Stefan Sandberg

Product Owner Simulation, Veoneer Vision

stefan.sandberg@veoneer.com

Towards a harmonized infrastructure

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Product Owner Simulation, Veoneer Vision

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This is Veoneer

- "Pure Play" focus on:
  - **Safety Electronics,**
  - **Advanced Driving Assistance Systems (ADAS),**
  - **Collaborative and Automated Driving (AD).**
- Founded in 2018, spin-off from Autoliv
- Close to 70 years of automotive safety development
- 7,100 employees in 13 countries
- Headquartered in Stockholm, Sweden
- Listed on the NYSE and the Stockholm NASDAQ OMX

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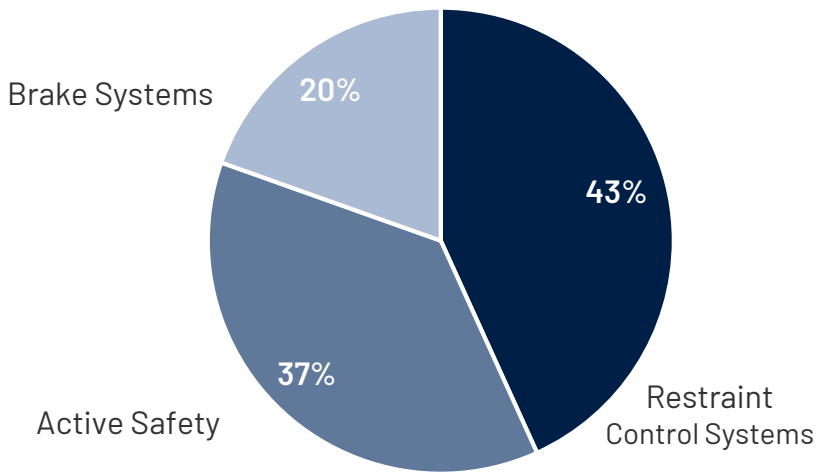
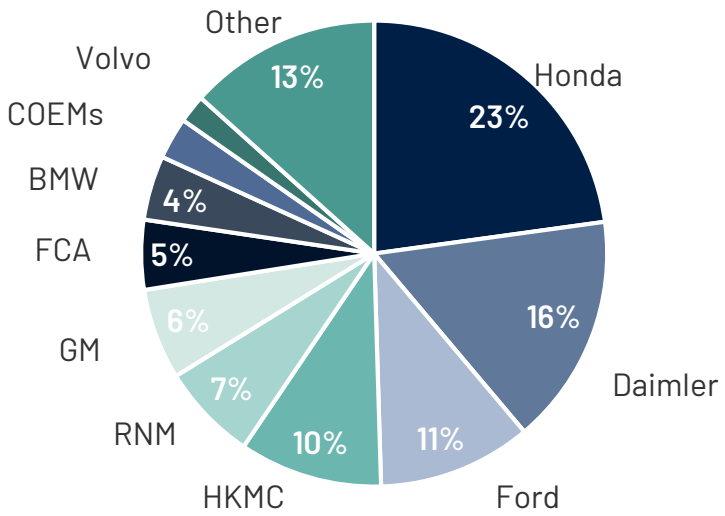
Net Sales

2019: $1,902 million

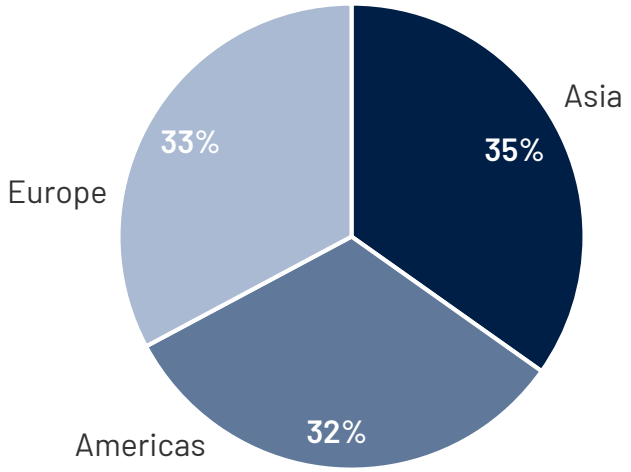
Sales by Product



Sales by Customer



Sales by Region



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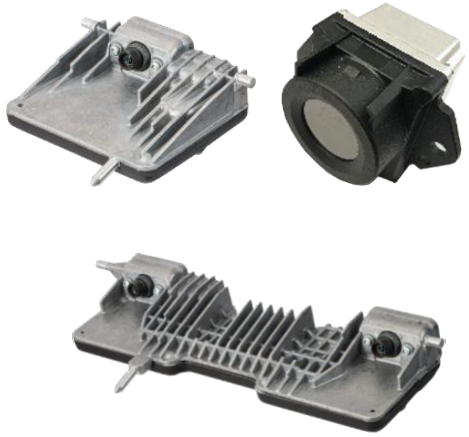
A Tech Company Delivering Automotive Grade



