



## Empowering Autonomous Driving Through High- Definition Location Data

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August 14 2019

# HERE Technologies



Countries mapped



4 of 5

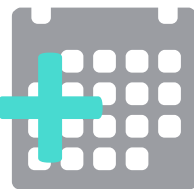
In-car navigation systems in Europe and North America use HERE maps

8,000+



Employees in 56 countries focused on delivering the world's best map and location technologies

30+



Years of experience transforming location technology

700,000

3D data points per second per car

HERE Maps on board of

100M

vehicles and counting

28

TB map data



400

HERE cars collecting data for our maps

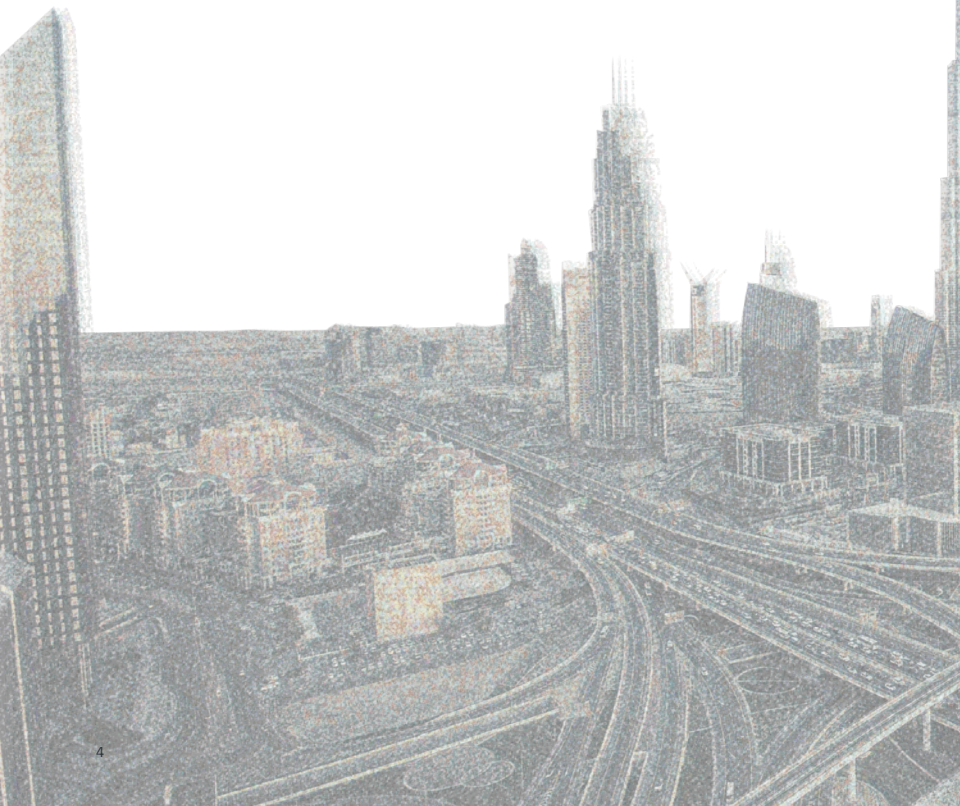


An aerial photograph of a dense urban skyline, likely Tokyo, featuring numerous skyscrapers and the prominent Tokyo Tower in the center. A semi-transparent teal rectangular box is superimposed over the upper half of the image, containing white text. The sky is filled with heavy, grey clouds.

