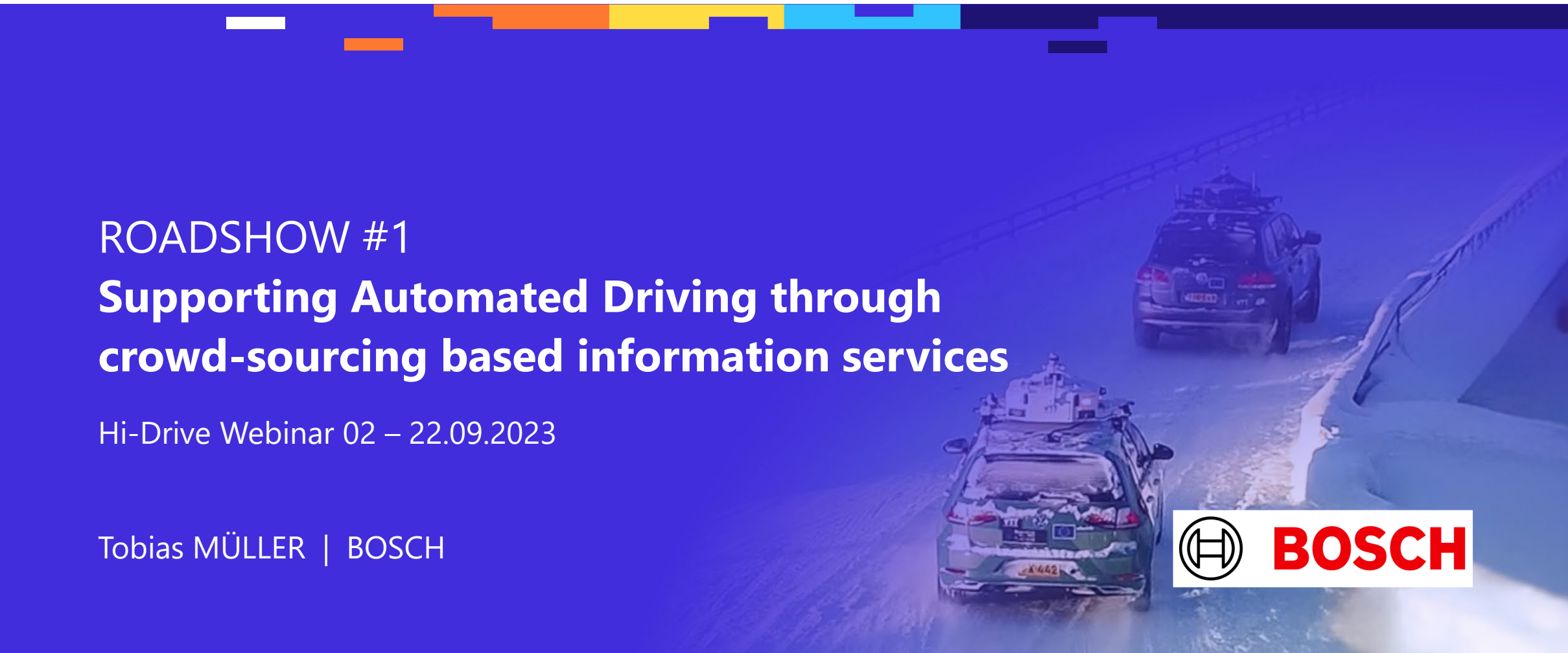


ROADSHOW #1
**Supporting Automated Driving through
crowd-sourcing based information services**

Hi-Drive Webinar 02 – 22.09.2023

Tobias MÜLLER | BOSCH



First remarks...










"Everything that happens in automated vehicles happens at a location and in a context."

"By combining data from automated vehicles and further sources with maps, we can learn about what happens at locations."

The "Hot Spot Map" concept



Services for VTT

Service	Vehicle owner	Development partners
Crowd Based GNSS Availability		 BOSCH
Predictive Quality of Service for Mobile Networks		 BOSCH 
Landmark Signature Recognition Map		 BOSCH

Crowd Based GNSS Availability



Enrichment of map with vehicle data:
GNSS horizontal dilution measurements per road segment.

