

# Enterprise-wide real-time SPC on AWS

Scalable zero-defect manufacturing with STATMES SPC

# Speaker intro

## AUMOVIO Engineering Solutions



**Upama  
Michel**

Senior Manager  
Data Services

**12+ years experience in  
manufacturing**



**Aswath  
Kolaron**

Data Analytics Manager  
Data Services

**Statmes SPC  
Technical Lead**



# Speaker intro

## AWS



**Rajesh  
Gomatam Ph.D**

Principal Partner Solutions Architect  
Manufacturing | Amazon Web Services

**Tech Lead – Industrial Data and  
AI: Smart Manufacturing**

# Manufacturing in Motion

Macro trends shaping quality and data strategy in industrial manufacturing

# 6 Forces Reshaping Manufacturing Today

01

## Smart Mfg / Industry 4.0→5.0

Connected, closed-loop operations. Human-centric & sustainability layer in 5.0

02

## Supply Chain Resilience

Post-pandemic reshoring + digital twins for real-time supply visibility

03

## Sustainability & ESG

EU CSRD, Scope 3, battery passport regulations demand traceable production data

04

## Labor Shortage & Upskilling

AR-guided assembly, AI anomaly detection, no-code shop-floor analytics

05

## AI/ML at the Edge

Vision-based defect detection, predictive maintenance, GenAI co-pilots for engineers

06

## Cloud-First OT/IT Convergence

Air-gapped PLCs / SCADA now integrating with IT cloud — foundational enabler for all above

★ *The manufacturing sector's most significant transformation since lean production*

# The Quality Imperative

## The Tier-1 Squeeze

**<10 PPM** OEM Defect Tolerance

**3–5%** Annual Cost Reduction Demand

**20–60+** Plants to Manage Consistently

**\$M+** Cost of a Single Quality Escape

### IATF 16949 Compliance

Mandates systematic process control, FMEA, control plans & SPC

### EV Transition Complexity

New processes for e-drive, battery housings, power electronics

### Traceability Requirements

Full genealogy from raw material to finished part — OEM & regulatory

### Product Liability & Recalls

One escape can trigger multi-million-dollar recalls & loss of business

# Quality Pain Points on Today's Shop Floor

1

## Reactive, Not Predictive

Defects discovered after they happen — at end-of-line or worse, at the customer

2

## Paper-Based / Siloed SPC

Manual entry, Excel charts, standalone tools disconnected from real-time machine data

3

## Alarm Fatigue

Poor control limit configuration & missing Western Electric rules lead operators to ignore alerts

4

## No Cross-Plant Benchmarking

Each plant operates in isolation — no real-time Cpk comparison across global network

5

## Missing Root-Cause Linkage

SPC signals OOC but no correlation to material lots, machine params, or environmental data

6

## Delayed Corrective Action

Long cycle from OOC detection → process stop → CAPA; scrap and containment costs pile up

# SPC — From Clipboard to Cloud

Why traditional SPC falls short — and how cloud-native architecture changes everything

# Why STATMES SPC Stands Out as an AWS Partner

STATMES SPC by Aumovio Engineering Solutions is an Advanced Manufacturing Quality Suite — listed on AWS Marketplace — that transforms existing MES data into real-time, automated process capability analytics.

## MES-Native by Design

Ingests directly from existing MES infrastructure — no new sensors, no new equipment. Removes the cost and complexity barrier that stalls most SPC modernisation projects.

## Automotive Engineering DNA

Built by Aumovio — formerly part of Continental, one of the world's largest Tier-1 suppliers. Deep automotive manufacturing expertise built into every design decision.

## Deploy Globally in Hours

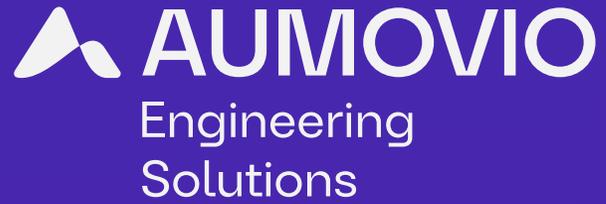
Container-based deployment on AWS means multiple plants can go live within hours — standardising process capability analytics at scale without per-site infrastructure.

## Engineered for the Shop Floor

Simple interface designed for quality engineers, not statisticians. Navigate, configure, and interpret real-time SPC metrics with minimal training and ramp-up time.

## AWS Partner

STATMES SPC is validated and listed on AWS Marketplace under Industrial IoT and Quality Assurance — on unified AWS billing.



