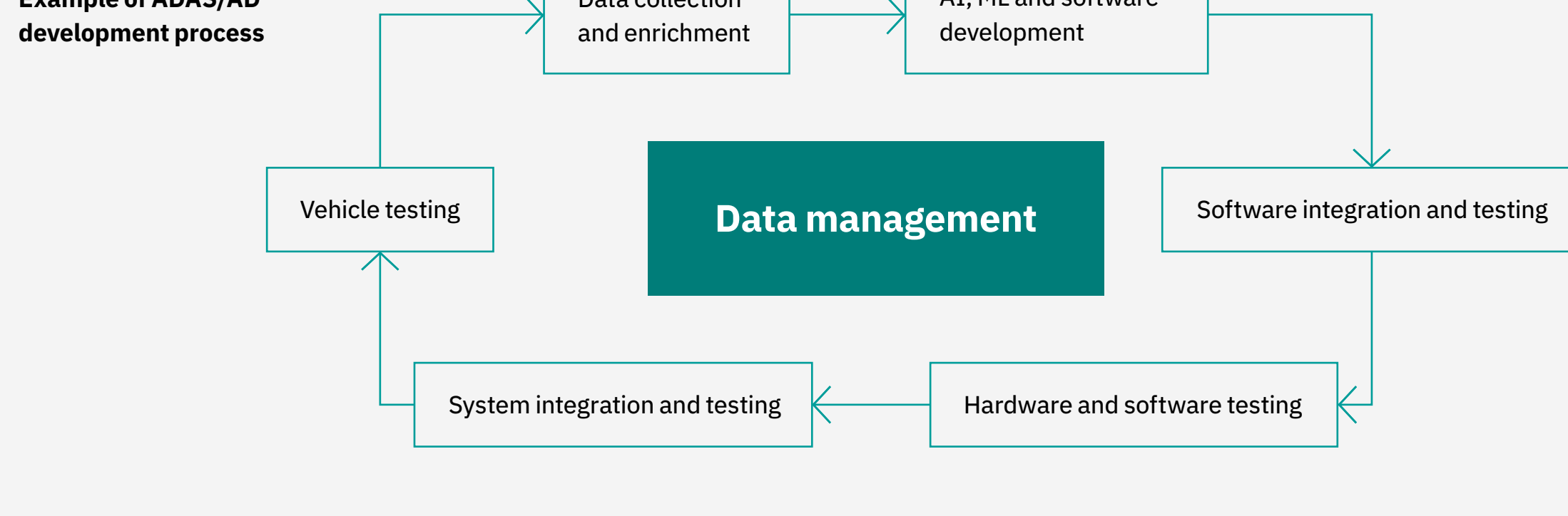


The six data challenges in ADAS/AD development

ADAS/AD development is a complex set of processes. From data collection to vehicle testing, managing your data sits at that heart of your value creation.



We've identified six of the most important data challenges in ADAS/AD development – and aligned our tried and tested solutions against each challenge. You can count on IBM to be your strategic data partner.

1. Managing unpredictable workloads

What is the best way to manage data effectively when you don't know what's coming next?

You have multiple fleets of testing vehicles, collecting up to 20 petabytes of data each hour. You need a **high-performance storage solution** that can handle unpredictable data management workloads.

IBM Spectrum Scale is designed to support workloads that require processing huge amounts of structured and unstructured data. Based on a General Parallel File System (GPFS) with 2.5TB/s demonstrated throughput for a 250PB filesystem, you can independently scale capacity, performance, protocol and resources to **future-proof your ADAS/AD workloads**.

Since 1993, IBM Spectrum Scale has been used to power the world's largest supercomputers.

2. Sharing data across globally distributed teams

How can you ensure your teams have access to the same data at the same time?

Your ADAS/AD development teams are spread across the world. You need a solution that can **transfer petabytes of real world data** collected by vehicles to remote development teams in hours, rather than weeks.

IBM Spectrum Scale truly enables fast-read-and-write access to data from anywhere in the world. Using the high-performance, location-independent **Active File Management**, you can **accelerate project schedules** and **improve productivity for globally distributed teams**, even during wide-area latencies and network outages.

AFM takes global namespace truly global by automatically managing asynchronous replication of data.

3. Analysing complex data with fast analytics

How can you reduce data processing times to get insights quicker?

Once you have gathered your ADAS/AD data, you need a **flexible storage solution** that integrates your data analytics tools to accelerate your AI data pipeline.

Using **IBM AREMA**, you can bundle workflows and **integrate multiple automotive data formats** with different storage architectures in one place. You can connect multiple **IBM Spectrum Scale** clusters or other HDFS repositories that can be federated into a single HDFS instance without requiring any changes to applications. Reduce the need to move data and **simplify the deployment and workflow** of Hadoop, Apache Spark and other related packages.

IBM Spectrum Scale supports tools such as Hadoop Yellow Elephant, Spark and Cloudera.

4. Applying AI training at scale

What is the best way to scale AI training and run more experiments?

The faster your AI training is, the quicker you can develop vehicles without compromising safety. You need a solution that brings **high-bandwidth, low-latency** and **efficient GPU offloading** from your NVIDIA machines to your R&D labs so you can **add speed to your innovation**.

IBM Spectrum Storage for AI with **NVIDIA DGX Systems** delivers individually scalable throughput and compute power to support groundbreaking performance. With more GPU-accelerated servers in a single rack, you can extend data management that **drives AI productivity**.

NVIDIA and IBM have been joining forces for years. We're even developing AI solutions together to help in the global fight against COVID-19.

5. Managing containerised workloads

How can you deploy software efficiently so you can scale your operations?

You can have the best computing power in the world, but it's no use if you can't deploy engineering data in a meaningful way. You need a way to schedule and **orchestrate all of your resources in one place** to **improve throughput and productivity**. And that includes your people, software and AI testing over the world.

Red Hat® OpenShift® is the default solution for creating and scaling containerised workloads. It creates your teams made changes quickly to reduce idle machine learning cycles and innovate faster. Using OpenShift, you can add **resiliency, reliability** and **scalability** to your **R&D labs**.

Red Hat is the world's leading provider of open source solutions with more than 1,000 enterprises using the solutions today.

6. Preserving data cost-effectively

What is the best way to securely and economically store large volumes of data?

The data you have collected is valuable and you need to protect it for years to come. You need a **durable, cost-effective, archiving solution** with high availability and fast access to data.

With **IBM Spectrum Scale** and **IBM Spectrum Archive**, you can automate the data-tiering process to optimise archiving costs, while maintaining global name space. **Improve efficiency and reduce costs** in your ADAS/AD development.

We are trusted by leading healthcare research facilities around the world to manage secure requirements in a secure and cost-effective way.

At IBM, we are experts in data management. Our proven ADAS/AD solutions are designed to help you build the most secure and reliable autonomous vehicle experiences of the future.

To learn more about how you can tackle your ADAS/AD data challenges, please contact **Jens Hoshcke** at hoshcke@de.ibm.com and visit ibm.com/daimler-adas

