BMW puts traffic light recognition to the test

June 27 2019, by Nancy Cohen

The BMW Group is investing in the future of self-driving vehicles. Getting people to adopt self-driving cars will require lots of attention to how these cars can behave safely not just on highways but in urban settings.

The word "recognition" sits heavily on the crown of auto designers who must come up with cars that safely recognize and adapt to other cars and to signal systems in city traffic. Technology that allows cars and traffic lights to communicate and work together can ease congestion and increase safety.

As a reader comment said in *TechCrunch*, The real test will be in dense

urban areas without a pre-planned route. "System performance is easily adjusted for pre-planned routes or even for geofencing, but the real test is in heavily populated and dense urban areas."

BMW is thinking along the lines of "environment recognition technology"; How safely can a car behave with self-driving capabilities in responding properly to traffic light signals?

Car watchers from several news sites said BMW has been working toward this end, on what it calls Urban Traffic Light Recognition.

Nico DeMattia, *BMWBLOG* said BMW has shown off its Adaptive Cruise Control system with traffic light capability. It's thus far called Urban Traffic Light Recognition and it gives the brand's adaptive cruise control the ability to recognize traffic lights and stop at the lights when necessary.

A car was sent out on a short test route around Munich, said Roadshow, CNET.

Specifically, it "will allow a car to slow and stop at a traffic light without the driver touching the brake pedal," said Roadshow, CNET.

BUT. What happens when the car must take off upon the light change? "The car won't take off from a red light, once the light turns green, if it's the lead car," said *BMWBLOG*. "If it's the lead car and the light turns green, the driver will either have to press the accelerator or the "Resume" button on the steering wheel. " (*WhichCar* similarly noted that "If the vehicle is the first in a queue of cars, a press of a steering wheel confirm button" was needed to coax the car into motion.)

And if you are not the lead car? Then "the system works like any other adaptive cruise control, where it restarts after a lead car begins to pull

away," said Roadshow, CNET.

Federic Lardinois could tell *TechCrunch* readers all about it because he saw the system in action. It was during a drive in a standard 3-Series car with the software update. "It worked flawlessly in the dense urban traffic of Munich, though this was obviously a pre-planned route that even including a traffic light the company set up specifically for this demo."

Sure enough, the chain of events once the light changed to green applied. "When the car detected a red light, it gently brought the car to a stop. The car will automatically hold the car at the red light and the driver then has to tap the cruise control button to continue when the light changes to green."

Carscoops delivered a wrap-up of "adaptive cruise control" focus and what BMW has achieved so far:

"Billed as an evolution of their current adaptive cruise control system with Stop & Go, the new system uses 'camera sensors, machine learning and a powerful backend' to detect and interpret traffic signals. This enables the system to automatically bring the car to a halt at red lights."

Numerous reports were careful to point out that the tech was still in development. While the stopping is autonomous, this is not a fully autonomous system. As *Carscoops* said, "it's not a full Level 5 autonomous vehicle."

A rollout could possibly be via an OTA update. Upon rollout, "it will be installed as an Over-the-Air update on all models capable of using it," said *BMWBLOG*.

"BMW demonstrated this during a brief test on Munich city streets," said DeMattia. "With the cruise control set to 30 km/h, the car was able to

recognize a traffic light turning yellow, slow down and come to a complete stop as the light turned red."

Roadshow, CNET, offered closer detail on BMW's test event.

"On a short test route around Munich, Germany, a BMW test driver set the adaptive cruise control at 30 kilometers per hour—the speed limit—and approached a traffic light. As the light changed from green to yellow, the car's cameras picked up the signal, and displayed a traffic light image on the digital gauge cluster of the BMW 330i test car. The car then slowed for the light without the driver needing to do anything."

BMW's red light recognition system was also witnessed by *WhichCar*.

David Gardner reported: "During a visit to the German car maker's headquarters in Munich we were taken on a demonstration ride to see the system in action...the fleet of development cars has the new software fully installed ... the only evidence that the car had any exceptional ability compared with a 'standard' 3 Series, was a small icon in the instrument cluster, which illuminates to confirm when it sees a traffic light."

He said that "As the lights turned amber, the BMW spookily started to slow and came to a complete stop at the traffic light, all without intervention from the driver."

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