# AUMOVIO Engineering Solutions

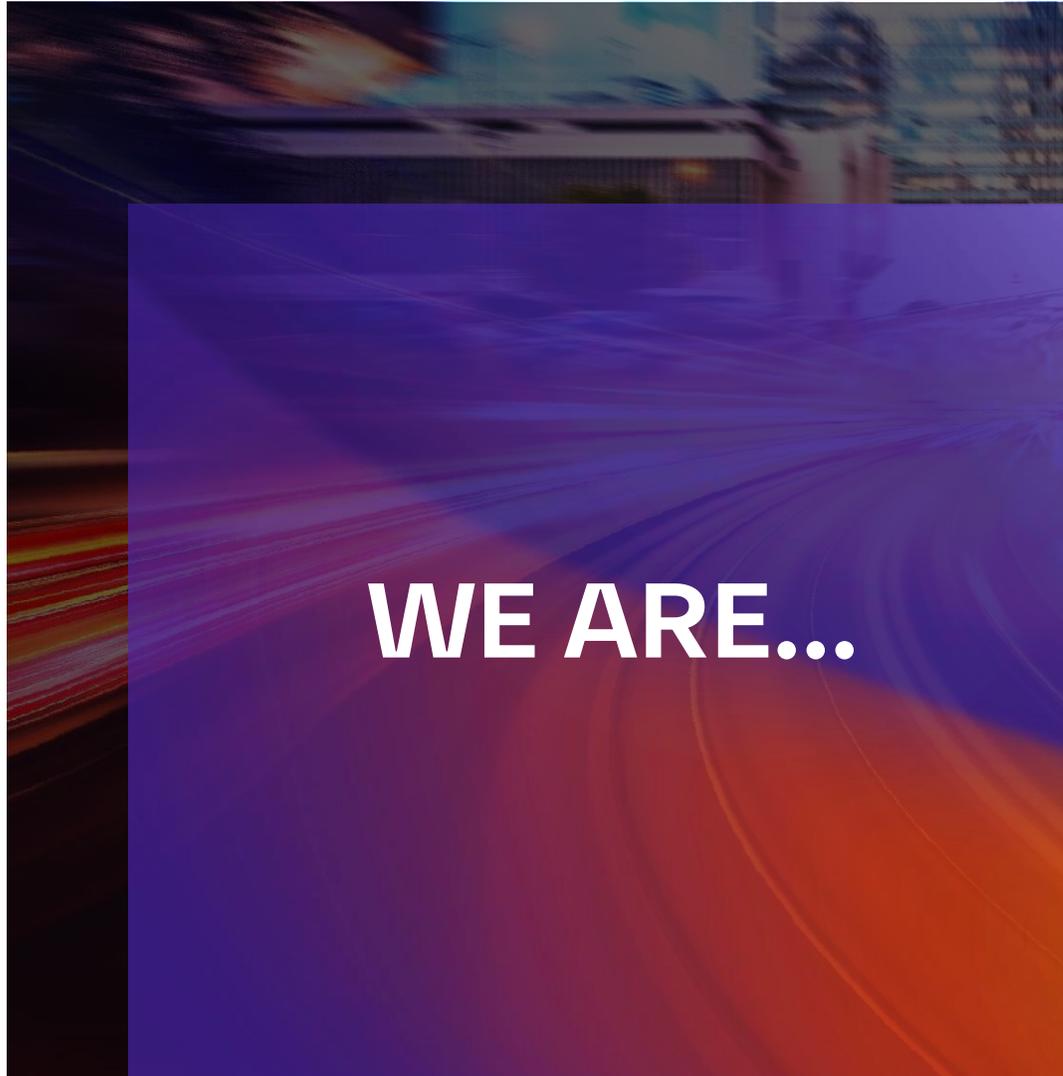
Your partner for future mobility

3/11/2026

<https://engineering-solutions.aumovio.com/>

Data Services

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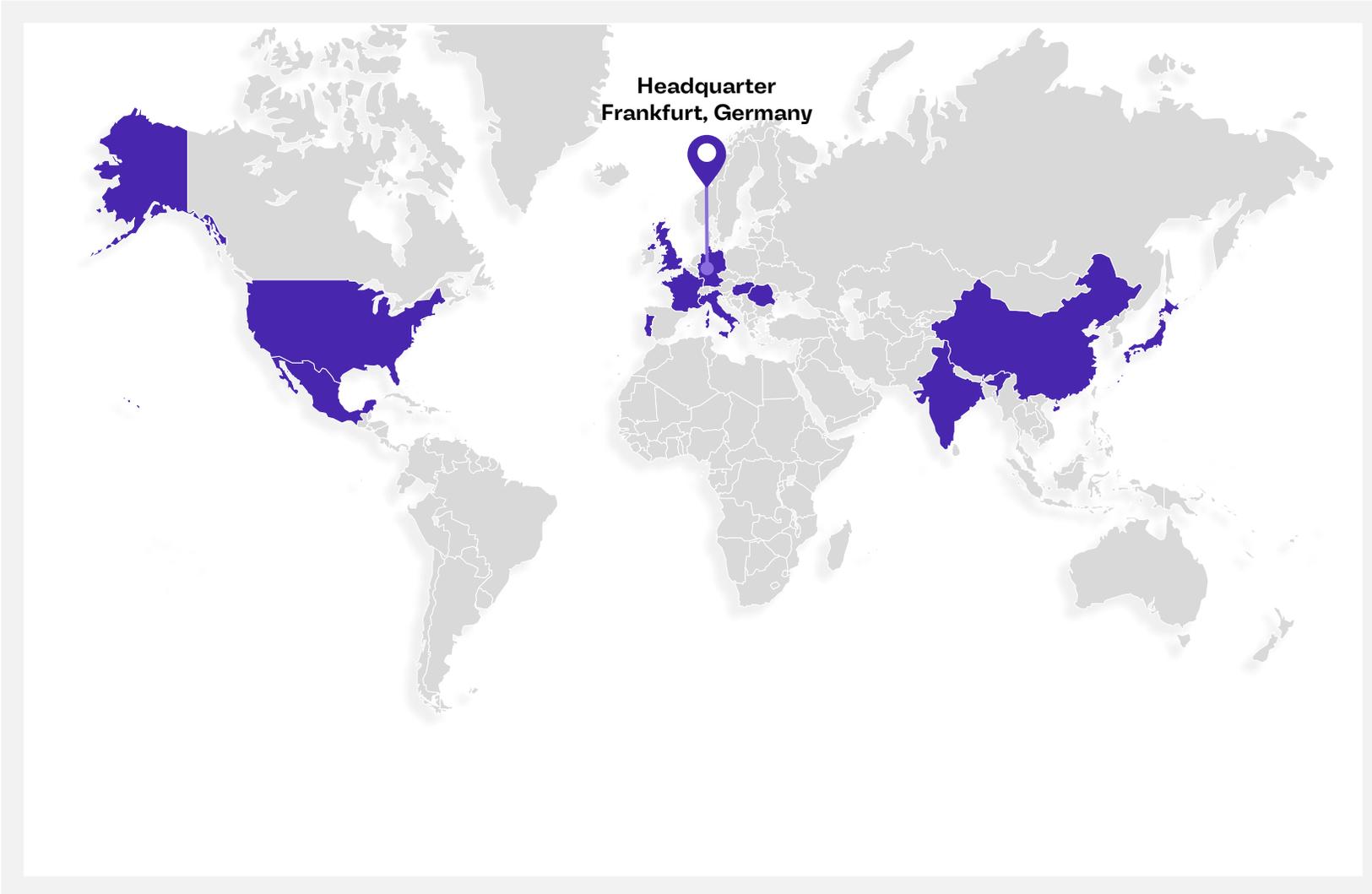
Developers of technology for future mobility.

