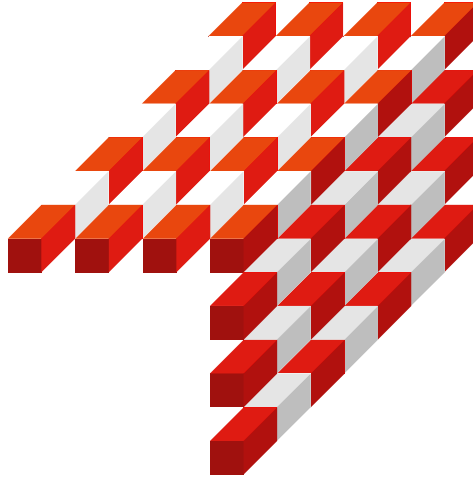


Mapping the road to autonomous driving



Willem Strijbosch
Head of Autonomous Driving

AUTONOMOUS DRIVING IS HAPPENING

A close-up photograph of a person's hand resting on the keyboard of a Dell laptop. The laptop screen displays a 3D simulation of a multi-lane highway with several cars, including a white car in the center lane and several orange and yellow cars in the adjacent lanes. The simulation appears to be a self-driving or autonomous driving software interface.

SAFETY

COMFORT

EFFICIENCY

The pillars of autonomous driving



MAPPING