# ENABLING AN AUTONOMOUS WORLD FOR EVERYONE



Creating a  
DIGITAL REPRESENTATION



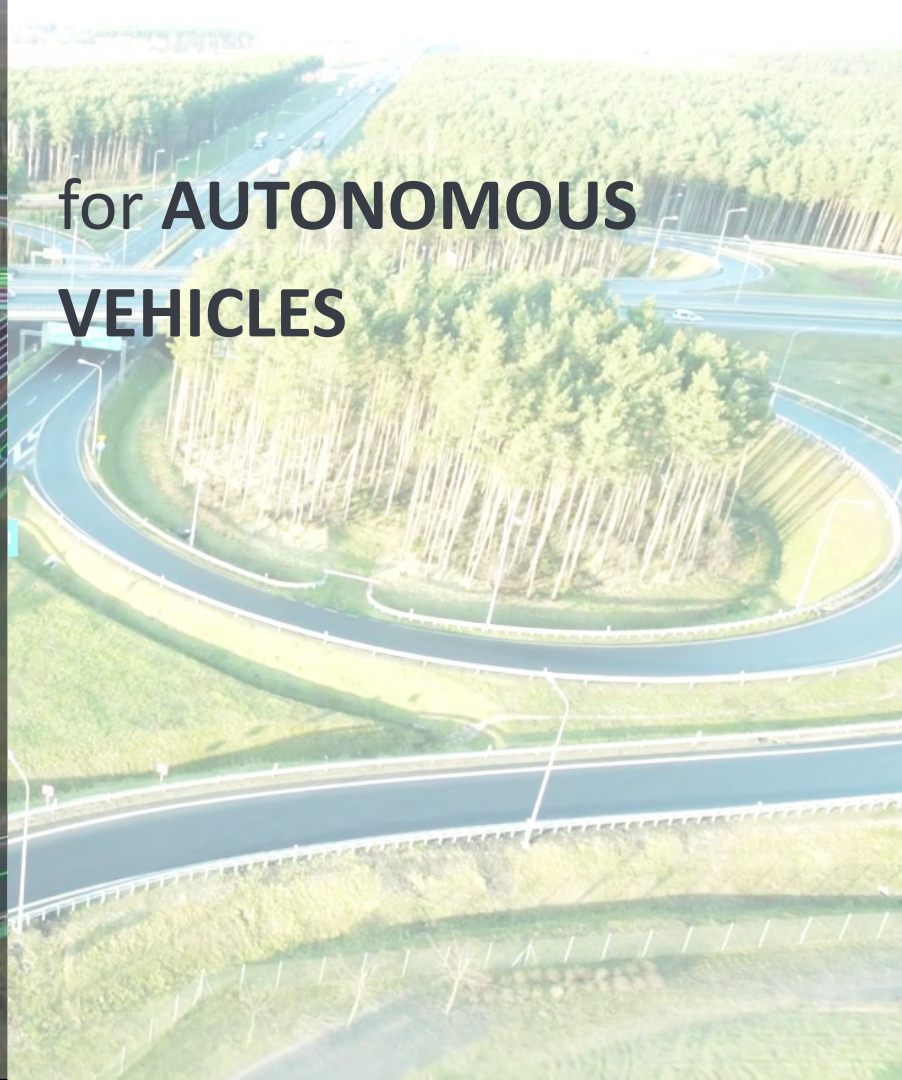
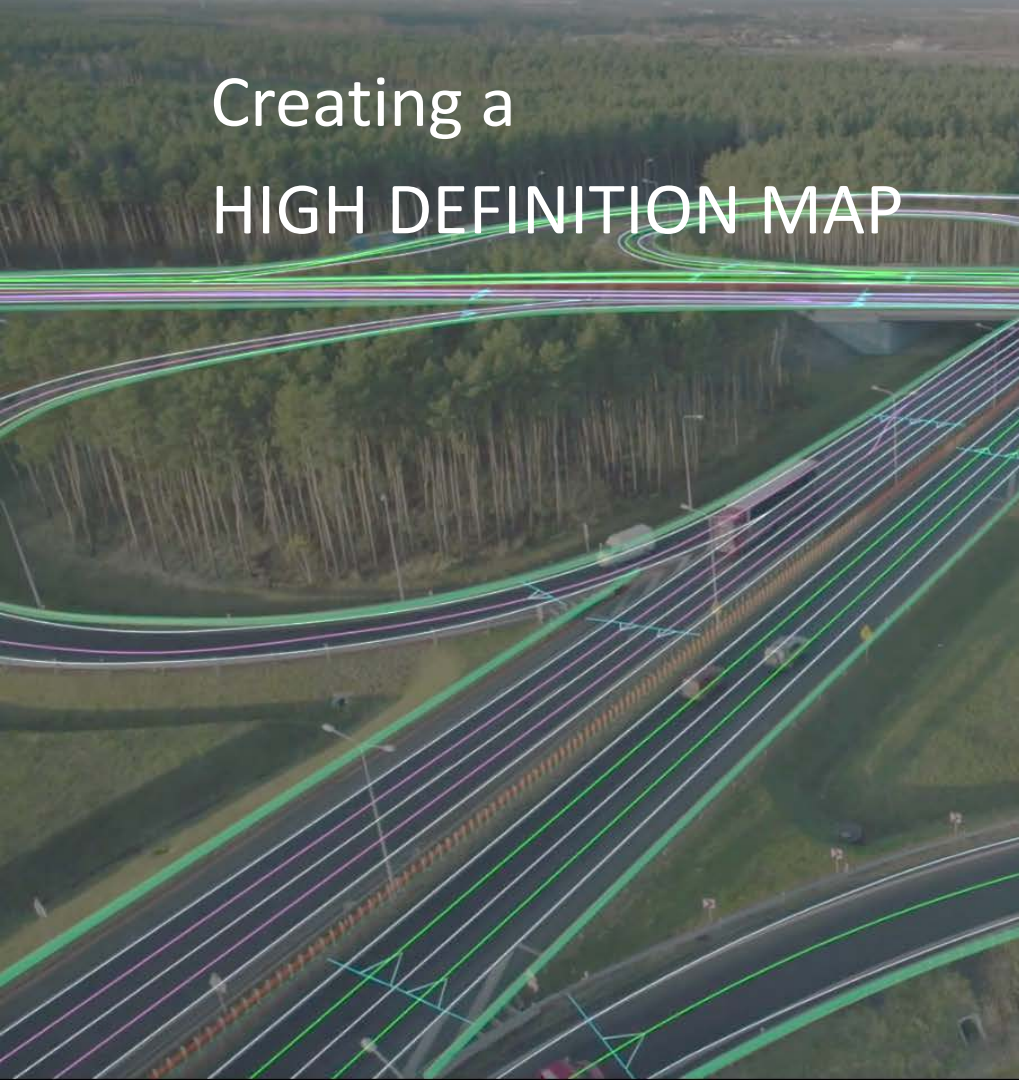
of the **PHYSICAL WORLD**





