

A futuristic scene with a glowing wireframe car in the foreground. In the background, three people are working in a server room. The car is composed of orange and blue lines, giving it a digital, transparent appearance. The background is dark with blue lighting from server racks.

GLOBAL AUTOMOTIVE DATA SPACE

Empower the Creation of Data Value for Autonomous Vehicle Development

Modern automotive companies generate large amounts of data, with a rising trend. The business value of this data is vast. To benefit, companies need a data strategy that matches the data's purpose and location. The strategy should consider what the data is used for, where the data and the users are located, and how to connect them efficiently. This includes defining policies for data allocation, access by internal and external stakeholders and data orchestration according to available resources and needs. The result: optimal control of all data in terms of speed, availability, flexibility, security, management and cost. GADS, the Global Autonomous Data Space from Dell Technologies and GNS Systems, optimally fulfills these criteria.

Digital Data: Driver of Technological Innovations

The automotive sector is becoming more digital and data-driven. As a response to the increasing demands for data, safety and security protection in vehicles, automotive companies are implementing highly interconnected development and production processes. Their efficiency and effectiveness in coping with the emerging system complexity, cross-company dependencies and ever shorter development cycles depends directly on the use of globally distributed data.

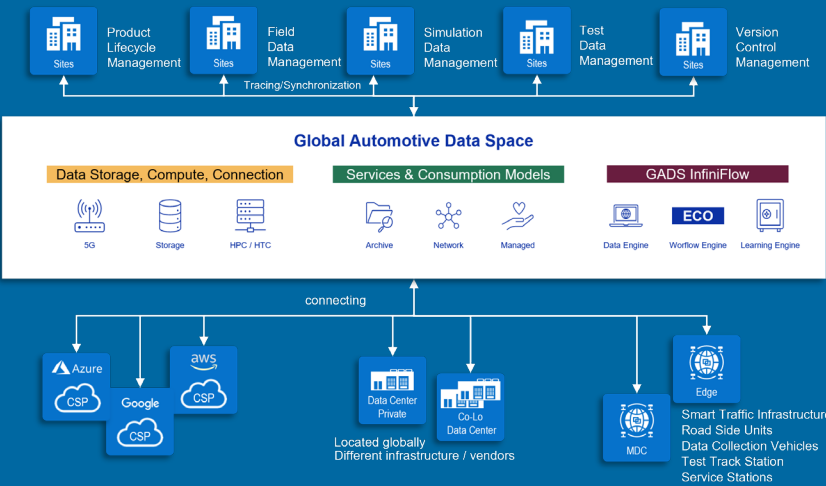
The analysis and evaluation of large heterogeneous data sets, especially with AI-based techno-

logies, already makes it possible today to identify patterns and regularities. Based on this, new systems like assisted and autonomous driving can be developed and processes and workflows across the product life cycle be optimized.

New technologies for storing, processing and transferring large data volumes, especially 5G, cloud and edge computing, are catalysts for data-driven value creation and are fostering the emergence of data and cloud-based ecosystems.

Global Automotive Data Space

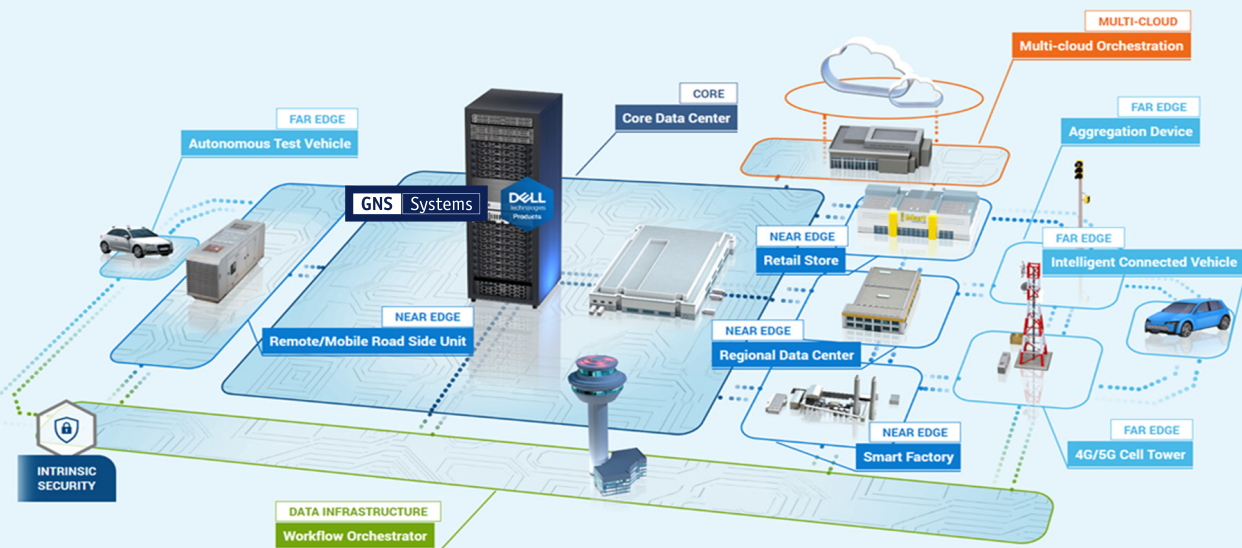
The unified data environment GADS provides developers with a coherent solution to address data challenges (for example data storage, management, orchestration, traceability, tiering) in a future-oriented approach. GADS provides a holistic approach to use-case optimized data access, processing and orchestration independent of the underlying data sources and connected tools (e.g. CAX) to ensure process traceability and increase confidence in the digital data trove.