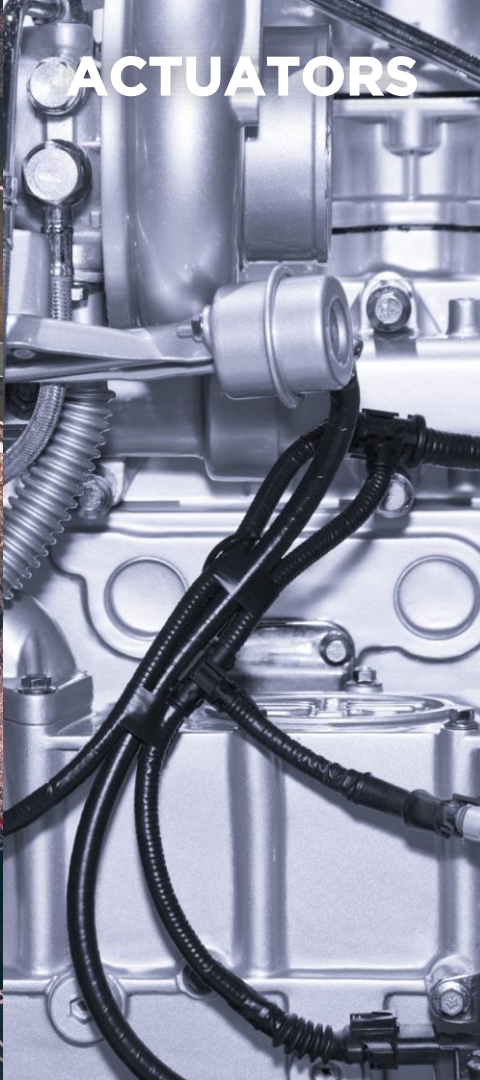
SENSING



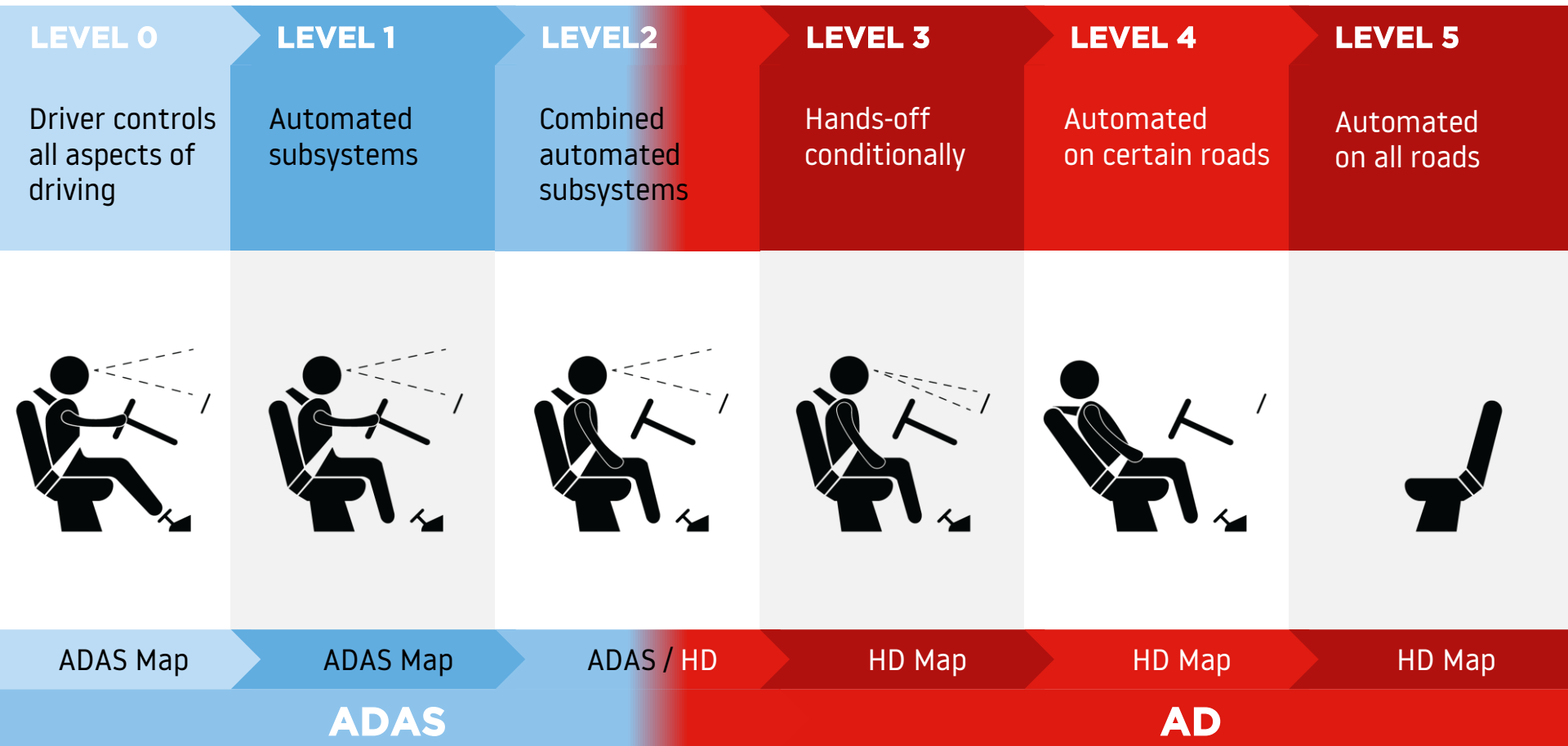
**DRIVING
POLICY**



ACTUATORS



TomTom maps for ADAS & AD





**The perception
challenge for
automated vehicles**



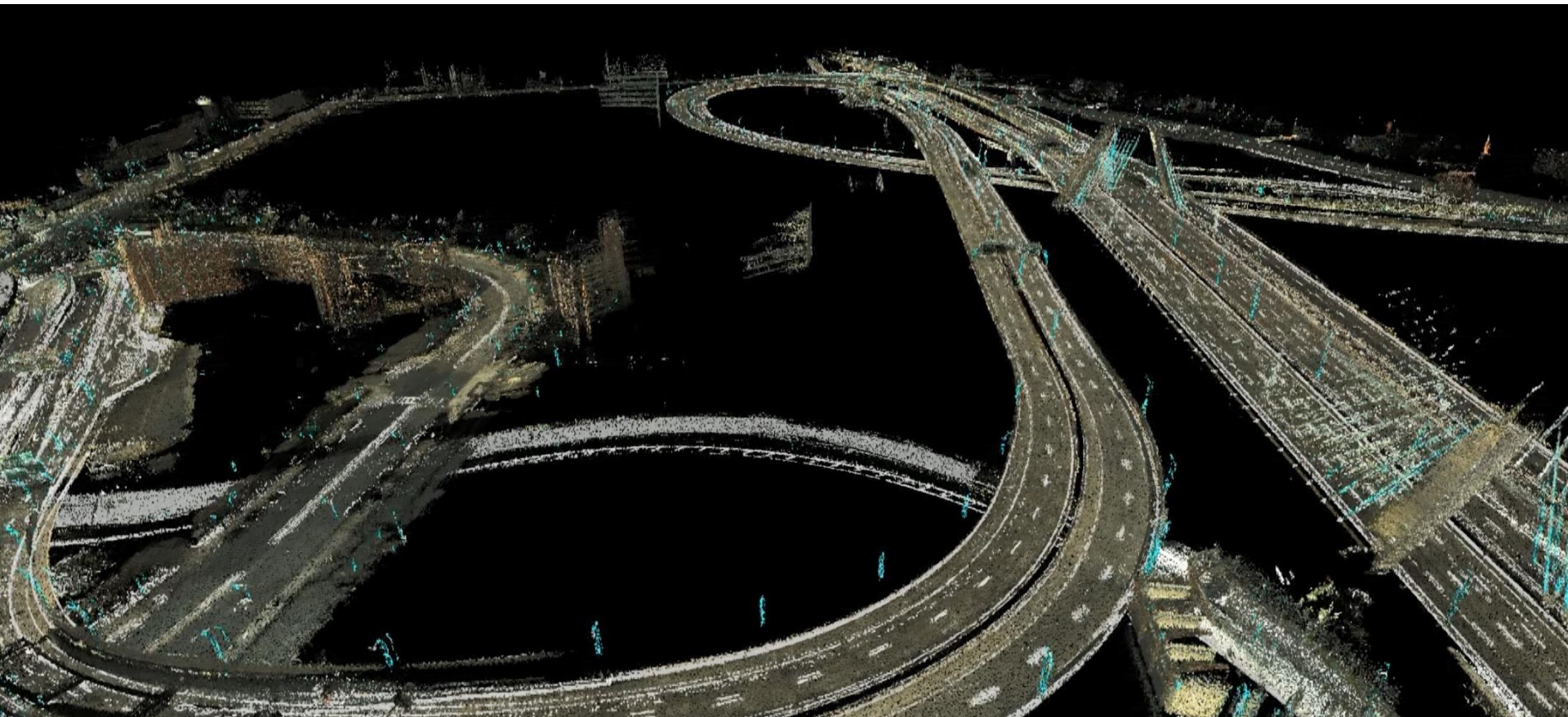
The localization challenge for automated vehicles



