The Internet of Moving Things:

Vehicle Connectivity, the third pillar of mobility, is already here.

Rui Costa
CTO

rcosta@veniam.com

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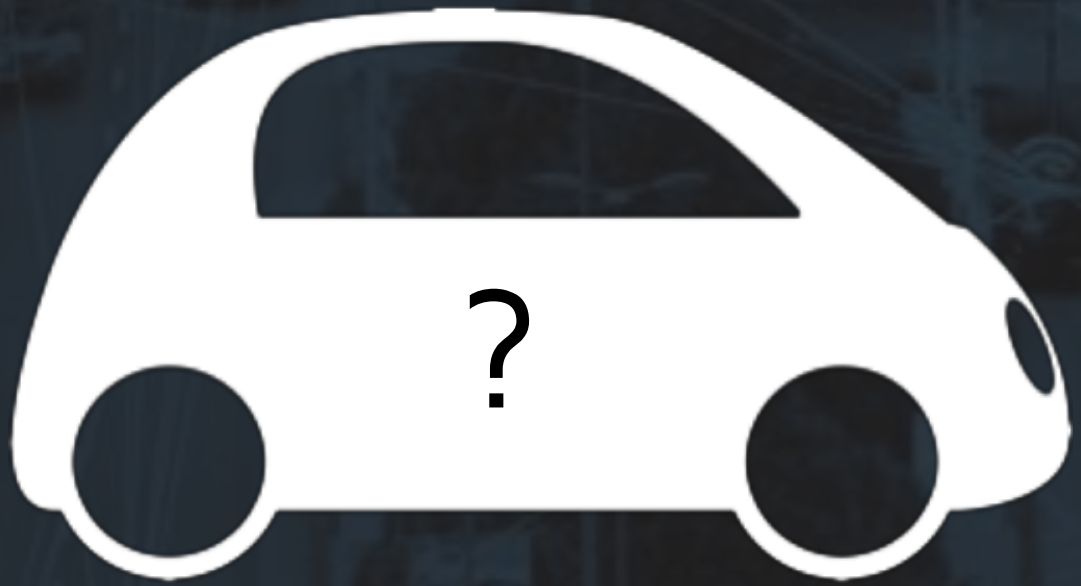

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VEHICLES ARE CHANGING

TODAY

5% content 85% hardware 10% software

2020

20% content 40% hardware 40% software

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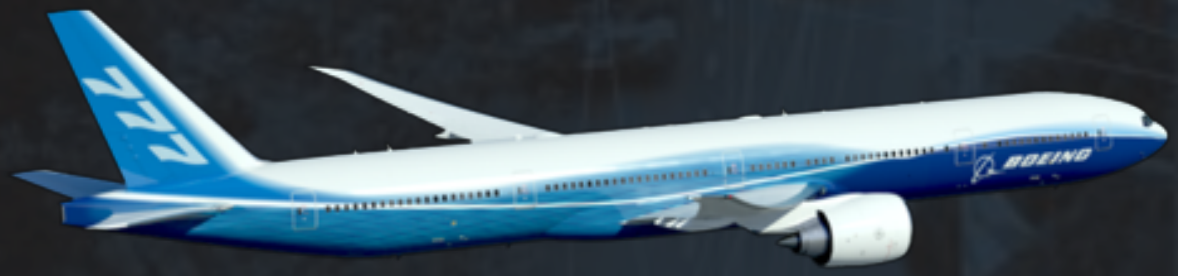
VEHICLES **ARE CHANGING**



3.4 million
lines of code

100 million
lines of code

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VEHICLES **ARE CHANGING**

*"**Rui, did you know** connected vehicles will have*

***5 times** the lines of code than **Facebook** in future?"*

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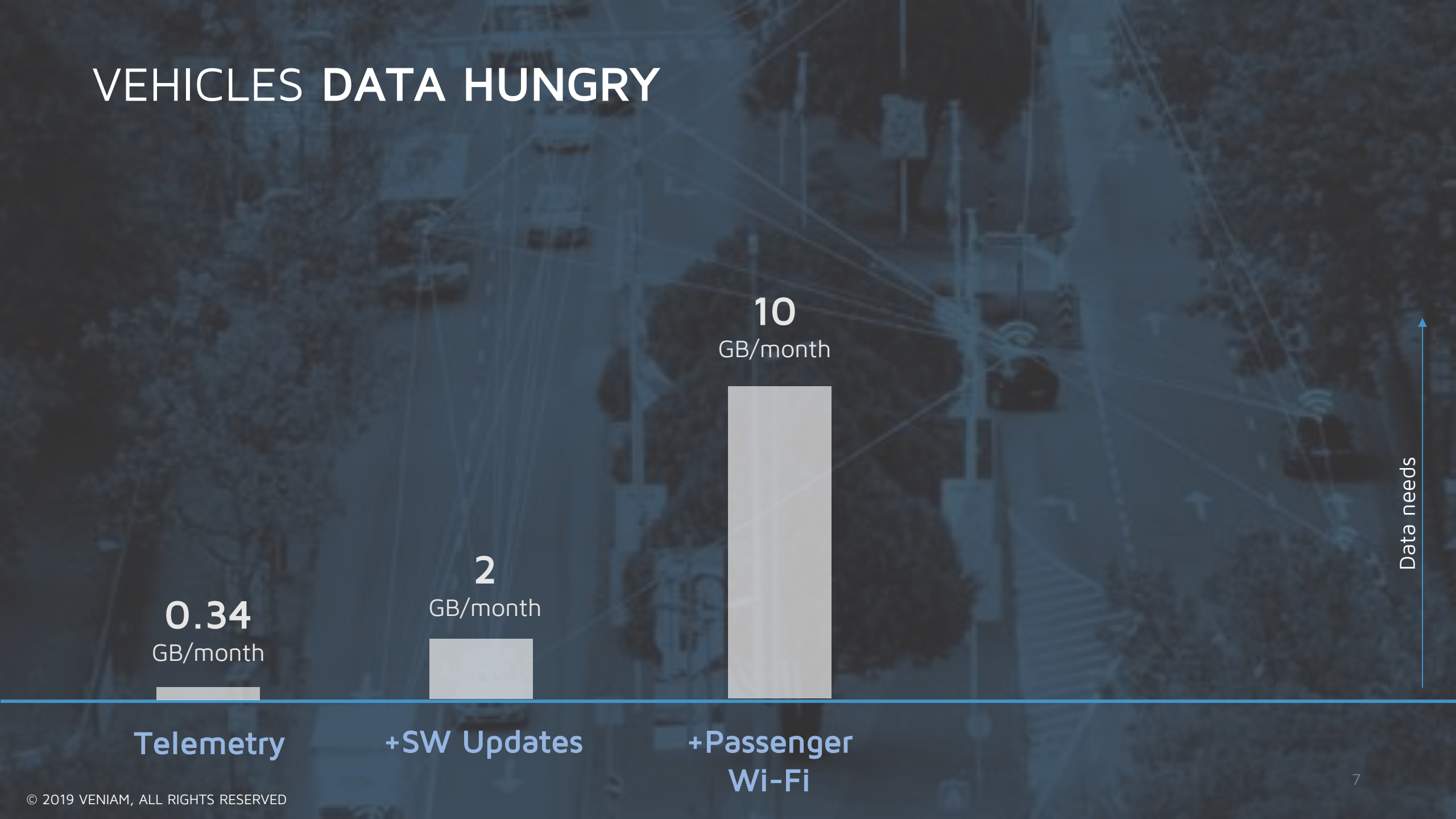
VEHICLES **DATA HUNGRY**



