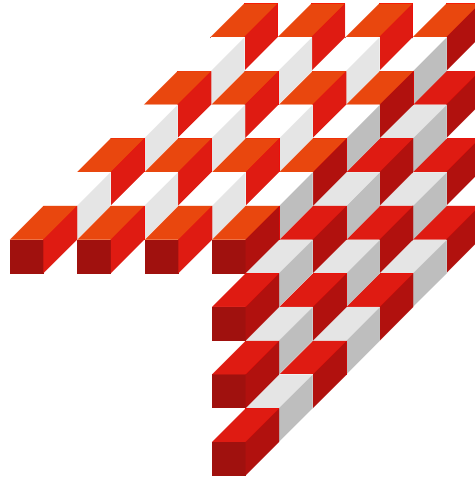


Mapping the road to autonomous driving



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 city street with a white car in the center lane, surrounded by buildings and other vehicles. The text 'AUTONOMOUS DRIVING IS HAPPENING' is overlaid in large white letters on the top left of the image.

SAFETY

COMFORT

EFFICIENCY

The pillars of autonomous driving



MAPPING



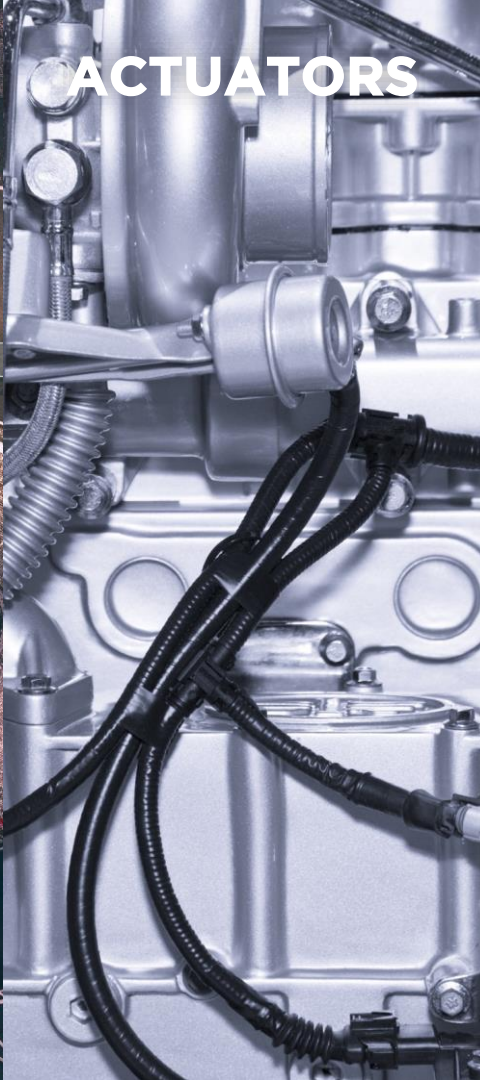
SENSING



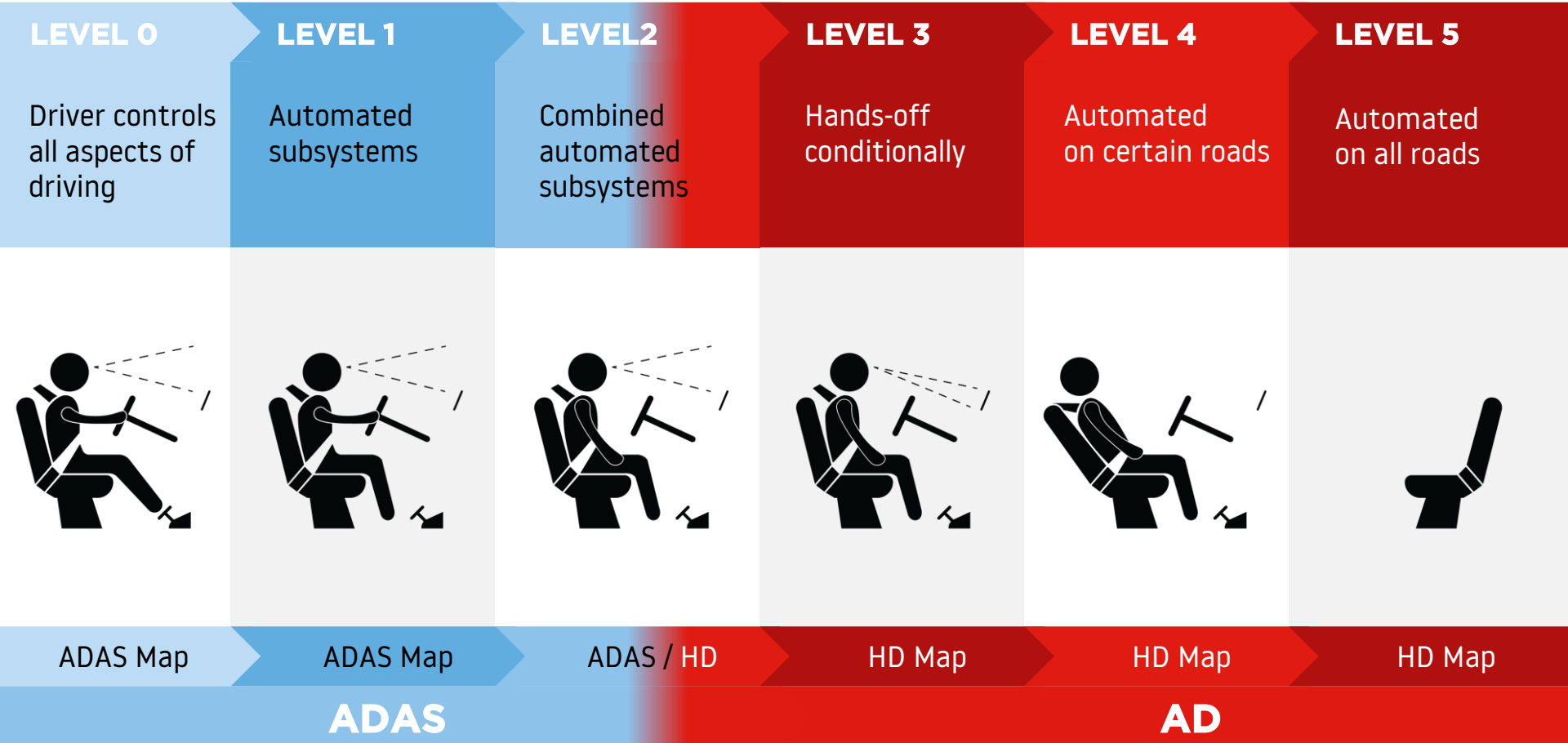
**DRIVING
POLICY**



ACTUATORS