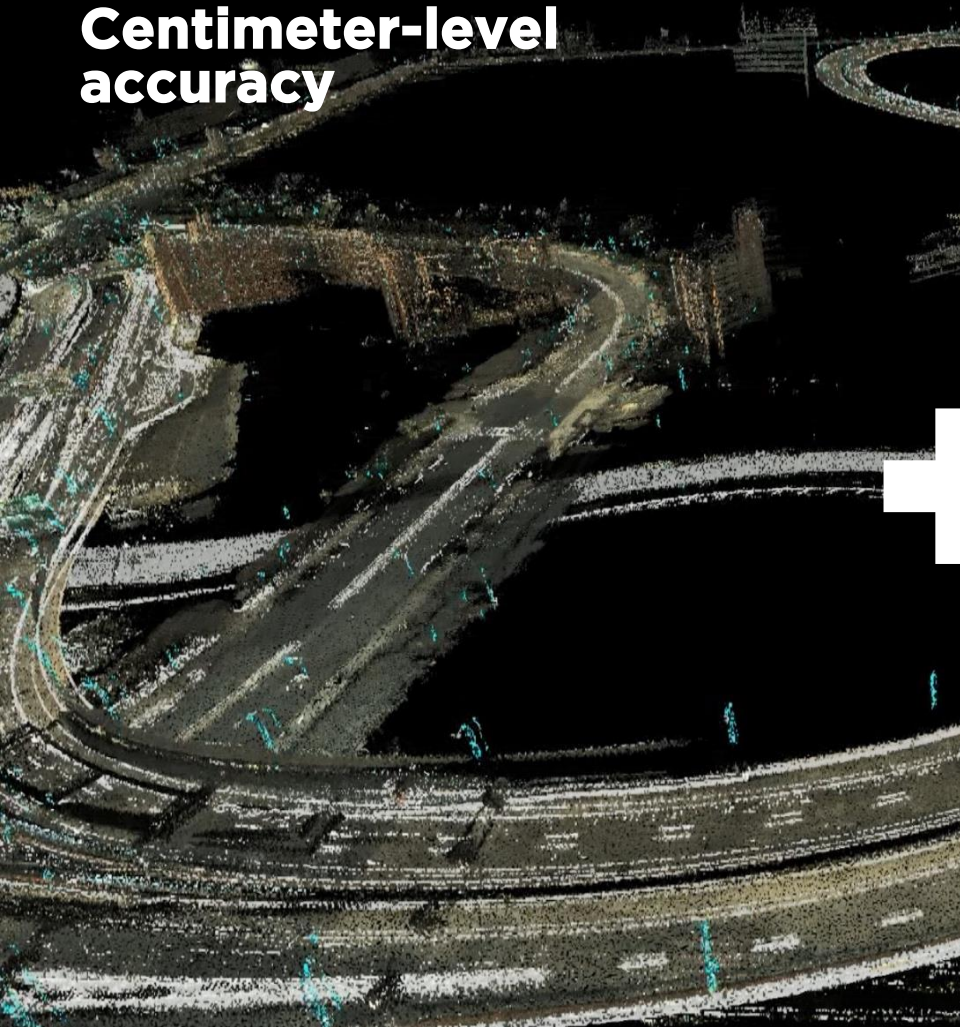
The path planning challenge for automated vehicles



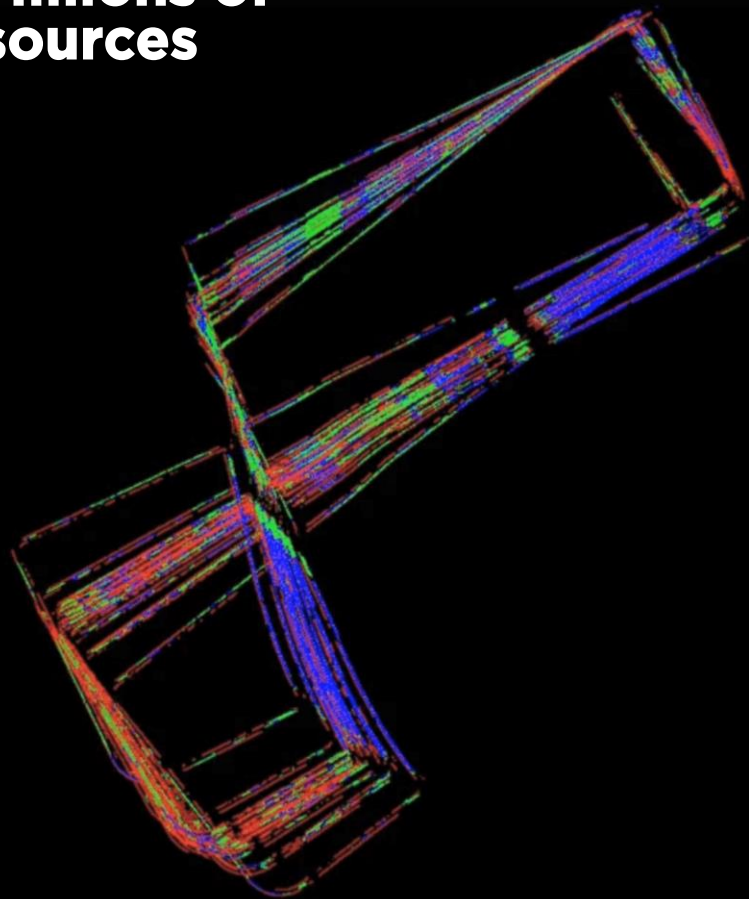
How do we make HD maps?