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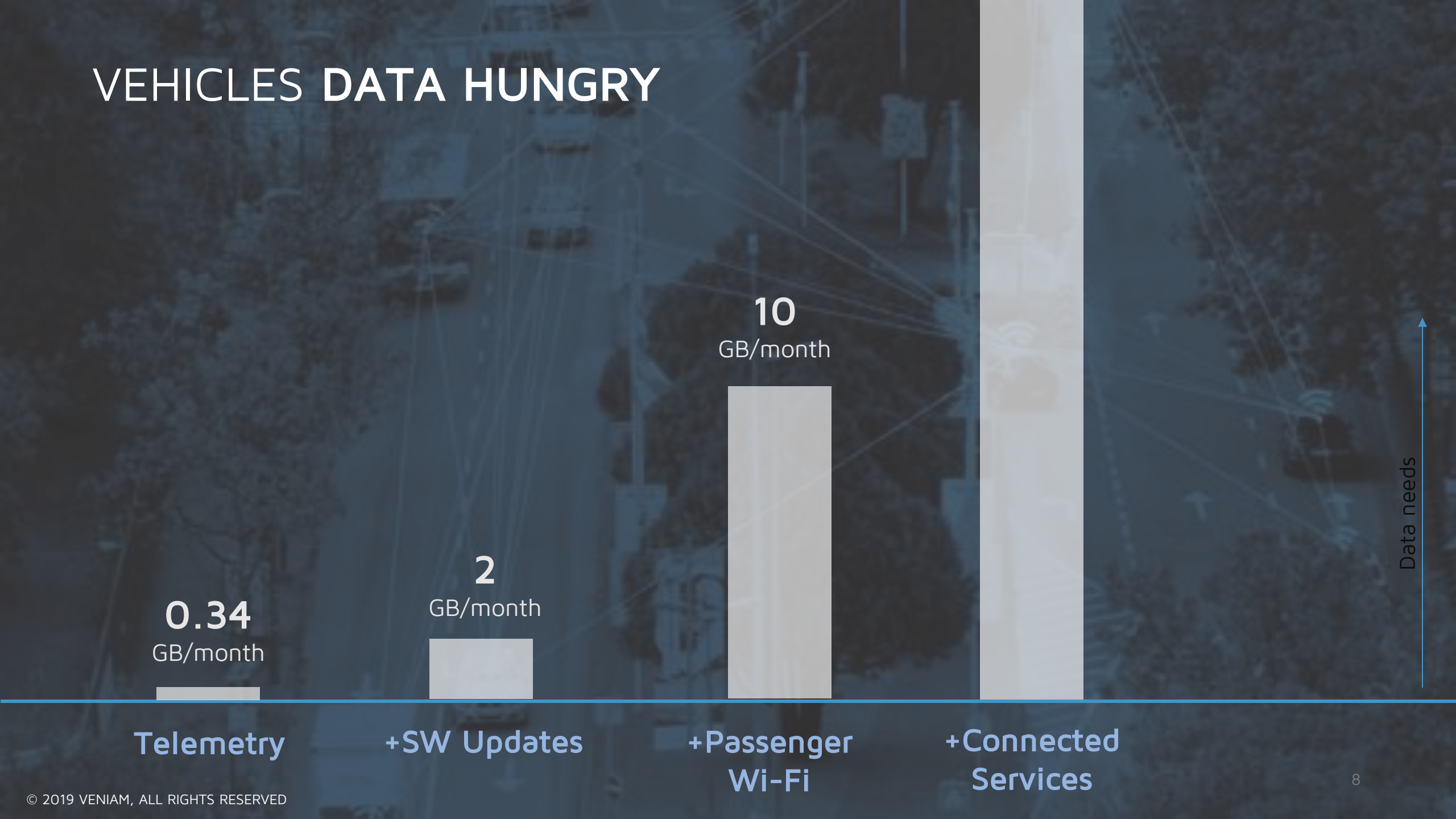
VEHICLES **DATA HUNGRY**



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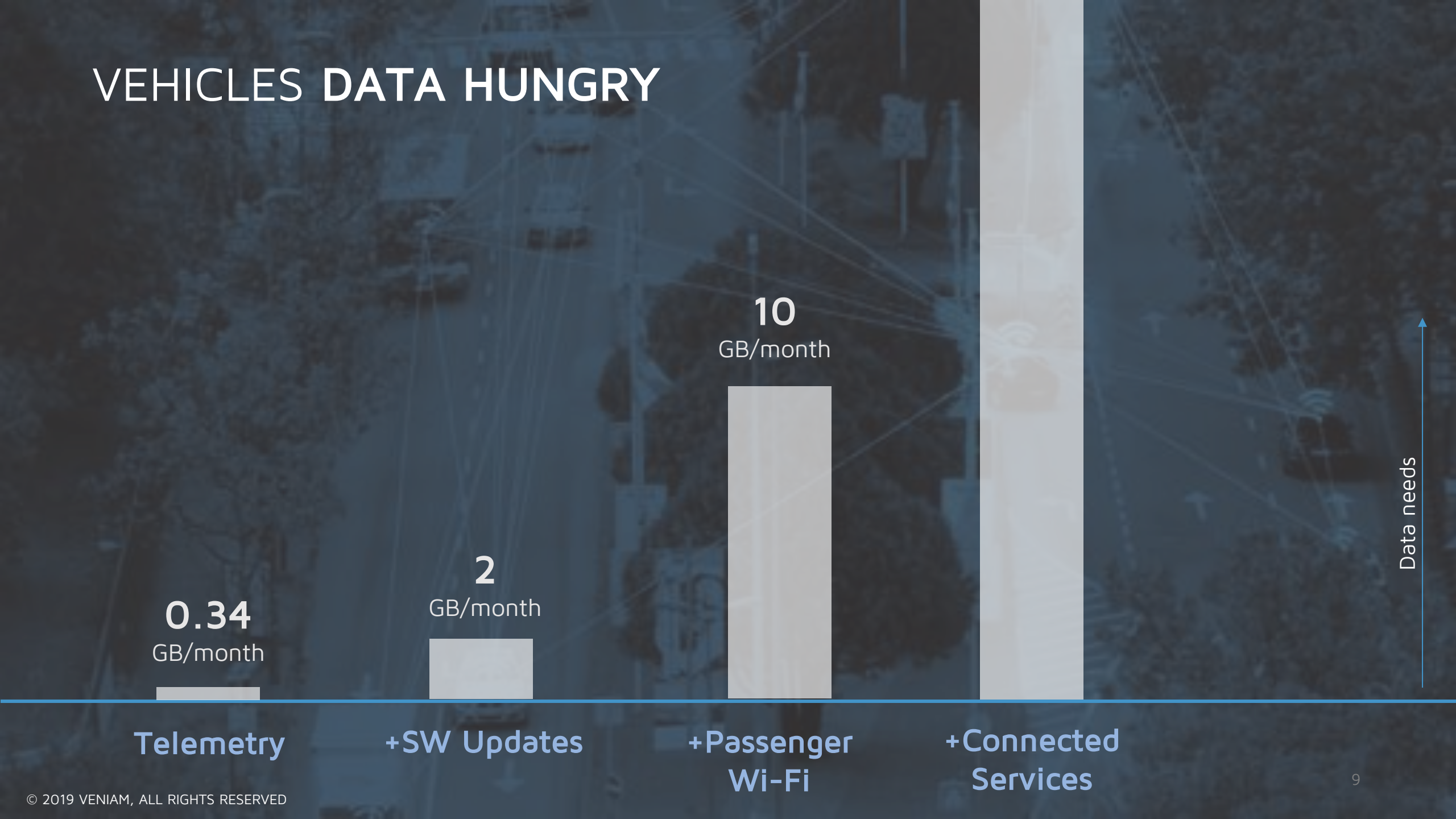
VEHICLES **DATA HUNGRY**