6.5 million
Camera Sensors Delivered

>38 million
Radar Sensors Delivered

~830 million
Airbag ECUs and Crash Sensors Delivered

Delivered during the past decade, as Veoneer and as part of Autoliv

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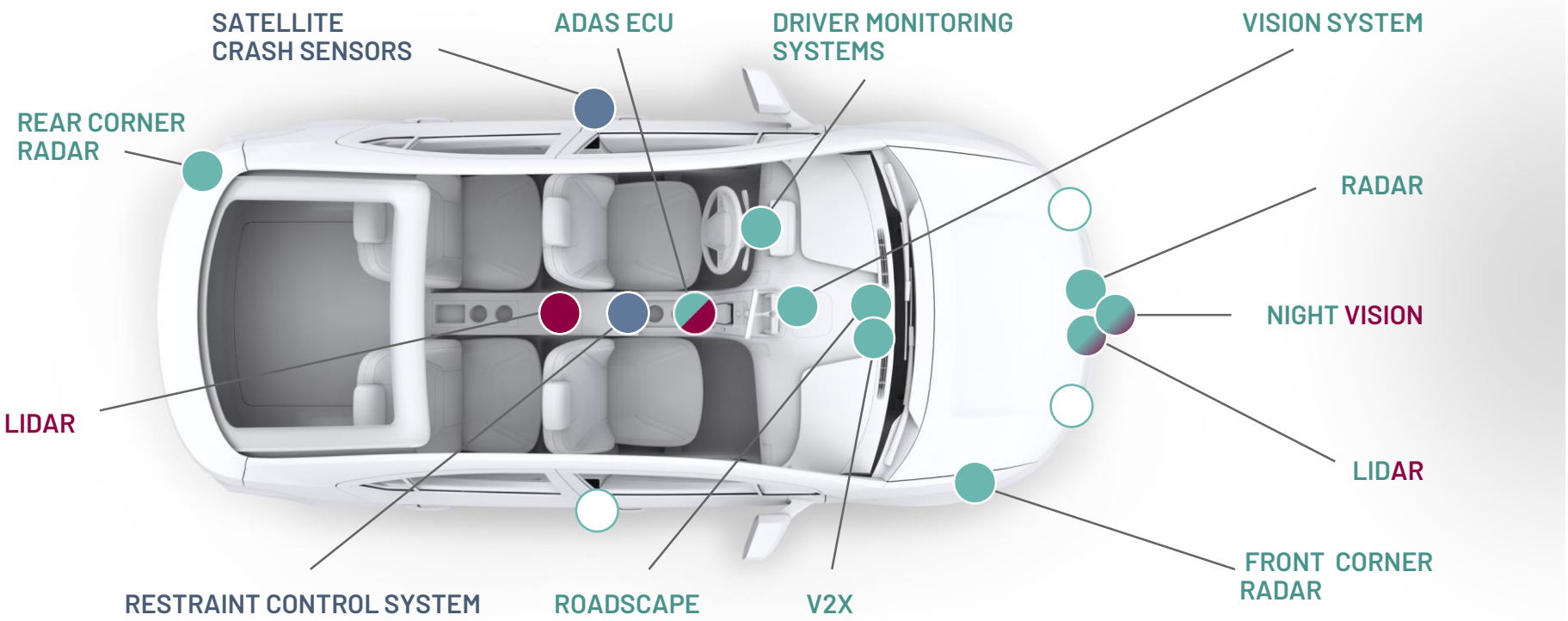
Our Technology Showcase