Creating a  
**HIGH DEFINITION MAP**

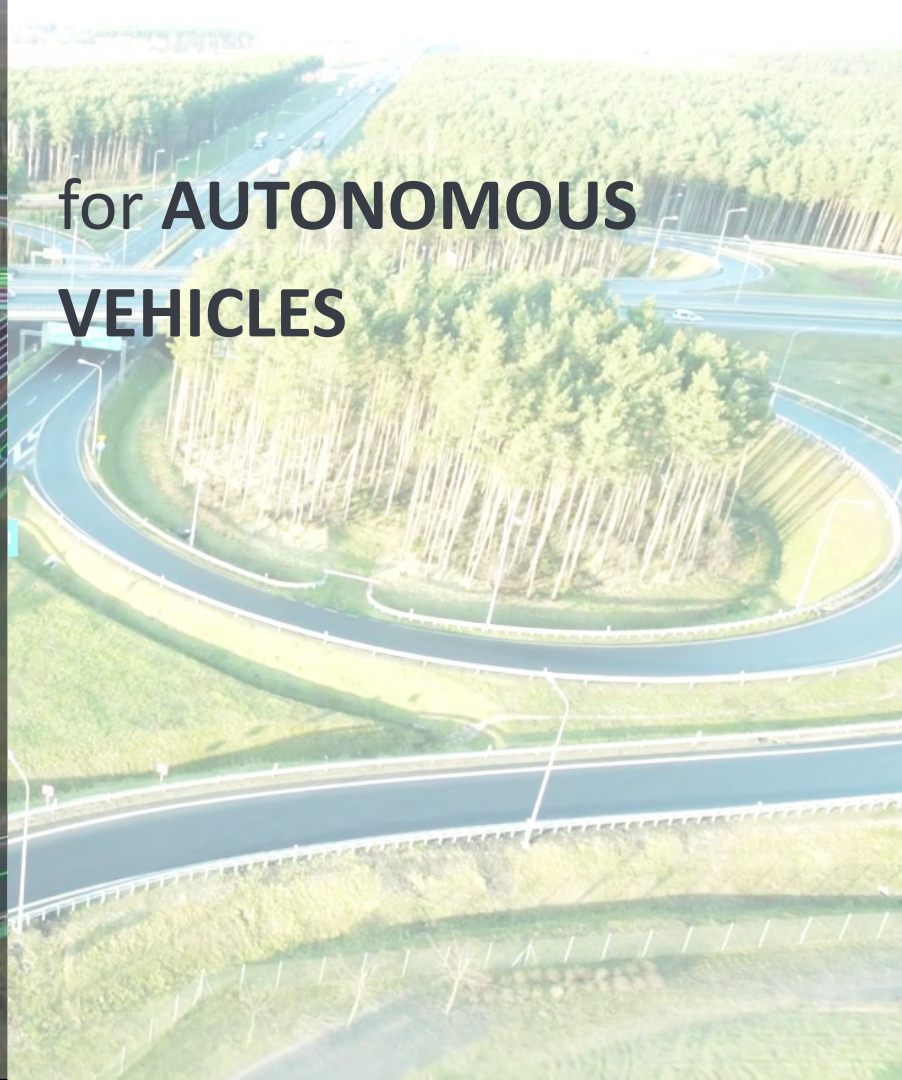
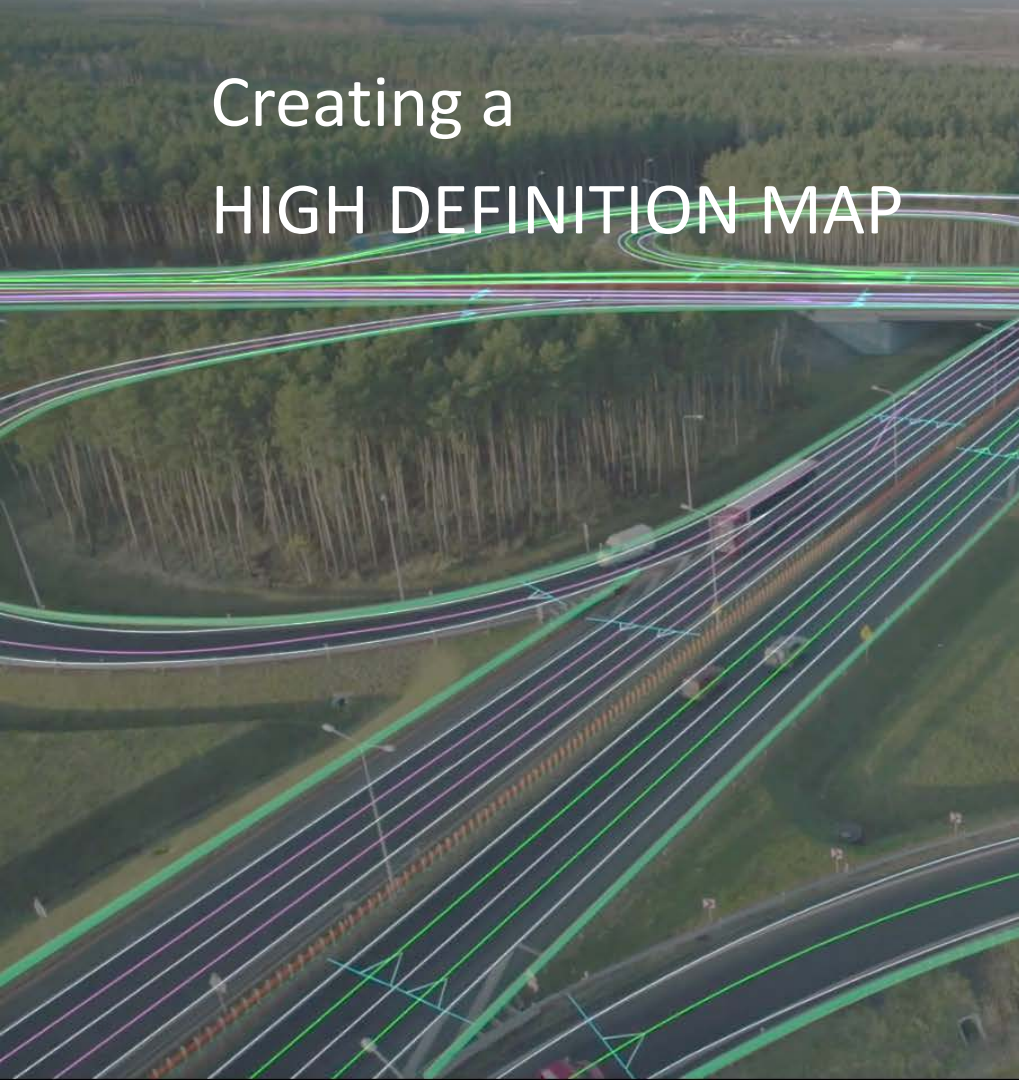
for **AUTONOMOUS  
VEHICLES**





