ITS GA 2021 Annual Meeting

How Cities Can Best Leverage Big Data for Actionable Insights

With Case Studies from the Bay Area, CA and Las Vegas, NV

September 20, 2021

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Transportation and mobility data have proliferated far beyond traditional ITS devices

Traditional

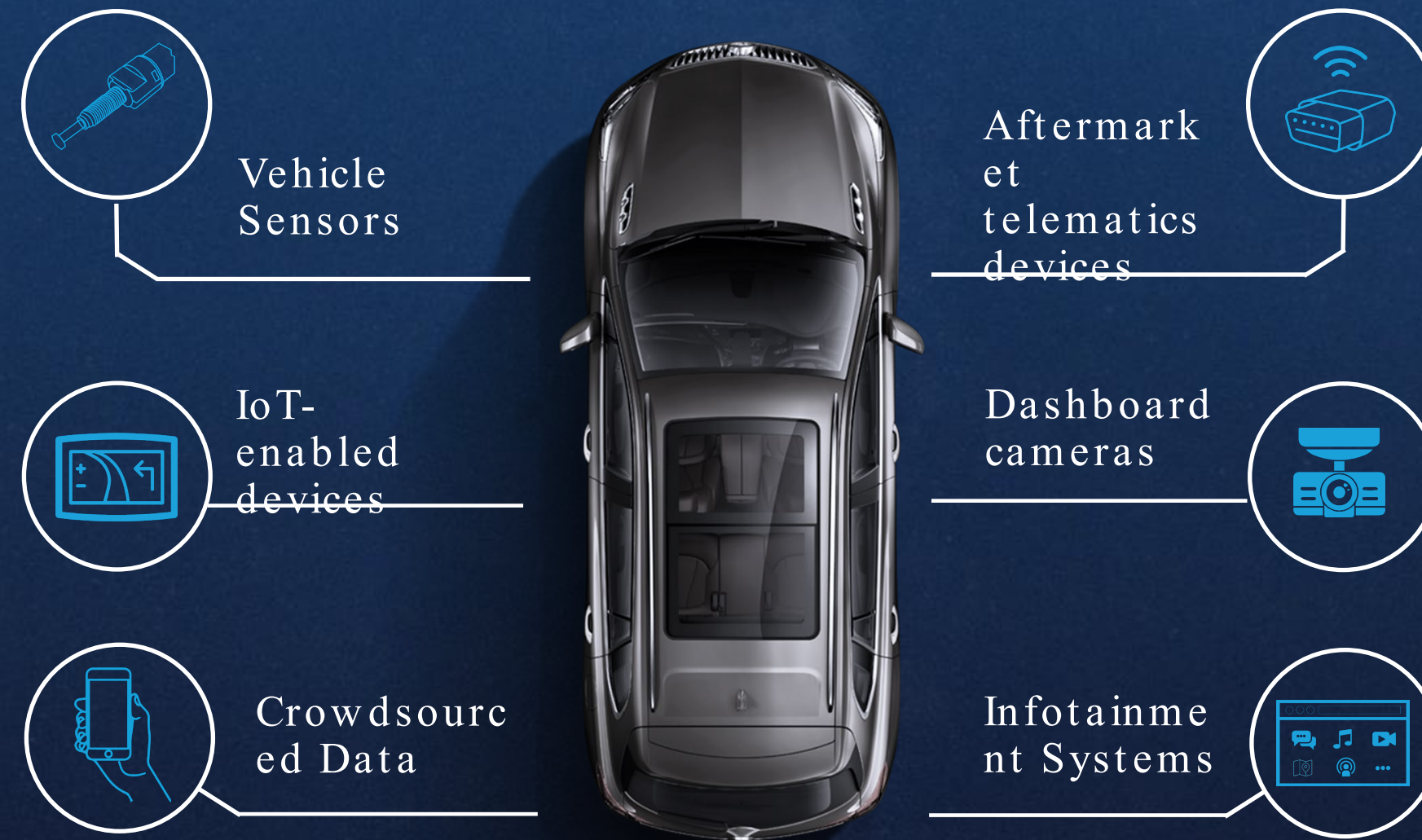Typically solely reliant on physical ITS infrastructure

Today

Physical and virtual data transmitted through connected vehicles and apps

Connected vehicles are collecting more data from a wider variety of sensors and on-board devices

