



Transportation Workshop

Frits van der Schaaf | Adam Pfister

24 September 2015, Southfield, MI



A Global Company

130+ Countries

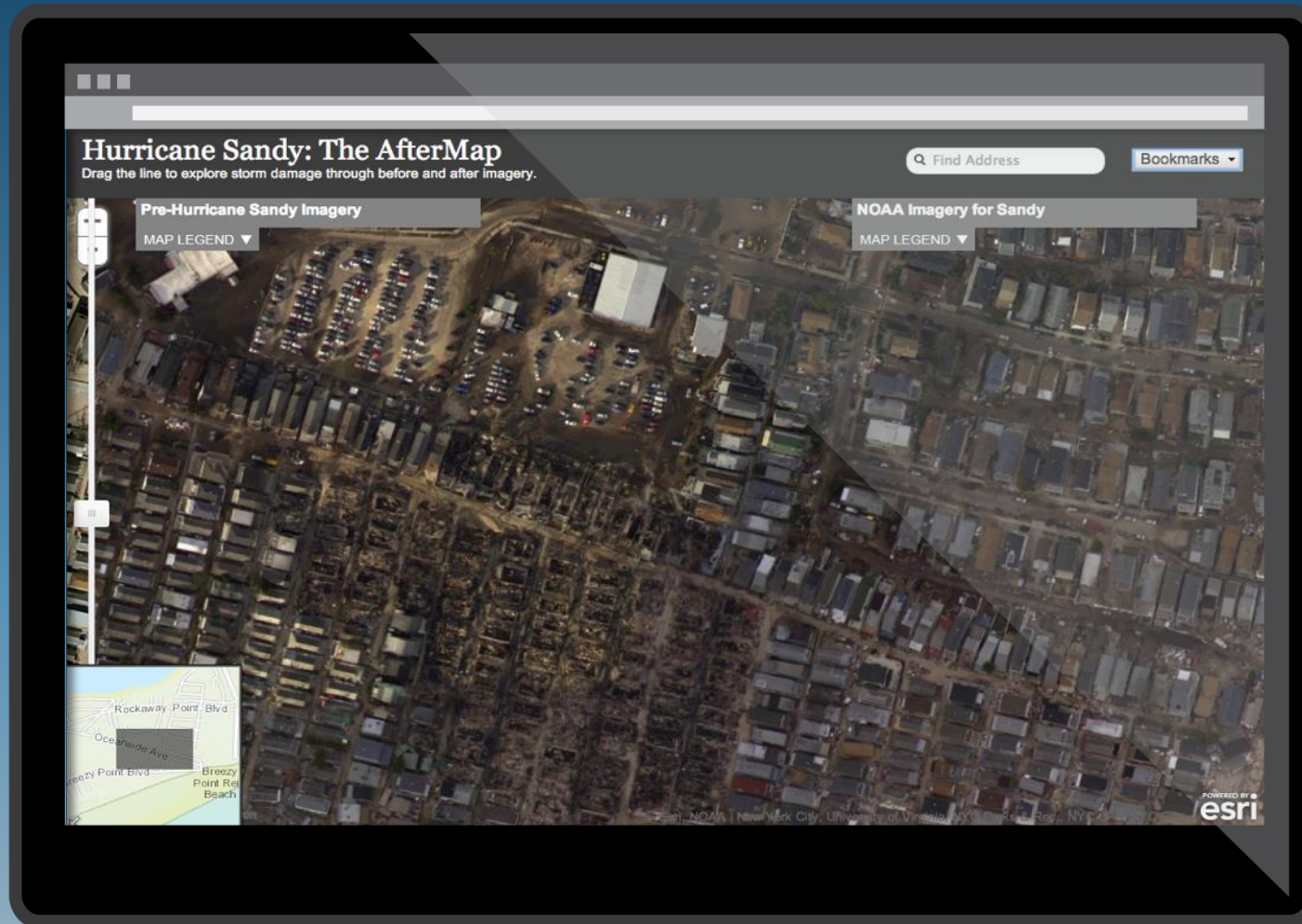
Privately Held

1969

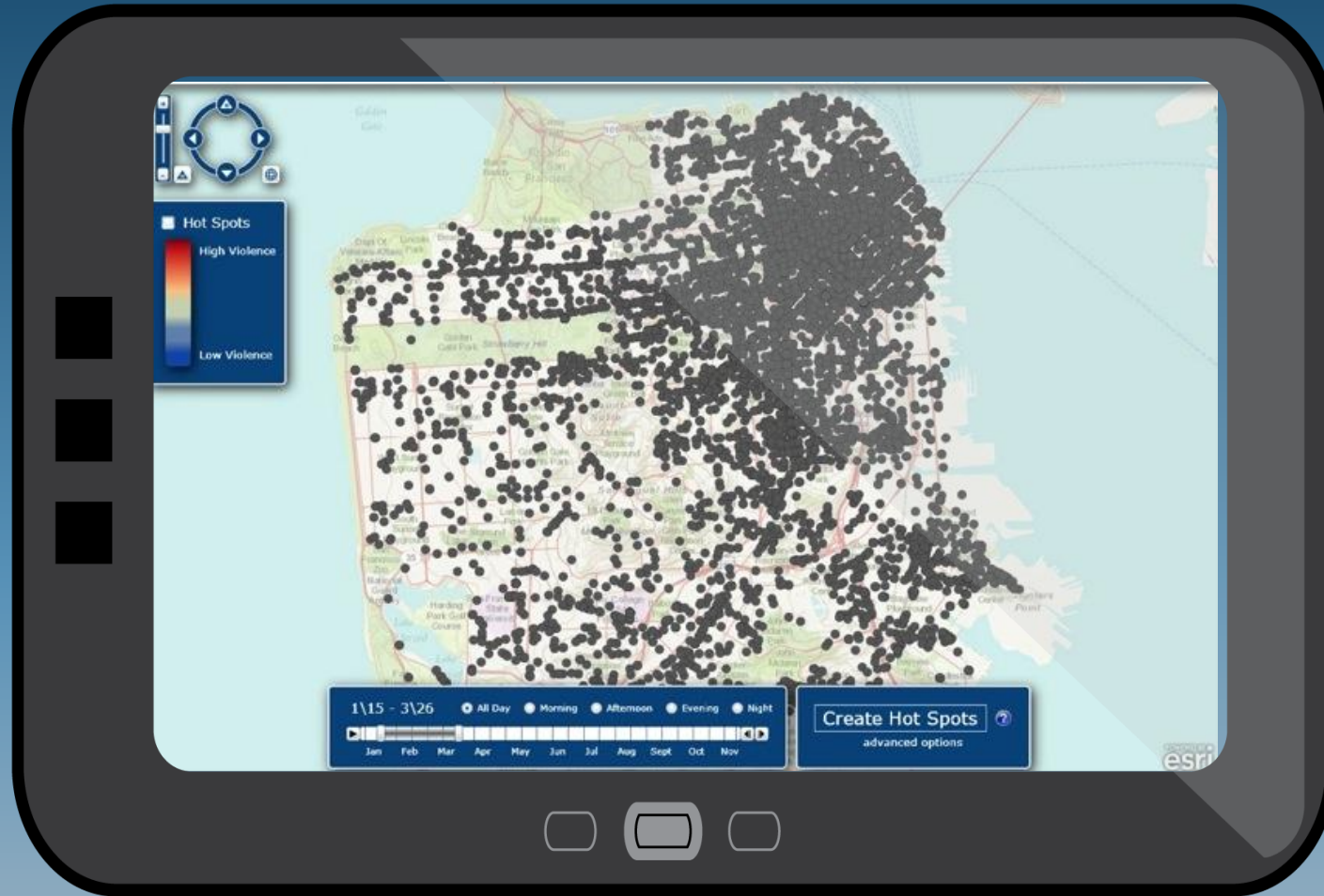
Esri OEM customers



