Elektrobit and Dell Technologies

Data orchestration and Smart Ingest to accelerate autonomous development and optimize your data pipeline with Dell EMC PowerScale.

Curating your Most Important Data Assets

In the artificial intelligence (AI) and machine learning (ML) development process and the test and validation process, the importance of curated data sets is beginning to equal the importance of source code in traditional development. In addition, modern automotive data sets are exploding in size and complexity due to high-resolution cameras and next generation sensors. The value of insights gathered from this data as well as the volume of data consumed inside the automotive industry is also expanding. This increase in demand, volume, and value of data can force unhealthy scaling conditions that stress budgets and in-house data management and storage systems. It is under these conditions that many inefficiencies are overlooked in favor of meeting deadlines.

As the automotive industry continues to make advancements towards Advanced Driver Assistance Systems (ADAS) and Autonomous Driving (AD), locating new efficiencies and finding ways to stretch project budgets is a top concern. In this process, data pipelines are often reviewed for their efficiency because they represent enormous complexity, budget consumption, and rapid expansion. Two necessary improvements quickly become clear: the need to fast track important topical data to teams in waiting and the need to remove corrupt or unusable data before it incurs further downstream costs.

Smart Ingest with Intelligence at the Edge

Together, Dell and Elektrobit have partnered to provide a data management and scalable storage solution for on-premises and public cloud workloads for the automotive industry. This solution allows you to filter data at the edge, before and during ingestion, which enables needed visibility for today's data pipelines. Using EB Assist Test Lab and Dell EMC PowerScale, immediate efficiencies are recognized by data consumers, resulting in time and storage cost savings. In addition to a robust production grade data orchestration system, our solution introduces options and flexibility which users can easily leverage to improve workflows.

 EB Assist Test Lab's rich metadata indexing, and data aggregation process creates a centralized database where data can be discovered by users all over the world. This drastically reduces the amount of time spent by engineers, data scientists, and algorithm developers to discover data, leaving more time to focus on development. EB Assist Test Lab offers unique tools for data collaboration and socialization which further improves a team's ability to find or commission data and accelerate their projects.

EB Assist Test Lab Benefits

- Filter data at the edge which reduces data transmission and storage costs
- Data generated from devices in close proximity helps reduce latency when speed is critical
- Simplify global collaboration, share data easily among teams
- Easily create campaigns and issue data collection requests
- Unique tools for data collaboration which accelerates data discovery

Benefits of our Joint Solution

- Save storage costs with intelligence at the edge
- Accelerate development by improving the delivery time of highly relevant data
- Holistic data orchestration solution
  » Faster Identification of
    • Highly relevant data
    • Unusable data
- Automated protocols for
  » Data flagging
  » Storage tiering
  » Data discarding.
- Access to a diverse partner network
- Enable global collaboration
- Improve data socialization