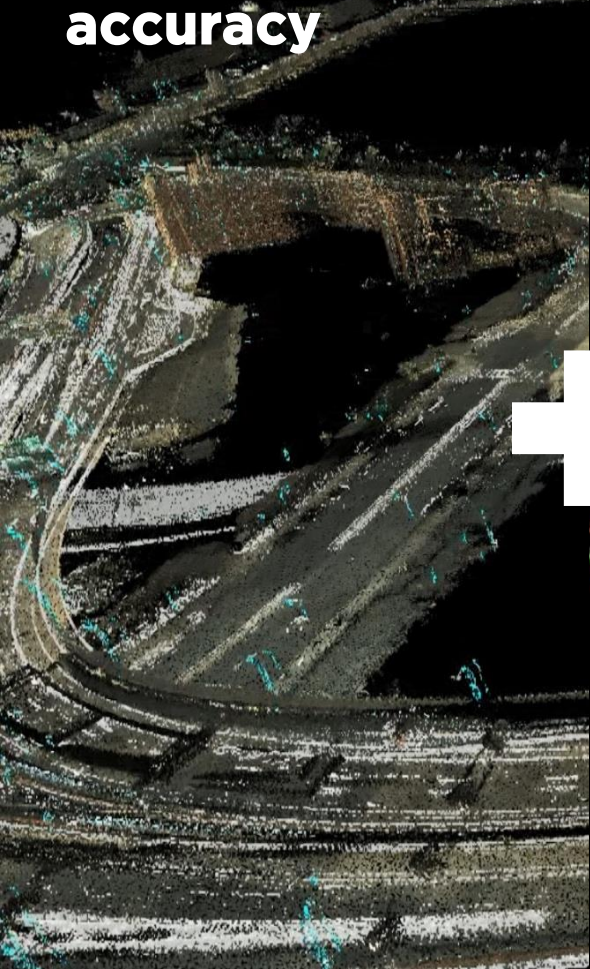
**Centimeter-level
accuracy**



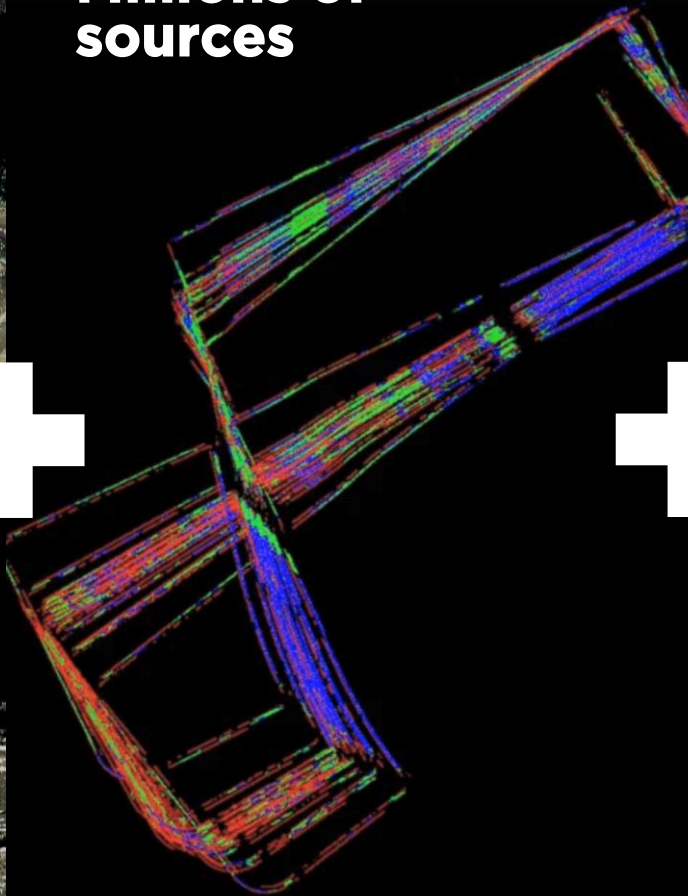
**Millions of
sources**



**Centimeter-level
accuracy**



**Millions of
sources**



**Real-time
processing**



AutoStream

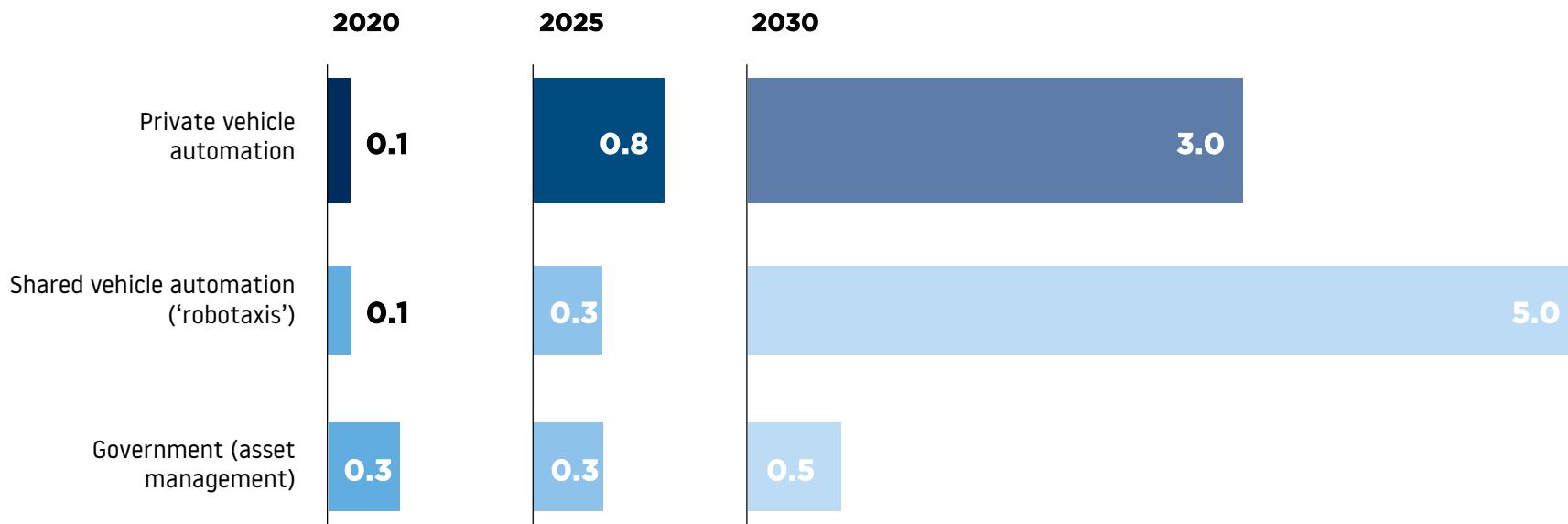
Map Delivery for Autonomous Driving

Start

TOMTOM 

Large opportunity, first in private vehicles, later in robotaxi

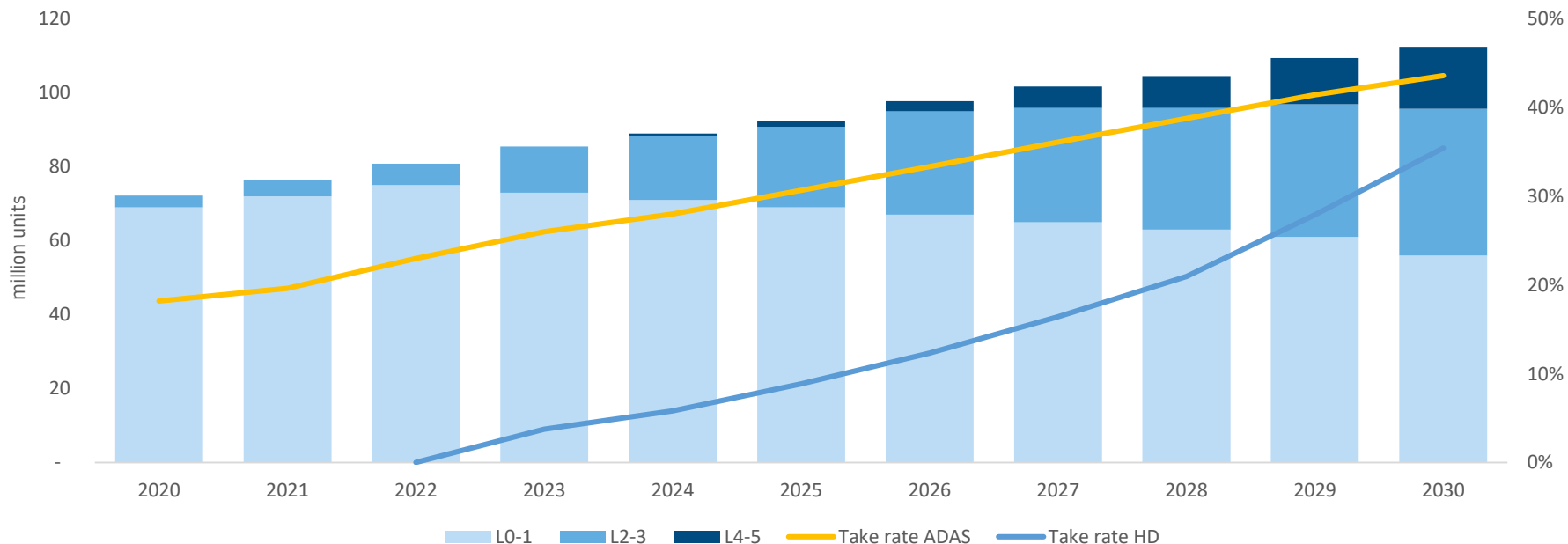
Market value (€ billion) - all products (ADAS Map, HD Map, Hazards Service)



Rising volumes in levels of automation

Technology developments bringing new and improved features into the car and driving costs down for consumers

Vehicle volumes & ADAS and HD take rates



Competitive advantage

Customer experience

- Automotive sales force
- Cumulative domain knowledge
- Global presence
- Independence

Leading technology

- Transactional map making
- Shortest cycle times
- Technology built up over the years (AI, computer vision)

Most complete product portfolio

- AutoStream
- SD Map
- Real-time service capability (Live Map)
- Automotive system integration services