TomTom maps for ADAS & AD





The perception challenge for automated vehicles



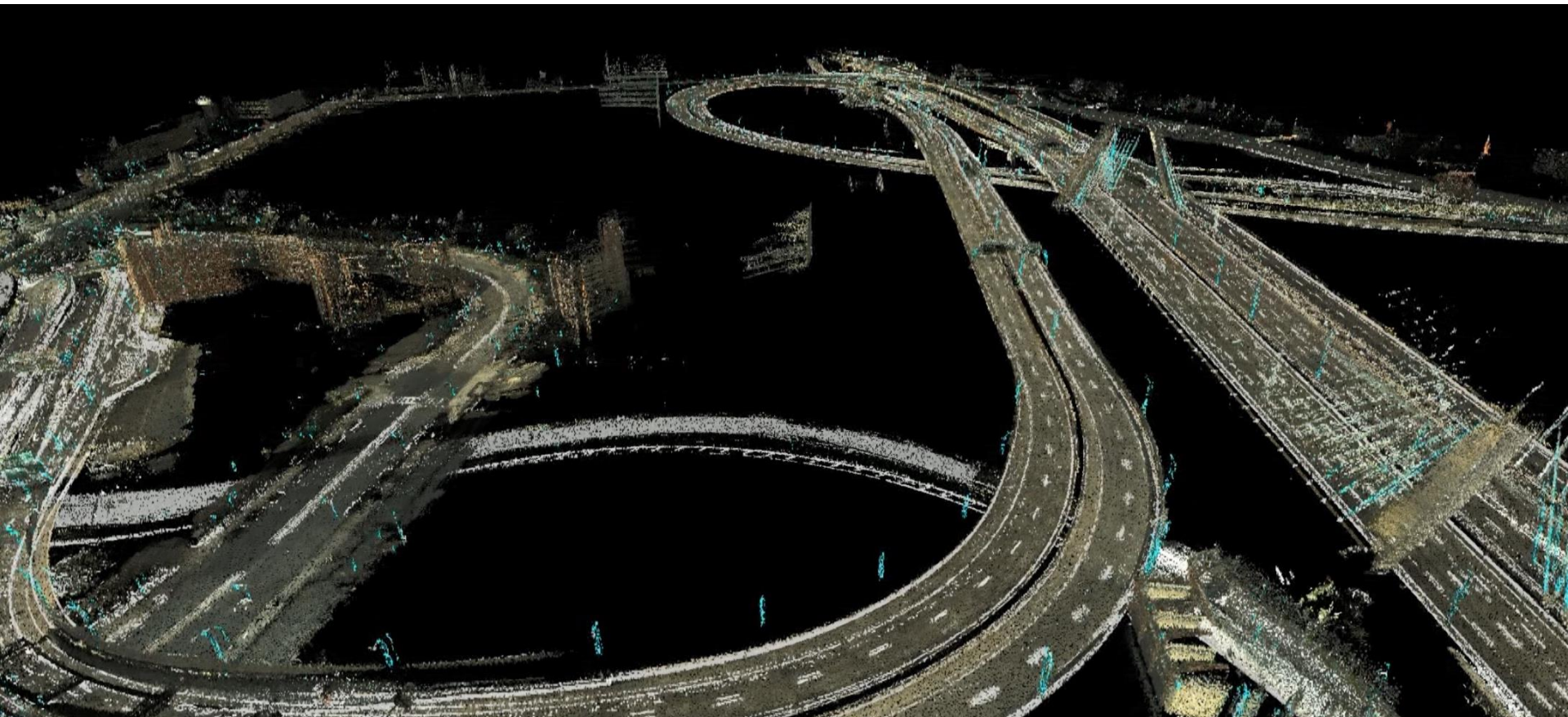
The localization challenge for automated vehicles



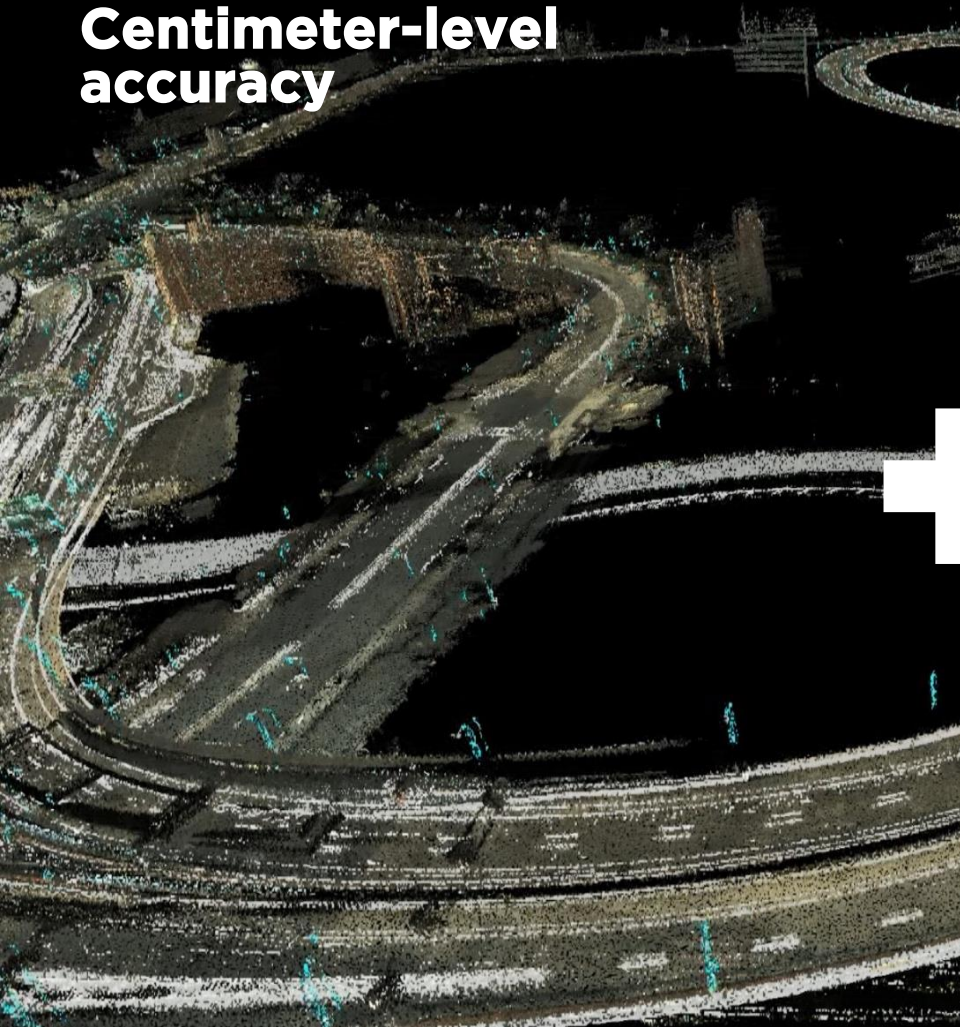
The path planning challenge for automated vehicles