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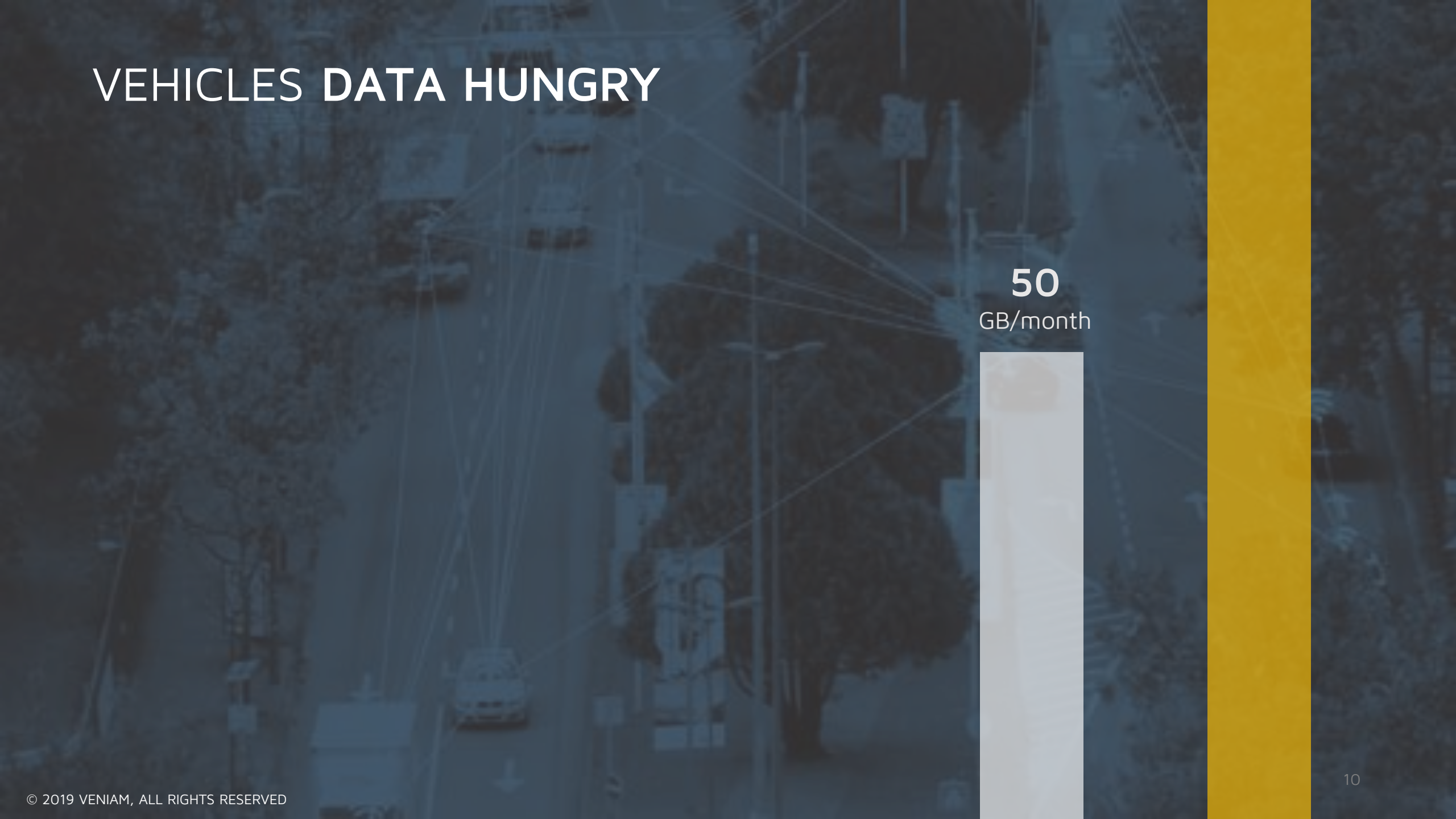
VEHICLES **DATA HUNGRY**



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VEHICLES **DATA HUNGRY**

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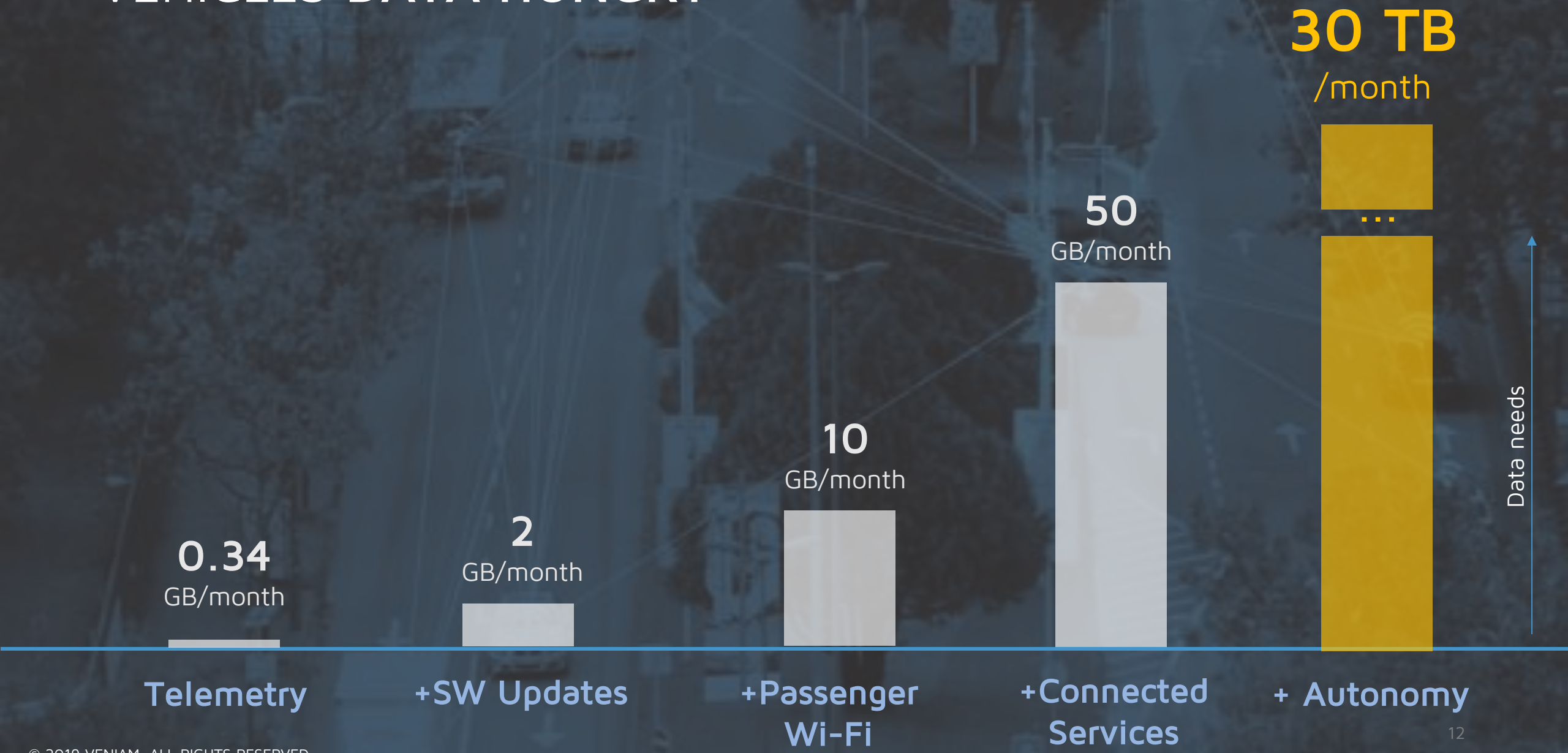
VEHICLES **DATA HUNGRY**