Vehicle Sensors

Aftermarket telematics devices

IoT-enabled devices

Dashboard cameras

Crowdsourced Data
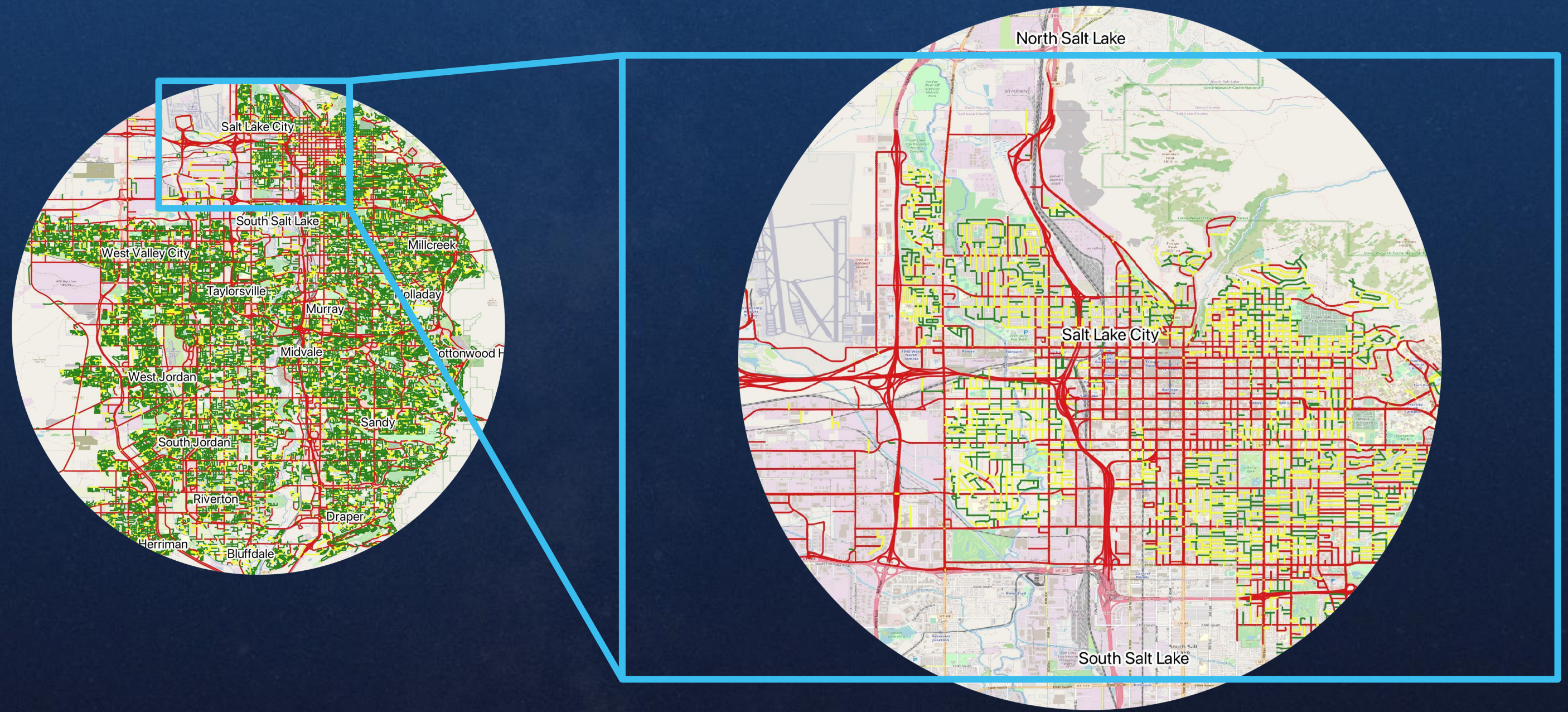
Infotainment Systems