# AUMOVIO Engineering Solutions

## Our core topics

- 1 Network & architecture
- 2 Electrification & emission reduction
- 3 ADAS & autonomous driving
- 4 Chassis & brake technology
- 5 Human machine interface & connectivity
- 6 Digitalization, IT & data solutions
- 7 Software defined vehicle
- 8 New mobility ecosystem
- 9 Acoustic solutions
- 10 Production

# Our global footprint



**1800+**  
Employees

**18**  
Locations

### European Union

- Frankfurt (DEU)
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- Markdorf (DEU)
- Nuremberg (DEU)
- Regensburg (DEU)
- Turin (ITA)
- Veszprém (HUN)
- Timisoara (ROU)
- Toulouse (FRA)
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# Understanding process capability using bottle filling

### Understanding Process Capability: The Bottle Filling Example

**Target Fill**      **Too Low**      **Too High**



✓ **Consistent Fills** = Happy Customers  
✓ **Within Limits** = Good Quality  
✓ **High Capability** = On Target, Less Variation

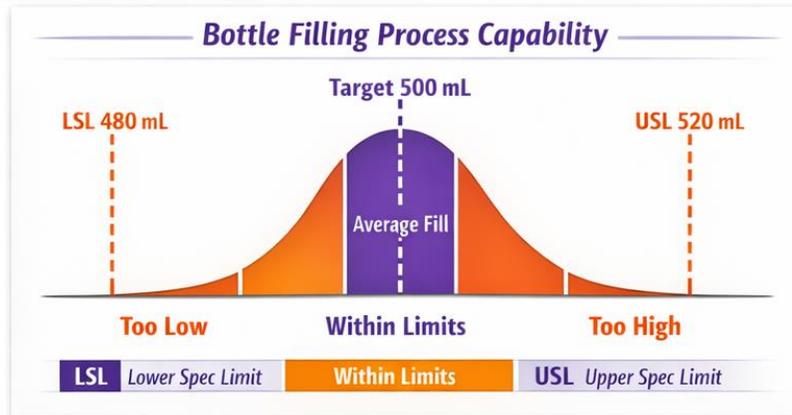
### The Bottle Filling Story



**Too Low**      **Too High**

Oops, this one's only 460 mL!

We aim to fill each bottle to 500 mL.



How good is your machine at staying in the range?

Good & Bad Outcomes:

- **Too Low:** unhappy customer
- **Too High:** high waste
- **Just Right:** good quality

# AES quality management suite

## STATMES SPC

### Stop Calculating SPC in Excel

- Manual process
- Error-prone templates
- Not scalable
- No real-time capability

### The Shift

- Automatic data handling for monitoring & reporting
- Crunch billions of data points in seconds
- Free process experts to analyze not identify issue
- Rollout enterprise wide without adding new user-based cost

### Scale Without Limits

- Deploy in weeks and not in months
- Scale globally in hours and not weeks

## AES Quality Management Suite

# Tool demo

# Our success story at AUMOVIO

## High volume processing in minutes



Process approximately 0.5 billion data weekly per plant with hourly update frequency. Includes 700+ products and 650+ stations.