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Mobility is changing dramatically

A trillion dollar market re-invented with data and connectivity

STEP 1: **THE CONNECTED CAR** → STEP 2: **MOBILITY ON DEMAND (MOD)** → STEP 3: **AUTONOMOUS VEHICLES**

CAR2GO · CHARIOT · DriveNow · lyft · MAVEN · UBER

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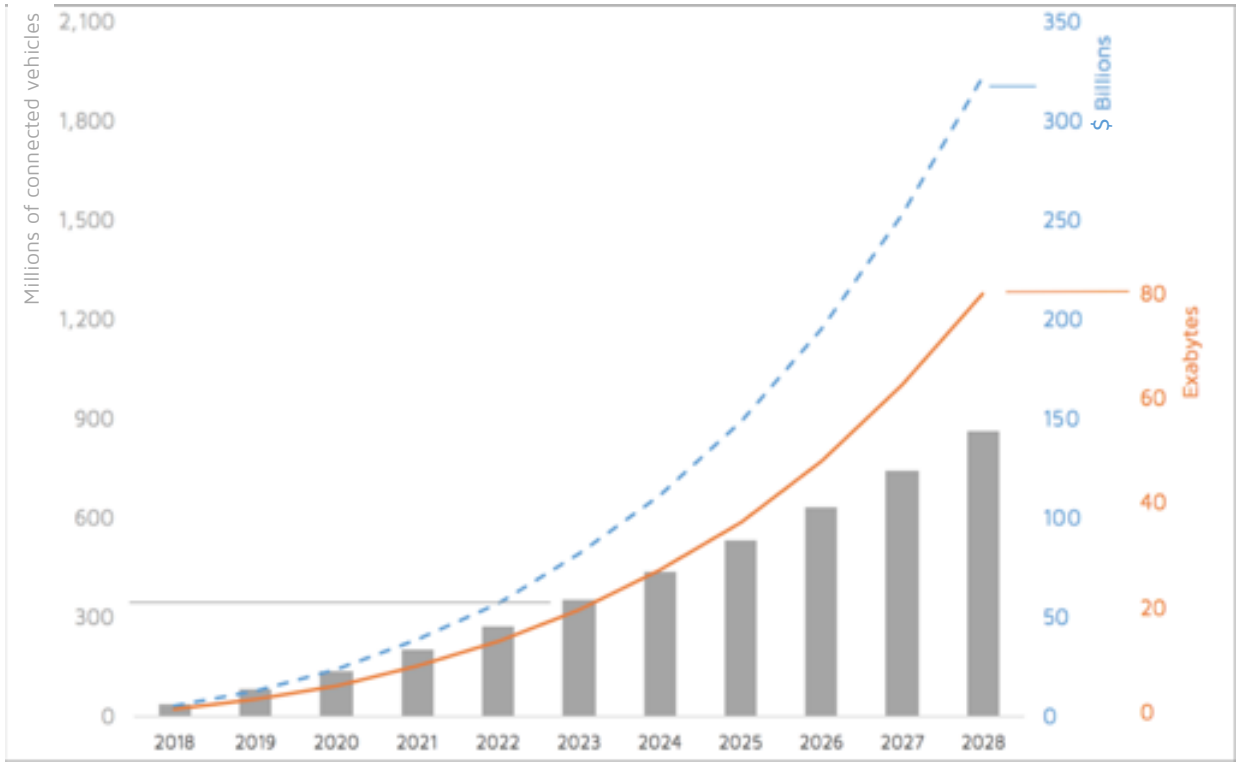
Market trends



DATA COSTS ARE EXPLODING

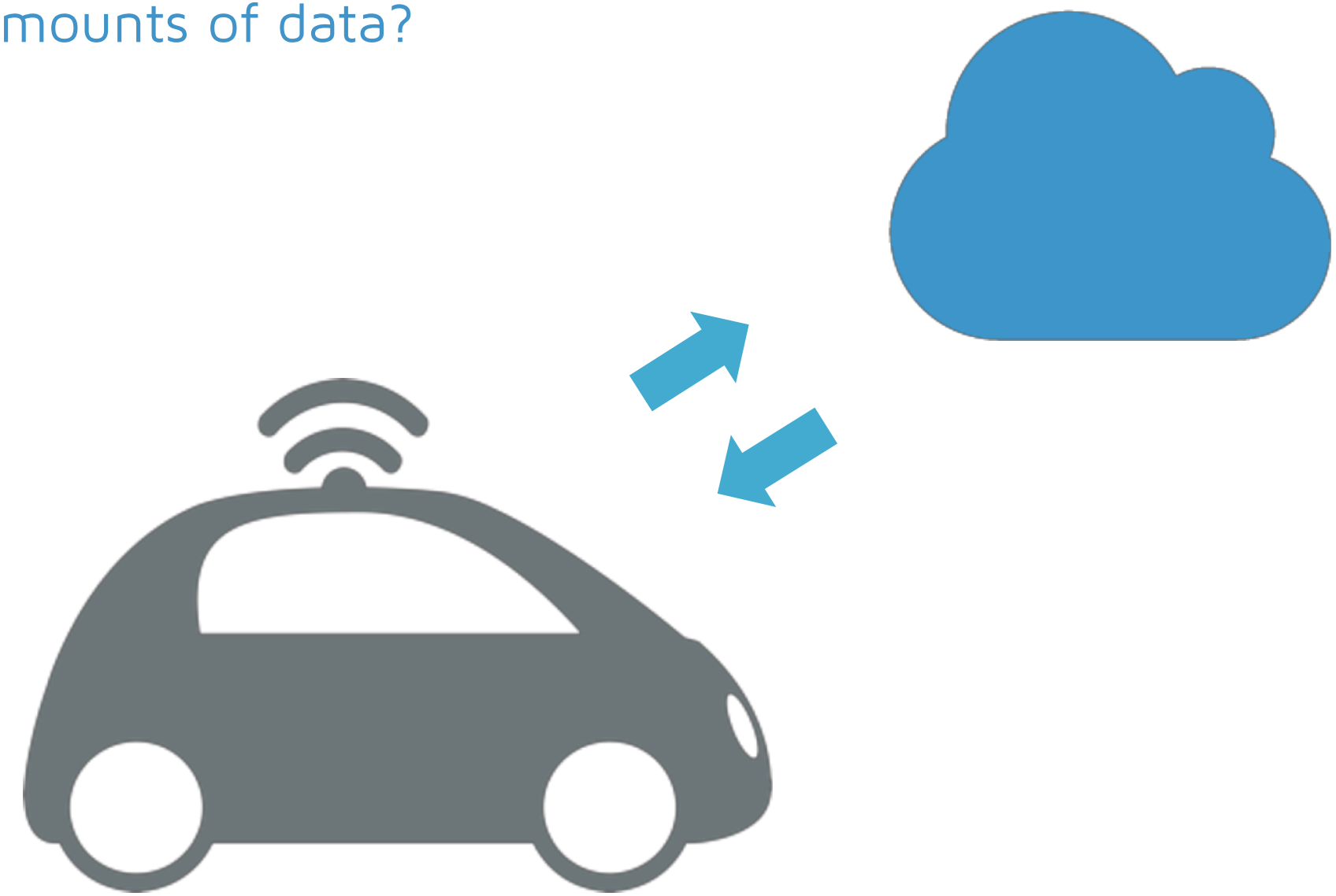
CURRENT NETWORKS DO NOT SCALE

AUTO OEMS ARE LOOKING FOR SOLUTIONS TO:

- Reduce costs
- Enable new connected vehicle services
- Offload data traffic

VENIAM®

Moving massive amounts of data?