Maps at Work Enable you to quickly see changes that impact your business



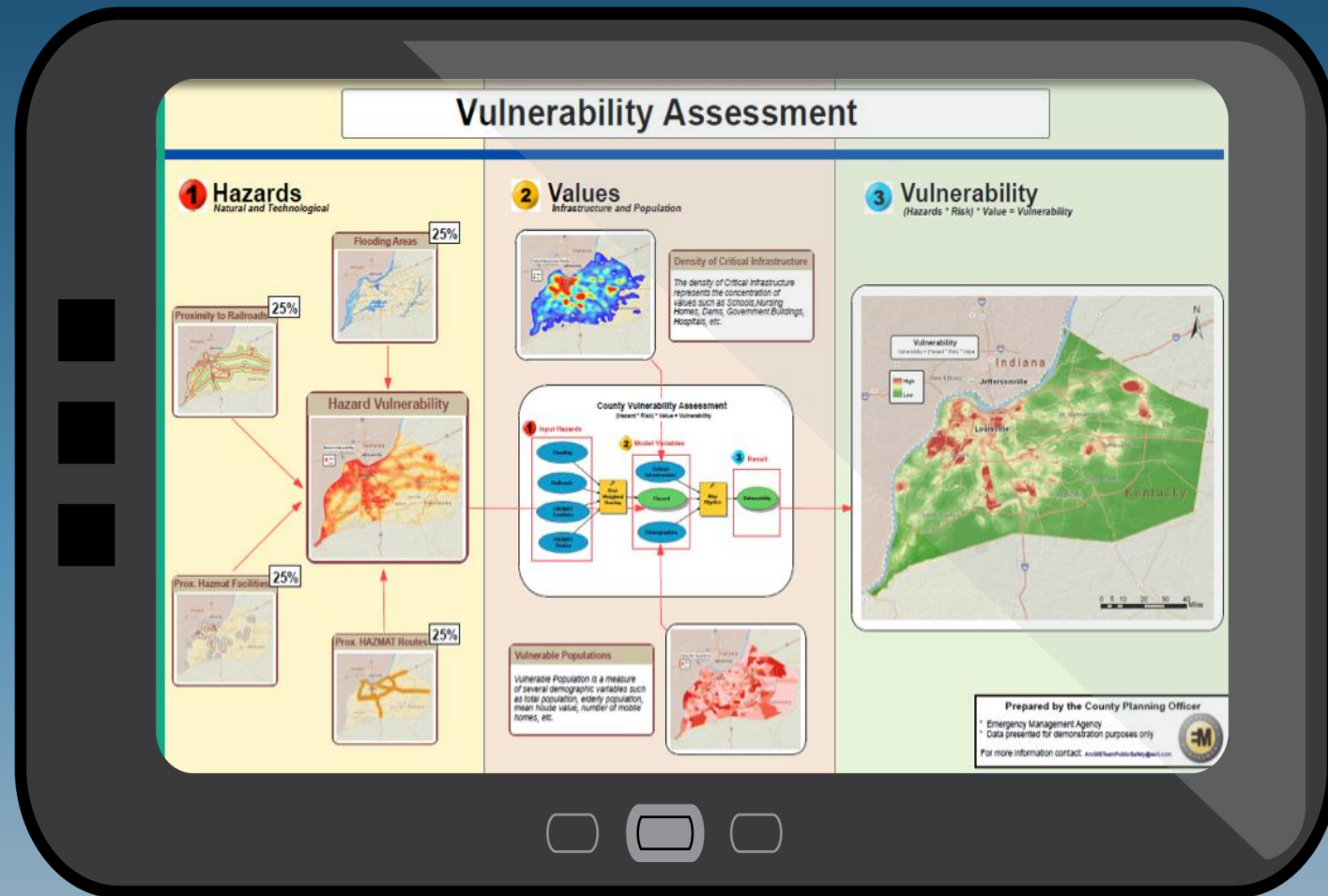
Maps at Work ► Reveal patterns and trends in your data that brings new insight



Maps at Work ► Illustrate time, show status and performance, and support decision making