## Timely alerts and notification



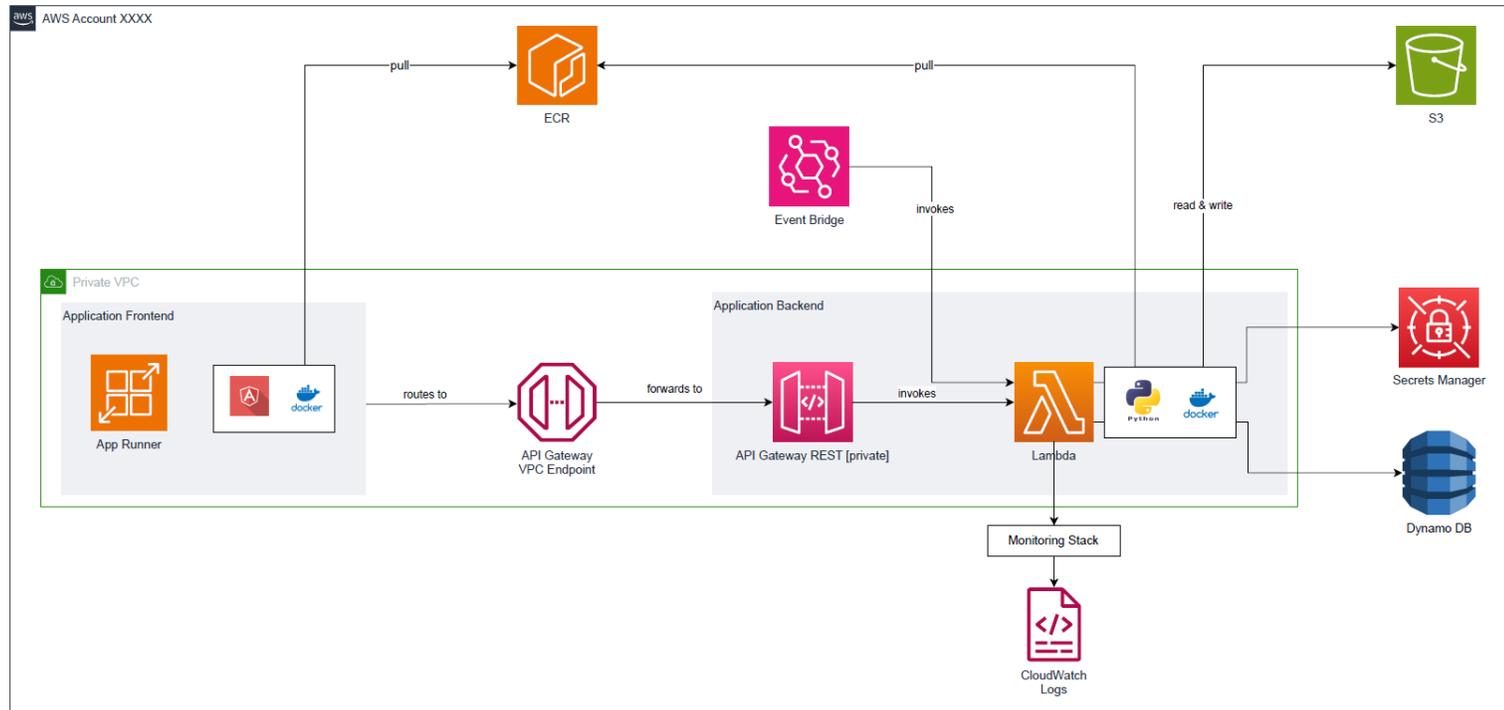
Cpk/Ppk is calculated within seconds and drift alerts are generated. If undetected, leads to high scrap cost.

## Reporting hours saved



With automatic solution to download customer reports in seconds, ~400 hours saved annually by a quality engineer.

# STATMES SPC solution architecture



## Scalable Solution Architecture

- Cost sensitive engineering
- Your data stays yours
- Infrastructure fully visible in your AWS console

# AES quality suite- STATMES SPC

## Customer journey

### AWS Marketplace Deployment

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- 1. Search AWS Marketplace**  
STATMES SPC
- 2. Subscribe to Product**  
One-Click Subscribe
- 3. Configure CloudFormation**  
VPC, Subnet, Region
- 4. Deploy Stack**  
Automated Deployment
- 5. Start Monitoring**  
Ready in Minutes!

# AES quality suite

## Support structure

### Introduction

- Schedule live demonstration sessions to explore STATMES SPC's capabilities using your own manufacturing data

### Deployment

- Work with our engineering team to develop custom integrations that connect STATMES SPC with your existing manufacturing execution systems (MES)

### Maintenance

- Our global team spans multiple time zones to ensure maintenance and support are always available when you need them.



# Key takeaways

## Quality-driven excellence



Embracing modern SPC solutions empowers organizations to make better-informed decisions through real-time data insights, driving measurable improvements in efficiency and productivity

## Data sovereignty & security



STATMES SPC deploys directly into your own AWS account via a secure, container-based architecture – ensuring all sensitive manufacturing data never leaves your infrastructure.

## Organizational-wide licensing



Purchase a single license that covers your entire organization, eliminating the complexity and cost of managing individual per-user seats.