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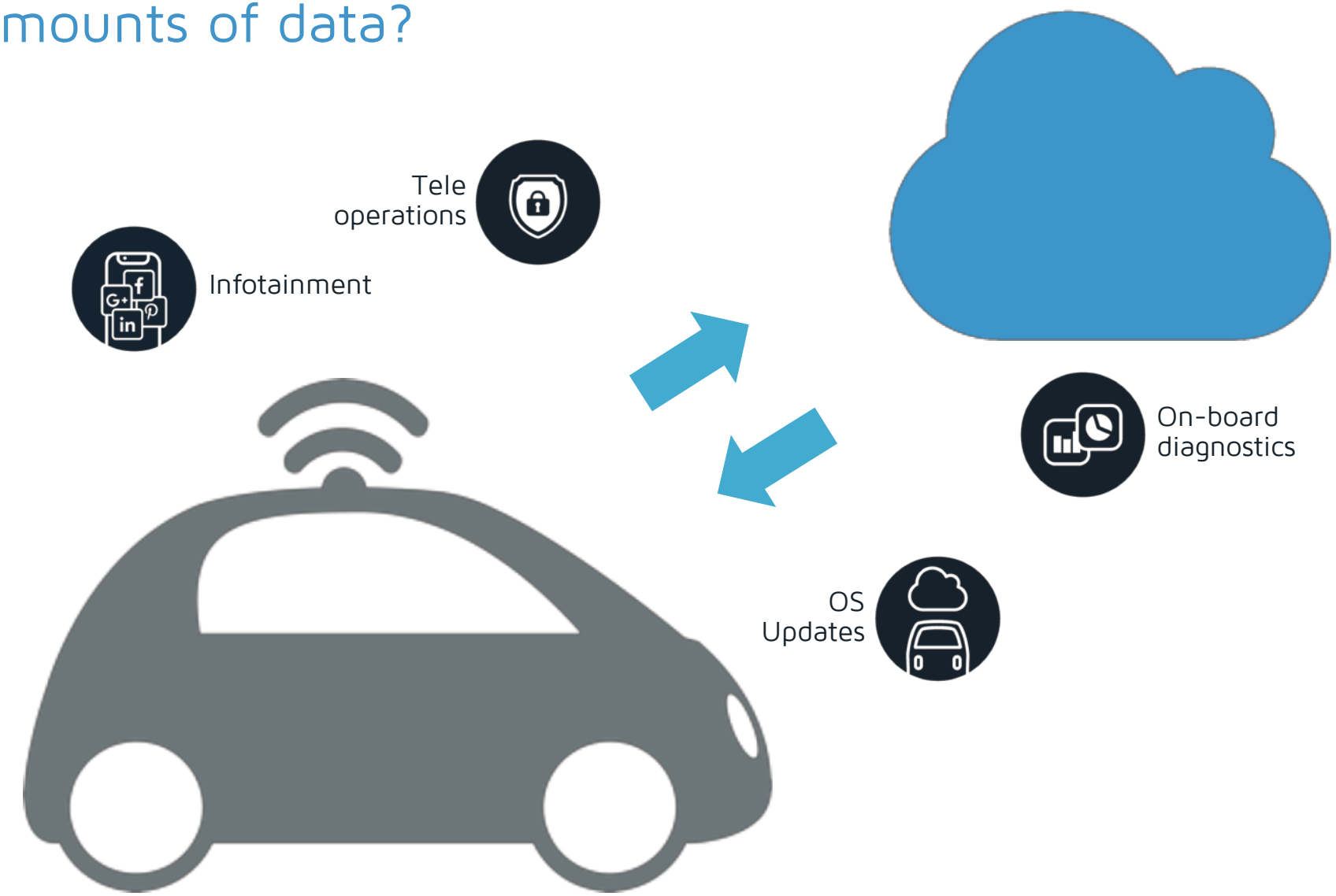
Moving massive amounts of data?



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Wireless Interfaces in your car

WI-FI

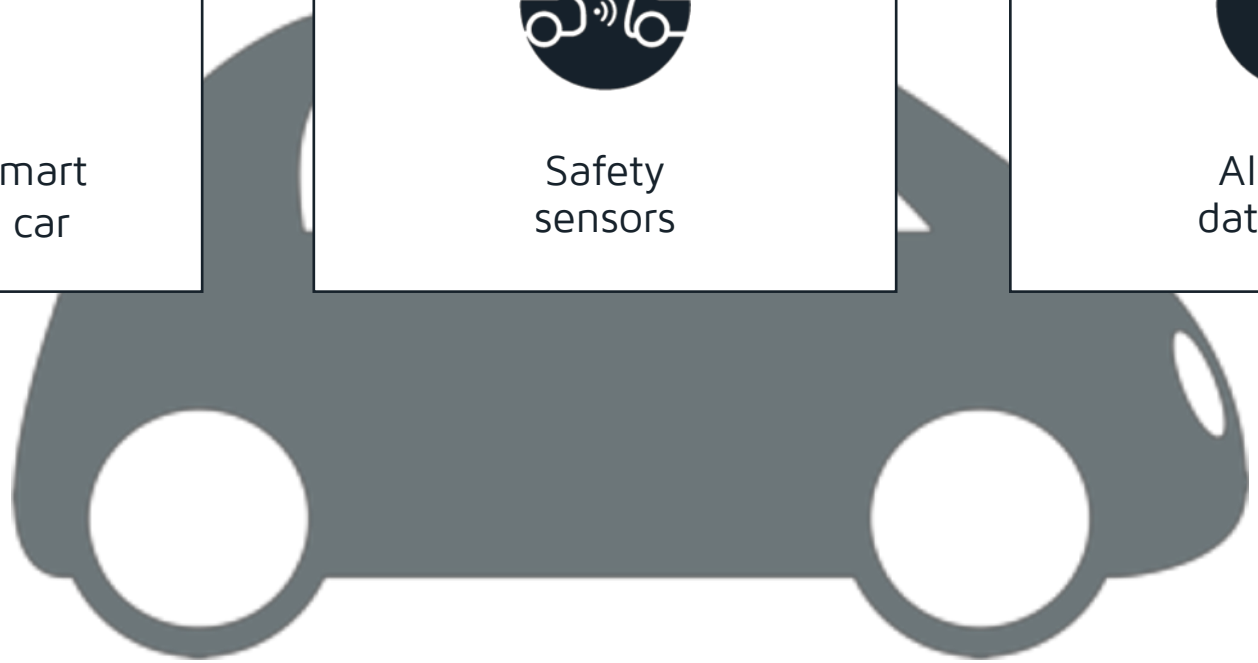
Connect the smart phone to the car

V2X
(DSRC, C-V2X)