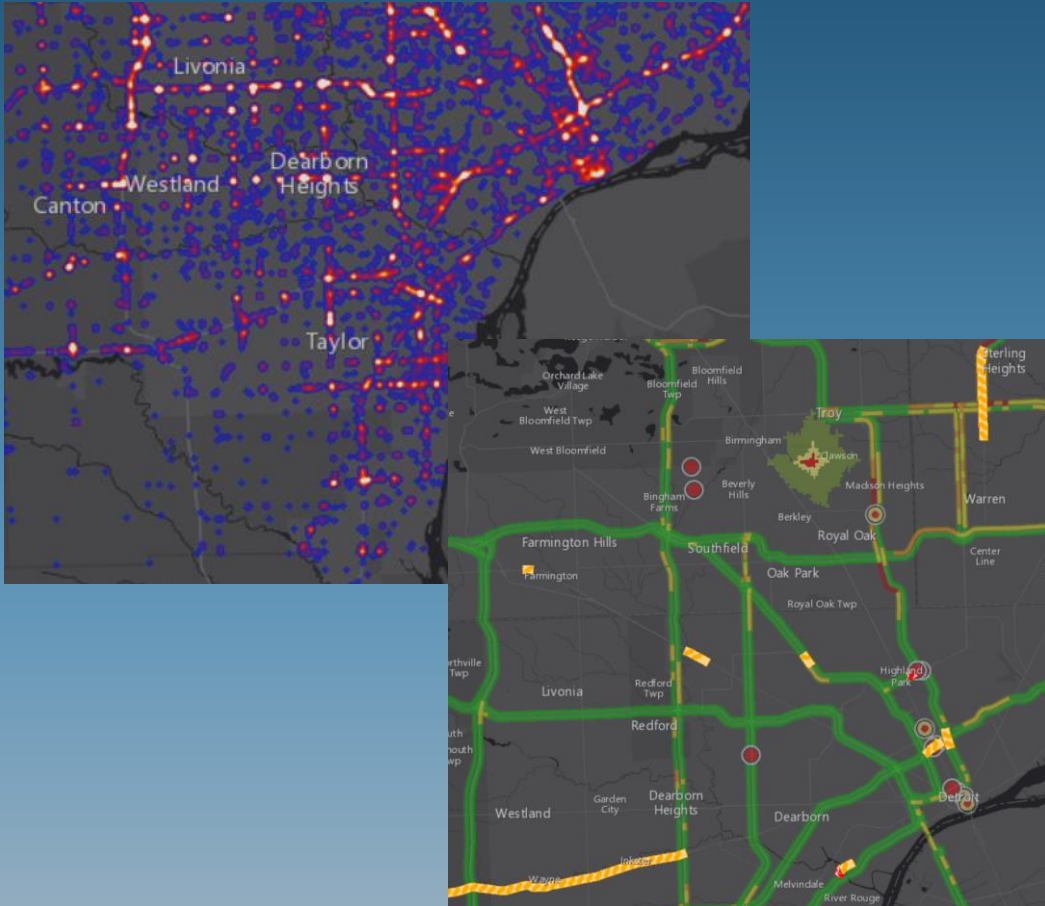


Maps at Work ► Enable evaluation and simulation that support strategic decision making