# Get your STATMES SPC demo today!

**Upama Michel**

Senior Manager | Data Services  
upama.michel@aumovio.com



Explore STATMES SPC on AWS Marketplace



# What is SPC — and Why Does the Market Need More?

## What is SPC?

- › Uses control charts (X-bar/R, IMR, p-charts) to monitor process variation in real time
- › Detects assignable cause variation BEFORE defects are produced
- › Shifts quality from inspection → prevention
- › Core metric: Cpk / Ppk — process capability index
- › Governed by IATF 16949, AIAG SPC manual in automotive

## Current Market Landscape

### Legacy Standalone

No cloud, no cross-plant visibility

### SCADA-Integrated

OT-only, not IT-connected, hard to scale

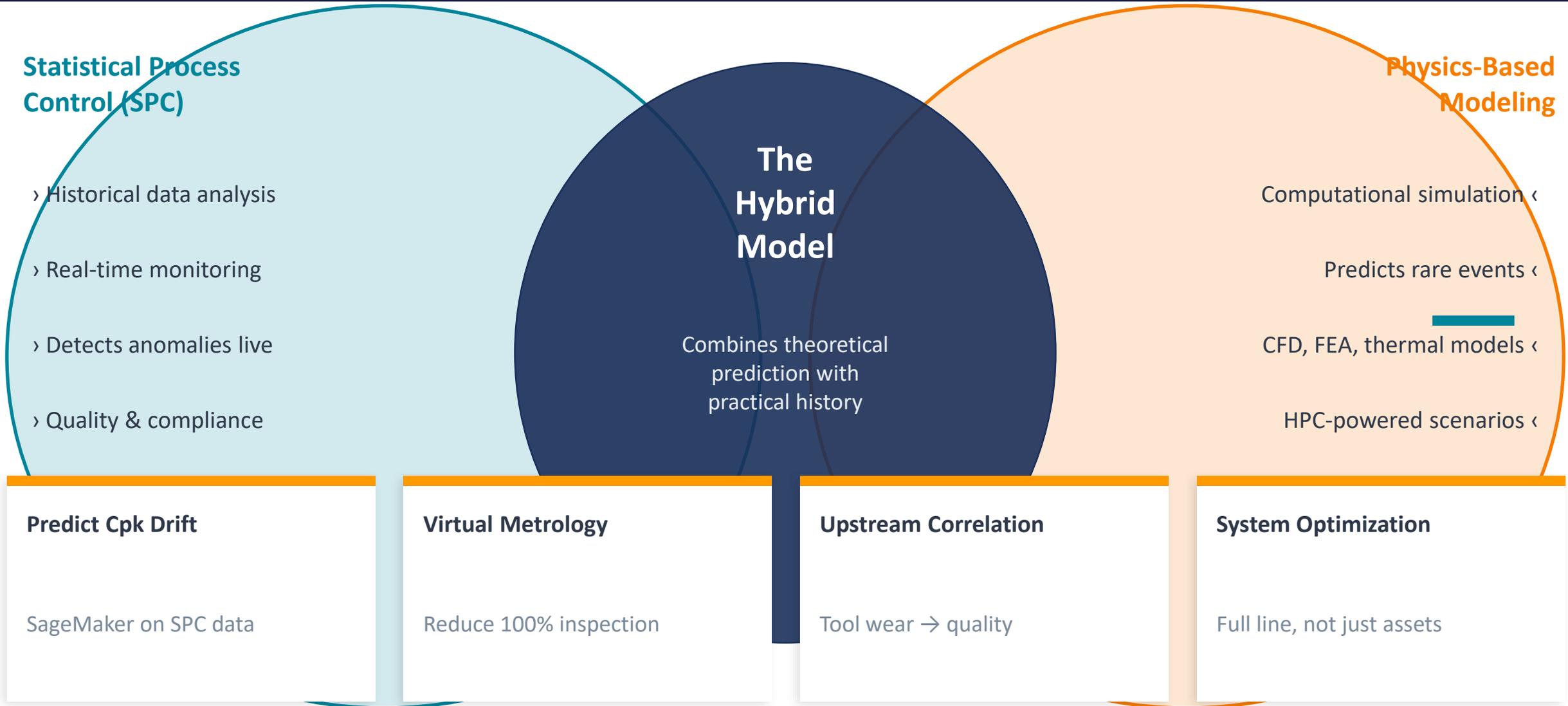
### MES-Embedded

High cost, slow deployment, rigid

### Cloud-Native (emerging)

✓ Best positioned for the future

# The Hybrid Intelligence Paradigm — The New Quality Standard



→ AWS Cloud provides the compute to run both in parallel — enabling system-level optimization across the full production line

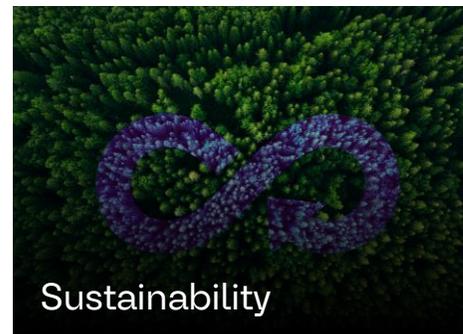
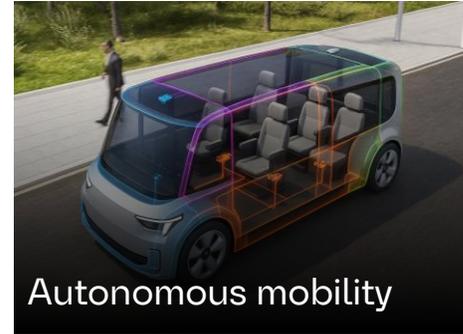
# AES Quality Suite