TomTom ADAS Map

Navigable maps for
automated driving
are powering over

> 1 million

SAE L1 & L2 vehicles
on the road today



TOMTOM LEADS
IN HD MAPS



>60%

MARKET SHARE IN AWARDED
DEALS AS MEASURED BY
TOTAL CAR VOLUME



ONLY

GLOBAL MAPPING COMPANY THAT
HAS FULL AUTONOMOUS STACK
IN HOUSE FOR TESTING AND
DEMONSTRATION



4

OUT OF THE GLOBAL
TOP 5 OEMS ARE WORKING
WITH TOMTOM HD MAP



FIRST

TO COVER HIGHWAYS IN EUROPE,
US, JAPAN, SOUTH KOREA

Important Notice

DISCLAIMER

This document contains certain forward-looking statements with respect to the financial position and results of TomTom's activities. We have based these forward-looking statements on our current expectations and projections about future events, including numerous assumptions regarding our present and future business strategies, operations and the environment in which we will operate in the future. These forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements, and you should not place undue reliance on them. Many of these risks and uncertainties relate to factors that are beyond TomTom's ability to control or estimate precisely, such as levels of customer spending in major economies, changes in consumer preferences, the performance of the financial markets, the levels of marketing and promotional expenditures by TomTom and its competitors, costs of raw materials, employee costs, exchange-rate and interest-rate fluctuations, changes in tax rates, changes in law, acquisitions or disposals, the rate of technological changes, political developments in countries where TomTom operates and the risk of a downturn in the market. Statements regarding market share, including TomTom's competitive position, contained in this document are based on outside sources such as specialized research institutes, industry and dealer panels in combination with management estimates.

The forward-looking statements contained herein speak only as of the date they are made. We do not assume any obligation to update any public information or forward-looking statement in this document to reflect events or circumstances after the date of this document, except as may be required by applicable laws.

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Thank you

