

Loblaw Commissions Third-Party Safety Review Endorsing Gatik's Autonomous Technology for Fully Driverless Operations

Review took place over a three-month period, paving the way for Gatik to launch Canada's first fully driverless operations following its successful completion

TORONTO, ON., October 5, 2022 – Gatik, the market leader in autonomous middle mile logistics, today revealed details of an extensive third-party safety assessment undertaken prior to deploying the first ever fully driverless commercial operations in Canada. The safety assessment was commissioned by Canada's leading food and pharmacy retailer, Loblaw Companies Limited (TSX: L, "Loblaw").

"Safety is at the heart of everything we do at Gatik," said Gautam Narang, CEO and co-founder, Gatik. "We integrate safety into all facets of our business, from initial concept to commercial deployment. It spans every level of our technology, processes and operations, and resides deep in the cultural make-up of the company. We were very pleased to participate in the extensive safety review, and strongly encourage this level of scrutiny becoming standard across our industry."

Gatik operates its network of autonomous box trucks across several cities, both in the US and Canada. This includes fully driverless operations at two sites and autonomous operations with safety drivers in 5 markets. At present, the autonomous vehicle (AV) industry awaits the implementation of common standards to evaluate and confirm the safety & security of AV systems before they are rolled out for broader adoption. Today's announcement underlines Gatik's commitment to providing transparency and clarity on the company's systems engineering approach to the safe development and deployment of its autonomous fleet.

The exhaustive three-month assessment of Gatik's technology was designed to evaluate safety and security prior to the launch of Gatik's fully driverless commercial delivery service with Loblaw. A team of third-party experts was deployed to create and execute a framework for evaluation of Gatik's end-to-end technology solution covering the landscape of standards from ISO/SAE and NHTSA including security standards NIST Framework, SAE J3061, ISO/SAE 21434 and UNECE R155. The assessment included a rigorous suite of system as well as component level tests, the successful completion of which provided clear and comprehensive validation that Gatik's fully driverless technology is acceptably safe to operate on public roads.

The assessment first examined Gatik's technology solution, subsystems and their functions, development & deployment practices as well as standards & regulatory

compliance. The assessment confirmed the following Autonomous Driving System (ADS) requirements have been met by Gatik:

- ✓ The ADS features' level(s) of automation is/are clearly defined based on SAE levels of automation found in J3016. The definition of the level of automation identifies the agent responsible for the dynamic driving task (DDT) under different circumstances and the vehicle's intended use is clearly stated.
- ✓ The ADS feature(s) has/have a clearly defined Operational Design Domain (ODD). Domain constraints are known, and the vehicle will respond safely and predictably when the ODD is exceeded.
- ✓ The vehicle has OEDR capabilities adapted to its ODD that enable safe and appropriate actions to be taken when subjected to day-to-day traffic conditions, as well as unexpected events.
- ✓ Where they apply, the vehicle and ADS comply with safety relevant standards and best practices, such as those developed by SAE International and the International Organization for Standardization (ISO).
- ✓ Safety risks were considered throughout the development of the vehicle and the ADS technologies. Sufficient pre-deployment testing has been conducted and validation methods have been employed to verify performance, safety of the intended functionality, occupant safety, and failure handlings. Validation and verification have been used to ensure safe integration and operation of the vehicle and ADS features in day-to-day traffic and in response to unexpected events and various weather conditions.
- ✓ The vehicle is equipped with safety systems with appropriate redundancies that continuously monitor system performance, perform fault detection and hazard analysis, signal any malfunctions, and ultimately take corrective actions or revert to a minimal risk condition when needed.
- ✓ Vehicle controls are accessible to users (that is, intuitive and easy to understand). The vehicle can communicate critical messages to occupants and other road users when needed, taking into account relevant accessibility factors, needs of different occupants, and the intended use of the vehicle.
- ✓ Concrete actions have been taken to ensure awareness of the capabilities and limitations of the ADS features of the vehicle, as well as the vehicle's safe fallback conditions.
- ✓ The vehicle is equipped with adequate active and passive safety features to protect occupants and other road users, and mitigate injuries and damages in the event of a system failure. The vehicle will be brought to a safe state following a system failure, and will convey safety critical information to passengers, first responders, and emergency services.
- ✓ Adequate design and mitigation strategies have been developed to protect the ADS-equipped vehicle from cyber security threats.
- ✓ In the event of a system update or after-market repair or modification, measures are in place to verify all vehicle systems continue to operate safely, and as intended.
- ✓ In the event of a collision or other incident, data collected by vehicles and ADS features is shared with federal, provincial/territorial, and municipal law enforcement and government agencies to support investigations, including defect and collision investigations.