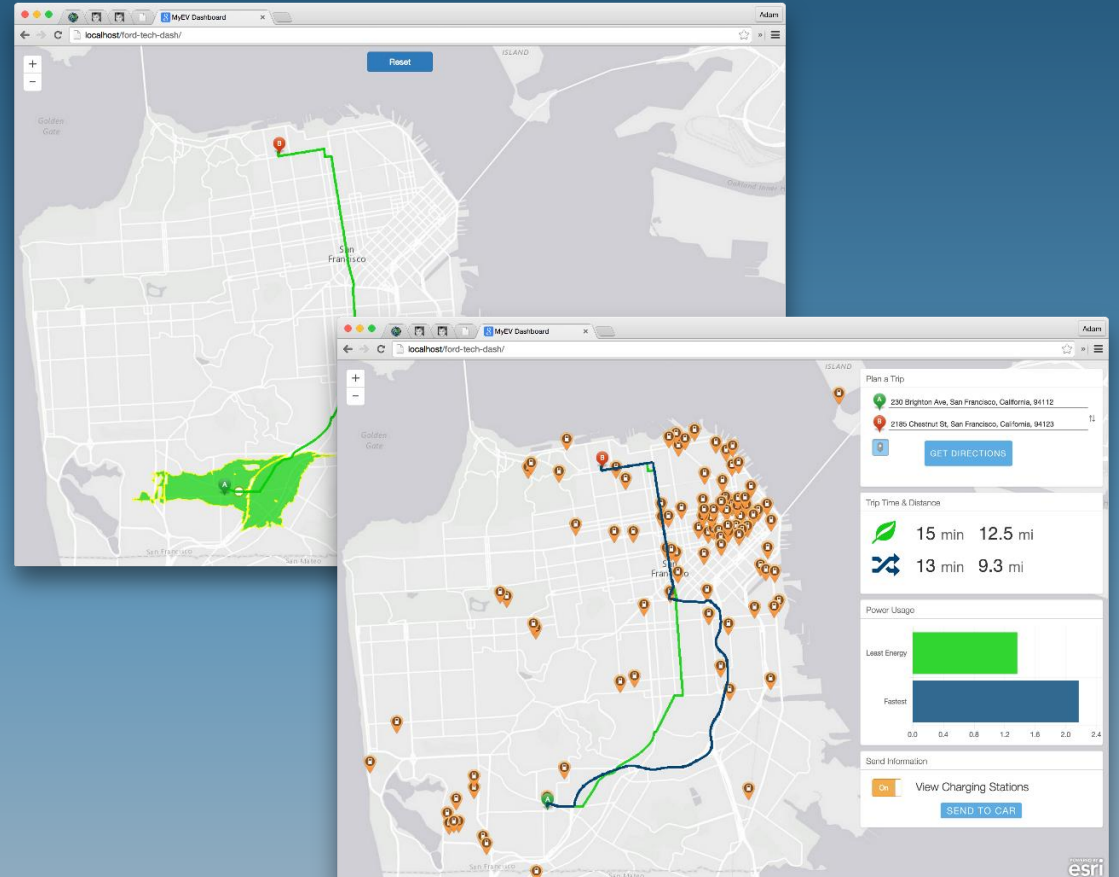


Demo's

Connecting to ecosystems
and proximity of cars



Road impedance and proximity
to available charging stations



Advancing Technologies are providing more Data, Computing, and Connectivity

