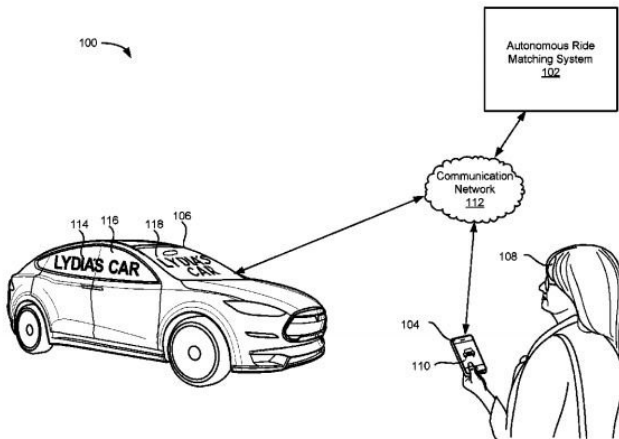


# Lyft drives patent talk on self-driving safety via messages for pedestrians, cyclists

15 December 2018, by Nancy Cohen



Credit: Patent #: US010152892

Lyft is in the news, as the United States Patent Office has granted Lyft with a patent for an autonomous vehicle notification system. '

The [patent](#) discusses [safety warnings](#) on self-driving cars' windshields, in order to prevent accidents that would involve pedestrians and other cars. The patent discussion also poses examples of windows to include a projector, see-through screen, or other display device to display messages to entities outside of the [self-driving](#) car.

The warnings are intended for pedestrians, cars and cyclists. So what kinds of messages would the human receive?

Mallory Locklear in *Engadget* said "the document shows some ways the described system could be used to communicate with the humans surrounding an autonomous [vehicle](#). One image shows a car displaying the intended passenger's name as it approaches them while another depicts a self-driving car notifying a pedestrian that it's safe to walk in front of the car. The patent also includes

images showing a self-driving car letting another vehicle know it's yielding and informing a cyclist that it's safe to pass."

In the dense patent talk of it all, the filing described "A method comprising: detecting, by a computing device of an autonomous vehicle, one of a plurality of entities within a proximity of the autonomous vehicle; determining, by the computing device of the autonomous vehicle, a location of the one of the entities relative to the autonomous vehicle; determining, by the computing device of the autonomous vehicle, a type of the one of the entities; determining, by the computing device of the [autonomous vehicle](#), a predefined message to be presented to the one of the entities..." Phew.

What kind of notification device? It could involve "one or more of a portable dash-mounted display device, a portable communication [device](#), a window projector, a translucent display, or a speaker."

A report in *The Verge* in May revealed a poll's findings that trust in self driving cars was slipping after several high-profile crashes. Driverless cars for many slid into a negative [spotlight](#); without confidence in safety, self-driving cars can go nowhere.

Affectiva, which spun out of MIT Media Lab, posted a thoughtful piece about self-driving cars, and where we are headed with them, earlier this year. Main point: drivers not only need to trust the company, they need to trust the car; they need to [trust](#) the AI technology being used. "A red light flashing to take control of the vehicle will not be enough for the driver to trust the machine."

The article spelled out what companies need to build into their vehicles: Companies need to build into the vehicles a [system](#) that effectively communicates what the car sees. *DMV.ORG* made a similar point about safety through communication. "Without a human behind the wheel, we have no

idea what the machines may do next—and without the proper communication in place, any move a pedestrian makes around them is a gamble."

Those who cheer for self-driving cars to have special communications systems for safety will be interested to know more about this patent.

Locklear in *Engadget*: "The patent describes a system that would first detect the location of individuals around the [autonomous](#) vehicle and then choose an appropriate message that could be displayed to them via screens and signs on the car itself."

The warnings would be beamed by the projectors and see-through screens. Annie Palmer in *Daily Mail* said Lyft described use of an [LCD/LED](#) panel, speaker for audio messages or a windshield/window projector as methods to display the warnings. Her report said the patent also described an 'autonomous ride matching service,' projected onto the windows and windshield.

Sensors would come into the play; these, said *Smart Cities Dive*, "would detect the location, proximity and speed of the recipient to determine the best message. For example, by forecasting the path of a bicycle, the car could display [instructions](#) that it is safe to pass, or indicate that it is turning." As for pedestrians, the report said that "the filing shows drawings of a vehicle displaying 'Safe to cross' to a pedestrian, or 'Yielding' to another car at an intersection. The text is displayed on the car's windows and windshield."

The patent "Autonomous vehicle notification system" was filed in April and made public recently.

Level 5, Lyft's self-driving division, has developed into a team of engineers and researchers. One year ago, an article in *TechCrunch* said that Lyft, regarding autonomous vehicles, was aiming to be at the forefront of that [technology](#) with its self-driving division.

**More information:** [Patent #: US010152892](#)

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