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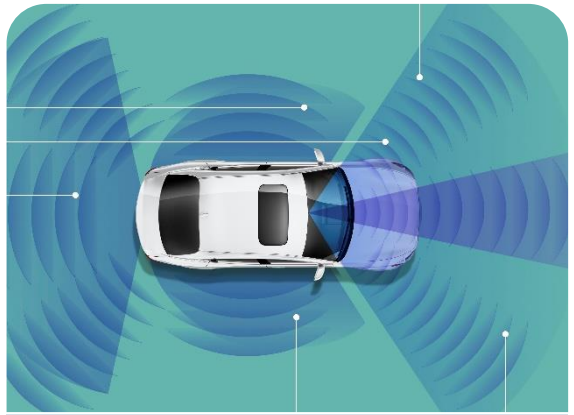
A Tech Company Committed to Creating Trust in Mobility



~500
Patent Families
where more than half are related to applications

~100
ADAS/AD test vehicles
collecting data and testing daily software updates

>15
Petabytes
of data used for Simulation

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Simulation Area
Veoneer Vision

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Simulation Area

- 80 people primarily in Linköping, Sweden and Timisoara, Rumania
- 13 teams
- 20 Data Collection Vehicles
- Delivered and supports close to a thousand data collection systems in-house and at customer sites
- Data storage and management
- Vehicle Integration shop
- Close to a thousand open loop HiL stations
- Delivery of components and Support to customer closed loop HiL stations
- Initial delivery of SiL solutions to customers

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Where we were

- Few customer specific configurations
- Large data need
- Proprietary monolithic data collection system
- Large amount of open loop HiL stations
- Large amount of different tools developed by different teams with overlaps
- Dependent on in-house hardware solutions

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Where we are

- Increasing amount of customer configurations
- Increasing data need
- Definition of harmonized and open DDS based standard architecture
  - Ramping up teams with new design approach
- Moving towards Limited amount of config-controlled components and reduced maintenance effort
- Investigating requirements on synthetic datasets
- Investigating strategic partnerships & procurements activities

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Where we are going

- Open architecture and avoid vendor lock-in
- Reduced maintenance effort
- Standardized data model
- Reduced amount of HiL stations
- Large amount of testing in SiL environment
- Closed loop testing
- Synthetic datasets
- Identified strategic partners
- COTS hardware

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RTI Connext in Play
Architecture Examples

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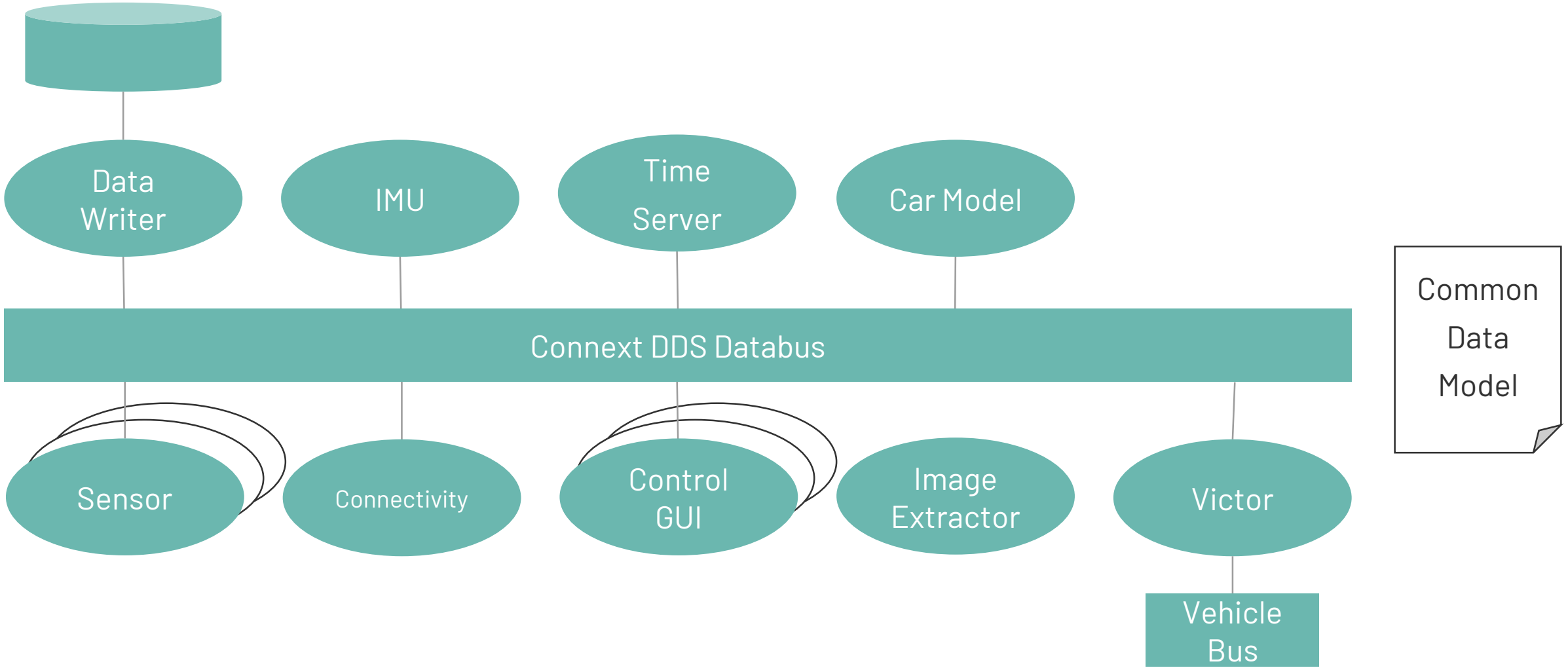
Data Recording System