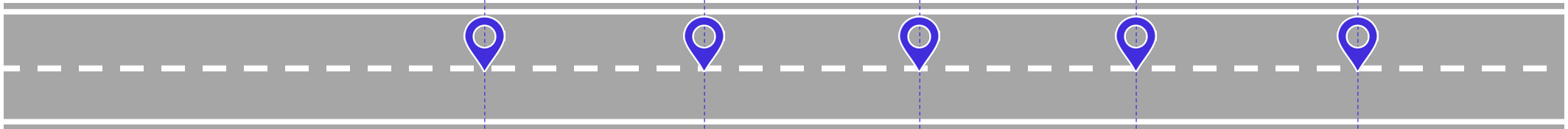
2.1m, 1.5m,
2.0m, 0.6m

1.5m, 2.0m,
2.1m, 2.9m

4.0m, 4.2m,
3.6m, 3.9m

3.3m, 3.5m,
3.5m, 3.4m

1.5m, 1.9m,
1.8m, 1.3m



Service based on enriched data:
Mean and variance of horizontal dilution

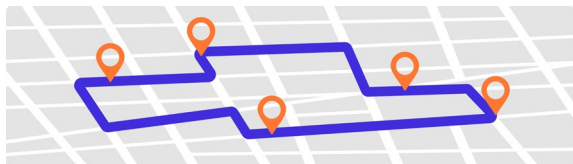
Mean: 1.55m
Variance: 0.47

Mean: 2.13m
Variance: 0.34

Mean: 3.93m
Variance: 0.06

Mean: 3.43m
Variance: 0.01

Mean: 1.63m
Variance: 0.08



Providing vehicles with a prediction of the upcoming GNSS available along its route.

Predictive Quality of Service for Mobile Networks

Service:

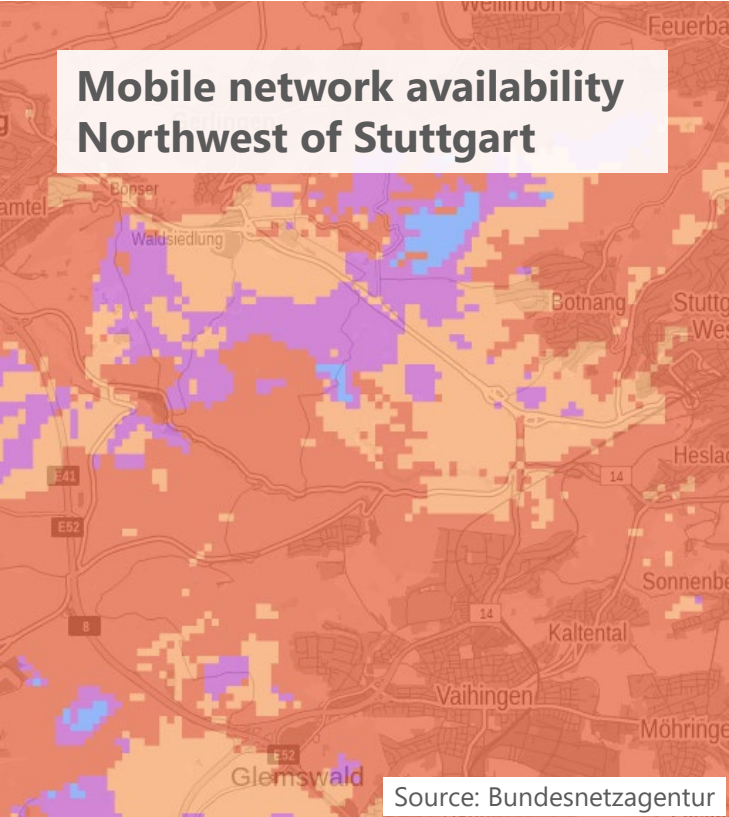
Provide vehicles with a prediction of the upcoming Network Quality available along its route

Subservice:

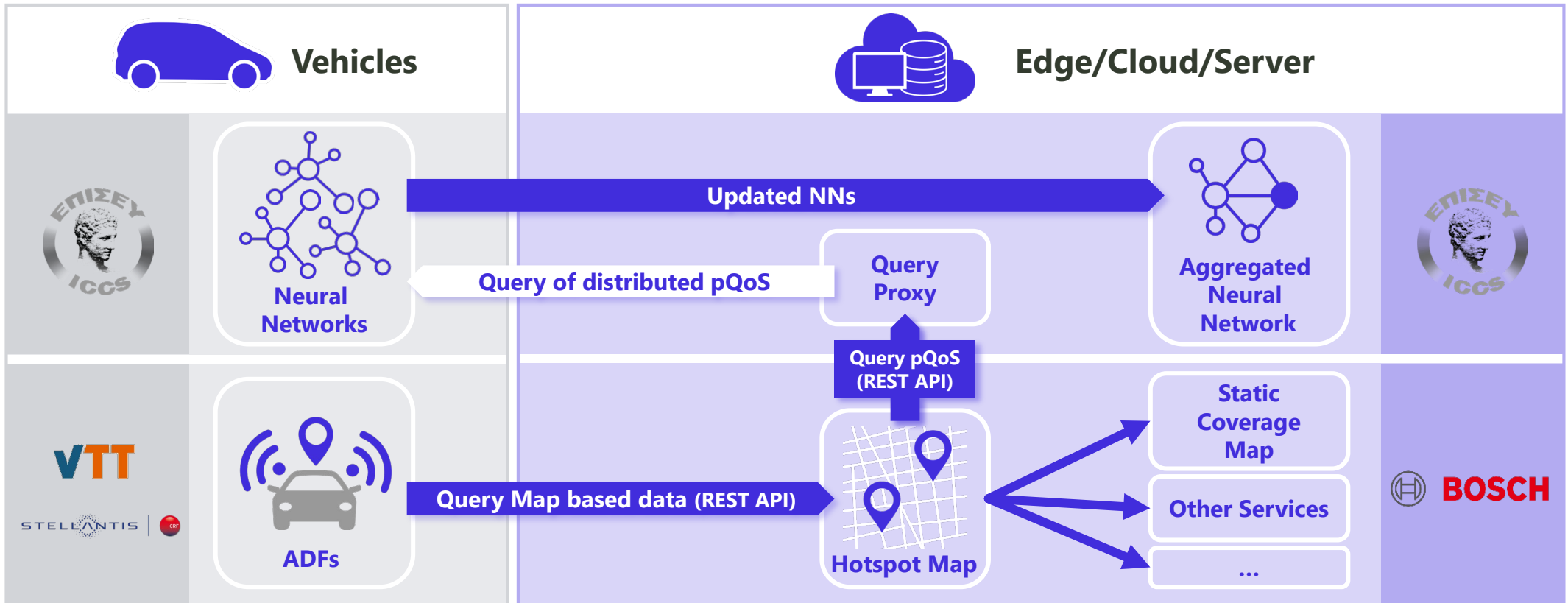
Static Network Coverage Map including Context Based Prediction

Subservice:

Dynamic Prediction based on real-time network measurements



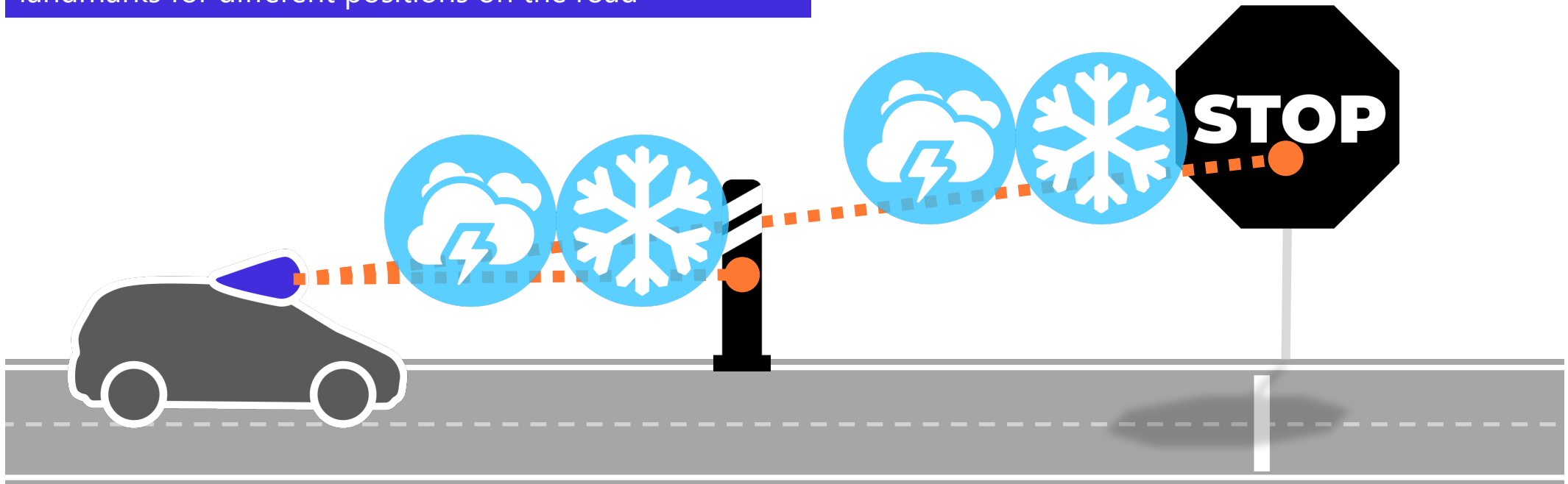
Predictive Quality of Service for Mobile Networks



