CASE STUDY

Torc collaborates with Flex on physical AI platform for autonomous trucks

Executive summary

Advanced Driver Assistance Systems (ADAS) and fully autonomous solutions hold immense potential for next-gen mobility. Flex developed an NVIDIA-based hardware platform that will support Torc's productization and scaled market entry for autonomous trucks. The Flex Jupiter Compute Platform enables Torc and automotive original equipment manufacturers (OEMs) to deploy advanced physical AI at scale on a robust, cost-effective, and flexible hardware foundation.

Challenge

To address the complexity of ADAS and advance toward full autonomy in commercial and passenger vehicles alike, computing hardware must be powerful enough to handle demanding software models, cost-effective enough to be deployed at scale, and flexible enough to be adopted across a range of programs and OEMs. This requires seamless scalability to meet high-performance computing demands. To advance its L4 self-driving semi-trucks, Torc engaged Flex to accelerate the launch and deployment of next-gen, autonomous long-haul trucking technology.

Solution

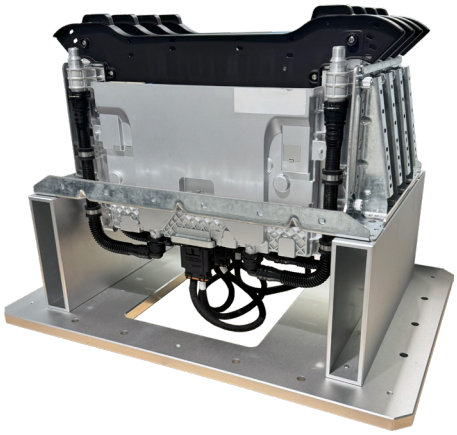
In support of Torc's autonomous trucking ambitions, Flex used the latest NVIDIA DRIVE AGX technologies and an innovative, highly scalable approach to develop a unique solution that speeds time to market and reduces costs without sacrificing safety or quality.

- Each Jupiter unit features two NVIDIA DRIVE AGX Orin System-on-a-Chips
- Up to four Jupiter units can be connected for networked parallel computing, providing computing power sufficient for L4 autonomous driving
- Four units provides 2,000 TOPS of compute, 64 vision sensors, and 112 networking I/O – plus Automotive Audio Bus (A2B) for commercial vehicle applications
- Scalability helps eliminate the need to split codebases for different ADAS levels, hardware generations, or software implementations

Result

As the first ADAS and autonomous driving computing platform with networked parallel computing, Jupiter sets a new standard for scalable automotive hardware. The customizable, safety-focused, and market-ready platform enables Torc to deliver autonomous long-haul trucking at scale.

- Jupiter units in use on public roads for Torc's Virtual Driver testing, on path to full product launch
- A hardware platform for purpose-designed, cost-competitive, and high-performance computing that supports strict OEM safety cases
- Accelerated validation through software-agnostic approach with published software interface and functional safety documentation



Flex Jupiter Compute Platform
Production ready

"The Jupiter Compute Platform provides Torc with the performance and production-intent reliability needed to deploy our AV 3.0 autonomous driving software today. We see this as an important factor that helps us deliver a safe and profitable product at scale."

CJ King, Chief Technology Officer, Torc Robotics

For more information, visit **flex.com/connect**

Flex (Reg. No. 199002645H) is the manufacturing partner of choice that helps a diverse customer base design and build products that improve the world. Through the collective strength of a global workforce across 30 countries and responsible, sustainable operations, Flex delivers technology innovation, supply chain, and manufacturing solutions to various industries and end markets.