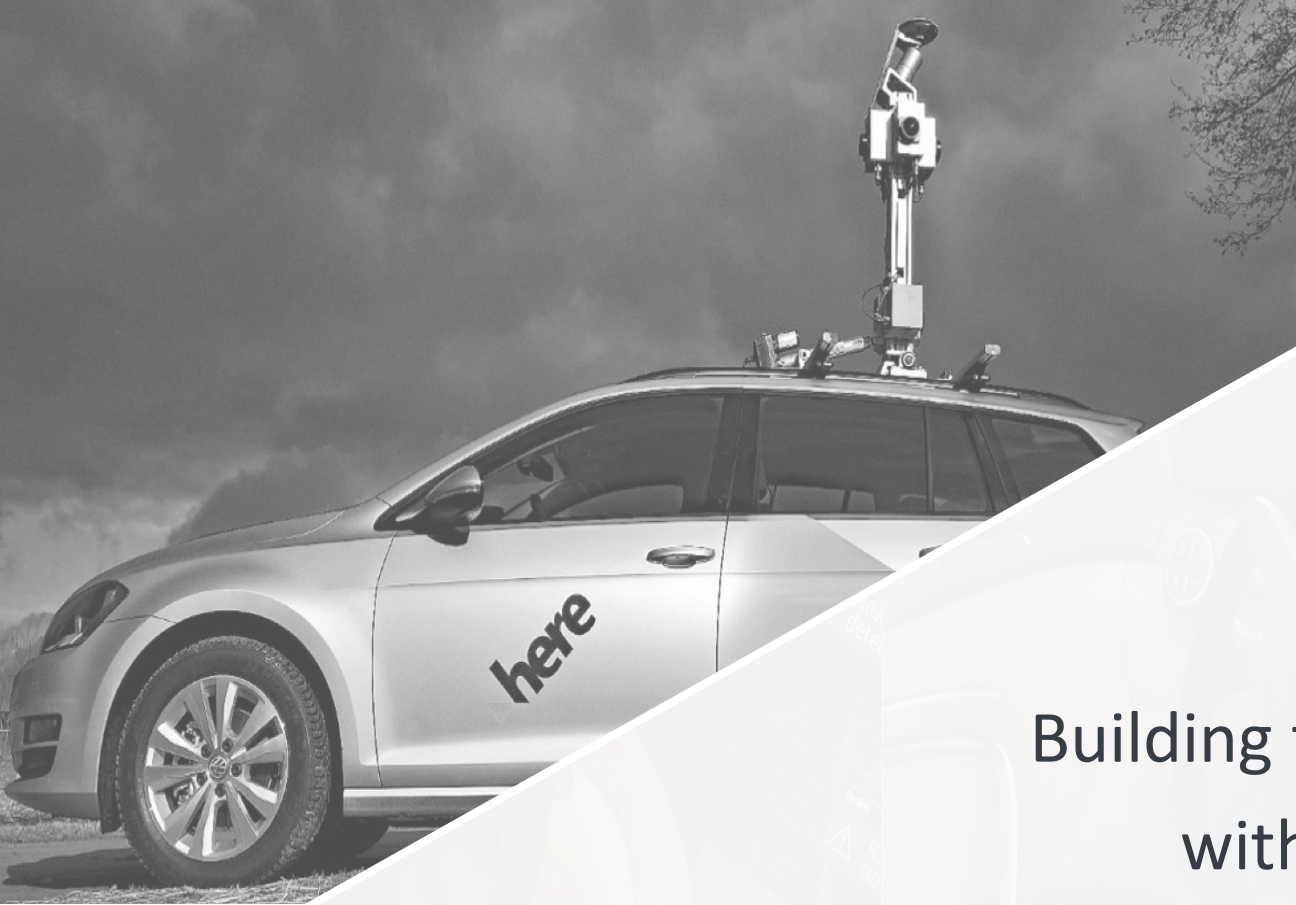
Creating a  
**HIGH DEFINITION MAP**

for **AUTONOMOUS  
VEHICLES**





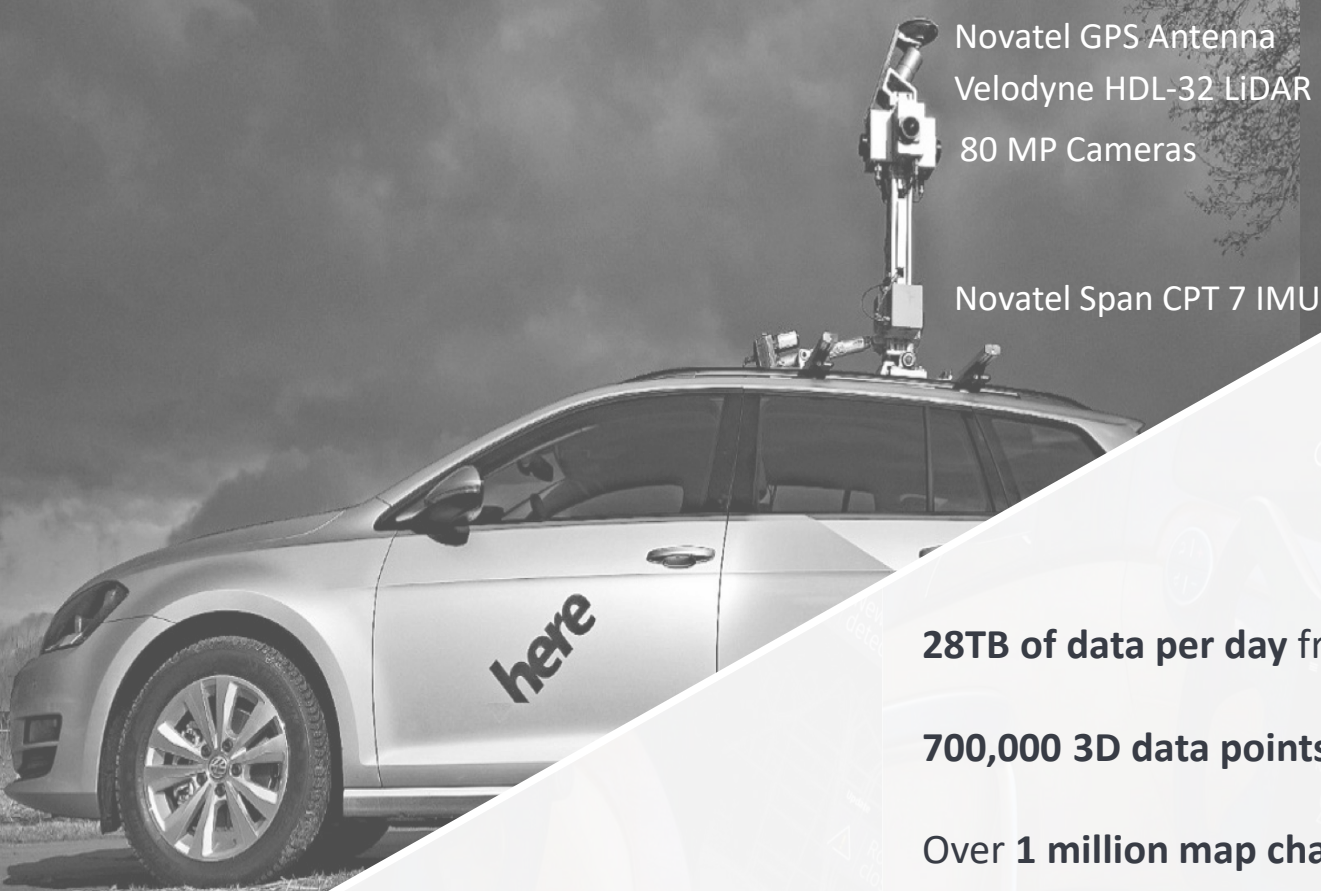




Building the foundation  
with our fleet







Novatel GPS Antenna  
Velodyne HDL-32 LiDAR  
80 MP Cameras

Novatel Span CPT 7 IMU

Updating map  
verifying  
Analysing conditions  
Road closed rerouting...