This translates to increased roadway coverage on major roadways as well as arterial streets and rural roadways
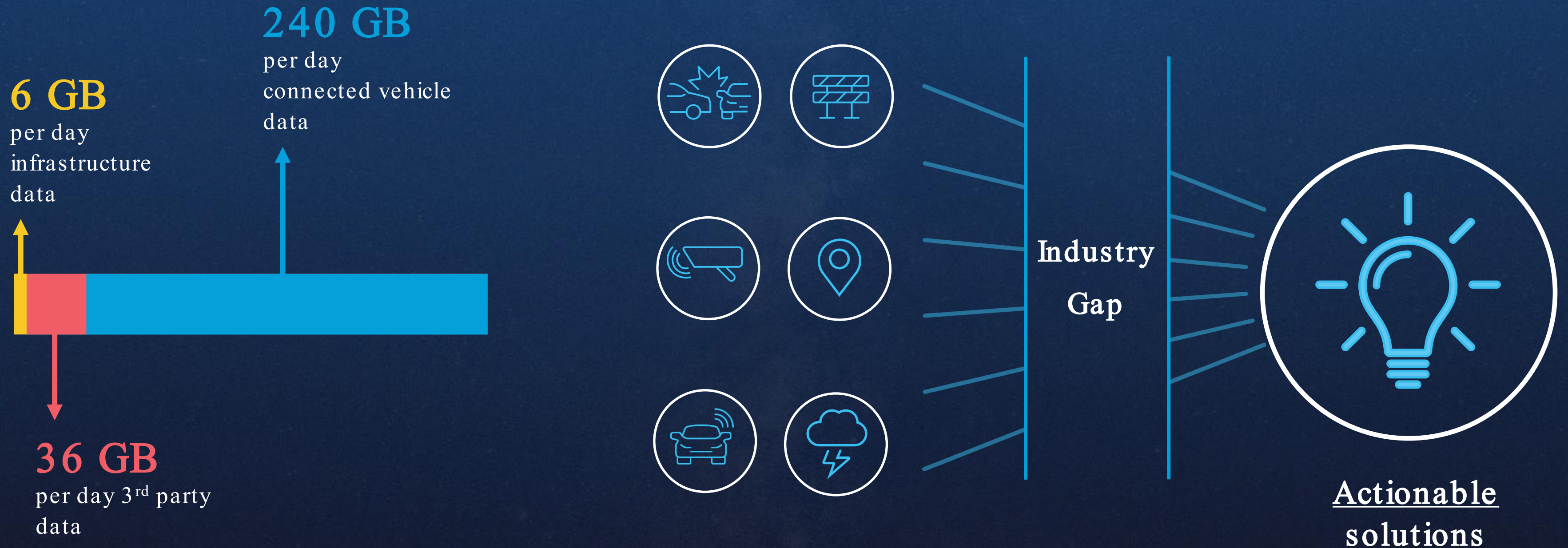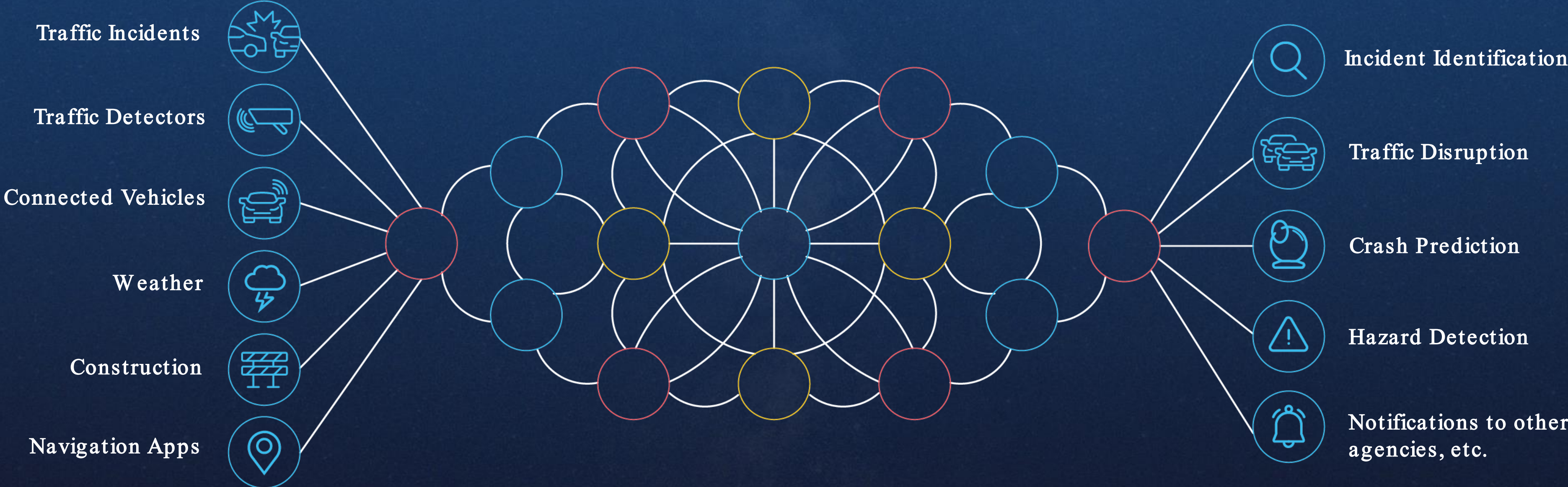