- GADS provides end-to-end access to the growing number of data types and systems.
- GADS ensures access and collaborative data sharing across applications and companies/ organizations.
- GADS allows large amounts of data to be streamed, quickly processed, stored and analyzed according to the use case specific needs.
- GADS ensures data quality, maintains information integrity and complies with existing legal guidelines.

Efficient & Effective Data Life Cycle across Edge-Core-Cloud

The platform enables companies to combine data in the cloud with on-prem and edge resources, process it and prepare or use it for Big Data analysis. GADS enables the collection, distribution and management of large, unstructured data volumes in real time. As a learning platform, GADS therefore contributes to the continuous optimization of storage and compute allocations across the product lifecycle, supply chain and user-specific data usage.



Robust, Efficient and Effective Data Workflows for Data Intensive Business



The platform enables development engineers worldwide to access data with domain-specific intelligent semantic data models.



Especially for data intensive development such as autonomous vehicles, user-defined guidelines form a powerful tool that offers the developer maximum flexibility and efficiency.



GADS provides a strong basis for data driven technologies such as digital twins for SDV, AI driven systems or processes, data analytics, and cross-company data sharing.



GADS captures the specified information elements during data processing and orchestrates them across different sites by following individually defined policies.

GADS App: Policy Driven Data Orchestration and Processing

Project: A

Camera Front	Company A	Raw: Munich	Development
		Labelled: Frankfurt	Testing
Lidar R Mirror	Company B	Raw: Azure public	Simulation
		Anonymized: Munich	Testing

Logging Dimensions and Properties

	Project	Recording Date (yyyymmdd)	Stream	Location
• Project	• A		• Camera Front	• Germany
• Recording date	• B	• 20230425	• Lidar R Mirror	• Austria
• Data feed	• C	• 20230310	• Vehicle Bus	• USA
• Location				

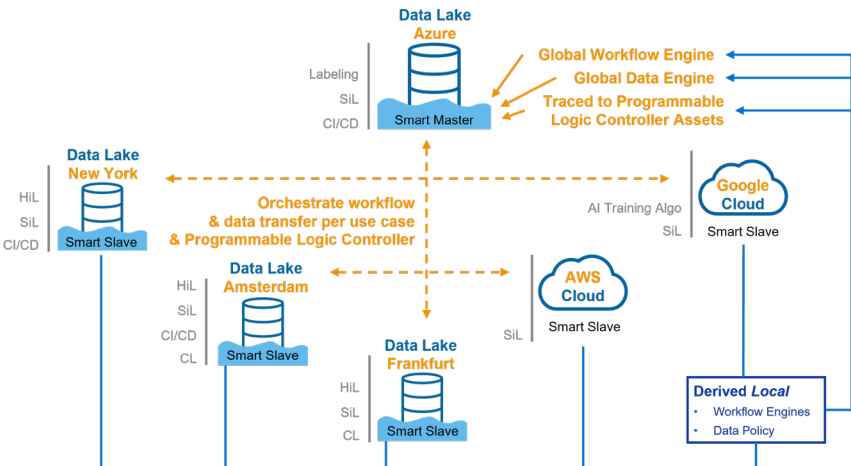
Data Mapping Dimensions and Properties

	Target Location	Processing Type	Company	Department
• Target Location	• Munich	• Raw	• A	• Development
• Processing Type	• Frankfurt	• Anonymized	• B	• Testing
• Company	• Azure public	• Labelled	• C	• Simulation
• Department				

- Orchestrating** qualified and ready-to-use data
- Preprocessing of uploaded data on the Edge
- Access rights** for globally uploaded data
- Policy-driven storage, transfer and management
- Execution of business applications** on globally distributed data in defined order

The Process and Workflow behind GADS

By connecting different systems (e.g., test benches) with a uniform, consistent data platform such as GADS, data transparency, data redundancy and data democratization as well as data management become easier. The platform captures specified process metadata and orchestrates it across multiple sites by following customizable policies. Industry developers benefit from the enormous process reliability and high flexibility offered by a single system for data management.



Benefits

GADS provides a unified interface for retrieving data and closes the gap between communication, orchestration and compliance:

- Developers benefit from the enormous process reliability and high flexibility offered by a single system for managing data across edge, core and cloud.
- The close networking of data via the platform ensures greater transparency of data flows.
- Data-driven development process is greatly enhanced by data integrity.
- The optimized storage, analysis and transmission of globally distributed data optimally supports users in the field of autonomous vehicle development.

GADS contributes significantly to data democratization and generates added value of data within the value chain.

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