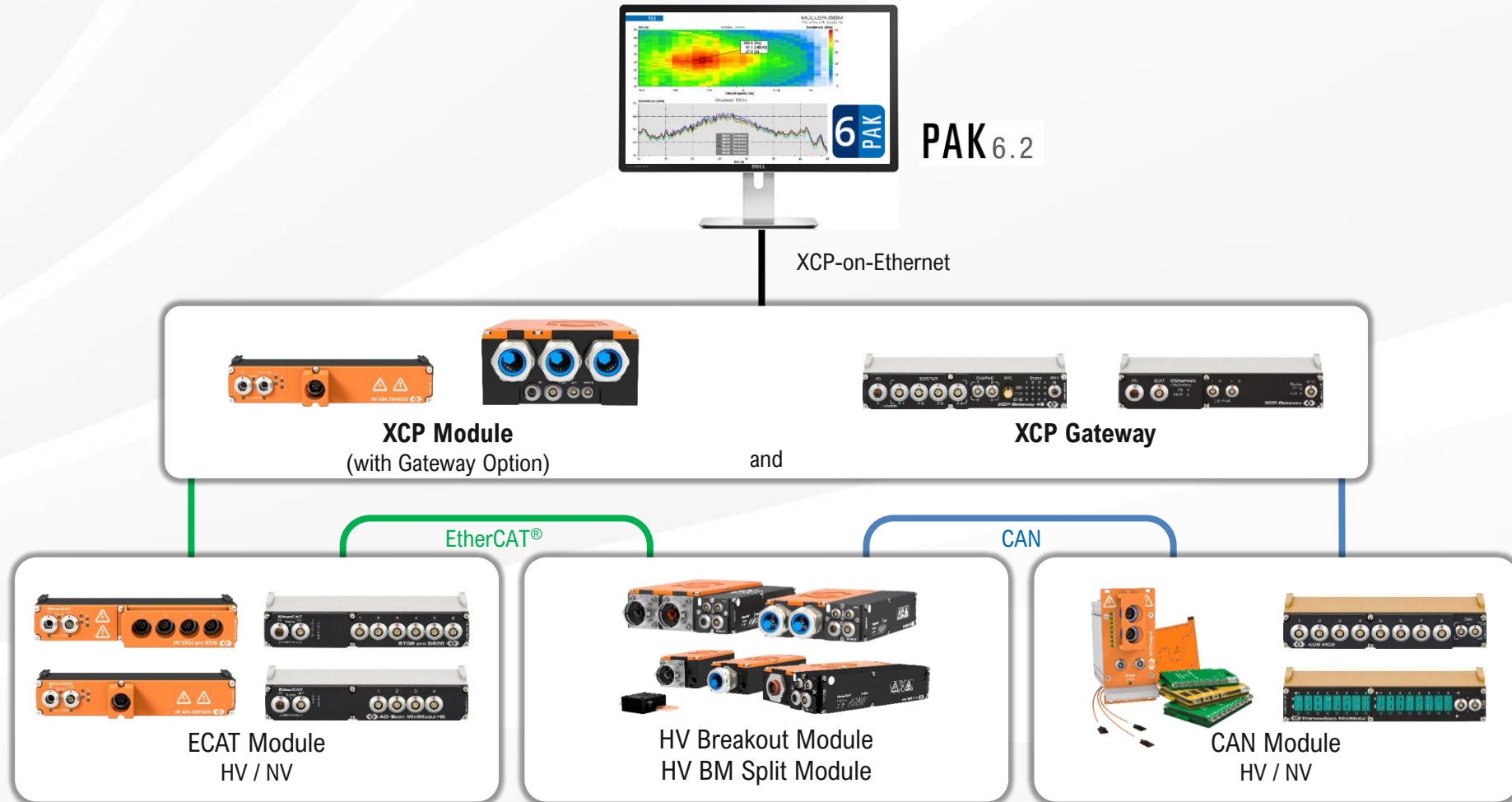
## PAK 6.2 NVH Suite



- Powerful online analysis
  - » Acoustics, structure, rotation, power, vibration,  
...
- Monitoring
- Online verifications
- Fully customizable
- Online Arithmetics functions
- Online target curves / comparisons

