European Mobility Leaders Build Safe Vehicles and Robotaxi Fleets on NVIDIA Hyperion

News Summary:

- Bolt with Lucid, Mercedes-Benz, Volkswagen Commercial Vehicles and Einride are showcasing selected autonomous-mobility use cases on the NVIDIA Hyperion computing platform, demonstrating potential applications for level 3 and level 4 vehicles as well as future robotaxi fleets, with Volvo Cars adopting Hyperion and NVIDIA Alpamayo Stack for safe automated driving.
- NVIDIA introduces Halos SAFE, a new framework within the NVIDIA Halos safety system, which combines simulation and physical testing to help developers generate measurable, traceable AV safety evidence.
- NVIDIA announces Alpamayo 2 Edge, Alpamayo Agentic Factory and new Cosmos 3 Nano model variants to help developers build, customize and evaluate autonomous-driving for diverse vehicles, operating conditions and regions.

GTC Berlin--NVIDIA today announced that leading automakers in Europe and mobility providers, including Bolt with Lucid, Mercedes-Benz, Volkswagen Commercial Vehicles and Einride, are showcasing selected autonomous-mobility use cases on the NVIDIA Hyperion computing platform, demonstrating potential applications for level 3 and level 4 vehicles as well as future robotaxi fleets.

In addition, Volvo Cars is adopting Hyperion and NVIDIA Alpamayo Stack software for safe automated driving. NVIDIA also introduced new AI and safety technologies to help developers build, validate and deploy autonomous vehicles (AVs) at scale.

Autonomous transportation represents a multitrillion-dollar opportunity, with robotaxis leading the move to commercial level 4 deployment. NVIDIA Hyperion and the NVIDIA Halos full-stack safety system give automakers and mobility providers the computing performance, safety foundation and long-term support to bring AVs and robotaxi fleets to market at scale.

“Robotaxis are the first mass-market application of robotics and physical AI, reinventing how people and goods move," said Jensen Huang, founder and CEO of NVIDIA. “NVIDIA Hyperion, together with our Halos safety operating system, gives our partners a full-stack robotaxi platform designed to achieve full autonomy and the highest levels of safety, bringing us closer to a future where everything that moves is autonomous."

Mobility Leaders in Europe Build on NVIDIA Hyperion
Automakers and mobility providers in Europe are pursuing various paths to autonomy, from passenger vehicles and robotaxi fleets to autonomous freight trucks. NVIDIA Hyperion's modular architecture supports all of these programs, compatible with NVIDIA Alpamayo Stack autonomous driving software as well as partners' own driving software.

Bolt has selected NVIDIA Alpamayo Stack for its European robotaxi program, beginning with future Lucid vehicles built on Hyperion. Bolt and NVIDIA will adapt the software for European roads and integrate it into vehicles from multiple manufacturers, combining NVIDIA's driving and safety technologies with Bolt's fleet-management systems, operations and local market expertise.

Bolt plans to begin gathering real-world driving data to support the development and validation of the autonomous driving technology -- subject to regulatory approval -- in Madrid in 2027, with Germany being a priority for future deployment as part of a planned European rollout of at least 25,000 level 4-capable future Lucid vehicles built on NVIDIA Hyperion.

At GTC Berlin, Volkswagen Commercial Vehicles is presenting its autonomous ID. Buzz AD vehicle platform with Hyperion to support multiple autonomous-driving systems. Hyperion provides a common computing and sensor architecture designed to simplify integration and validation, helping developers and mobility operators bring robotaxi and commercial transport services to market.

Volvo Cars is combining its industry-leading vehicle safety systems and engineering expertise with Hyperion, Halos OS and Alpamayo Stack to enable future Volvo cars to safely navigate complex real-world environments from door to door.

Mercedes-Benz is extending its partnership with NVIDIA on Hyperion and Alpamayo Stack to support the development of the automaker's L3 and L4 capabilities. The company also announced that MB.DRIVE ASSIST PRO, developed in partnership with NVIDIA, will soon get approval for urban point-to-point urban driver assistance in Germany, helping drivers navigate journeys through complex city traffic.