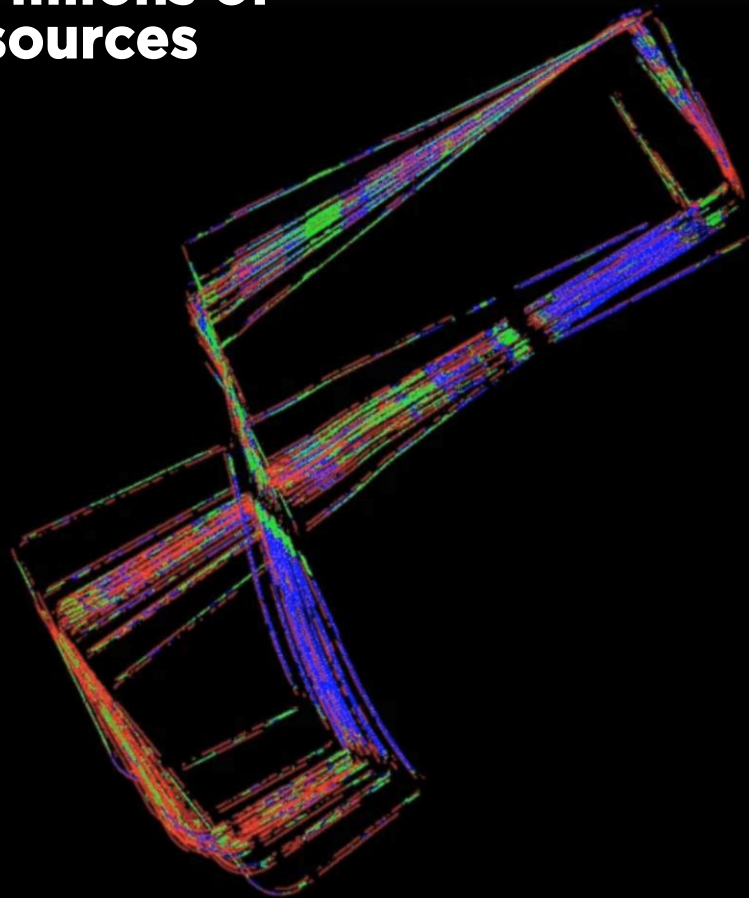
How do we make HD maps?



