

# HD MAP

HIGHLY ACCURATE BORDER-TO-BORDER MODEL OF THE ROAD



## OVERVIEW

Autonomous driving is the most disruptive change in the automotive industry since the invention of the car. Autonomous driving will completely transform not only the way we commute but will boost the safety, comfort and efficiency of vehicles to a level beyond imagination. Undeniably, autonomous driving will require an advanced on-board map to support various vehicle systems.

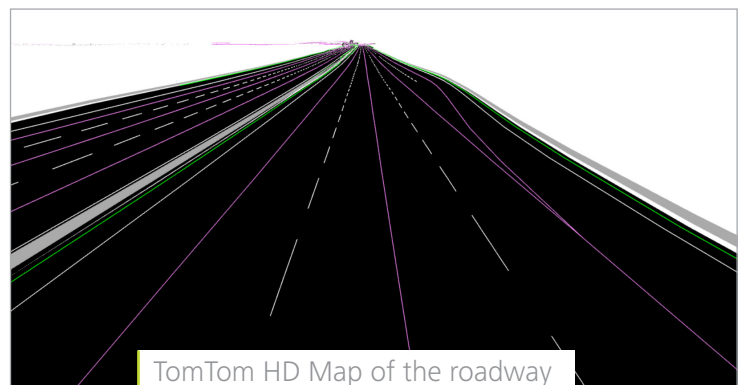
Enabled by its real-time map infrastructure, TomTom’s High Definition (HD) Map provides a highly accurate and realistic representation of the roadway profile, including curvature and terrain information. The HD Map extends the range of view for the vehicle while enabling smoother, safer and more efficient driving scenarios. The HD Map can also be leveraged to fulfill a broad range of advanced driving applications. The first generation of the HD Map focuses on highway driving; support for other environments including urban and rural will follow as autonomous driving evolves.

## PRODUCT FEATURES AND BENEFITS

FEATURES	BENEFITS
<b>3D geometry</b>	<ul style="list-style-type: none"> <li>• Delivers realistic modelling of surroundings and driving scenarios</li> <li>• Enables slope and curvature values to be derived for ADAS applications</li> </ul>
<b>Lane dividers</b>	<ul style="list-style-type: none"> <li>• Allows for precise positioning of vehicle and other sensed objects</li> </ul>
<b>Road borders</b>	<ul style="list-style-type: none"> <li>• Delivers improved driving scenarios</li> </ul>
<b>Guard rails</b>	<ul style="list-style-type: none"> <li>• Increases confidence in sensor input</li> </ul>
<b>Lane connections and lane dependent attributes</b>	<ul style="list-style-type: none"> <li>• Delivers improved driving scenarios</li> </ul>
<b>Lane dependent speed limits</b>	<ul style="list-style-type: none"> <li>• Delivers improved driving scenarios</li> </ul>
<b>Absolute accuracy</b>	<ul style="list-style-type: none"> <li>• Delivers precision in terms of X,Y,Z coordinates since the HD Map has an accuracy of 1 m or better compared to reality</li> </ul>
<b>Relative accuracy</b>	<ul style="list-style-type: none"> <li>• Allows neighboring reference locations in the HD Map to be positioned with an accuracy of around 15 cm relative to each other</li> </ul>