**28TB of data per day** from our fleet

**700,000 3D data points per second** from our cars

Over **1 million map changes per day**

**14.8 million km<sup>2</sup>** of satellite imagery



# Maintaining the map with the crowd

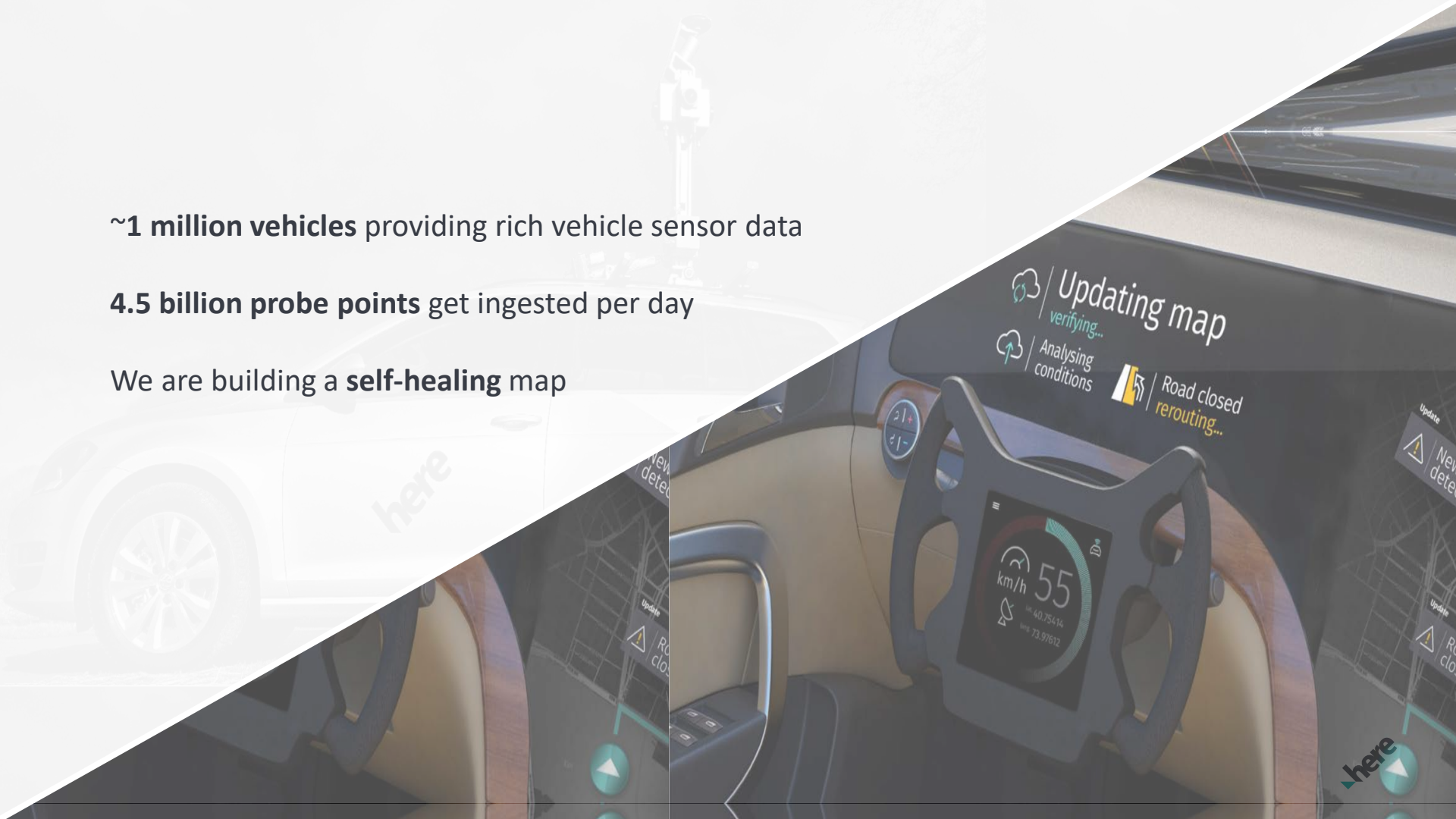




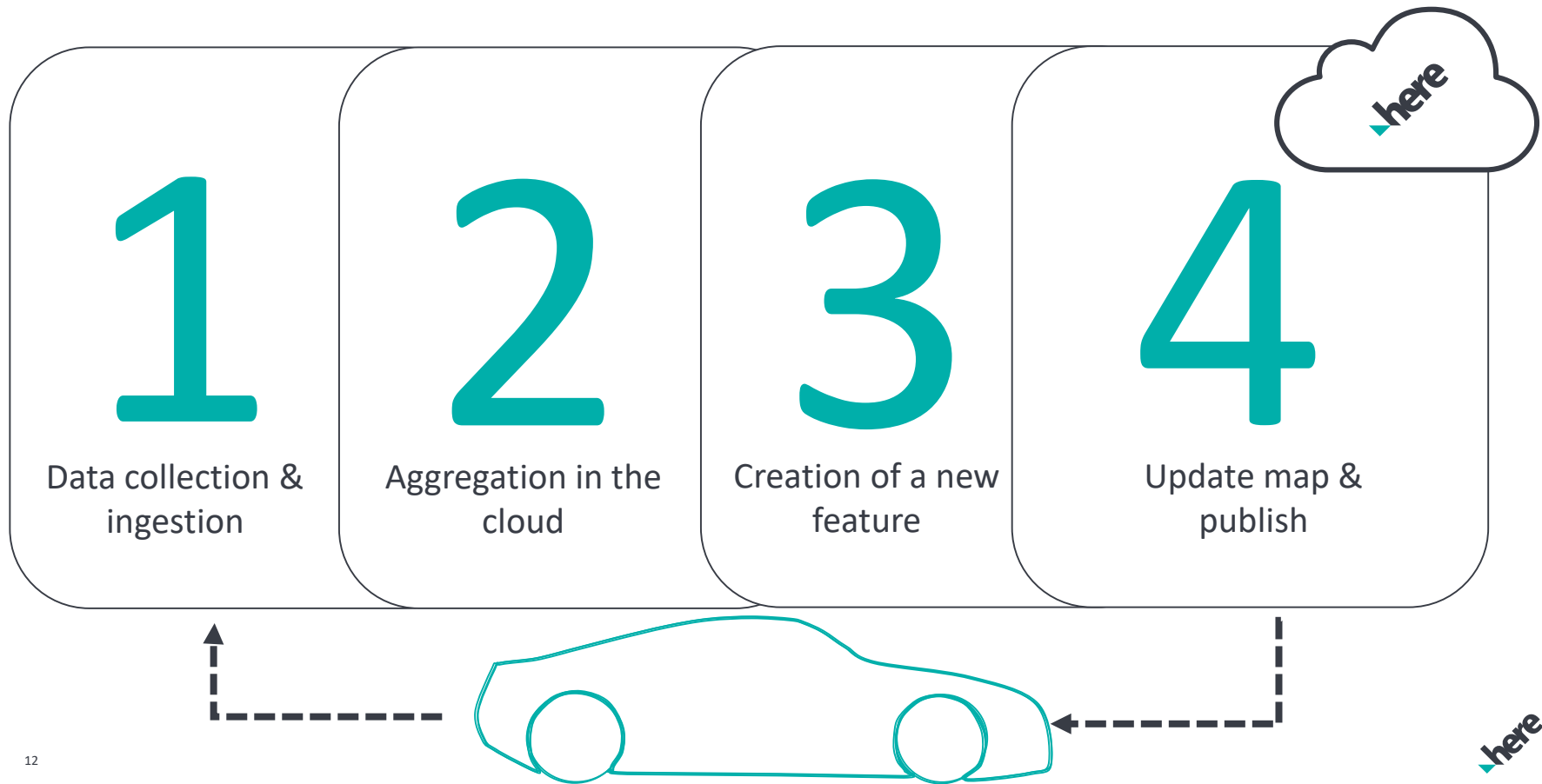
~1 million vehicles providing rich vehicle sensor data

