Accelerating Autonomous Vehicle Development with Intelligent Data Management

Optimize the Test Cycle with Quantum QXS Hybrid Storage

AUTONOMOUS VEHICLE TESTING REQUIRES A NEW STORAGE MODEL

The number of sensors and cameras mounted on test vehicles for autonomous vehicle development continues to increase. More cameras and sensors mean more data per test. The current process with removable hard drives is broken, lacking sufficient capacity for complete test cycles—causing test interruptions as storage is swapped out—and a cumbersome upload process.

The pace of autonomous vehicle development is accelerating rapidly, and engineering teams rely on test data as a critical tool in the development process. Delays receiving test data have a ripple effect negatively impacting the pace of innovation and technology advancement.

RUGGEDIZED STORAGE ARRAY MEETS THE CHALLENGE

The test vehicle is literally where the rubber meets the road in the autonomous vehicle development process. From providing initial sensor and camera data for the modeling process to validating the latest models and algorithms, testing provides critical insights to the development team.

Timely access to the latest test data is key to efficient development cycles, and ultimately reducing time to market for new innovations. Capturing test data on a Quantum QXS™ hybrid storage system, with capacities up to 96TB in a 2U form factor (1.9PB with expansion modules), supports multiple tests without manual intervention and unnecessary delays. The QXS system is MIL-STD-810F/G and NEBS compliant, proving a ruggedness to withstand test vehicle environments, providing confidence that your test data will be there when you need it.
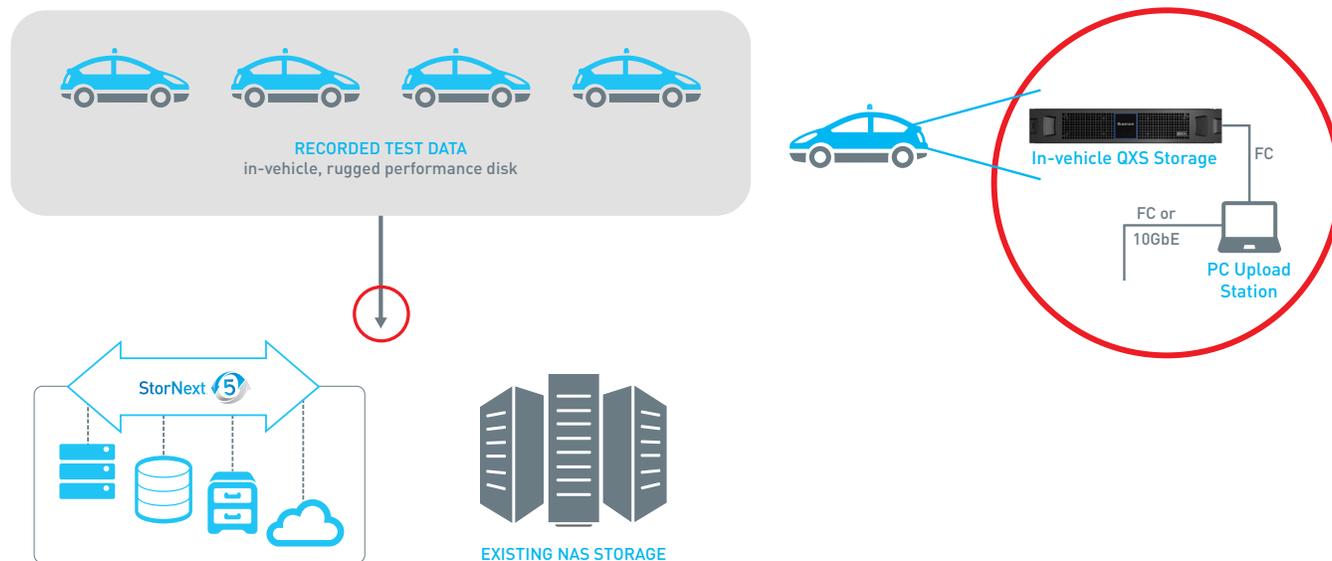
Fast data uploads are supported by up to 6.4GB/sec read performance and 16Gb SAN connectivity, minimizing the gap from testing to developer access.

SOLUTION BENEFITS

- **Capacity for uninterrupted testing**
  Up to 96TB capacity in 2U, expandable to 1.9PB, supports multiple test cycles.

- **Rugged and high-availability design**
  MIL-STD-810F/G and NEBS compliant optimized for unfriendly environmental conditions such as heat, dust, and movement. Proven 99.999% availability, ensures test data is recorded and available.

- **Supports multiple feed**
  Up to 5.3GB/sec write performance supports multiple camera/sensor streams.

- **Fast upload speeds**
  Upload data fast with high-performance FC connection to upload station and FC or 10GbE to SAN or NAS storage.

- **Simple deployment**
  Integrate seamlessly with existing processes and infrastructure.

Figure 1 - In-vehicle QXS hybrid storage provides enough capacity for multiple test cycles, with fast uploads to StorNext multi-tier storage platform and existing NAS storage environments.

SEAMLESS INTEGRATION

The in-vehicle QXS hybrid storage solution can easily integrate with existing NAS and SAN storage environments. Additionally, it can be paired with Quantum's StorNext® tiered storage platform, providing an intelligent data management solution to enable the right balance of performance and cost. See Quantum solution brief SB00151A (Accelerating Autonomous Vehicle Development with Intelligent Data Management) for more information on this intelligent storage solution ideally suited for autonomous vehicle development.

SOLUTION COMPONENTS

- QXS hybrid storage
- Optional: StorNext tiered storage solution

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