



Hessisches Cluster für Sensorik / Hessian Cluster for Sensor Technology

– Help Shape the Ecosystem!

September 15, 2026 in Darmstadt, Germany



Prof. Dr. Klaus-Michael Ahrend
Executive Board, HEAG
& Managing Director, HUB31



Dipl.-Wirtsch.-Ing. Reinhard Becker
Corporate Development, HEAG

- HEAG is the investment management company of the Science City of Darmstadt. Its key responsibilities include supporting the city in strategic matters, in particular economic development and connecting business and science.
- HUB31 is the technology and start-up center of the Science City of Darmstadt, the Chamber of Industry and Commerce, TU Darmstadt and Darmstadt University of Applied Sciences. It is currently the largest start-up center in Hesse.
- The “Hessian Cluster for Sensor Technology e.V.” was founded in Darmstadt on August 13, 2026. Founding partners include institutions such as Merck, Entega, TU Darmstadt and HEAG. The Executive Board includes Reinhard Becker, among others.



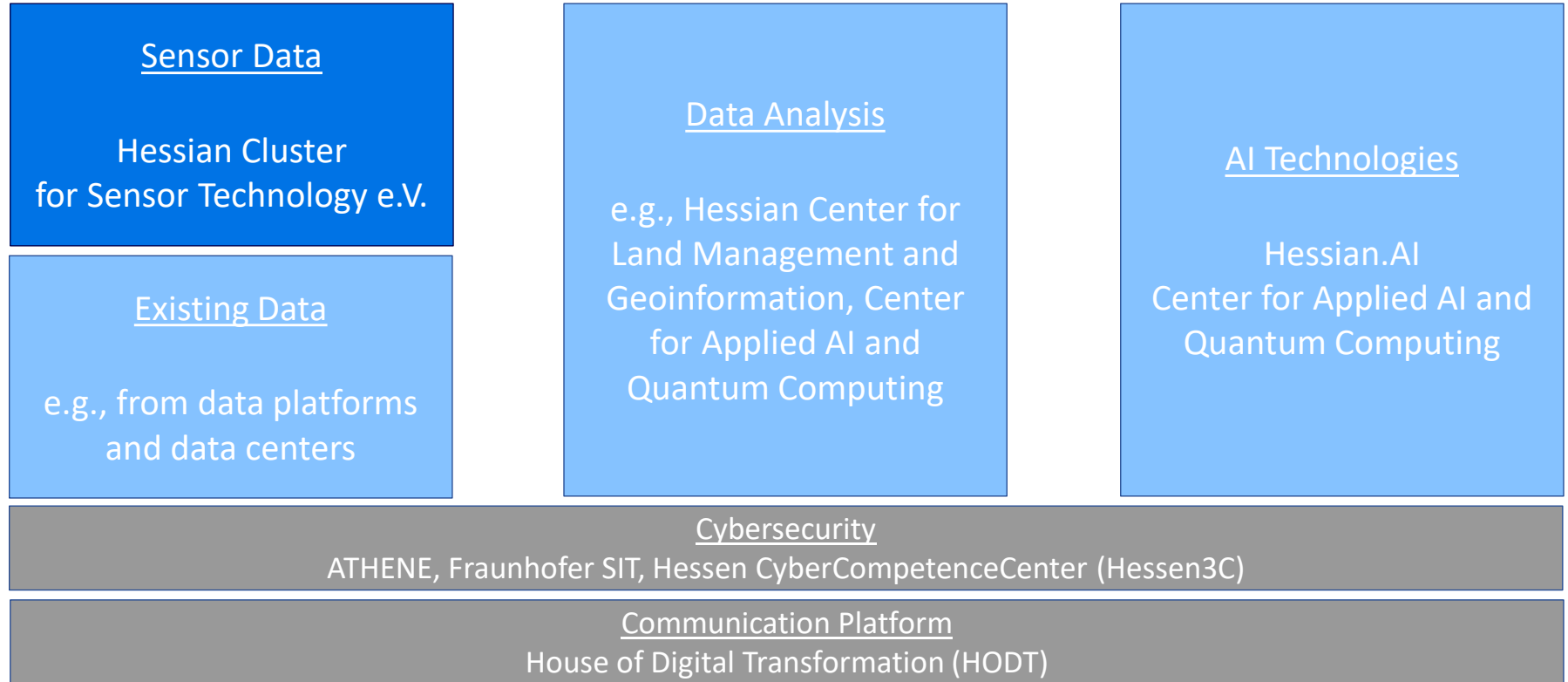
➔ Germany lacked a center for sensor technology!