Safety sensors

4G LTE

All other data traffic



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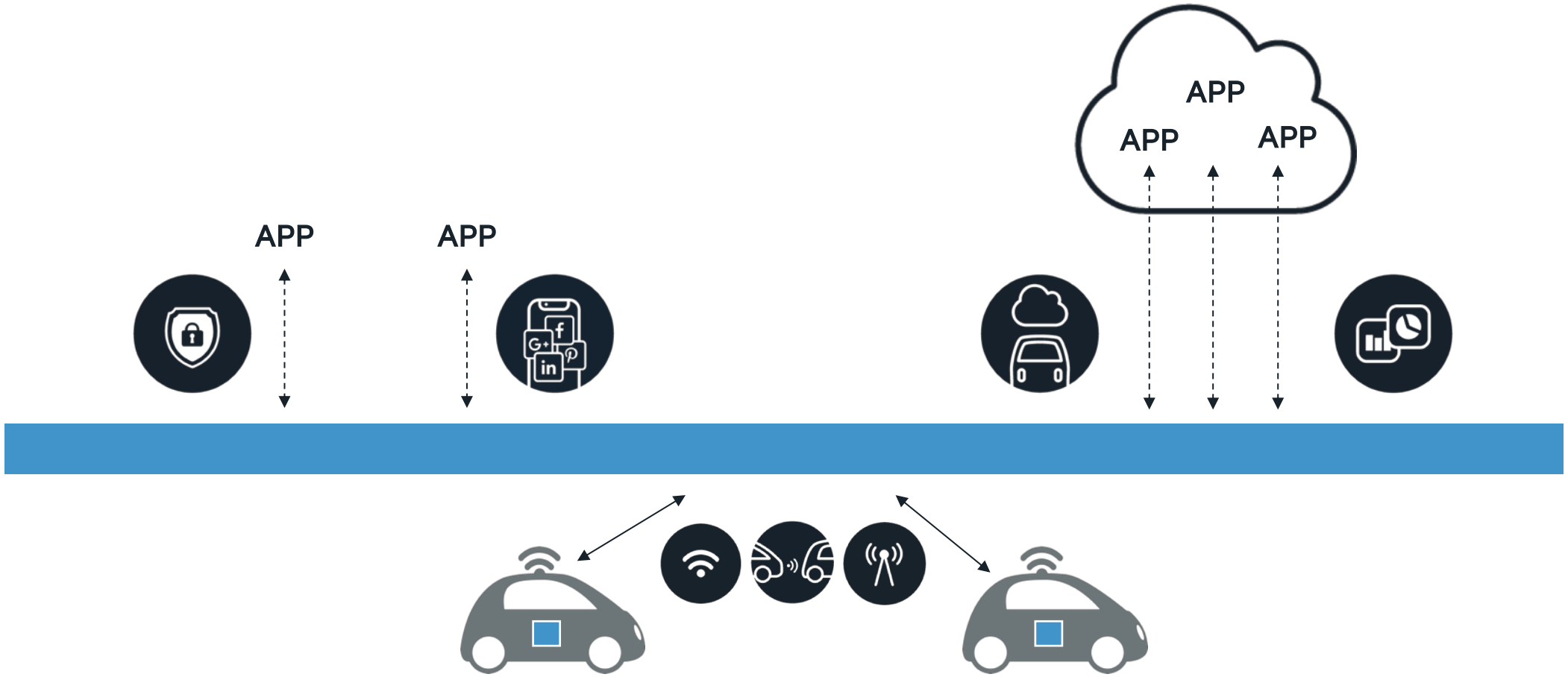

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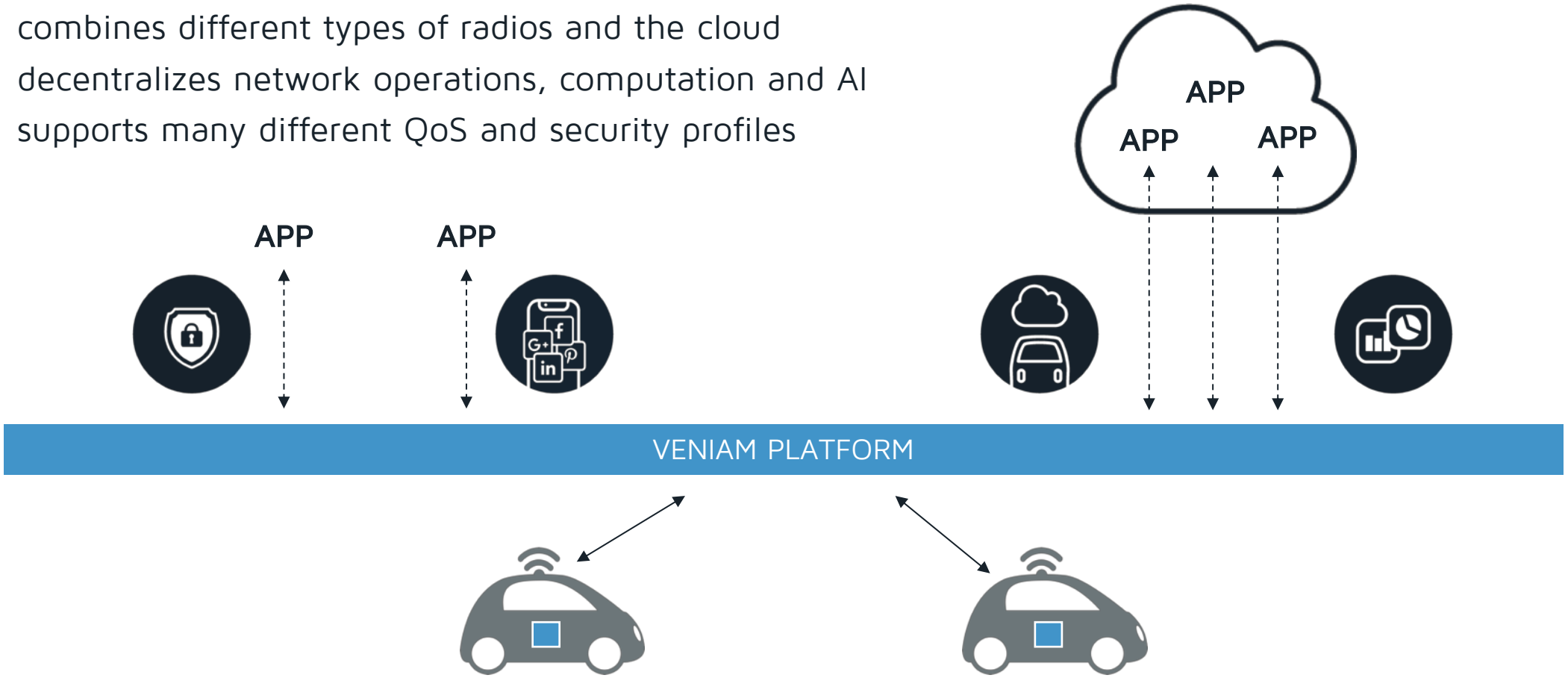
Veniam offers intelligent networking software for auto OEMs

- combines different types of radios and the cloud
- decentralizes network operations, computation and AI
- supports many different QoS and security profiles