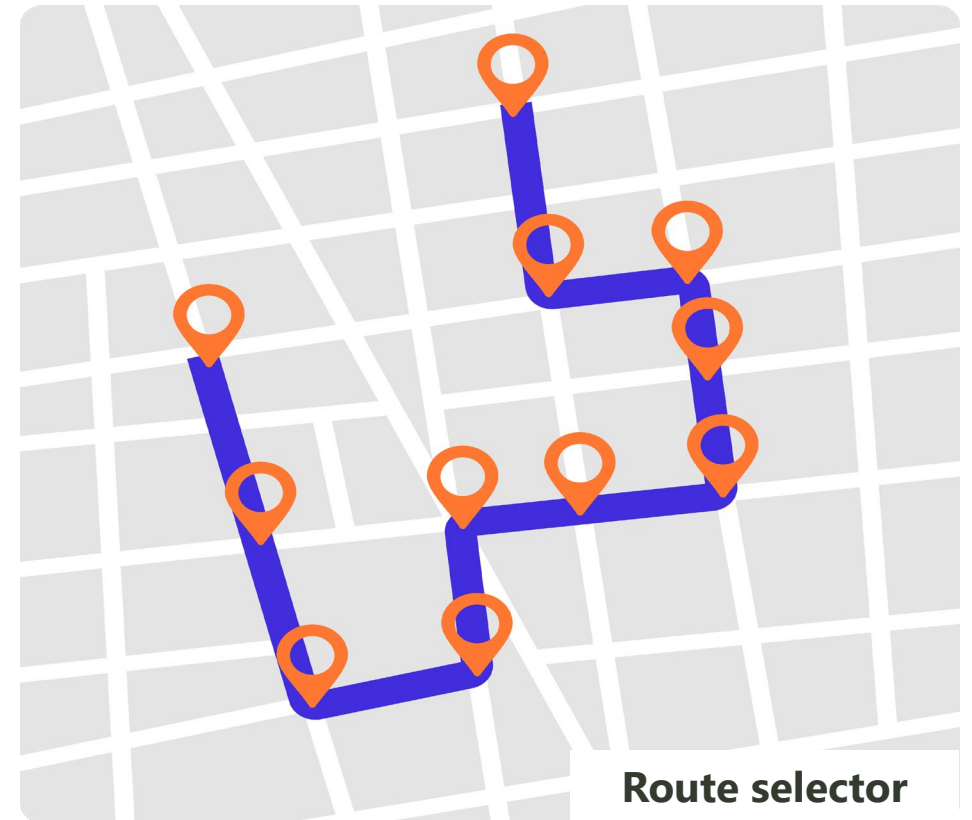
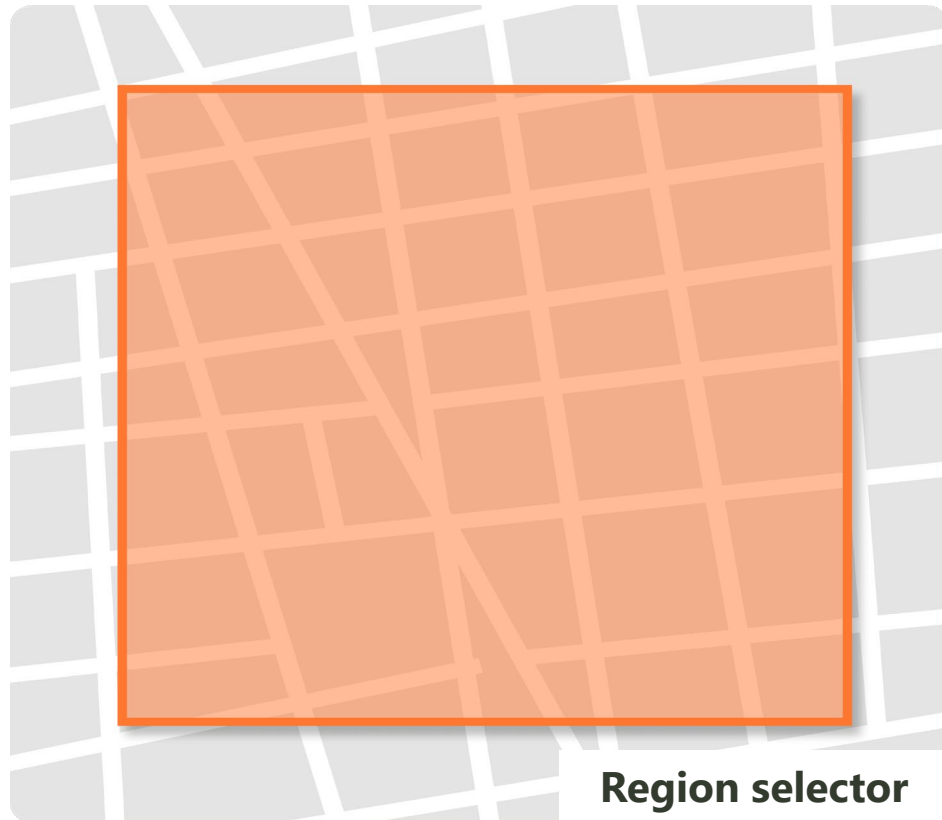
Landmark Signature Recognition Map