Dell Technologies Benefits

- Automotive thought leader providing Automotive-specific products and solutions including the Dell Autonomous Drive Ecosystem
- Proven ADAS storage solutions with approximately 70% of leading Tier-1 ADAS suppliers using PowerScale Storage today.
- High performance CPU and GPU-compute solutions for AI/ML/DL
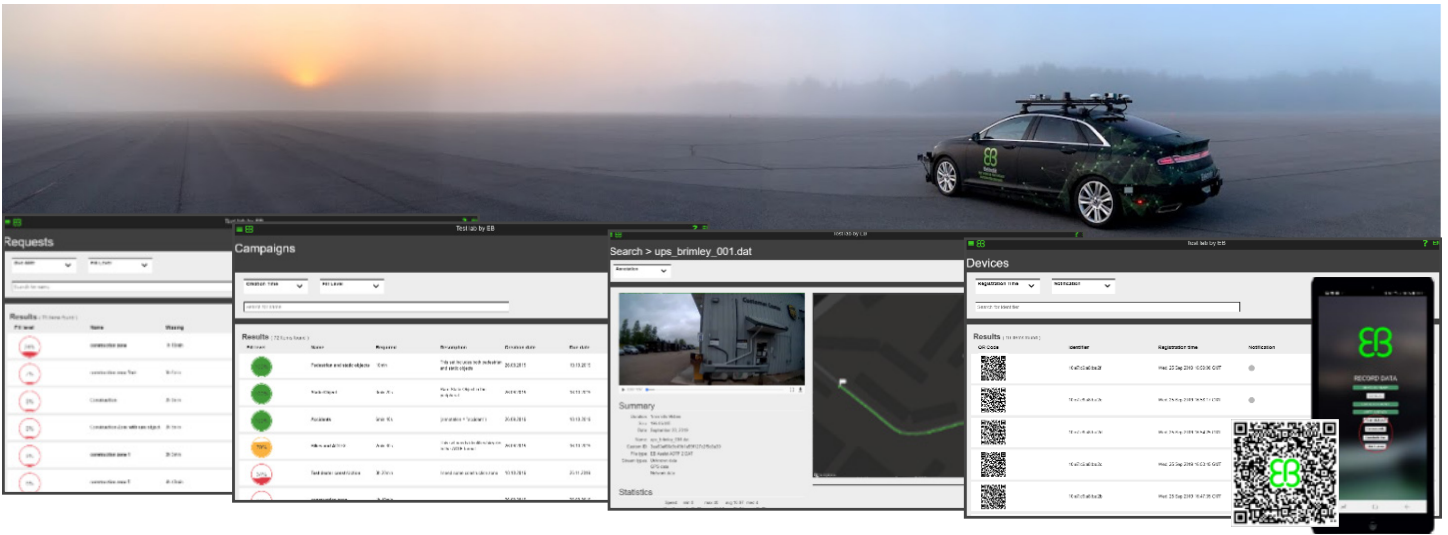- World-wide support and services tailored to meet needs ranging from start-ups to global enterprises.

Fig. 1: EB Assist Test Lab web interface is available to users around the world

Our solution is a central component in the data pipeline and serves as the orchestration tool deployed in the cloud, but raw data can be stored in multiple locations using PowerScale systems. Our tool connects different user groups to a centralized data base that houses all indexed metadata and brings visibility to large databases. Once the data is collected, analyzed, and aggregated, the core feature becomes data discovery where basic and advanced searching is performed to locate existing data or discover the data gaps. Through EB Assist Test Lab's interface, external activities can also be managed like 3rd party labeling or simulation and these data subsets can be created and refined using the campaigns feature. EB Assist Test Lab is highly adaptable and can fit with any preselected car PC specified by the customer. In addition, Elektrobit and Dell are established service providers and our project organizations can implement your ideal solution.
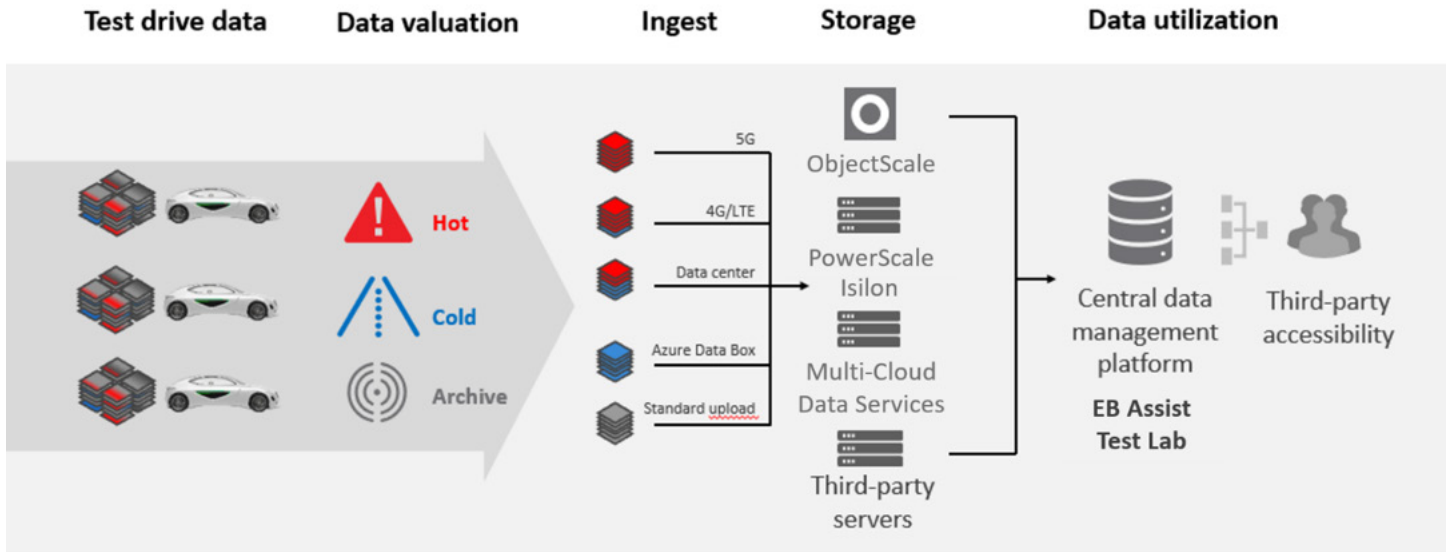