VENIAM MANAGES DATA FLOWS AND ACCESS TO VEHICLE'S COMMUNICATIONS AND COMPUTING RESOURCES

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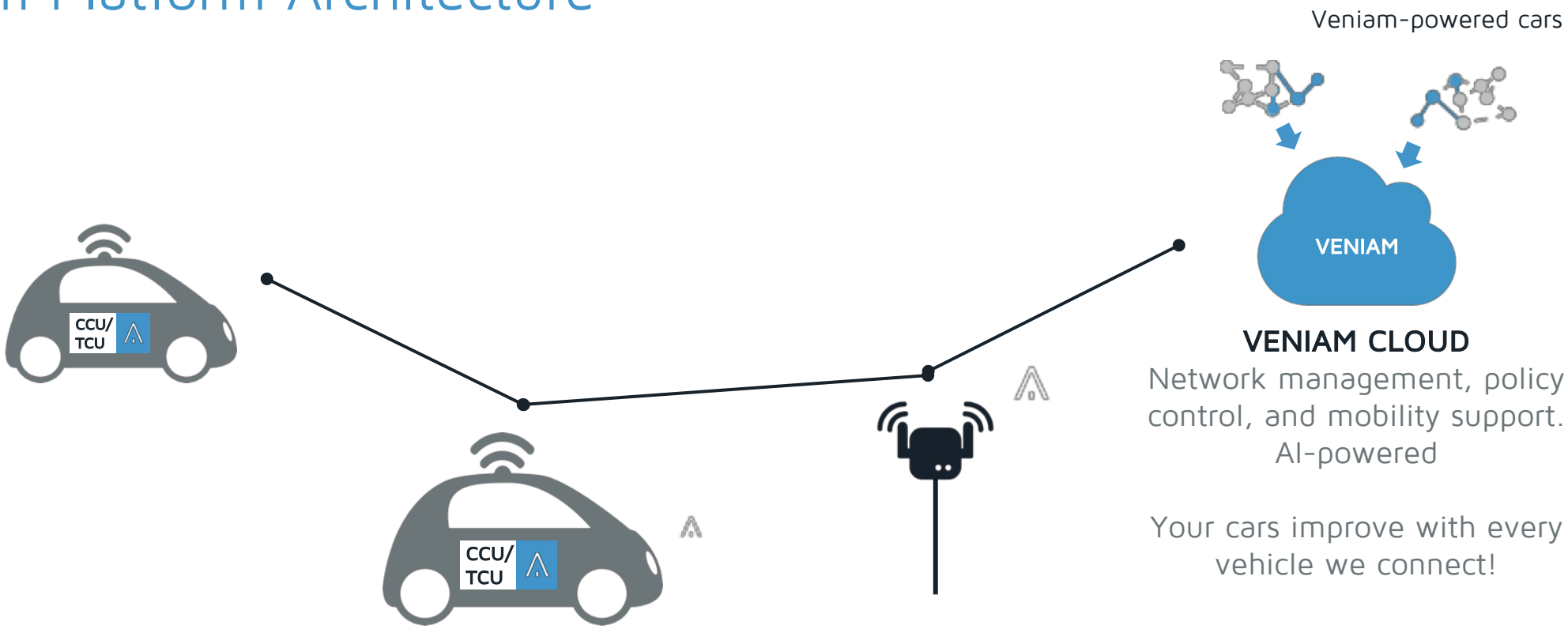
Veniam Platform Architecture



VENIAM CLOUD

Network management, policy control, and mobility support. AI-powered

Your cars improve with every vehicle we connect!

