

# HERE`s View on Highly Automated Driving

## ITS Japan

here

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Seamless experiences



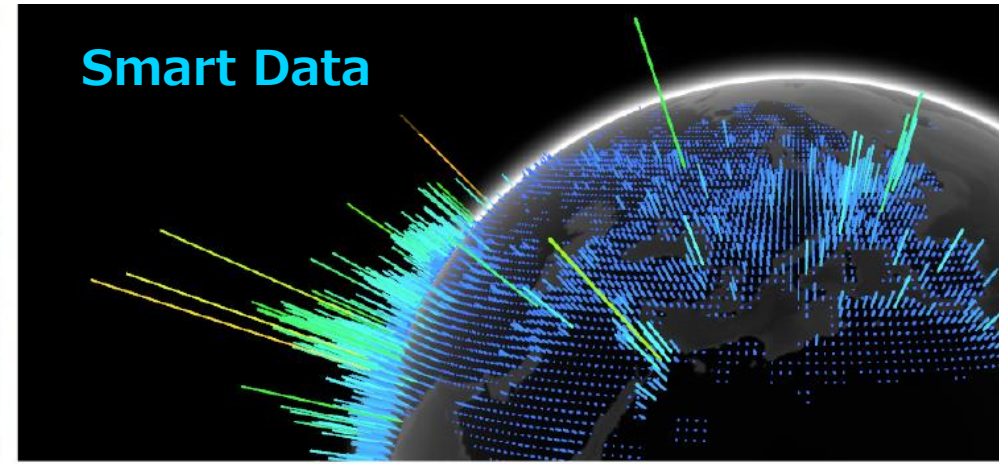
Data protection



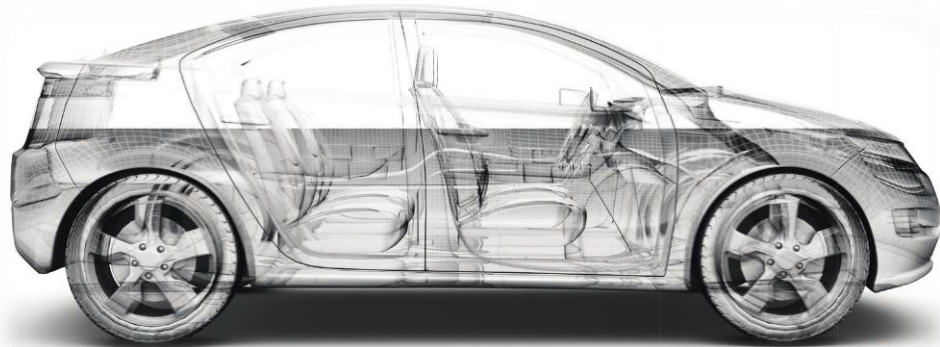
Privacy



Smart Data



The vehicle becomes part of the internet of things



Design Integration



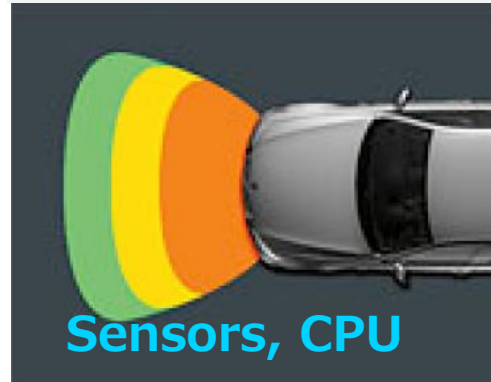
Unparalleled Urbanization



Need for Sustainability



Sensors, CPU





# Automation



# HERE & Highly Automated Driving

The problems we are solving...