4.5 billion probe points get ingested per day

We are building a **self-healing** map

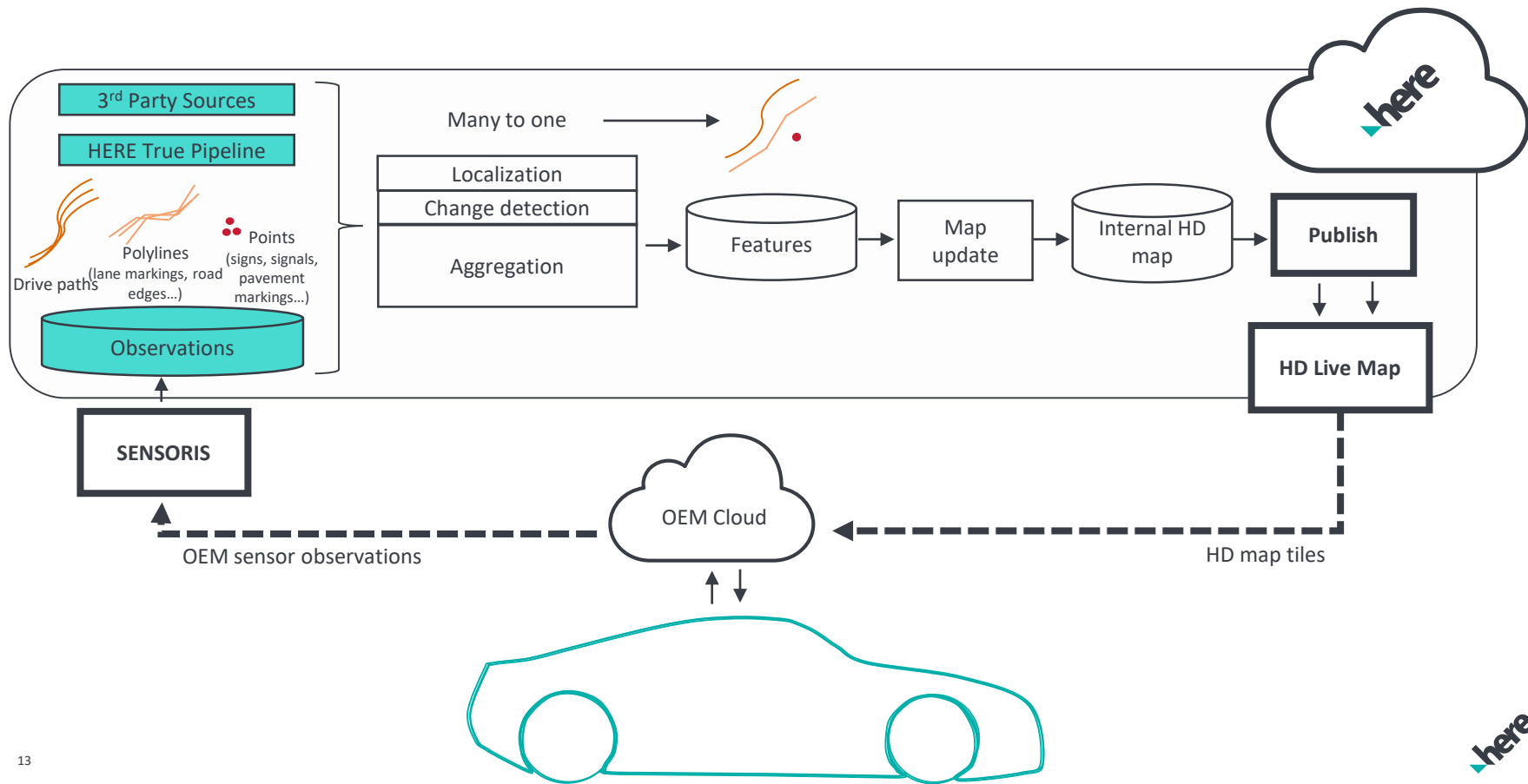


## HERE's self-healing map process

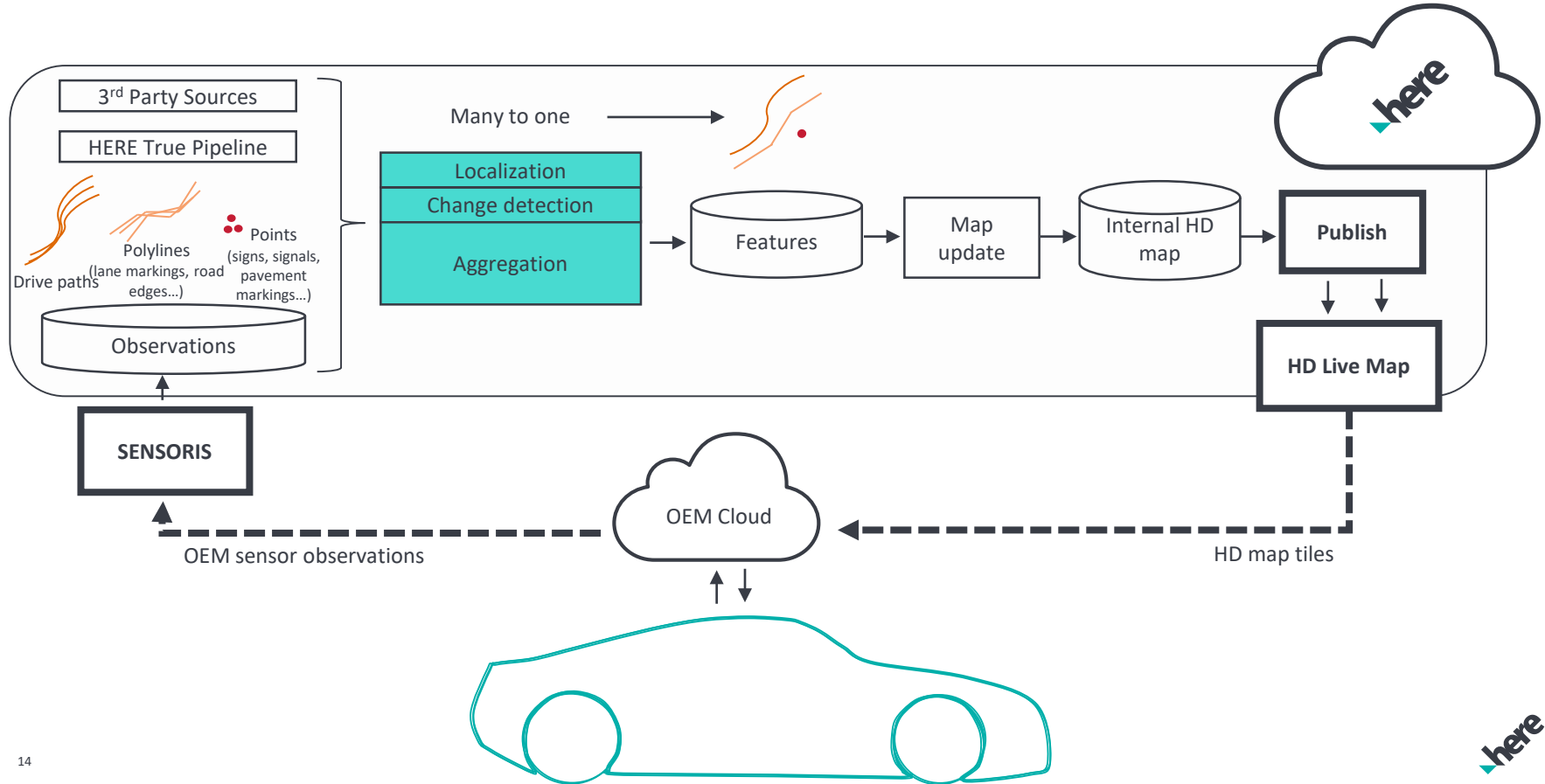