Under the assessment, Gatik's system underwent testing which included: evaluation of the end-to-end technology solution, development & deployment processes, standards & regulatory compliance, risk assessment & evaluation of control measures as well as physical component, subsystem and vehicle level testing. The physical testing of these vehicles on Gatik's closed courses included fault injection & several edge case tests – for example degrading & injecting fault on sensor data, GPS jamming/spoofing to disrupt navigation, disabling brakes or sending incorrect acceleration commands with objects in

front. This also included overriding RADAR and LIDAR data representing false empty road situations to the system, while having real objects in front of the truck mimic sensor failures or malicious hacking. The results confirmed Gatik's autonomous technology does not create an unreasonable risk to the safety of other road users.

"Canada is on the cusp of enormous potential in the driverless commercial delivery space, a space that's being led by Loblaw," said Vivek Khindria, Senior Vice President Cyber Security, Networks and Technology Risk. "We commissioned a third-party independent assessment to validate the security and safety of Gatik's autonomous system, and are pleased with the results."

"Safety is not achieved by any one factor, but by the combination of best-practices, multiple layers of system redundancy, cutting edge techniques, exhaustive validation, sound engineering judgment and continually building upon our proven record of delivering exceptional results," said Apeksha Kumavat, co-founder and Chief Engineer at Gatik. "We embraced the opportunity for our system to undergo a stringent review process and validate our technology ahead of commencing fully driverless operations with the country's largest retailer."

Gatik's failsafe approach to fully driverless operations is built upon the company's foundational Operational Design Domain (ODD) framework which aims to provide a structure to define the capabilities of the autonomous stack at any given point, and connect those capabilities to the routes and operating areas. This enables Gatik to deploy, test & validate targeted releases incrementally, enabling the structured expansion of ODDs for fully driverless operations in a predictable and value-driven manner. This in turn enables Gatik to deploy on a given route that has been safety validated while developing additional functional capabilities on other routes, paving the way for continued commercial expansion of Gatik's fully driverless operations.

About Gatik

Gatik, the leader in autonomous middle mile logistics, delivers goods safely and efficiently using its fleet of light and medium duty trucks. The company focuses on short-haul, B2B logistics for Fortune 500 retailers and in 2021 became the first company worldwide to operate fully driverless commercial deliveries on the middle mile. Gatik's Class 3-6 autonomous box trucks are commercially deployed in multiple markets including Ontario, Texas, Arkansas and Louisiana. Founded in 2017 by veterans of the autonomous technology industry, the company partners with industry leaders including Ryder, Goodyear, Isuzu and Cummins and has offices in Toronto, Ontario and Mountain View, California. In 2022, Gatik was named to Forbes' list of America's Best Startup Employers

and by Fast Company as a World Changing Idea. In 2021, Gatik was recognized on the Forbes AI 50 list and as a World Economic Forum Technology Pioneer.

About Loblaw Companies Limited (TSX: L)

Loblaw Companies Limited is Canada's food and pharmacy leader and the nation's largest retailer. Loblaw provides Canadians with grocery, pharmacy, health and beauty, apparel, general merchandise, financial services, and wireless mobile products and services. With more than 2,400 corporate, franchised and Associate-owned locations, Loblaw, its franchisees, and Associate-owners employ approximately 200,000 full- and part-time employees, making it one of Canada's largest private sector employers.

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