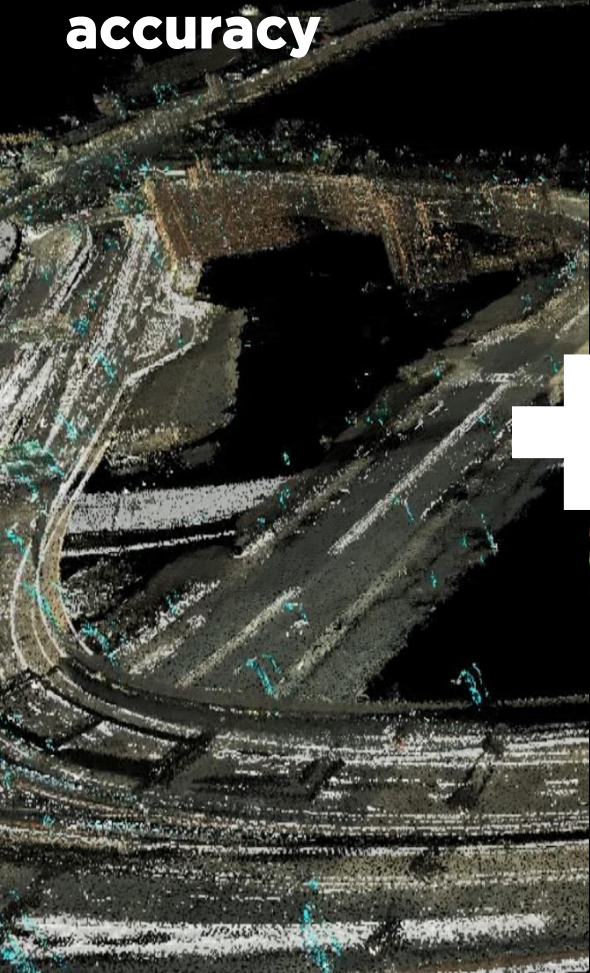
**Centimeter-level
accuracy**



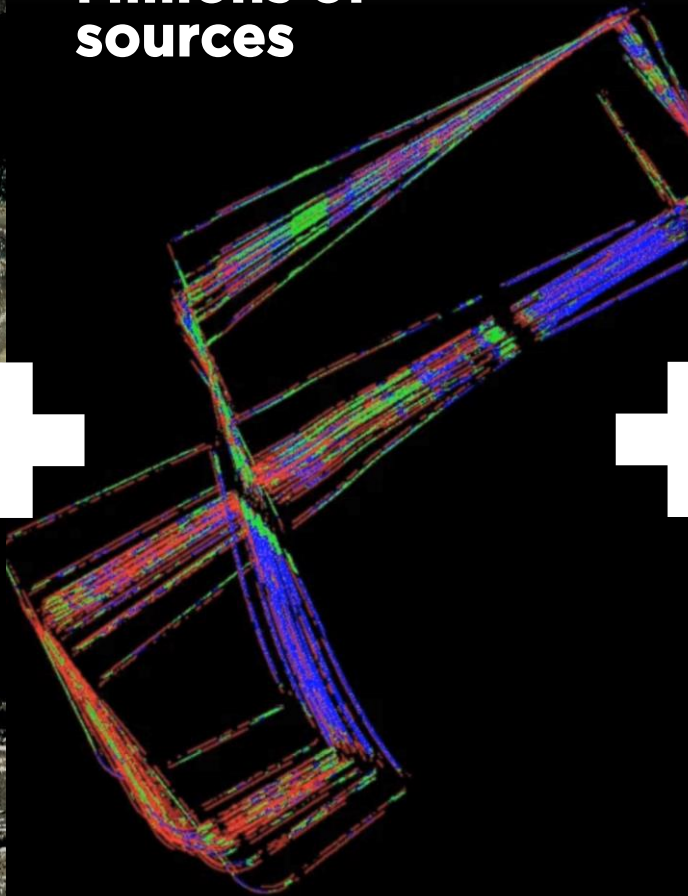
**Millions of
sources**



Centimeter-level accuracy



Millions of sources



Real-time processing



AutoStream

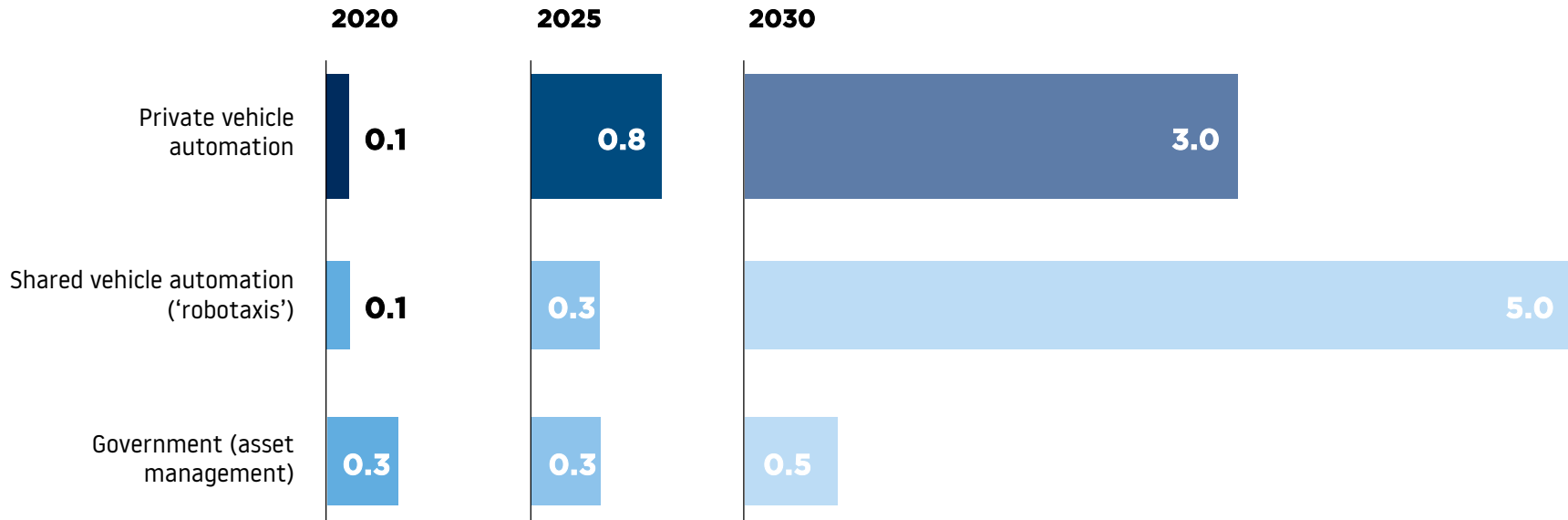
Map Delivery for Autonomous Driving

Start

TOMTOM 