Fig. 2: Options along the Smart Ingest path

By defining storage tiers, our customers can create custom rule-based data routing and implement checks to confirm the value of collected data before it is ingested. This layer of operations at the edge will quickly introduce efficiencies to legacy data pipelines and reduce the time your team spends waiting for data.

OneFS Integration

Storage for raw sensor data is increasing in complexity. A constellation of different storage tiers including all-flash, hybrid, and archive nodes are a common requirement for modern data lakes. Dell's PowerScale OneFS file system is a vital component in leveraging and unifying complex storage protocols. EB Assist Test Lab is fully integrated with Dell's OneFS file system and helps to extend the capabilities of your managed data lake. By adopting the OneFS REST API, EB Assist Test Lab enables the upload and download of data, custom rule definitions, and various storage pool policies. Administrators can implement and adjust these rules as needed and data consumers can document the data they need using the Campaigns and Requests feature on EB Assist Test Lab. These documented data requests are then crosschecked with the storage rules and correlated data is flagged during ingestion and through automation is placed in the appropriate storage tier. Highly relevant data becomes available on high performance tiers and less topical data is placed in more economical storage locations.

About Dell Technologies

Dell Technologies OEM Solutions works with customers to combine our technology and their IP to bring innovation to market faster, codesigning solutions to help change the world. With a global presence, we help automotive customers cope with their global services and supply chain requirements. We have a portfolio of systems and solutions that are purpose-built for industrial & automotive workloads and designed for tough industrial environments such as automotive factory floors and automotive edge use cases. Our systems are ruggedized, have extended life and stability, and can fit into space-constrained environments—all built with enterprise-level security, interoperability, systems management and open standards.

Dell Technologies automotive solutions help automotive companies pursue new data-driven business opportunities in the software-defined era with future-proof infrastructure built on massively scalable, high performance storage systems, intelligent servers, access to your choice of public cloud services, a streaming data platform, and a well-vetted ecosystem of software partners. We can support both traditional workflows and data-intensive, emerging AI workflows. Dell Technologies solutions offer simplified data management and predictable performance all at the massive scale required for ADAS and AD development and testing.

About Elektrobit

Elektrobit (EB) is an award-winning and visionary global supplier of embedded and connected software products and services for the automotive industry. A leader in automotive software with over 30 years serving the industry, EB's software powers over one billion devices in more than 100 million vehicles and offers flexible, innovative solutions for car infrastructure software, connectivity & security, automated driving and related tools, and user experience. EB is a wholly owned, independent subsidiary of Continental. For more information, visit us at elektrobit.com.

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