Measuring Everything That Moves and Changes



Sensors



Open
Data



Mobile

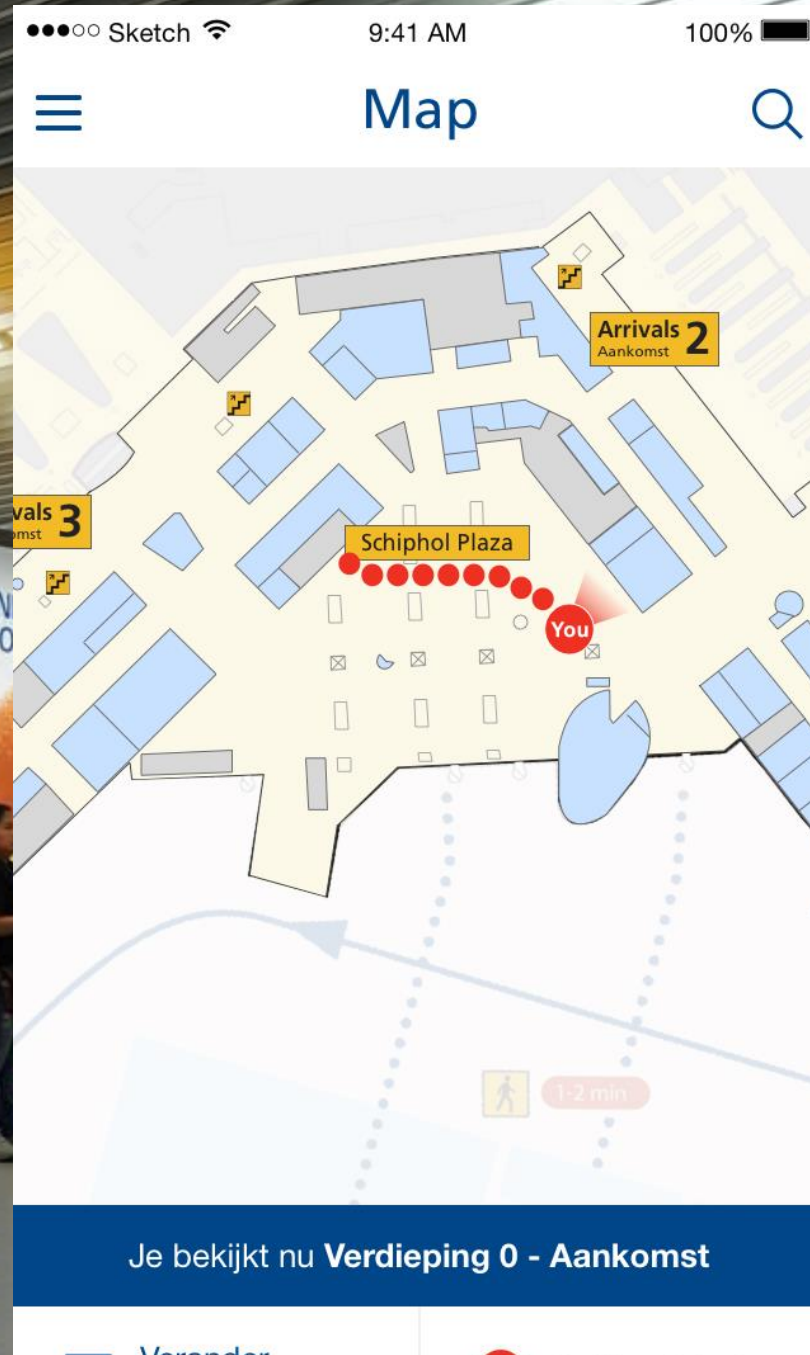


Cloud
Computing



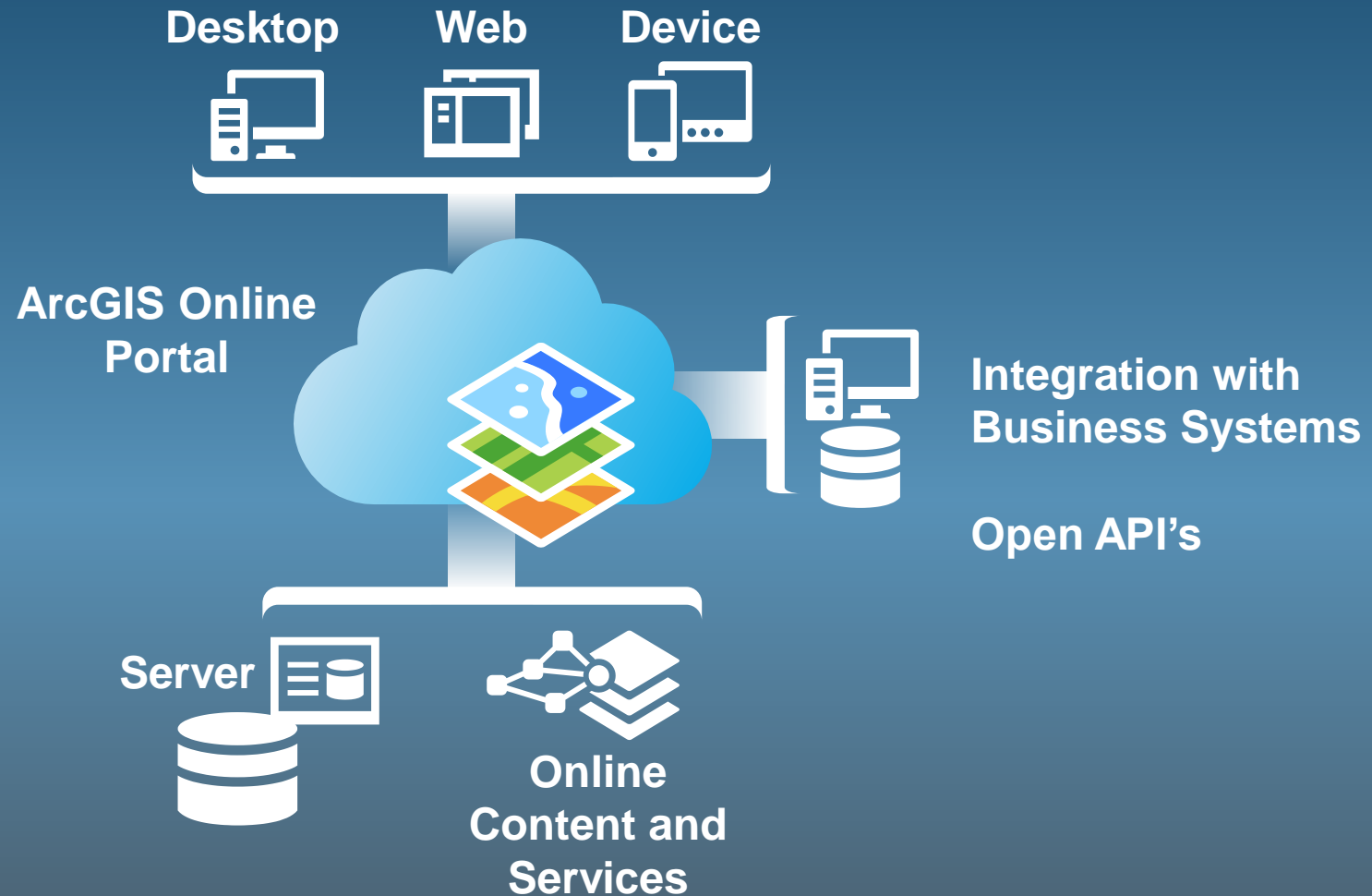
Big Data

Airport | Traveler | Airline



ArcGIS an integrated Location Platform

