Top 5 Reasons to Choose Dell EMC Isilon and EMG for ADAS / AD

Dell Technologies and eMapGo (EMG) are at the forefront of Advanced Driver Assistance Systems (ADAS) and Autonomous Driving (AD), providing the technology that makes tomorrow's automobiles possible today. OEMs and Tier-1s face a multitude of complex choices related to data, analytic skill-sets, software stacks, analytic toolkits and infrastructure components. To operate in China successfully, companies must choose the right partners for the right job. For ADAS / AD development, those partners include Dell Technologies and eMapGo. Our partnership is built on the philosophy of offering flexibility and informed choice across an extensive portfolio. This includes services ranging from sensor data ingest and labeling to complete data center architecting and management. The following are just a few reasons why Dell EMC Isilon and EMG are the right choice at the right time for your ADAS / AD needs.

1 | Collect Sensor and HD Mapping Data with No Legal Issues

A necessary step toward the development of any autonomous vehicle is the capture of localized sensor data. Many countries, including China, place restrictions, including privacy rules and portability limitations on data from devices such as video, GPS and Lidar. China views such data as strategic and only allows Chinese companies with Class A certificates of Mapping and Surveying to own, manage, and access such data. Together with Dell Technologies and EMG, you are assured that your ADAS/AD project data is legal. With EMG, administration of your sensor data is managed for you, allowing you to focus on what you do best – designing and manufacturing the world's most advanced autonomous vehicles.

2 | Proven ADAS / AD / AI Infrastructure Experience

With over an exabyte of storage currently supporting ADAS development teams at over 40 leading OEMs and Tier-1 automotive suppliers worldwide, Dell EMC Isilon scale-out NAS storage has become the de facto platform of choice for automotive safety and autonomy development. To enhance customer success, Dell Technologies offers services for ADAS / AD & Artificial Intelligence (AI). Dell Technologies Consulting provides expert guidance to bridge the gap between information technology, data scientists and lines of business. The Dell High Performance Computing (HPC) and AI Innovation Lab offers a world class engineering team, one of the world's fastest supercomputers, and extensive industry partnerships. The HPC & AI Lab brings together a community of the brightest minds focused on HPC, AI, machine learning (ML) and deep learning (DL).

3 | ADAS / AD Sensor Data Labeling and HD Mapping Services

The most valuable asset of any automotive project is sensor data. For ADAS / AD development, sensor data must be captured, ingested and then enriched before it can be used for AI/ML/DL for sensor fusion development and for Model-, Simulation- and Hardware-in-the-Loop (MiL/SiL/HiL) testing and validation. EMG and Dell Technologies provide ADAS/AD data services including labeling, wherein key annotation such as bounding boxes to identify vehicles, pedestrians, lane markers, and interesting scenarios for testing are captured. Utilizing crowd sourcing, EMG can manage thousands of workers to offer high quality data enrichment with quick turn-around. High definition (HD) maps are another critical data requirement for ADAS / AD. EMG utilizes a combination of continuous ground data and satellite data collecting to provide up-to-date maps ideal for ADAS / AD vehicle navigation.

4 | Scale to Exabytes with No Performance Compromises

The typical AD/ADAS project requires the careful orchestration of thousands of concurrent streams of data into and out of central storage. Hundreds of test vehicles must have their data ingested and then thousands of users must review and enrich that metadata. High-performance data access for AI/ML/DL and tens of thousands of MiL/SiL/HiL jobs must all synchronize flawlessly. This requires a carefully designed and well managed data center built for centralized storage. Isilon's scale-out architecture makes it ideal for ADAS/AD. Designed from the ground-up for massive concurrency, Isilon is also easy to manage and can scale from terabytes to 10's of Petabytes with no disruptions or downtime. Isilon is also NVIDIA and Dell certified for AI/ML/DL with NVIDIA GPUs – with performance-tuned reference architectures that are a core component of any ADAS / AD project.

5 | Exabyte-scale ADAS / AD Sensor Data and MetaData Management

AD/ADAS datasets are growing exponentially. SAE-level 3 projects require 50 to 120 PB of total storage to accommodate captured sensor data, and SAE-level 5 project requirements are measured in multiple exabytes. While managing such vast amounts of data presents a challenge for most companies, it is the sensor metadata that is most critical and most challenging. This data must be searchable to build suites of tests for AI as well as simulations. To accommodate this, Isilon features Data Management System (DMS) – a purpose-built ADAS sensor metadata manager. With DMS, sensor data and metadata are tracked at data ingest. Metadata tags, which are user-definable, are placed into a high-performance database making them searchable by ADAS development tools. DMS also load-balances sensor data across multiple storage clusters and tracks its location in the same database. This allows development tools to automatically queue up tests for HiL/SiL/MiL testing.

Learn More about Dell EMC Isilon in ADAS/AD

Contact a Dell EMC Isilon Expert

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