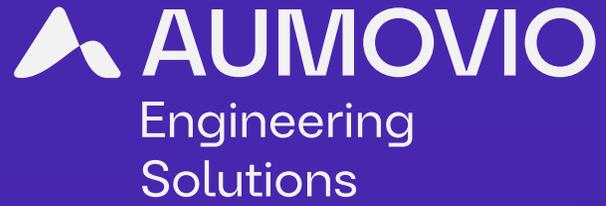
## Cost breakdown

Scenario: 1 plant · 100 users · 2 sessions/week

Service	Est. monthly cost
AppRunner	~\$10 – \$20
Lambda	~\$2
S3	~\$10 – \$20
Secrets Manager	~\$0.80
DynamoDB	< \$0.10
ECR	~\$0.10
EventBridge	~\$0.10
Total	~\$23 – \$44 / month

# Transferring technology from automotive to other industries





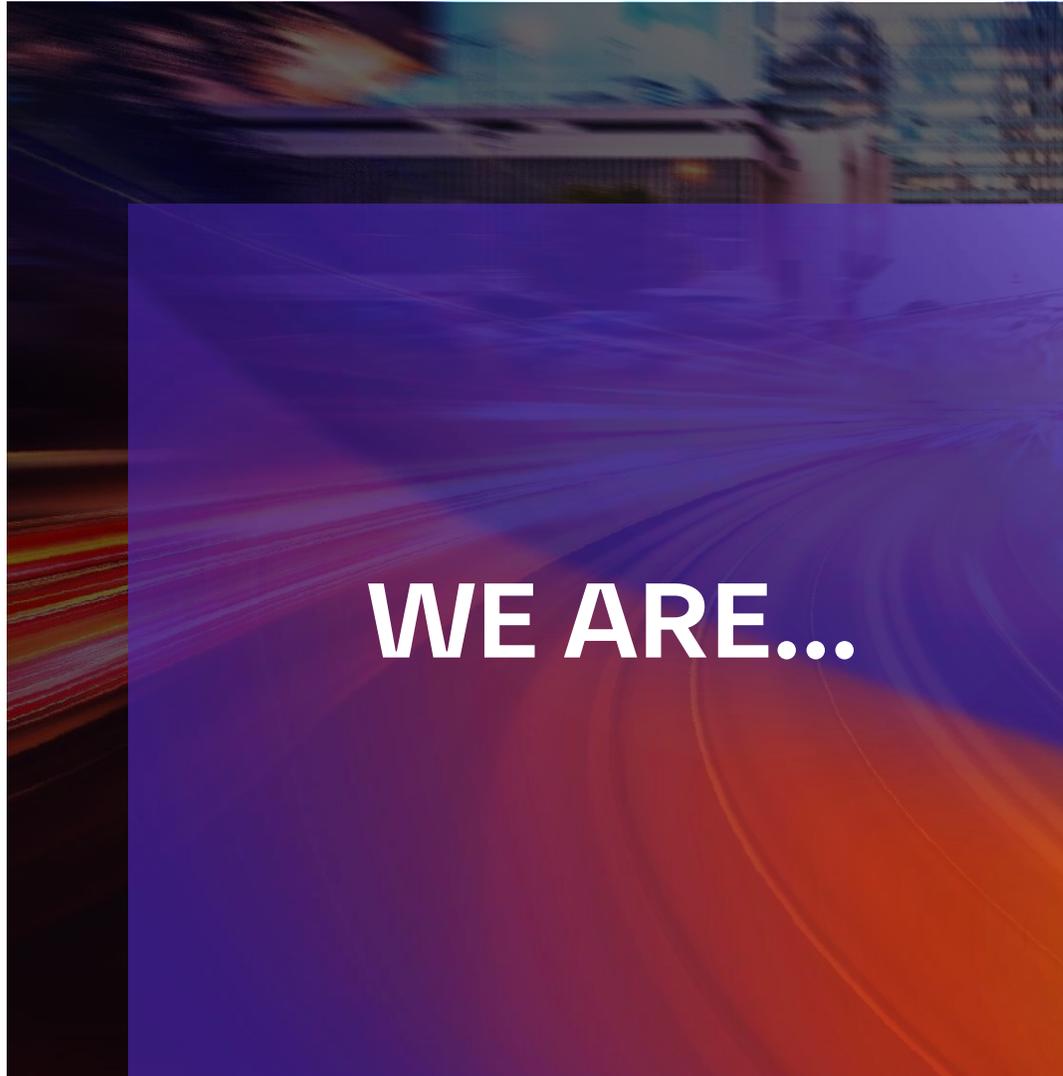
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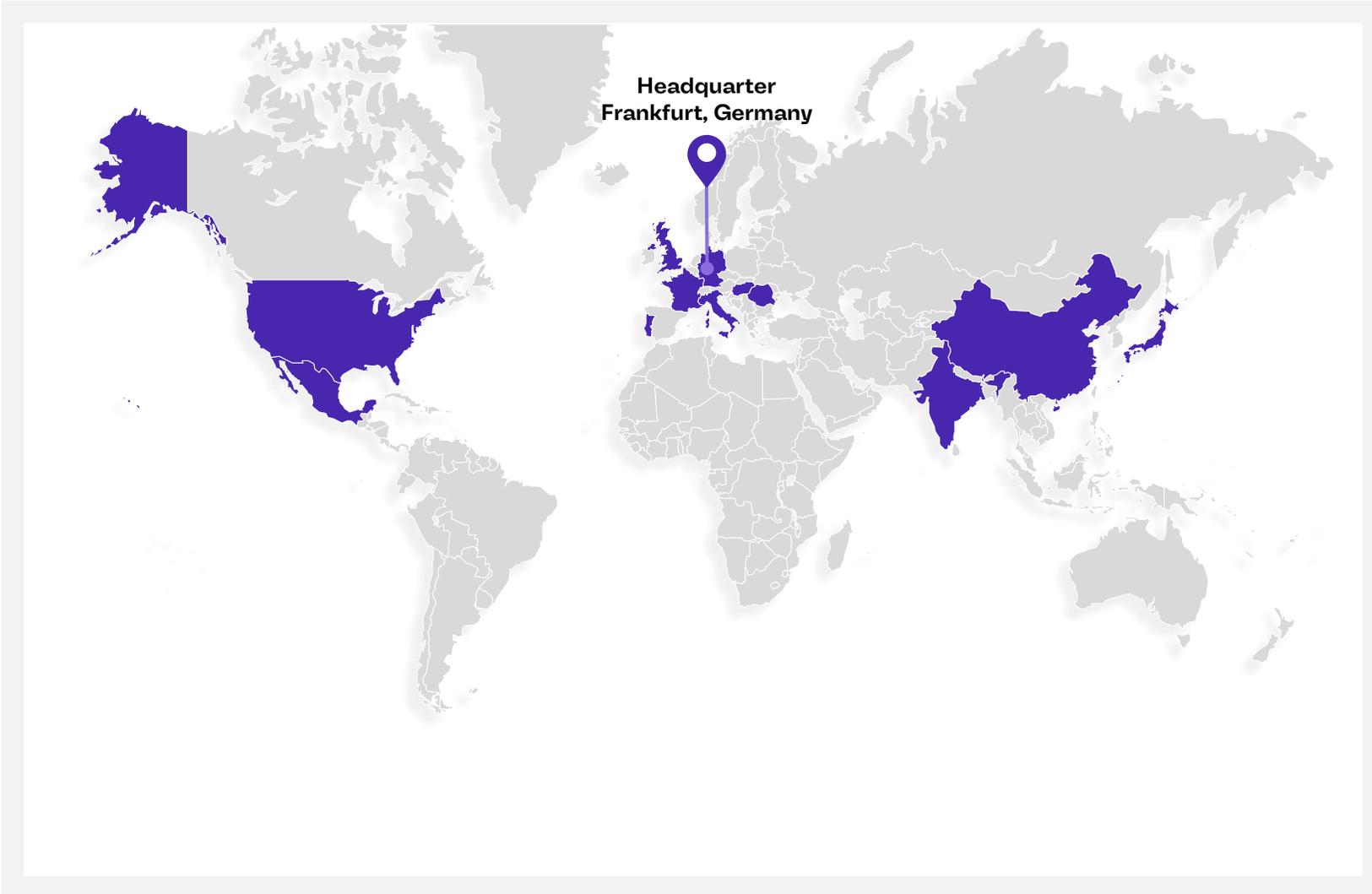
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# We are development and production partner for challenges in the automotive and industrial market