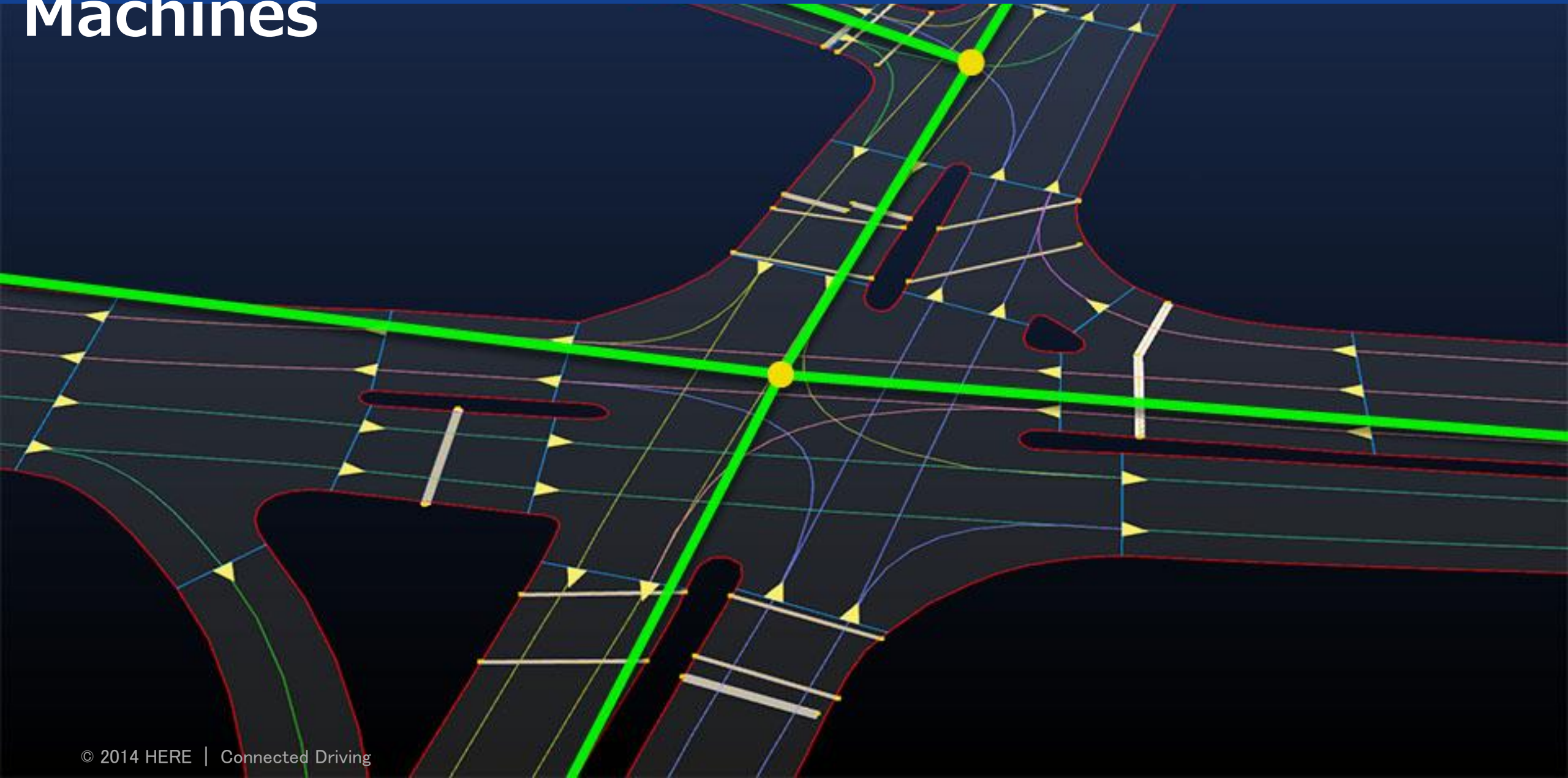
Problem	Key Needs	HERE Solution
WHERE EXACTLY AM I?	Precise positioning for lateral & longitudinal control of vehicle on the road surface	HD Map
WHAT LIES AHEAD?	Near real-time information for accurate planning of vehicle control maneuvers beyond sensor visibility.	HD Live Roads
HOW CAN I GET THERE COMFORTABLY?	Making automated driving comfortable for humans	HD Humanized Driving





