



# AVATUM

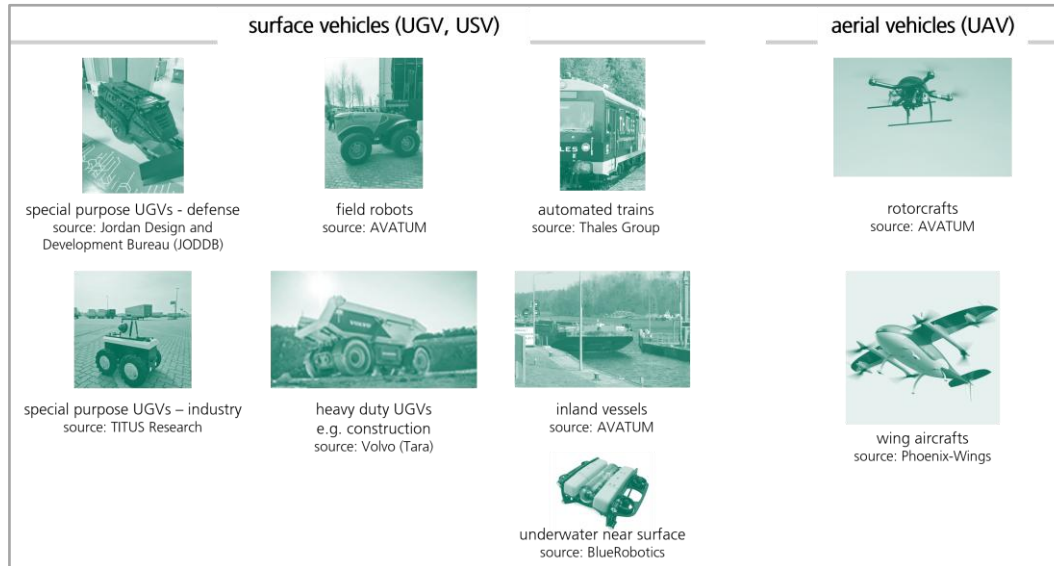
... at a glance

WE ENABLE  
AUTONOMY.

Prof. Dr. Uwe Meinberg

## our company

Since its foundation in 2011, AVATUM has been a driving force for innovation. We conduct applied R&D for unmanned autonomous vehicle systems, related infrastructure and appropriate ecosystems in an industrial context and for the defense sector.



200+

projects  
successfully completed  
(~30% defense)

20+

international customers

## our R&D and services

### business processes/ urban operating system

- concepts for fully digitized/ automated processes
- simulation missions/ business processes (e.g. by AnyLogic)



### transport & missions

- concepts for fully automated missions
- interface concepts (v2x)
- communication (v2x)
- simulation missions (e.g. AnyLogic, Simu5G, Gazebo)



## artificial intelligence (AI)



### enabling and controlling autonomy

- sensor concepts/-fusion
- control systems (*Model Predictive Control*)
- communication (v2x, 5G, satellite, ...)
- simulation vehicles (e.g. GAZEBO, Simulink, MathLab)
- POC

### enabling and controlling missions

- sensor-/actuator-conceptions
- evaluation of complex sensor data (vehicle, environment)
- simulation sensor systems (e.g. GAZEBO, Simulink, MathLab)
- control stations (teleoperation, disaster management)
- POC



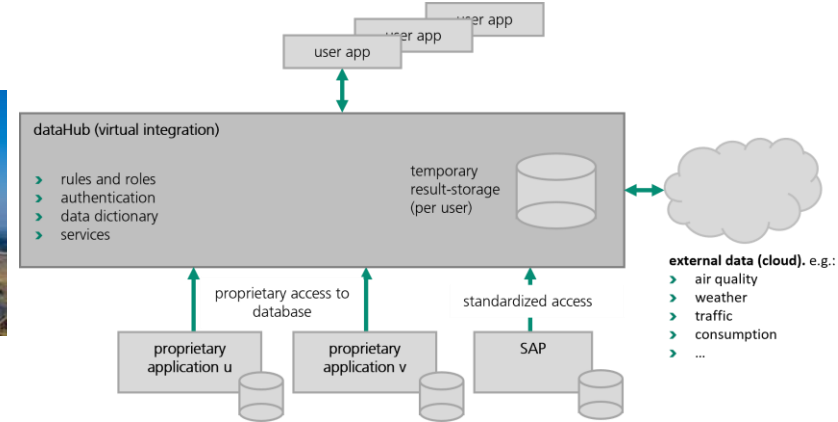
### human-machine-interfaces

- interface conceptions
- interaction under high cognitive load
- simulation
- AR/VR