Service:

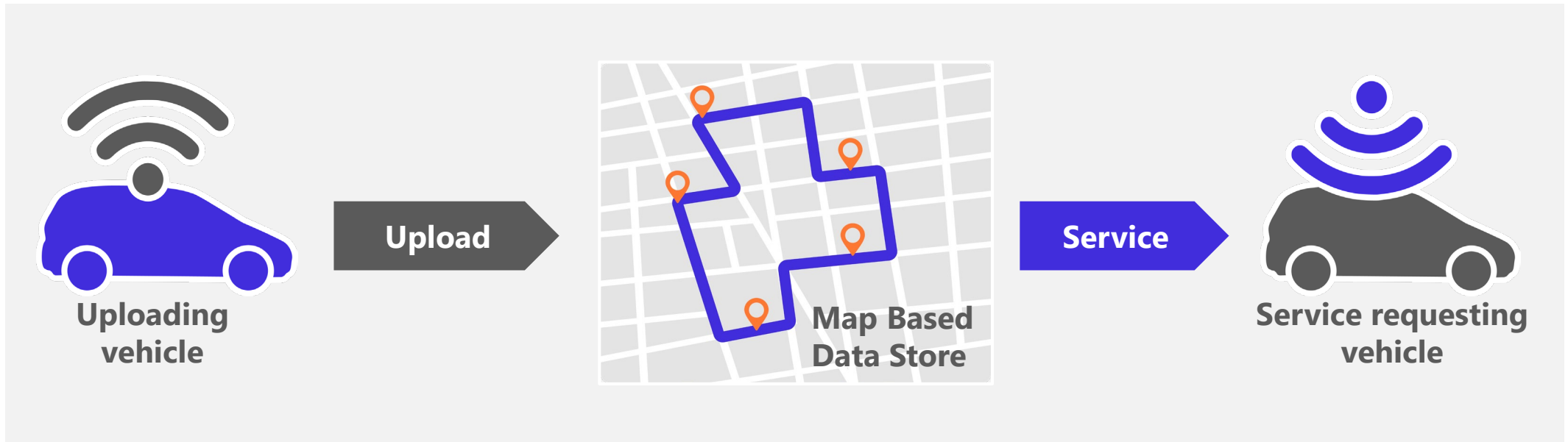
Provide location and past/predicted LiDAR reflections of landmarks for different positions on the road



Spatial Information Selectors



Where to Process What?





THANK YOU FOR
YOUR KIND ATTENTION.

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Hi-Drive

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