Live roadway situation



TomTom HD Map of the roadway situation pictured on the left

**ADVANCED DRIVING APPLICATIONS ENABLED BY THE HD MAP**

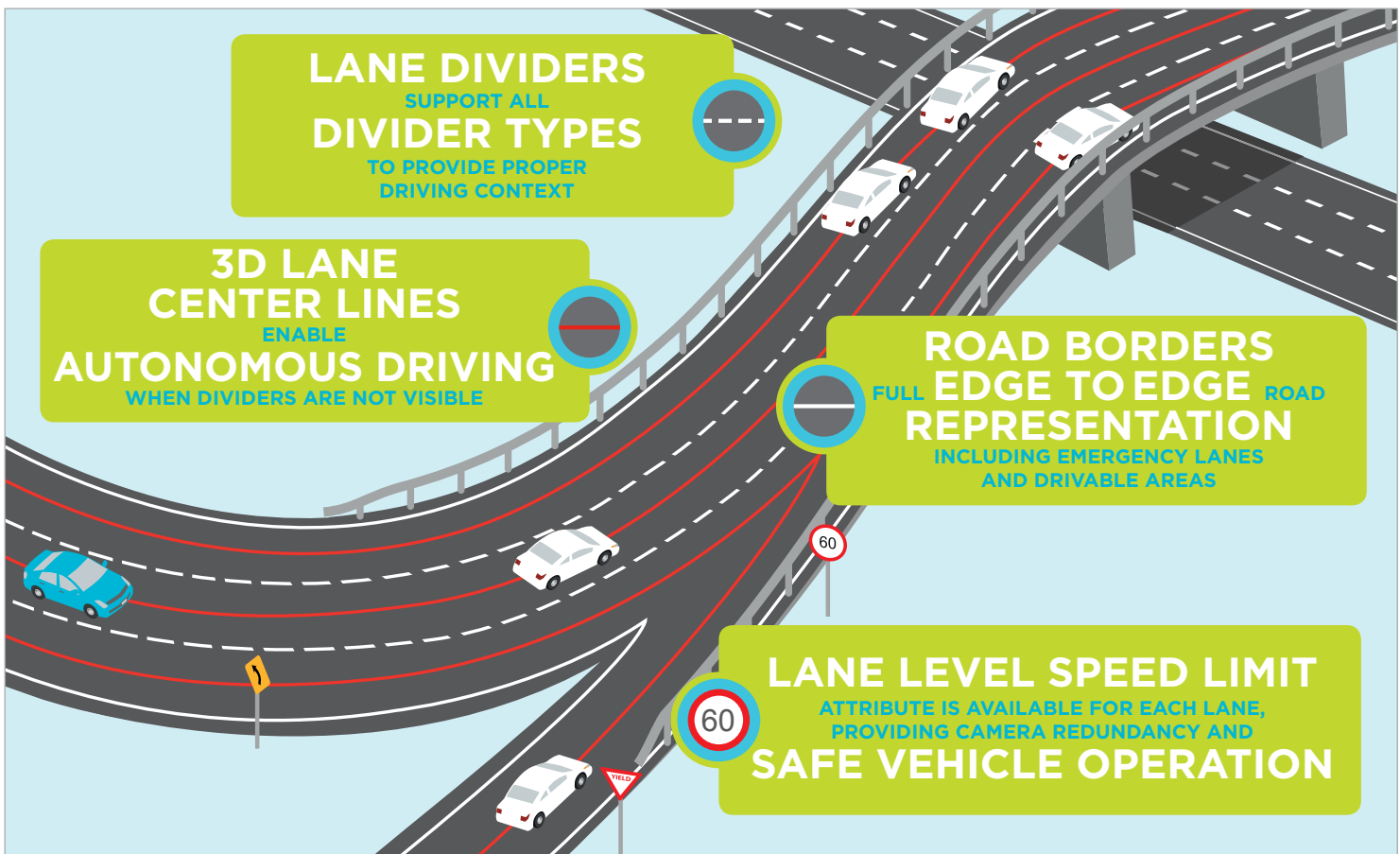
 Hands-free driving	 Predictive powertrain control	 Eco-routing and driving
 Lane merge and end notification	 Advanced lane guidance	 Advanced road display
 Lane splits	 Curve speed warnings	

**END USER BENEFITS**

- Highly precise vehicle positioning
- Small data footprint
- Robust feedback

**FORMAT**

- XML
- Shapefile format
- Navigation Data Standard (NDS)



TomTom's high quality ADAS and autonomous driving content enable precise localization and motion planning for vehicles

**AUTOMOTIVE.TOMTOM.COM | LICENSING.TOMTOM.COM**