

Volvo and Uber have jointly announced a Volvo XC90 they're claiming is the first production car capable of fully driving itself. The vehicle results from a collaboration between the two companies that began in 2016, and it has safety features that allow Uber to install their self-driving system for possible future deployment of self-driving cars on Uber's network for autonomous ride-sharing. The production-ready XC90s, assembled at the Volvo plant in Torslanda, Sweden, will have human controls such as steering wheels and brake pedals, but will have factory-installed steering and braking systems designed for computer rather than human control.



There's also battery backup power and new cybersecurity systems; if safety-critical systems fail, the vehicle is equipped to come to a safe stop. Besides being hybrid for a propulsion standpoint, these cars will be hybrids from a driver standpoint, being human- and/or self-driven and at least at the beginning with a safety driver.

There's an array of sensors on and in the vehicle for Uber's self-driving system to operate safely in an urban environment. There's no sunroof, since it would be blocked off by the large sensor array on the roof, and the cars have auto-close doors to prevent an unsafe departure. There's also an interior fisheye camera to scan for items left behind by riders.

Volvo say they plan to use a similar autonomous base vehicle for the introduction of their own self-driving cars set for debut in the early 2020s. The technologies will include features designed to enable unsupervised self-driving in designated areas such as highways and roads. Aside from the primary goal of getting AVs onto the road and starting AV ridesharing services, a second goal is to win public and regulatory trust following previous tests stopped because of safety issues: an Uber-modified Volvo in the U.S. state of Arizona was involved in the first death attributed to a self-driving vehicle. Uber had disabled that car's automatic emergency braking system without even leaving a warning light for the safety driver, who in that case was too busy watching TV on her smartphone to pay attention to the road.

Volvo Cars CEO Hakan Samuelsson expects fully a third of of the cars his company sells to be fully autonomous by the "by the middle of the next decade". Volvo Senior VP of R&D Mats Moberg says working with Uber is paying dividends because it has forced the automaker "to reduce the hierarchies inside our own company" to speed up decision-making.