providing mapping, analysis, data management, and collaboration

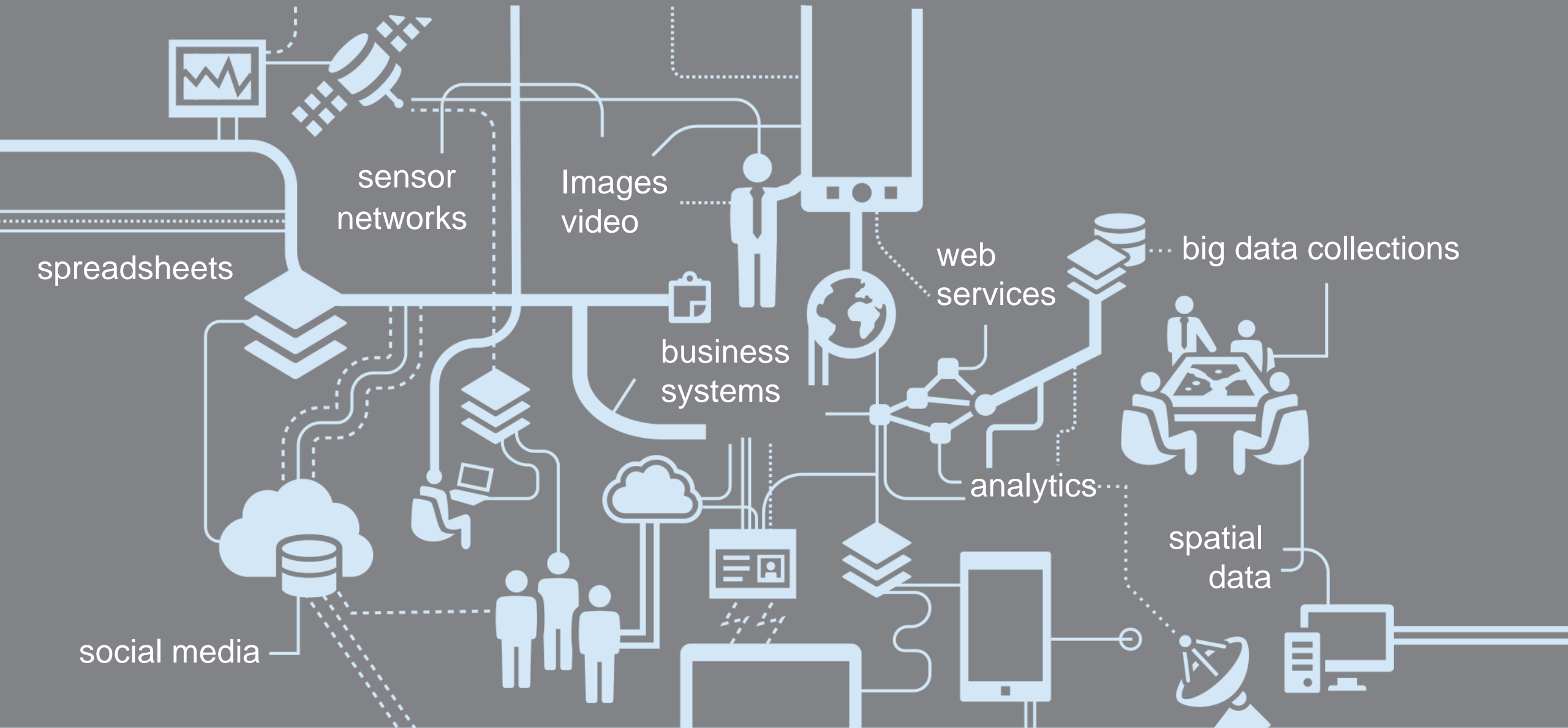


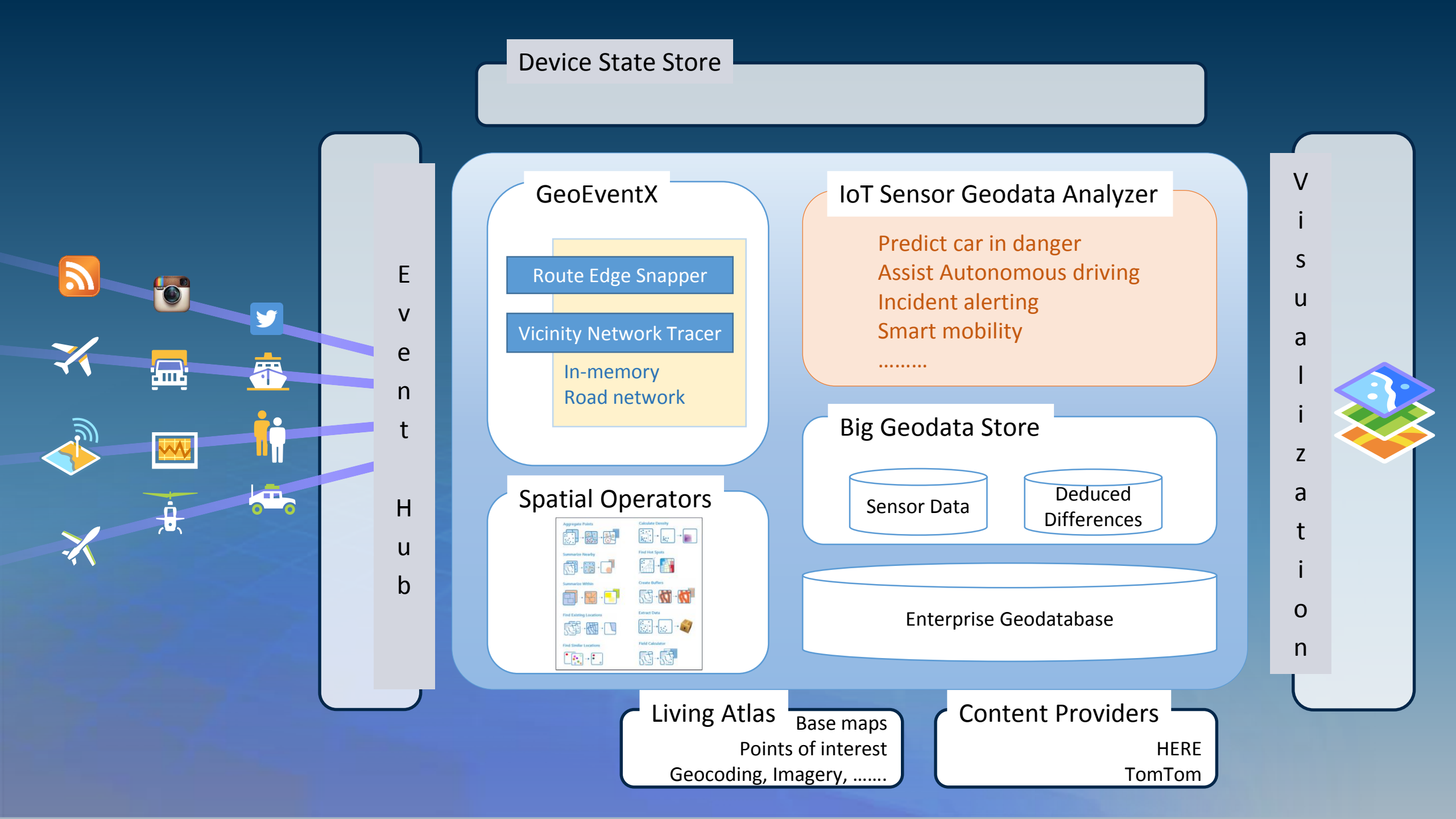
ArcGIS is a Platform

making mapping and location aware apps available across your organization