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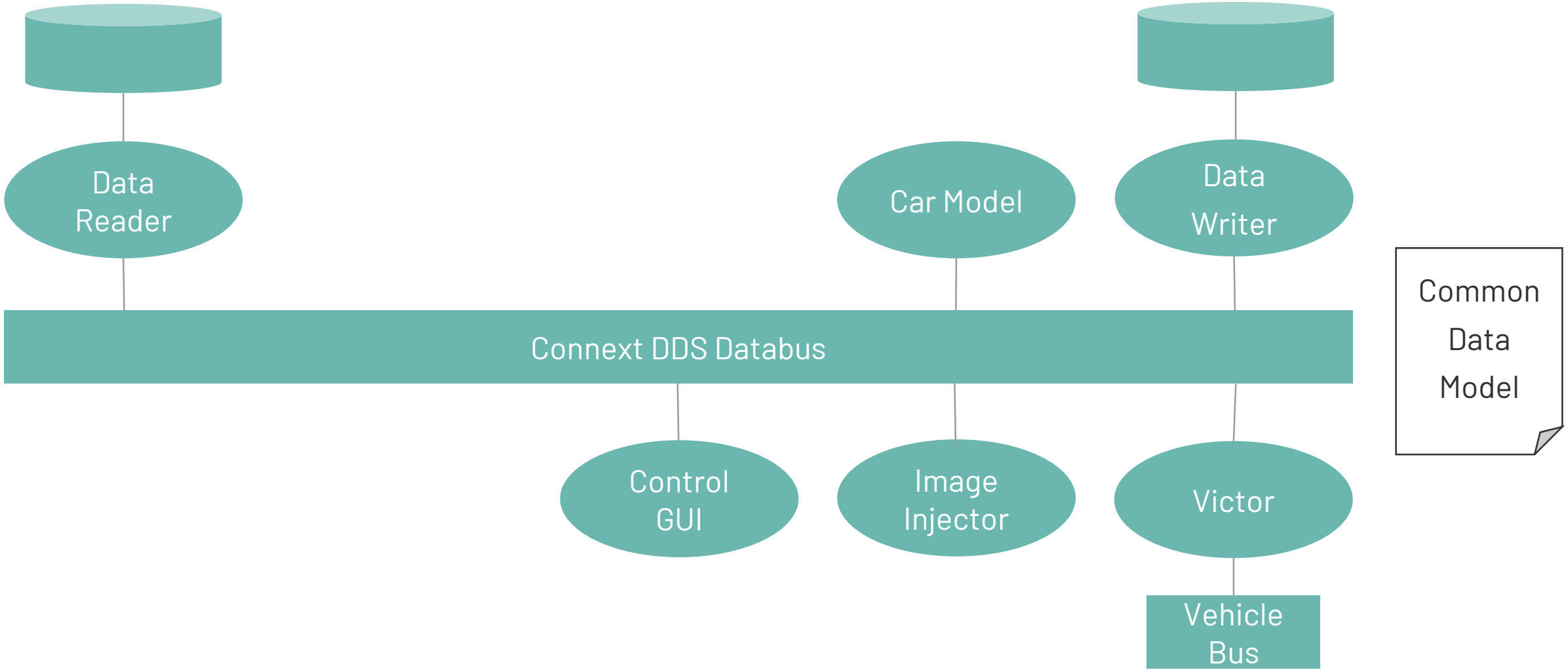
HiL/SiL Station (Open Loop)



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Creating Trust in Mobility

Flawless Delivery

Customer-Centric Collaboration

Human-Centric Innovation

Thank You!

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