## Development



## Component supply



# Portfolio overview

## Domains and areas of expertise

### Customized automotive technology

We apply high-volume technologies to specific small series projects and use-cases in different markets



Chassis



Vehicle body & comfort



Assistance & automation



Drivetrain



Cockpit & infotainment



Network & connectivity

### General engineering solutions

We support the development of components & systems for mobility and ensure product functionality & conformance.

### IT & data management

We support transformation to a data driven organization and optimize IT systems.

### Prototype & manufacturing services

We manufacture according to your design and provide solutions for sustainability.

# AUMOVIO Engineering Solutions

## Solutions portfolio

### Consulting & specialist support

- Software consulting
- Data services
- Simulation engineering
- Security & privacy
- Research & development process consulting
- Functional safety management
- Cloud
- Data literacy

### Manufacturing

- Samples, electronics & mechanics
- Series production
- Build-to-print
- Special projects (automotive & beyond)

### Integration

- System integration
- Virtual integration
- Vehicle integration & workshops
- Software integration

### Development

- System engineering
- Software engineering
- Electric machine design
- Hardware & mechanical engineering
- Noise-vibration-harshness

### Concept creation

- System conception
- Requirement engineering
- E/E architecture
- Innovation engineering

### Testing & simulation

- 3D thermal simulation and structure analysis
- Test consulting services
- Driveline performance simulation
- Brake systems test and validation
- Virtual vehicle testing



# AUMOVIO engineering solutions within AUMOVIO



# We can develop “from a clean sheet of paper” or based on proven high-volume components

**A**  **AUMOVIO**  
Engineering Solutions

**B** “Clean sheet of paper” approach

## Modification of proven AUMOVIO components

 Head-up displays	 Mechanical controls	 MK C2	 MK 100 ESC
 Climate control	 Radar sensors	 Camera sensors	 EPB

 Multi high power control unit	 MK 100 UHP
--	---



Twin motor controller

# Adapting automotive technologies for niche market customers



Head up display



Key



Driver monitoring system



MK 100 UHP



MK C1 HAD



Body controller



Gateway



Telematics control unit



CAirS



Instrument cluster



Body & comfort ECU



Climate control



Twin motor control



HHLA Sky X4 drone

# Sustainable solutions & mindset

## AES sustainability

### Developing sustainable solutions

- Intelligent glass control
- 3D printing
- Ac2ated Sound
- Re-manufacturing

### Custom engineering for sustainability

- AI-based plant detection
- Lifecycle assessment
- AI4energy
- Tree seeding robot