# Requirement 1: HD Map. Machines

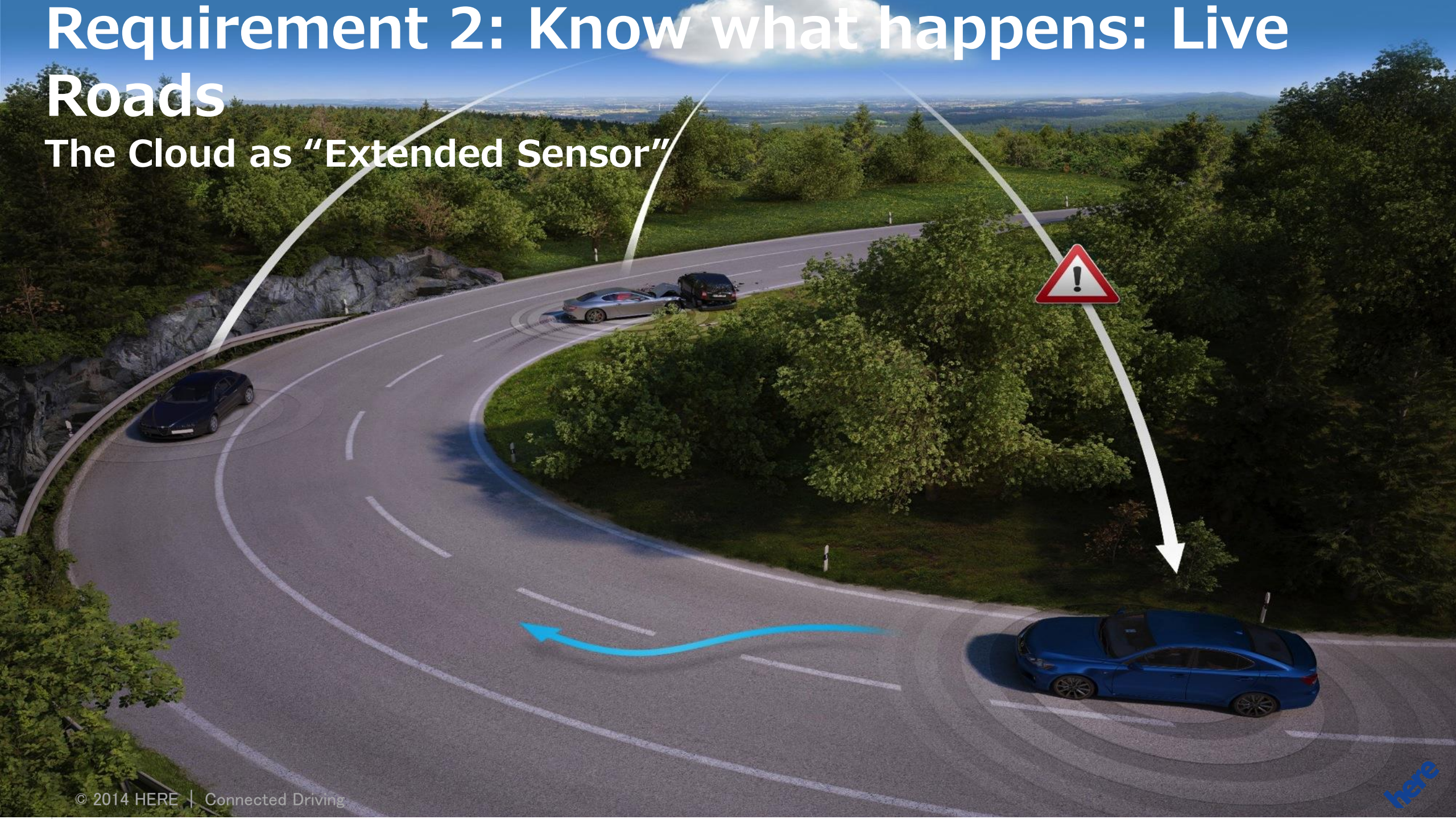
# A Map for





# Requirement 