# HERE's self-healing map process

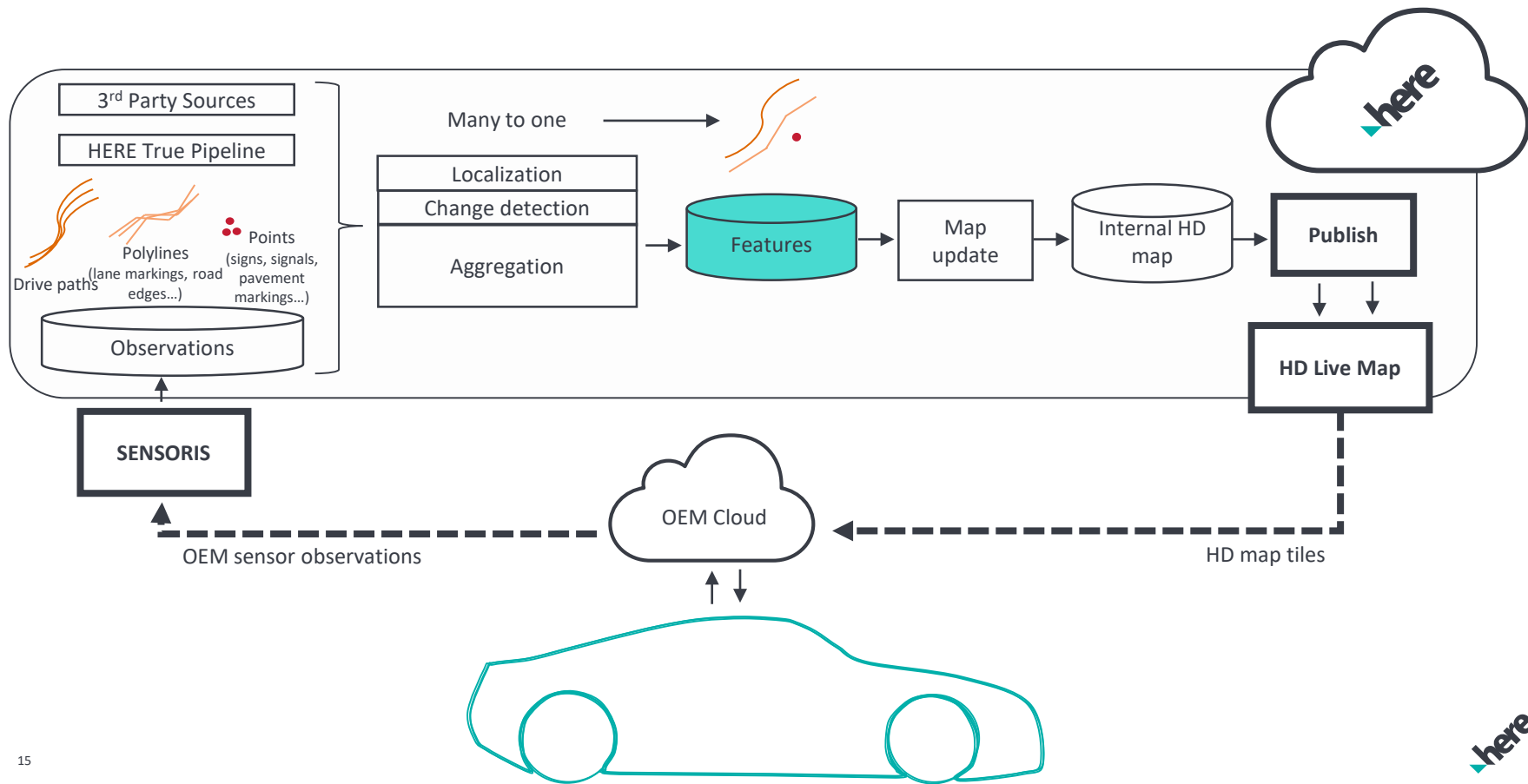


# HERE's self-healing map process

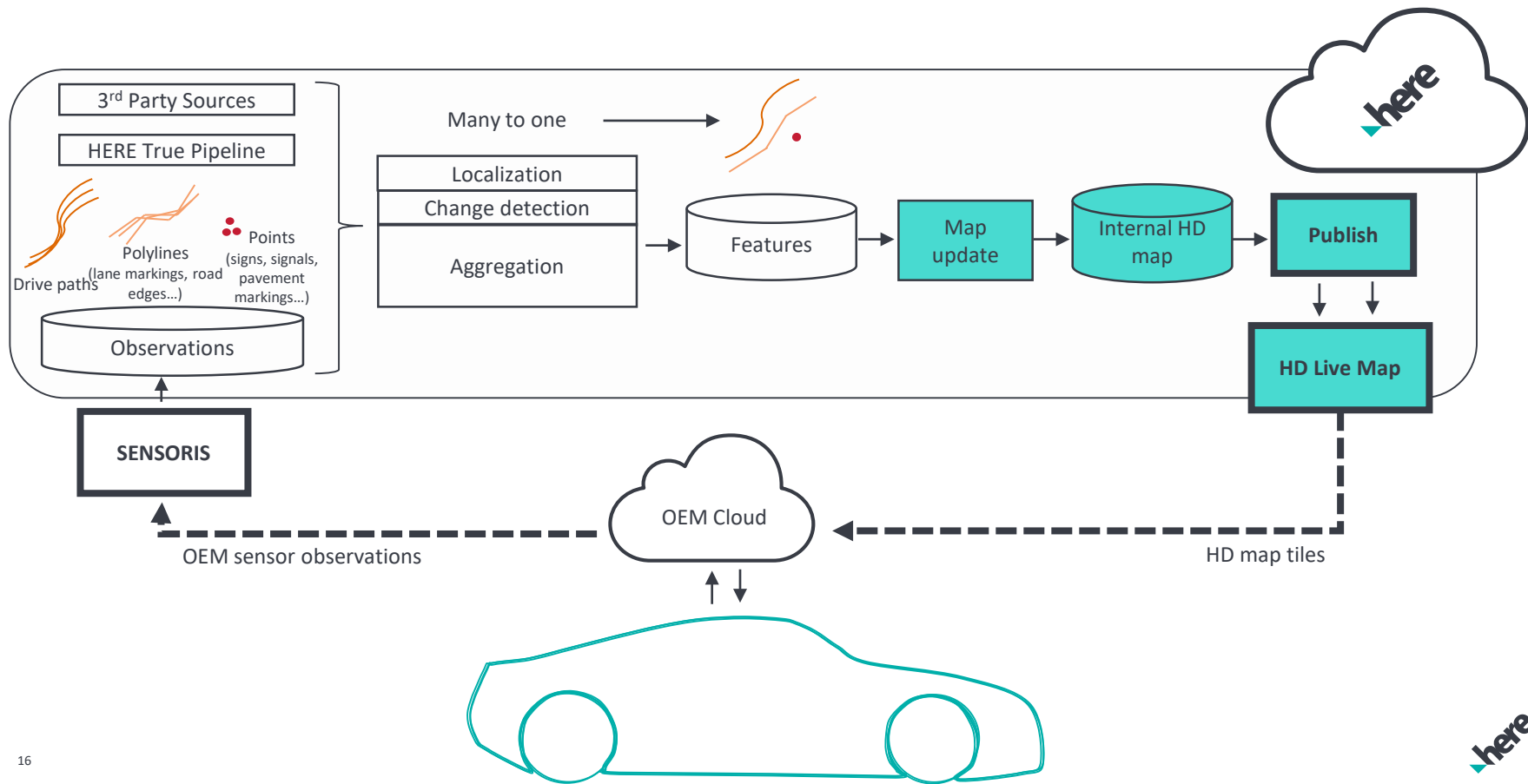