## ➤ some references in sm-s context

- **power generation**  
monitoring and integration  
of environmental data



- **power grid operation** (extra-high voltage)  
monitoring of environmental data  
(capital region Berlin/Brandenburg)

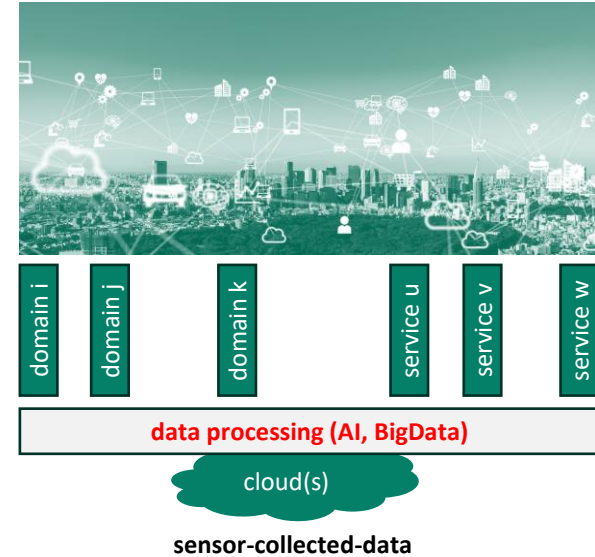


- data retrieved from 50+ public and 300+ private meteostations (weather, air quality)
- geo-references (measurement stations and critical objects) based on WGS 84
- traffic data integrated (where applicable, mainly Berlin and bigger cities in Brandenburg)

## ➤ some references in sm-s context

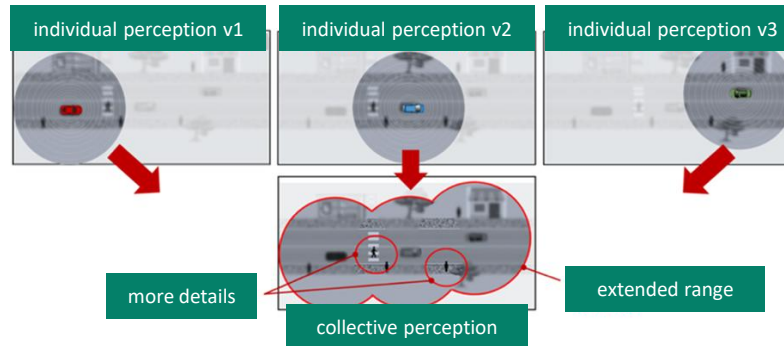
### ➤ urban operating system (in cooperation with Mercedes Benz)

- data collected by
  - traffic participants
    - vehicles, bicycles (both: private, commercial)
    - pedestrians
    - drones
    - ships(!)
  - measurement stations
  - service providers (communication, energy, ...)
  - ...
- processed by AI and BigData methods
- provided for
  - traffic/transport services
  - traffic/transport management
  - **phenomenon detection**
  - environmental management
  - urban planning
  - urban services
  - ...



### ➤ collaborative perception for road vehicles

(sensor-fusion,  
v2x communication)



## ➤ our participation

### ➤ we were already partner in the previous project (01/2022-06/2022)

*"Empfehlungen für ein Luftqualitätsüberwachungssystem in den Städten Zielona Góra und Cottbus"*

### ➤ in the current project

*"Das Grenzüberschreitende stationär-mobile System für Luftqualitätsüberwachung und Vorhersage zu der nachhaltigen Entwicklung der Städte Zielona Góra und Cottbus"*

### **we will participate in the following working packages**

- analysis and assessment of the sustainability levels of the two cities, Zielona Góra und Cottbus
- development of a draft stationary/mobile air quality monitoring and forecasting system for the sustainable development of the two cities
- development of algorithms using AI to model various sustainability scenarios for the two cities



**AVATUM GmbH**

Ahornstraße 18A  
12163 Berlin  
Germany



Anckelmannsplatz 1  
20537 Hamburg  
Germany

# AVATUM

**your contact:**

Prof. Dr. Uwe Meinberg

Tel: +49 30 767 285 39  
Mob: +49 173 260 4887  
Web: [avatum.eu](http://avatum.eu)  
Mail: [uwe.meinberg@avatum.eu](mailto:uwe.meinberg@avatum.eu)