2: Know what happens: Live Roads

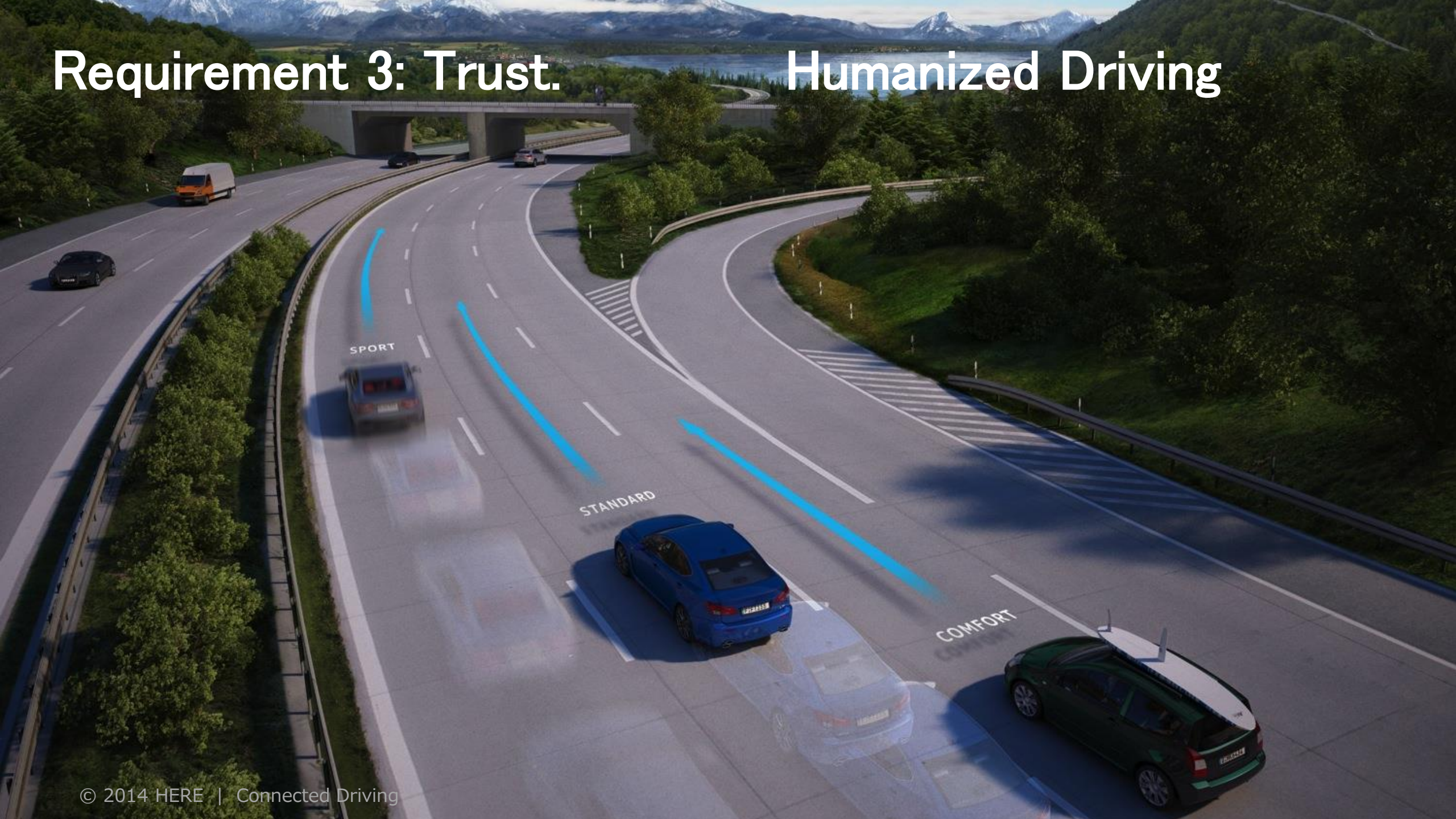
The Cloud as "Extended Sensor"