- Sensor technology is an indispensable “tool” for digitalization and AI.
- The global sensor technology market has more than doubled over the past 10 years.
- The Hessian state government has recognized the importance of sensor technology for securing the future of business and science in Hesse and beyond. Establishing a center for sensor technology is a goal of the Hessian state government’s coalition agreement for the 2024–2029 legislative term.
- In 2025 and 2026, HEAG organized events: the Darmstadt Sensor Technology Days. Partners included the Fraunhofer Society, GSI, HUB31 and TU Darmstadt.
- Building on this, the Hessian Cluster for Sensor Technology e.V. was founded on August 13, 2026.

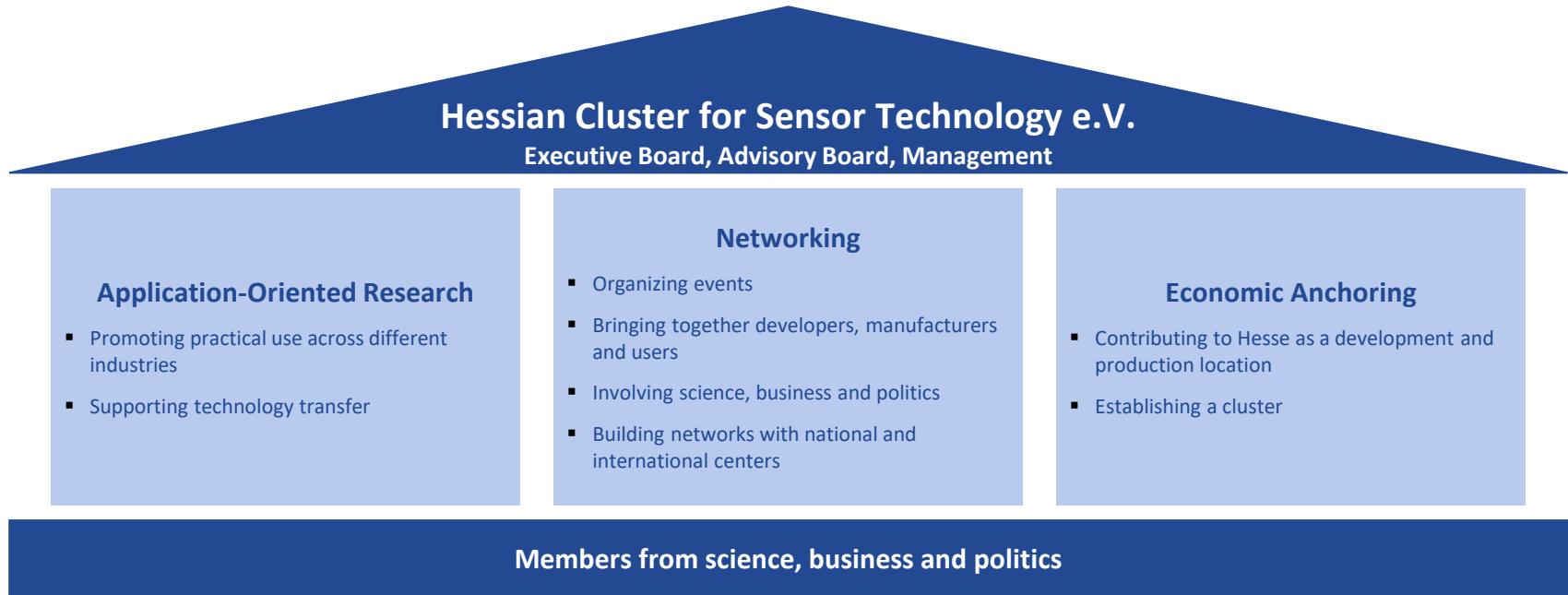
➔ It is Germany’s first cross-application center for sensor technology.