Beyond passenger vehicles and robotaxis, Einride is building its next-generation Einride Driver on Hyperion for autonomous freight trucks, using Halos, Alpamayo and NVIDIA Cosmos™ open world models to develop and validate its driving system, while TIER IV and the Technical University of Munich plan to integrate Hyperion to develop and validate systems for autonomous public transportation in Germany.

NVIDIA technology and manufacturing partners are also helping expand the AV ecosystem, with Aptiv, Valeo and Schaeffler building Hyperion-based computing platforms that can be integrated by vehicle manufacturers for L4 AVs and robotaxis.

Scaling Safe Autonomy With NVIDIA Halos
Halos provides the safety foundation for NVIDIA's AV platform, bringing together AI computing, safety software and validation from development through deployment.

To give developers repeatable ways to evaluate driving behavior and simulation accuracy, NVIDIA today introduced Halos SAFE -- the Safety Assurance Framework for Evaluation -- with dSPACE, IVEX and TÜV Rheinland collaborating on evaluation workflows. Halos SAFE connects simulation, software- and hardware-in-the-loop evaluation, on-road testing and fleet monitoring through defined scenarios, tests and measurable performance criteria to generate traceable safety evidence that supports deployment.

The Halos SAFE ecosystem also includes JLR, Mercedes-Benz, Volvo Cars, 51Sim, aiMotive, AVL, Deepen AI, Foretellix and Synopsys.

Accelerating AV Development
Developing AVs means teaching AI to handle the diversity of real-world driving, then bringing that intelligence into the vehicle. NVIDIA's latest models, tools and blueprints help developers prepare driving data, improve models and evaluate performance:

- **Alpamayo 2 Edge**, a 2-billion-parameter reasoning model built on NVIDIA Cosmos 3 Edge's NVIDIA Nemotron™-based foundation, is optimized for the NVIDIA DRIVE AGX Thor™ platform and designed to run at 10Hz for in-vehicle scene understanding and motion planning.
- **AlpaJudge**, a human-calibrated evaluation and reward model, scores driving explanations to assess reasoning quality, filter weak annotations and reduce manual review of training data.
- **Foundation4D** labels multicamera video without lidar input, supporting perception-model training and NVIDIA Omniverse™ NuRec scene reconstruction.
- **New Cosmos 3 Nano** model variants expand synthetic data generation and closed-loop simulation for autonomous driving through synchronized multiview, multi-camera and lidar generation across diverse driving scenarios.
- **Cosmos Data Factory's AV dataset-generation blueprint** turns driving video and vehicle signals into curated, searchable, labeled data, using synthetic data to expand scenario coverage.
- **Alpamayo Agentic Factory**, an open blueprint expected to become available in early 2027, uses AI agents to connect data preparation, model post-training and simulation evaluation, reducing integration work.
- **NVIDIA NIM™ microservices for Alpamayo 1.5 and NuRec Harmonizer** deliver both models as optimized inference containers, giving AV reasoning and scene harmonization a simplified deployment path.

Uber and NVIDIA are developing a data factory powered by Cosmos to curate and process data for AV development. The effort is part of a broader partnership spanning AI development infrastructure, Hyperion-based vehicles and Uber's global ride-hailing network.

Porsche is leading the development of a data flywheel workflow across Volkswagen Group brands through Voxel51, using NVIDIA Cosmos Data Factory and Omniverse NuRec on Microsoft Azure to turn fleet data into datasets and simulations for evaluating autonomous-driving models. This is expected to reduce repeated physical test drives by up to 90% and shorten development cycle duration by up to 85%.

Watch the GTC Berlin keynote from Huang and explore sessions.

About NVIDIA
NVIDIA (NASDAQ: NVDA) is the world leader in AI and accelerated computing.

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