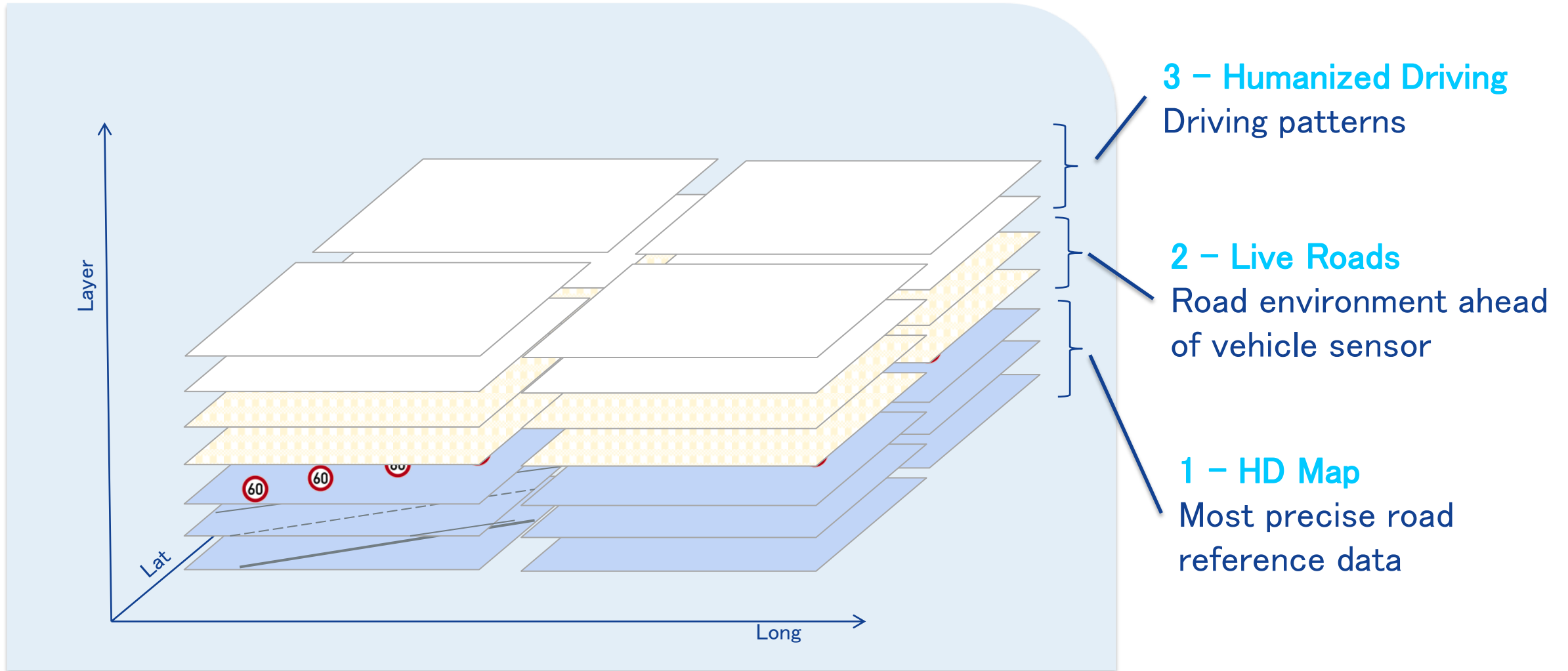


# Requirement 3: Trust.

# Humanized Driving

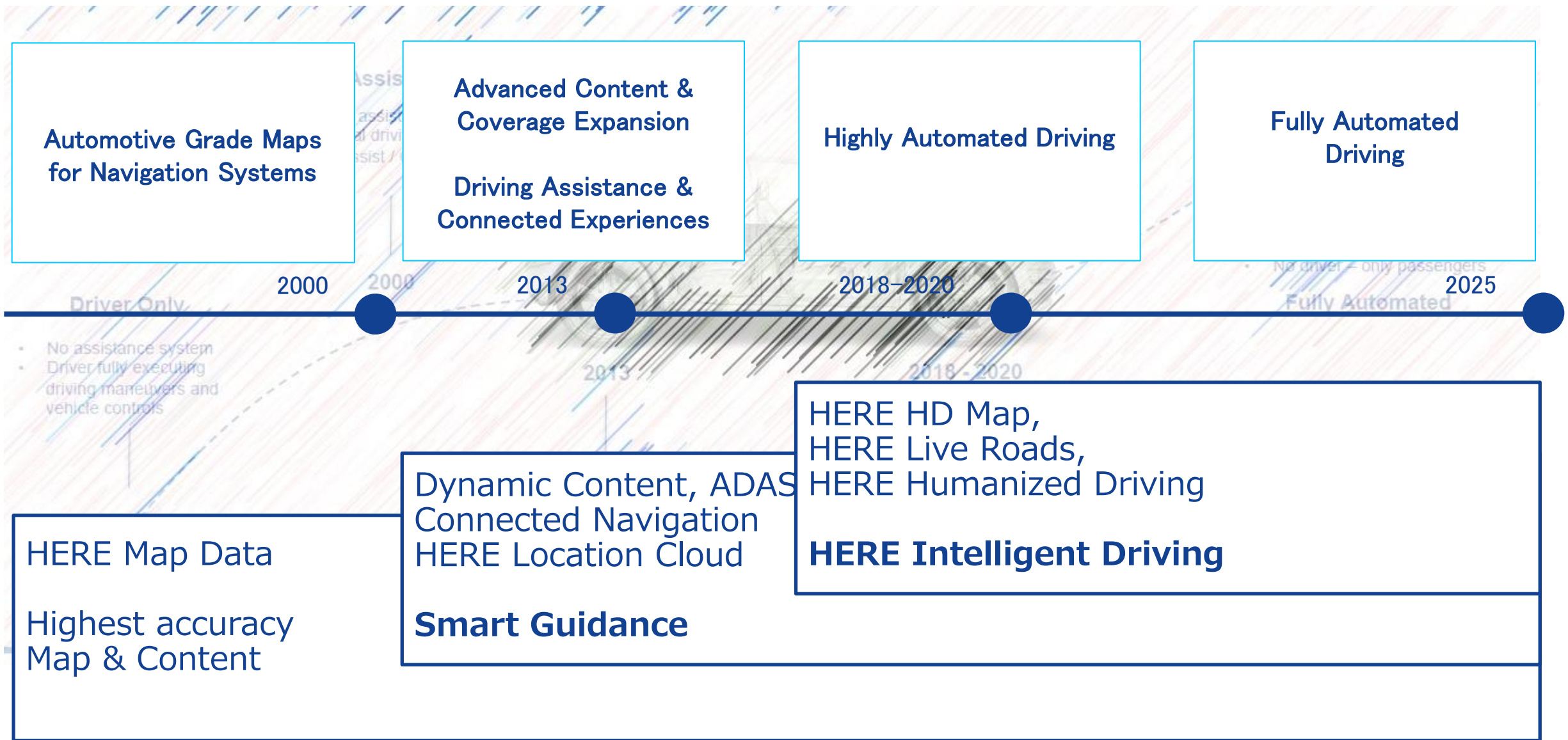


# HD Map: Conceptual View





# Critical Building Blocks towards the future



# 3 Key Requirements for Highly Automated Driving



**HD Map**

Precise positioning for lateral & longitudinal control of vehicle on the road surface