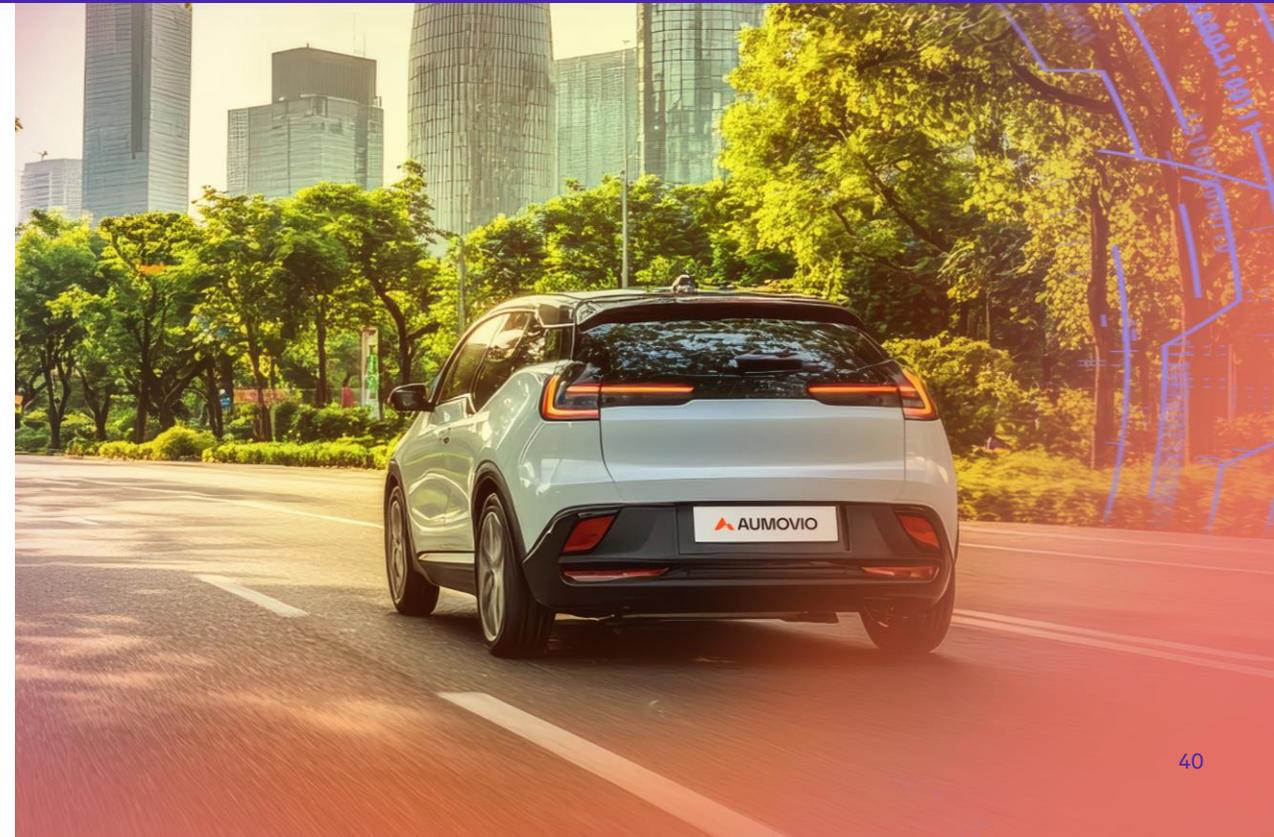
### Embracing a sustainability mindset

- Green plant label/green office label
- Corporate citizenship initiatives worldwide



Visit our Sustainability  
Spotlight

An AUMOVIO  
Engineering  
Solutions magazine.





## Managing Director

Jean-Michel Verdier



## Center of Technology and Expertise

Stephan Groitzsch

## Support functions



**Finance, Controlling, Purchasing & Co-Managing Director**  
Waldemar Lissy



**Human Relations**  
Anne Rateau



**Marketing & Communication**  
Debjani Roy



**Strategy & Business Intelligence**  
Matthias Clemenz



**Quality & Project Excellence**  
Jörg Cunz



**Footprint & Resource Strategy**  
Eric Vincelot

## Segments



**Interior**  
Stefan Strauss



**Vehicle Control & Safety**  
Volker van Lier



**Advanced Mobility, Data & Sustainability**  
Jürgen Schmitt

## Markets & customer focus



**AES Markets and Customer Focus**  
Trevor McLennan



**AES Sales Office (TBD)**  
*Contract Management & Reporting*



**AES Focus Market Europe**



**AES Focus Market North America**  
Kent Young



**AES Focus Market China**  
Yu Sun



**AES Focus Market India**  
Rashmi Karurmath



**AES Focus Market Japan**  
Shunta Matsuoka



**AES Focus Market South Korea**  
YoungJun Cho

## Operations



**Production Solutions**  
Daniel Magon

# Examples from our customer portfolio automotive and other branches



ASTON MARTIN

**LIEBHERR**



**SIEMENS**



STELLANTIS



STREETSCOOTER



SCHAEFFLER



**AIRBUS**



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