Integration into the Structure of the Hessian Ministry of Digitalization and Innovation





- Establishing a Hessian business and science cluster for sensor and actuator technology
- Building expertise, production and value creation
- Networking existing business and science stakeholders
- Attracting new stakeholders from abroad or from outside Hesse
- Developing a strategy for establishing specific technologies in Hesse in line with the European Net-Zero Industry Act
- Strengthening existing companies' links to science through events, trade fairs and R&D projects
- Establishing a funding offering for sensor and actuator technology start-ups
- Strengthening the excellence initiatives of Hessian universities
- Alignment with the goals of the Hessian coalition agreement





- Enabling practical use across different industries: testing new sensor technology in various fields and sectors, e.g., medical technology, chemicals, automotive and others
- Supporting technology transfer: networking with TU Darmstadt, HDA, Fraunhofer institutes and other research institutions, businesses, sensor manufacturers and users; creating a sensor technology map for Hesse and Germany to better connect science, research and business.
- Promoting pilot projects: raising awareness and providing information on funding opportunities
- Market and technology monitoring: regular exchange with various stakeholders to identify trends and technology developments



- Organizing events: hosting events in Darmstadt and Hesse, enabling exchange among different stakeholders, organizing idea competitions and hackathons
- Bringing together developers, manufacturers and users: using existing databases, manufacturers and users
- Involving science, business and politics: engaging various stakeholders in developing and organizing the Hessian Center for Sensor Technology, including industry associations such as the AMA Association
- Building networks with national and international centers: networking and exchange with other centers



- Strengthening Hesse as a development and production location: attracting manufacturers; location policy focused on sensor technology
- Cluster management: building a sensor technology cluster in Hesse/South Hesse; developing a “sensor technology poster”
- Education and training: establishing corresponding degree programs with TU Darmstadt and HDA; promoting professional development through knowledge exchange between companies
- Funding advisory network: building and using networks for funding advice

Overview of Sensor Measurands – Market and Development



■ Mechanical Measurands in Solids

- Length, Distance
- Displacement
- Thickness
- Proximity
- Angle
- Inclination
- Area
- Shape
- Position
- Roughness
- Motion
- Speed
- Mass Flow
- Vibration
- Acceleration
- Mass
- Weight
- Pressure
- Torque/Moment
- Height
- Density
- Rotational Speed
- Torque
- Hardness
- Modulus of Elasticity
- Strain

■ Mechanical Measurands in Liquids and Gases

- Flow Velocity
- Flow Rate
- Flow Direction
- Density
- Viscosity
- Fill Level
- Pressure
- Vacuum
- Volume

■ Thermal Measurands

- Temperature
- Thermal Radiation
- Radiation Temperature
- Heat Capacity
- Thermal Conduction
- Thermal Comfort
- Entropy

■ Optical Measurands

- Light Intensity
- Color
- Light Wavelength
- Refractive Index
- Light Polarization
- Luminance

■ Acoustic Measurands

- Sound Intensity
- Sound Pressure
- Sound Frequency
- Speed of Sound
- Sound Polarization

■ Nuclear Radiation

- Radiation Flux
- Radiation Type
- Radiation Energy
- Radiation Dose

■ Chemical Measurands

- Concentration
- Composition
- Reaction Rate
- Molecular Weight
- pH Value
- Redox Potential
- Moisture
- Water Content
- Ice
- Dust Concentration
- Particle Size
- Contamination
- Electrical Conductivity
- Thermal Conductivity

- Degree of Ionization

■ Magnetic and Electrical Measurands

- Current
- Voltage
- Charge
- Frequency
- Phase
- Electric Field
- Magnetic Field
- Electric Power
- Electrical Resistance
- Inductance
- Capacitance
- Dielectric Constant
- Electric Polarization

■ Other Essential Measurands

- Time
- Frequency
- Count
- Pulse Duration

→ Nearly 100 parameters can be captured using sensors; more are to be developed for digitalization and Industry 4.0.

Hessian Cluster for Sensor Technology e.V.



Hessian Cluster for Sensor Technology e.V.

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