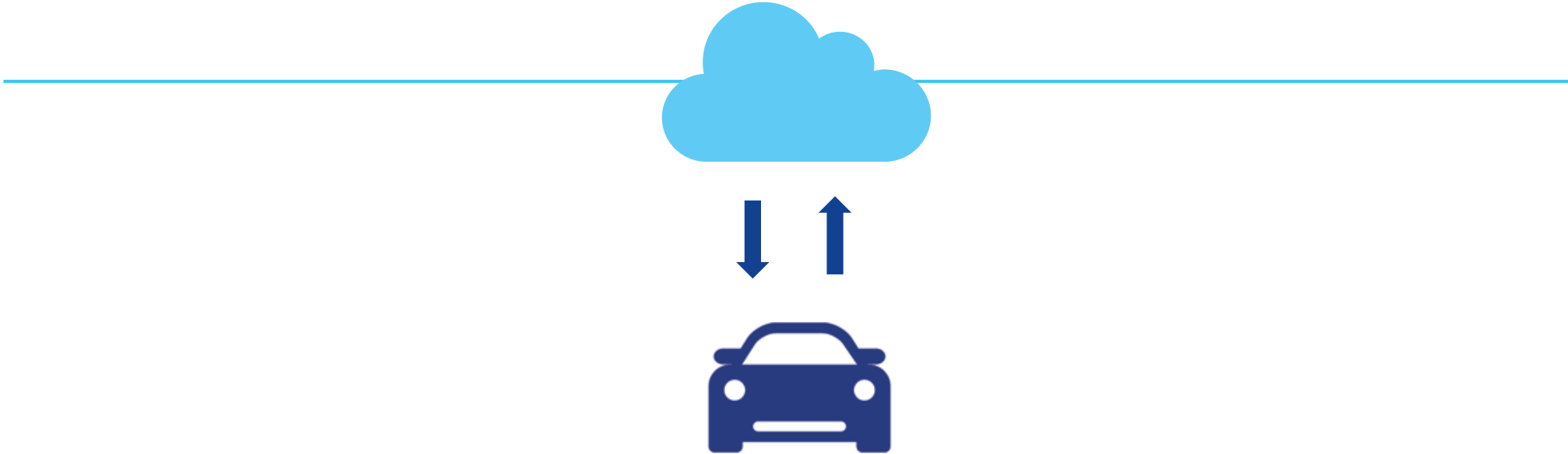
**HD Live Roads**

Accurate planning of vehicle control maneuvers beyond sensor visibility.