Legend

Vehicle sample count per typical day

- 🟢 Low
- 🟡 Medium
- 🔴 High

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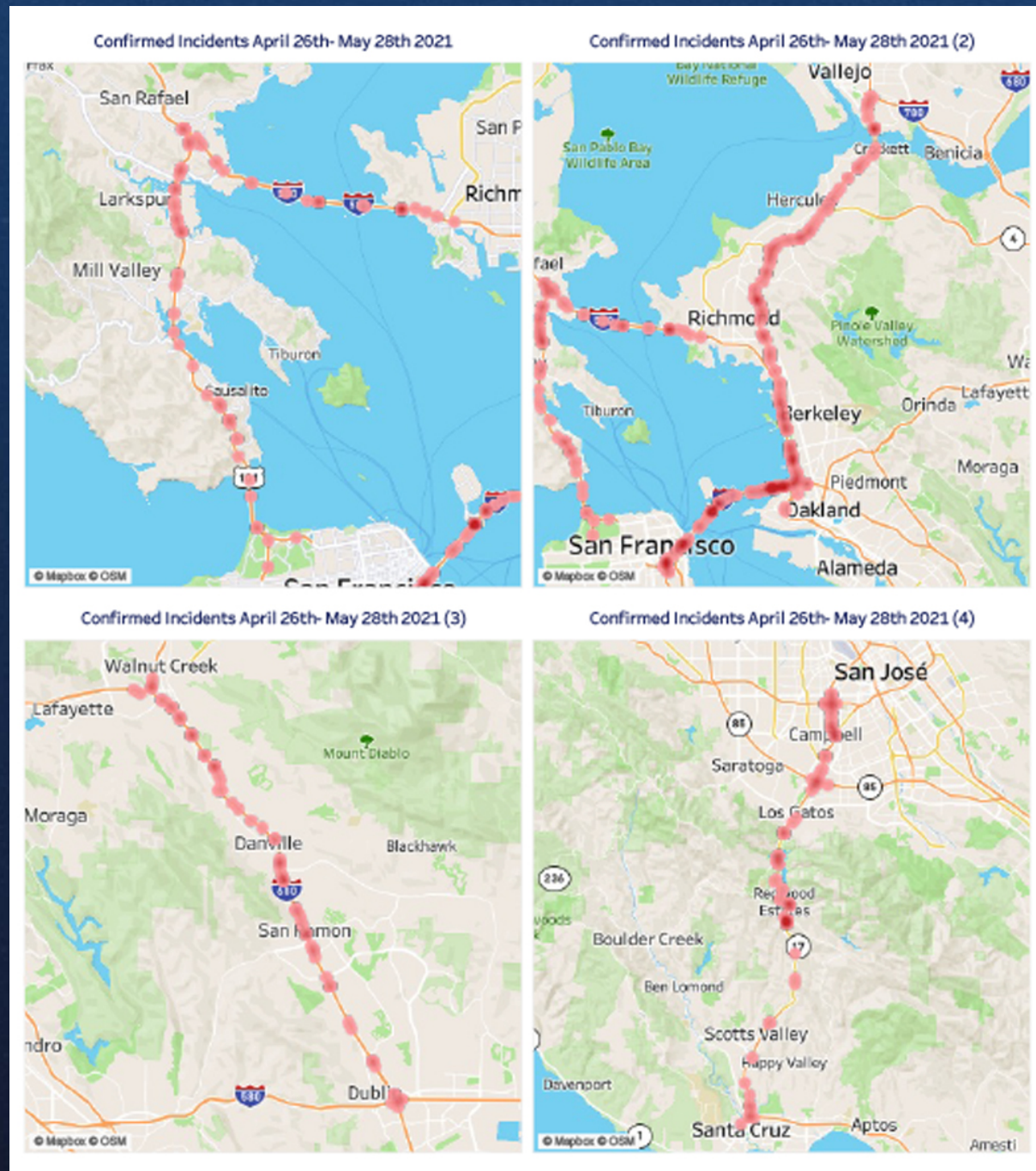
The sheer volume of this data is far beyond what a human being can process alone

240 GB
per day
connected vehicle
data

6 GB
per day
infrastructure
data

36 GB
per day 3rd party
data

Industry
Gap

Actionable
solutions

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Machine learning technology allows us to process mass amounts of data to learn patterns and detect anomalies

Traffic Incidents

Traffic Detectors

Connected Vehicles

Weather

Construction

Navigation Apps

Incident Identification

Traffic Disruption

Crash Prediction

Hazard Detection

Notifications to other agencies, etc.

Case Study: Bay Area

Additional incidents

+23

Compared to
previous incident
detection methods

Identified Faster

43%

Of incidents
detected were
faster than a
911 call

8 minutes

On average,
faster than
traditional
methods

Safety and efficiency impact by the numbers

9.71%
Decrease in GHG emissions within the spatiotemporal region affected by incident

18%
Reduction in primary crashes on monitored roads.

21%
Increase in incidents identified

43%
Of speeding drivers reduced their speed to adhere to speed limit after Strategic Traffic Management Site

41,547
Previously uninsured vehicles registering into OK UVED program since January '21

9
Minute reduction in incident identification time.

THANK YOU

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