



HD Map with RoadDNA

High definition map with sensor-agnostic localization

Overview

Automated vehicles require maps that are significantly different than the maps that are used in today's navigation systems. Drivers today mainly use digital maps to orientate themselves, to plan a journey and to navigate to their destination. However, as the driving task gradually shifts from the driver to in-vehicle automated systems, the role and scope of digital maps shifts accordingly. This means that the user of the map is no longer the driver, but rather a machine. As a result, a new generation of maps built purposely for machines is needed. The next generation of maps comes in the form of a highly accurate and realistic representation of the road, generally referred to as high-definition (HD) maps.

As carmakers race towards an autonomous future, the industry as a whole widely agrees on the need for HD maps to make

autonomous driving possible. TomTom is a pioneer in HD maps, having launched the first commercial HD map in 2015.

The TomTom HD Map is a highly accurate representation of the road, featuring a myriad of attributes including lane models, traffic signs, road furniture and lane geometry, with accuracy down to a few centimeters. The TomTom HD Map can be used to help an automated vehicle precisely localize itself on the road, to support the vehicle sensors to understand its surroundings, and to plan maneuvers. Because of these characteristics, the TomTom HD Map can be used to enable and improve different driving automation functions, such as Autopilot and Highway Pilot, all the way to Level 5 automation.

Features

Lane-level geometry

Lane-level speed limits

Lane markings

Traffic lights

Road borders and guardrails

Lane connectivity

Complete on/off ramp coverage

Benefits

Helps improve the lateral and longitudinal control for automated driving applications

Helps improve the speed control function for automated driving applications

Helps ensure the vehicle adheres to the traffic rules

Ensures safe stops and entrance to highway ramps

Improves lateral positioning and input for operational design domain

Helps determine a safe and smooth path for the vehicle

Allows safe and comfortable merging onto highway and automated lane change