**HD Humanized Driving**

Making automated driving comfortable and acceptable for humans





**here**

**Maps for Life**

**here**

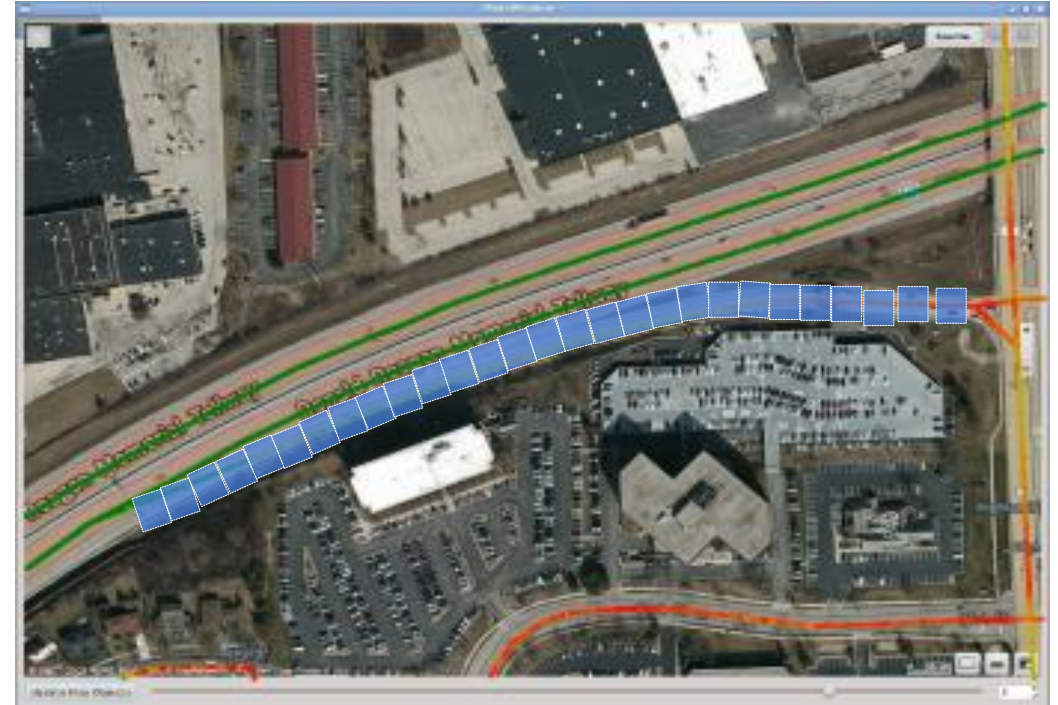
Backup

here



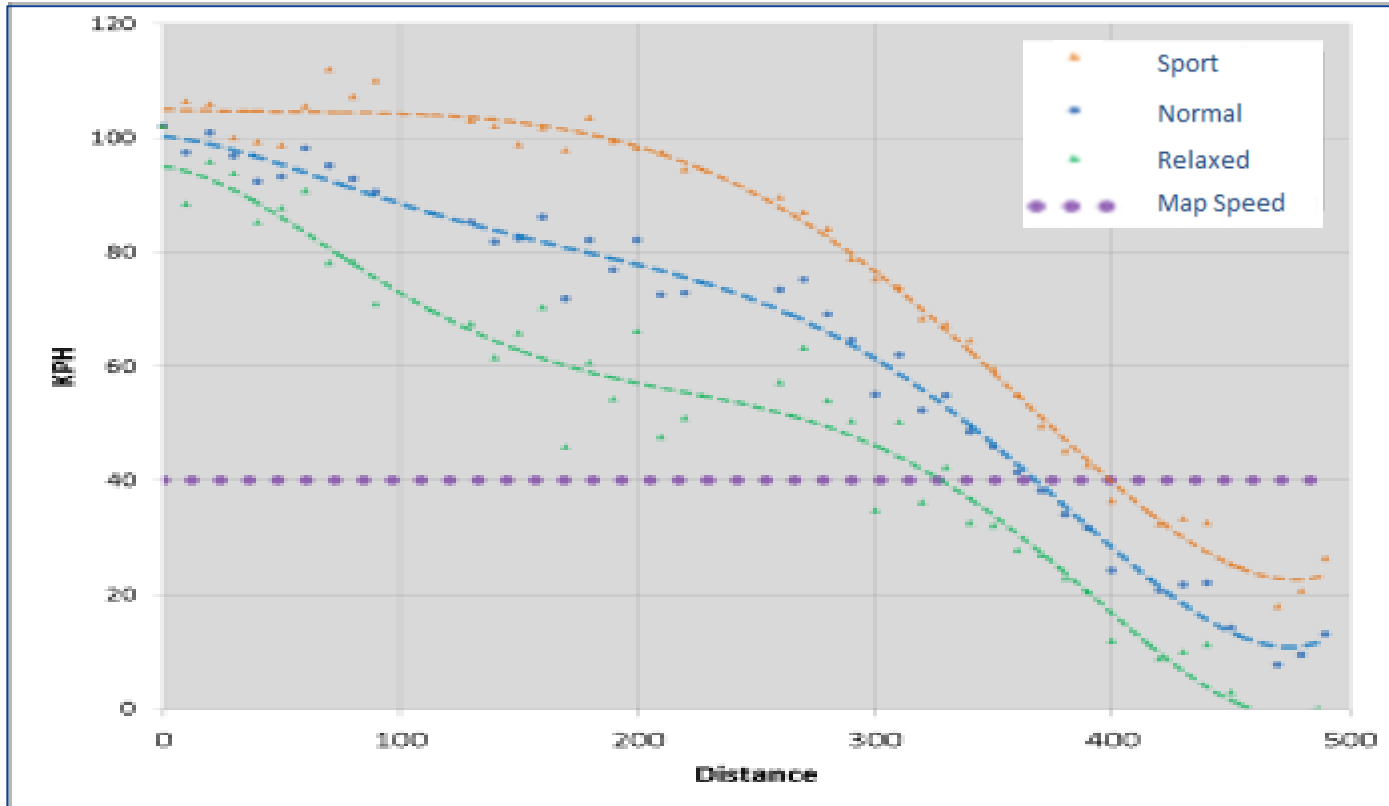
# HD Humanized Driving

- Speed profiles for link level road network
- Individualization based on driving behavior
- A personal identity for automated vehicles



# HD Humanized Driving, cont' d

## Determine speed profiles



## Output data set (Average style)

link_pvid	travel direction	data count	min speed	speed profile
920296539	T	1269	15	0;15 50;22 80;18
866646297	F	548	21	0;21 10;58 220;60
866646445	F	1573	65	0;65 60;65
19912921	T	511	16	10;16 40;36 70;22 90;32 150;48
923736419	T	1041	25	0;109 10;25 630;80
19889872	F	288	17	0;17 40;17
19912122	T	3293	27	0;27 120;29 140;28
866887370	F	17	11	0;11 40;11
19912504	T	84	28	0;45 60;28 160;38
19912031	F	395	12	0;100 275;68 460;12 481;12

- Observation:**

- Humans entering exit ramp with the speeds much higher than the speed limit and rapidly decelerating to the speed about 50% of the speed limit. Then they start accelerating