EMBEDDED NETWORKING SOFTWARE

Mesh-enabled, multi-network, and context-aware

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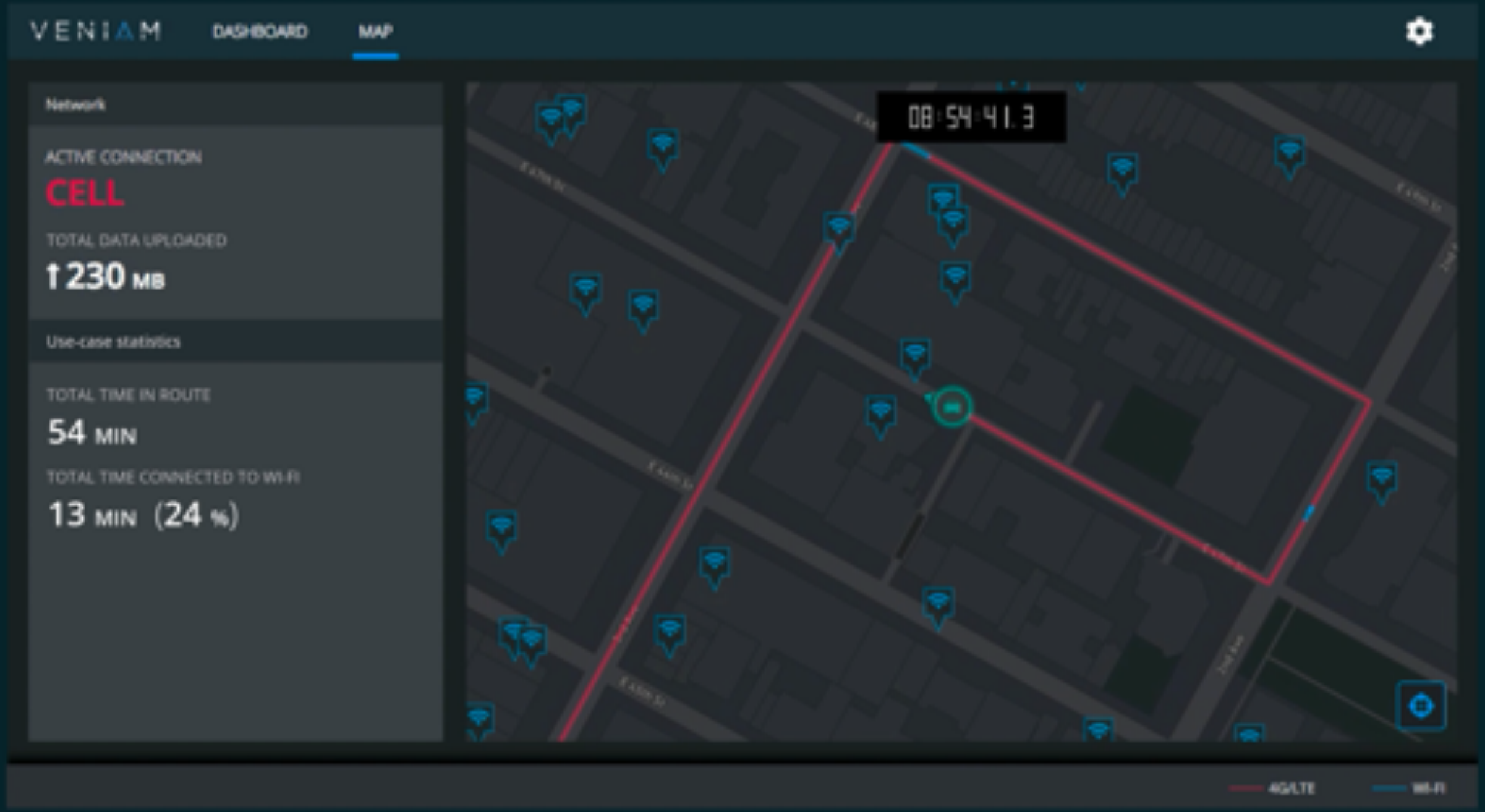
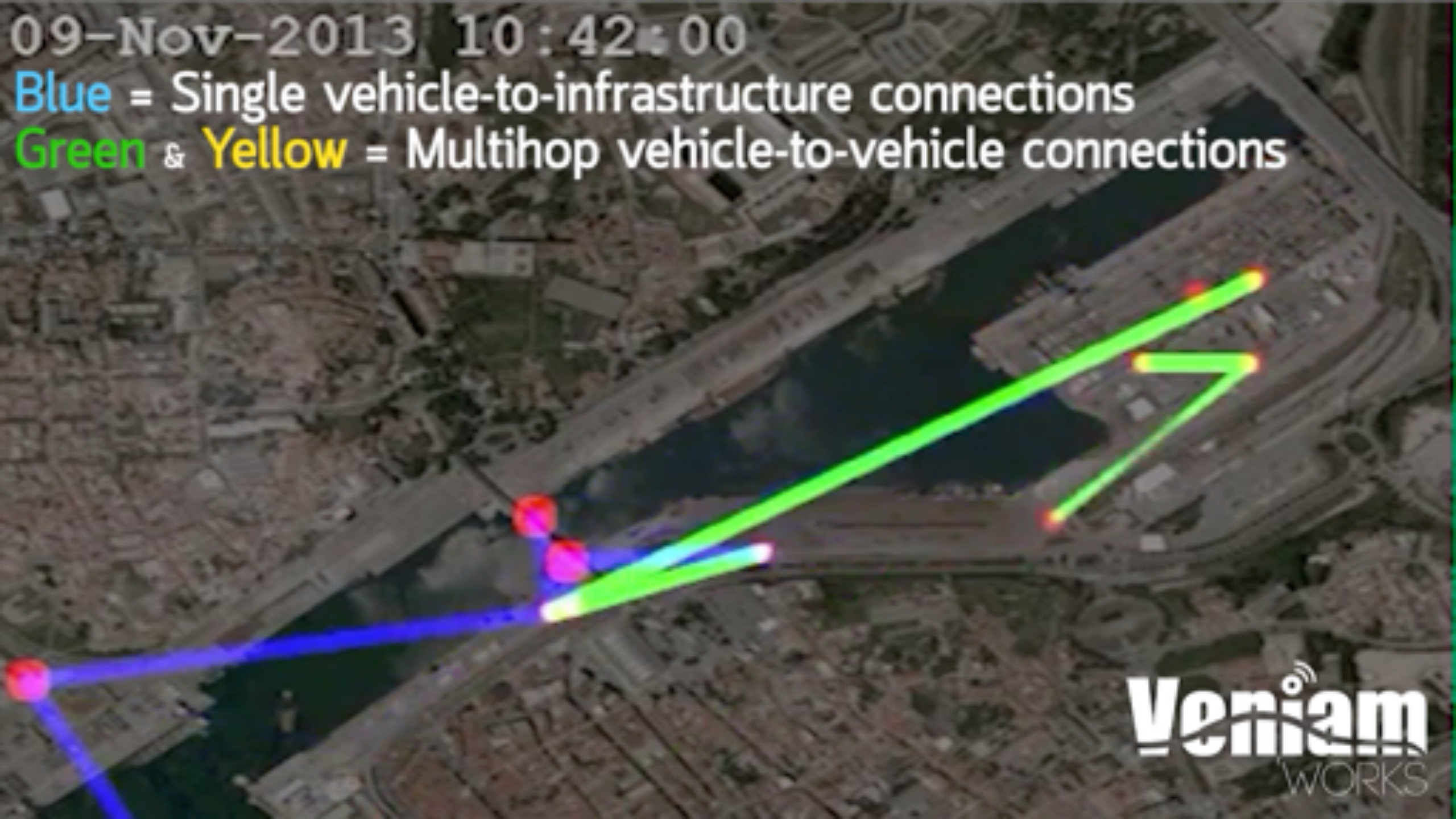
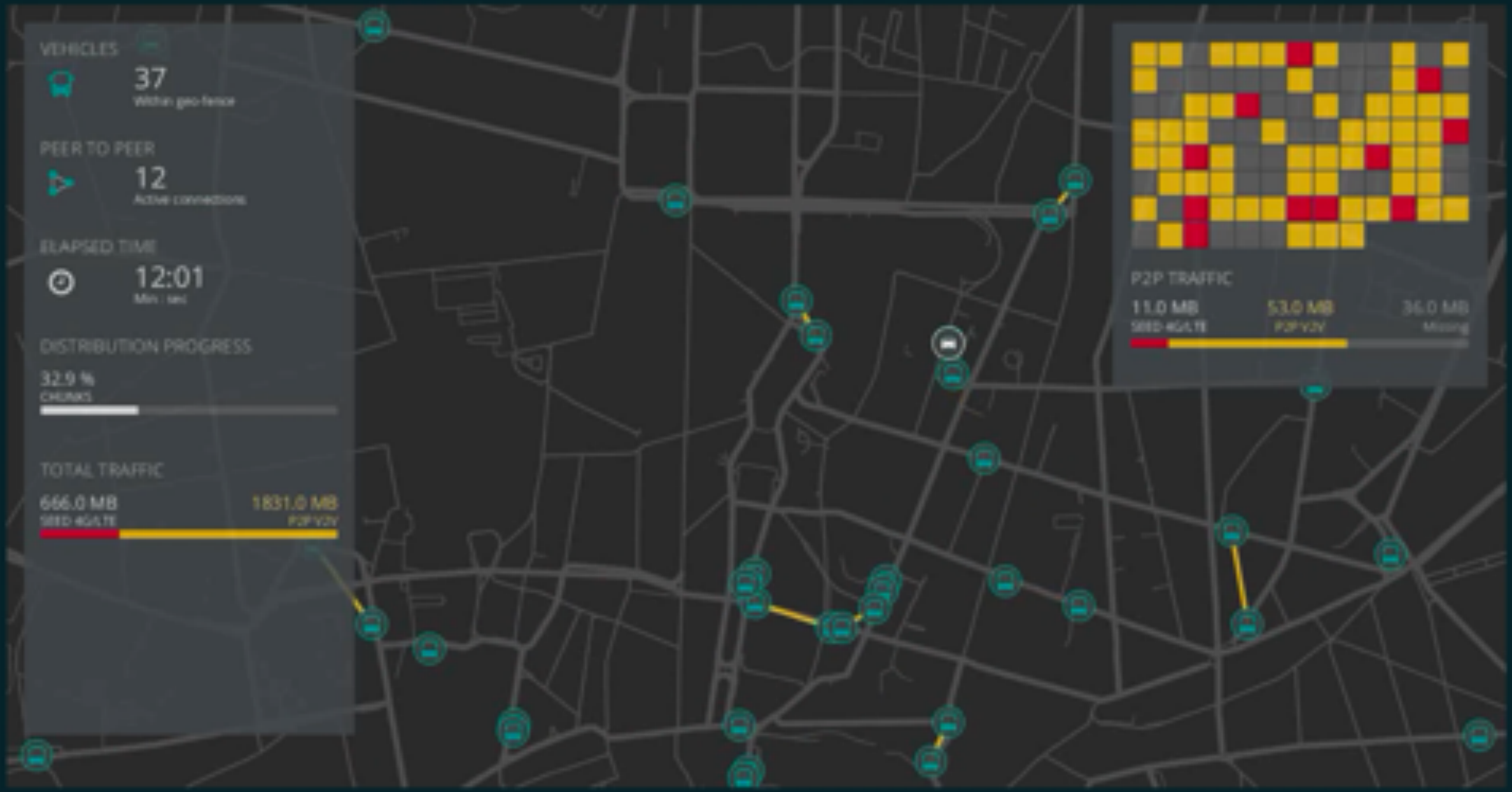

VENIAM
DASHBOARD
MAP
Network
ACTIVE CONNECTION
CELL
TOTAL DATA UPLOADED
↑230 MB
Use-case statistics
TOTAL TIME IN ROUTE
54 MIN
TOTAL TIME CONNECTED TO WI-FI
13 MIN (24 %)
08:54:41.3
4G/LTE
Wi-Fi


09-Nov-2013 10:42:00
Blue = Single vehicle-to-infrastructure connections
Green & Yellow = Multihop vehicle-to-vehicle connections
Veniam
WORKS

VENIAM

Vehicle-to-vehicle (V2V) content distribution in a mesh network of vehicles using file chunking



Multi-network mesh
Embedded software
Cloud-based data orchestration

RCOSTA@VENIAM.COM

THANK YOU

WE ARE
HIRING