## USE CASE II

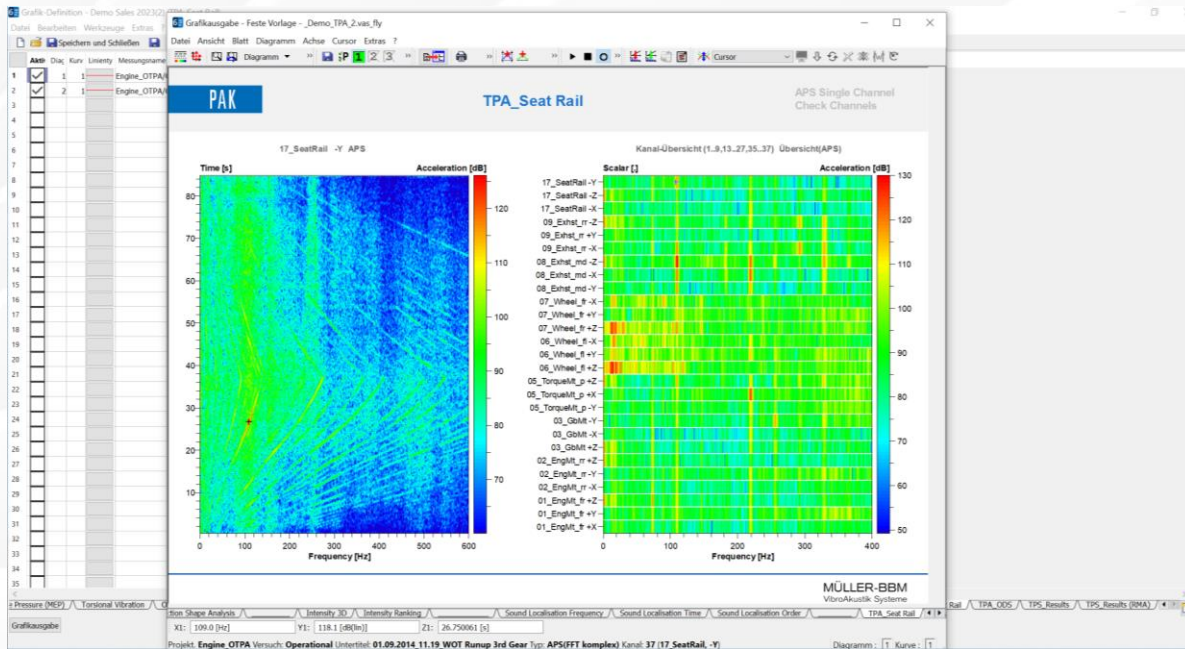
# CSM Measurement System with PAK 6.2



## USE CASE II: ONLINE ANALYSIS & REPORTING

# In Depth Analysis & Reporting

## PAK 6.2 NVH Suite



- Powerful data analysis
  - » Acoustics, structure, rotation, power, vibration,  
...
- In depth analysis
  - » Correlation of channels
  - » Interactive comparison of measurements
- Standard reports
- Fully customizable
- Correlation of measurement quantities

**USE CASE III – COMPREHENSIVE INSIGHTS**

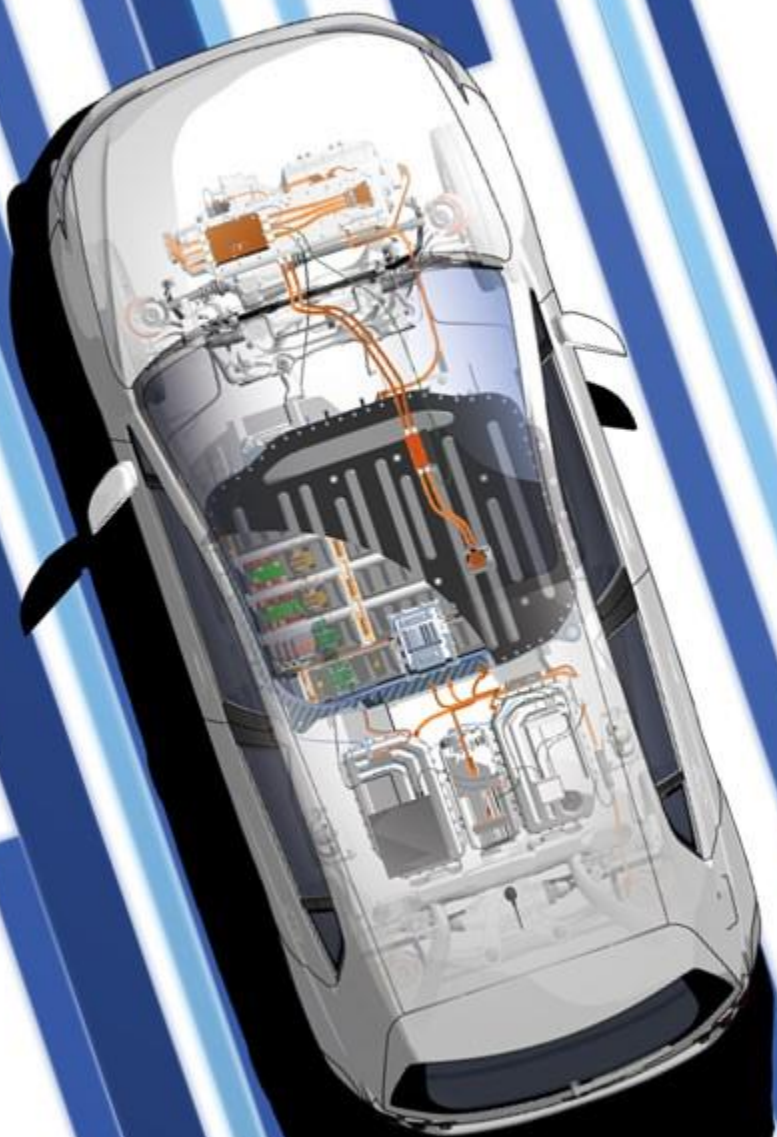
# Fields of Application

**Our ecosystem enables holistic solutions for various testing & engineering tasks, e.g.**

- Interior Acoustics
- Vehicle Performance
- Structural Dynamics
- High-voltage Measurements
- Current / Voltage Measurements
- Battery Testing
- Benchmarking | EoL Testing
- Exterior Noise Evaluations

**HIGHLY-SPECIALIZED ECOSYSTEM**





VECTOR 



# TECHDAY

2023

GRAZ

MÜLLER-BBM  
VibroAkustik Systeme



**AXON**  
systems