Large opportunity, first in private vehicles, later in robotaxi

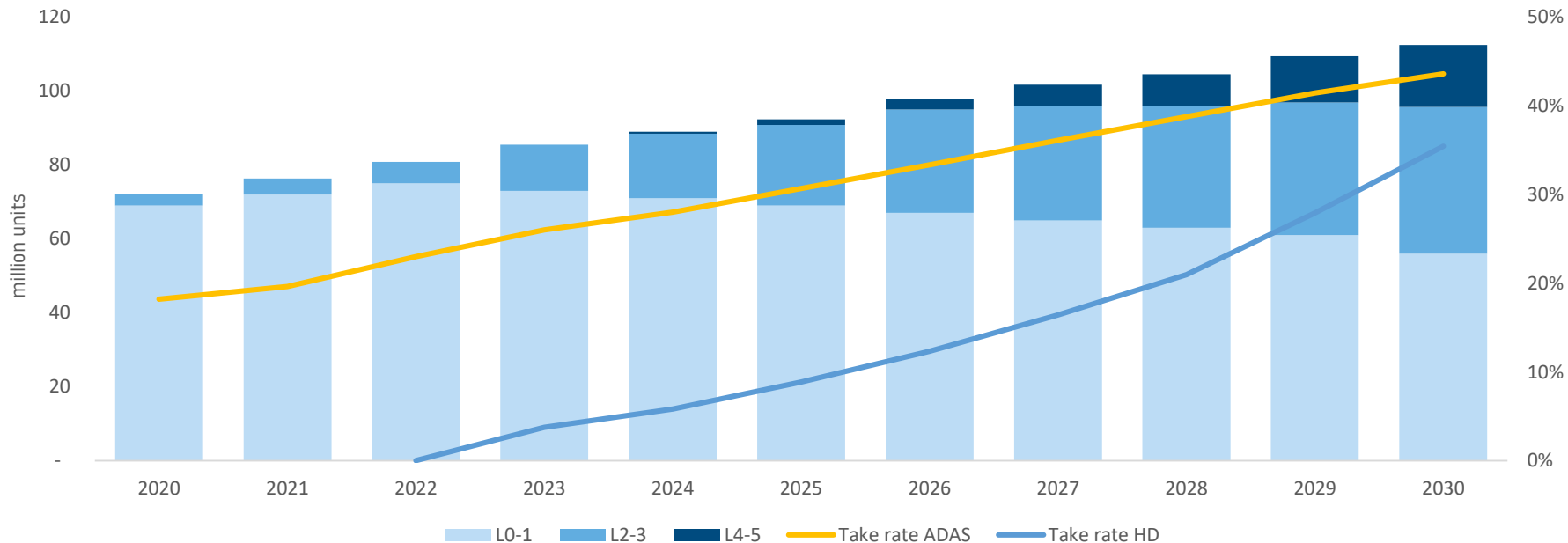
Market value (€ billion) - all products (ADAS Map, HD Map, Hazards Service)



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

279 m
curvature

12%
slope



**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

Q&A