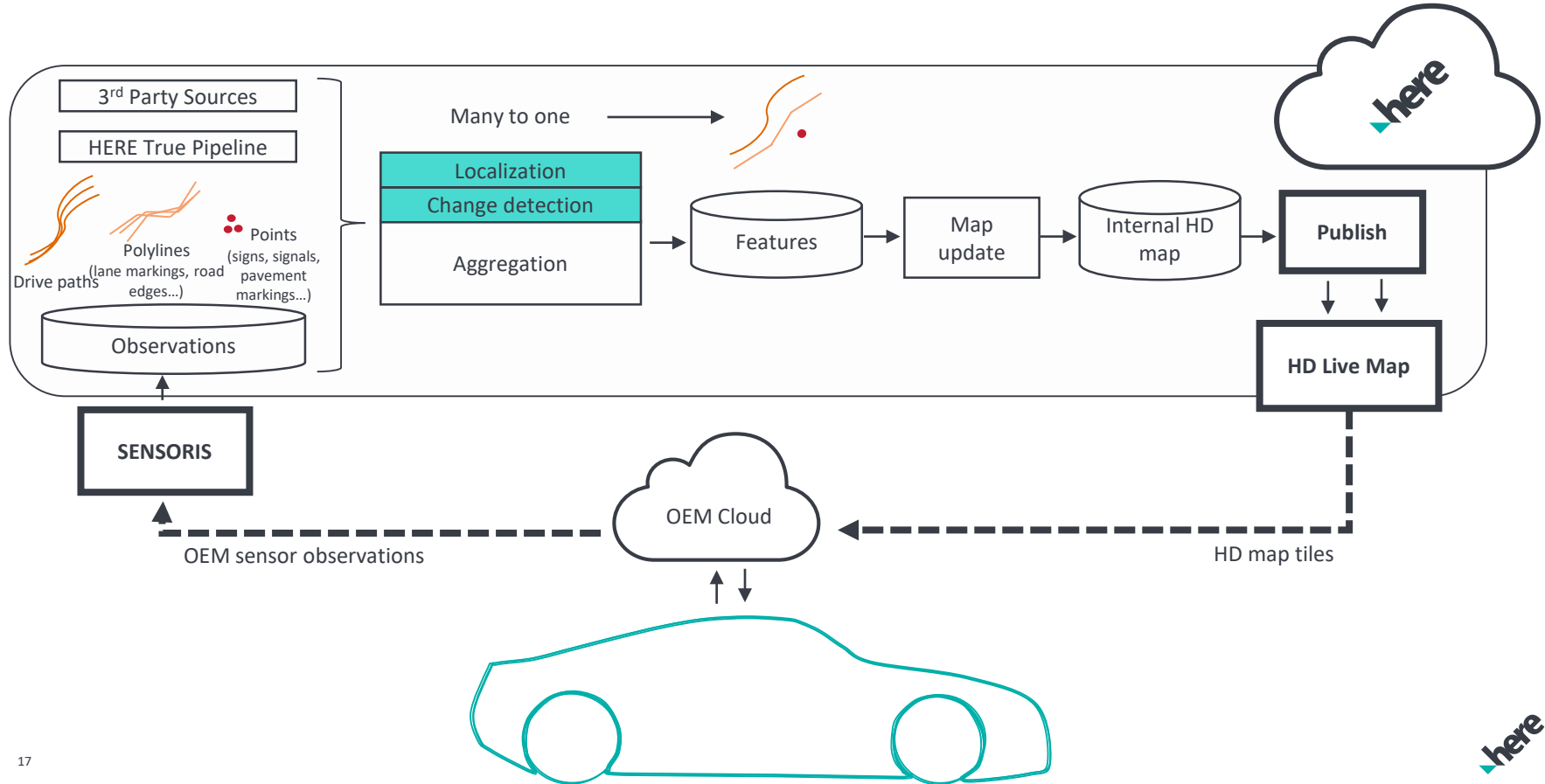
# HERE's self-healing map process



# HERE's self-healing map process



# From the cloud to the car







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