Leveraging location inside your business application





ArcGIS Content – a living atlas

Oceans

Topographic

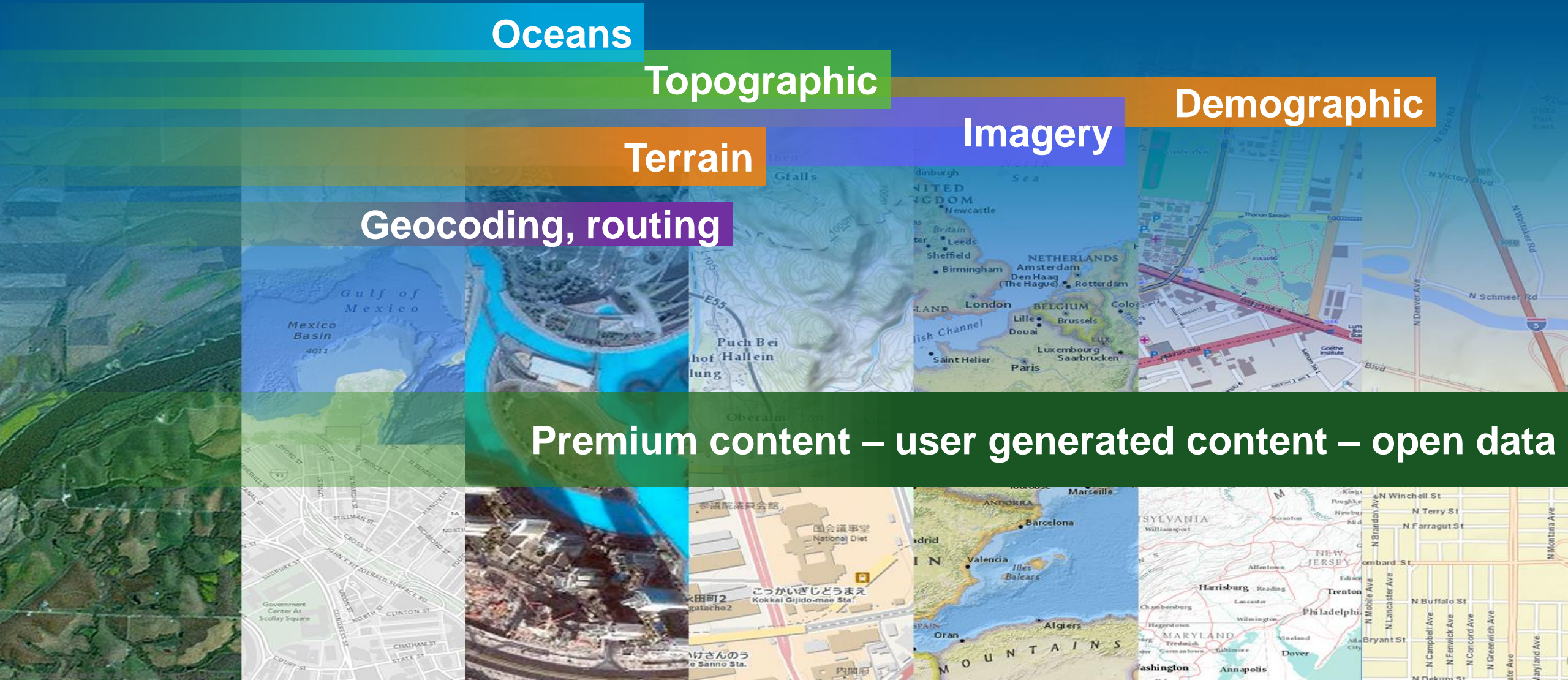
Demographic

Imagery

Terrain

Geocoding, routing

Premium content – user generated content – open data



Ecosystem of connected worlds





- Connected world by creating collaborative hubs
- Location platform cuts across lines uniting technologies, sectors and disciplines

Connecting the smart city, intelligent highway system, smart grid, smart insurance

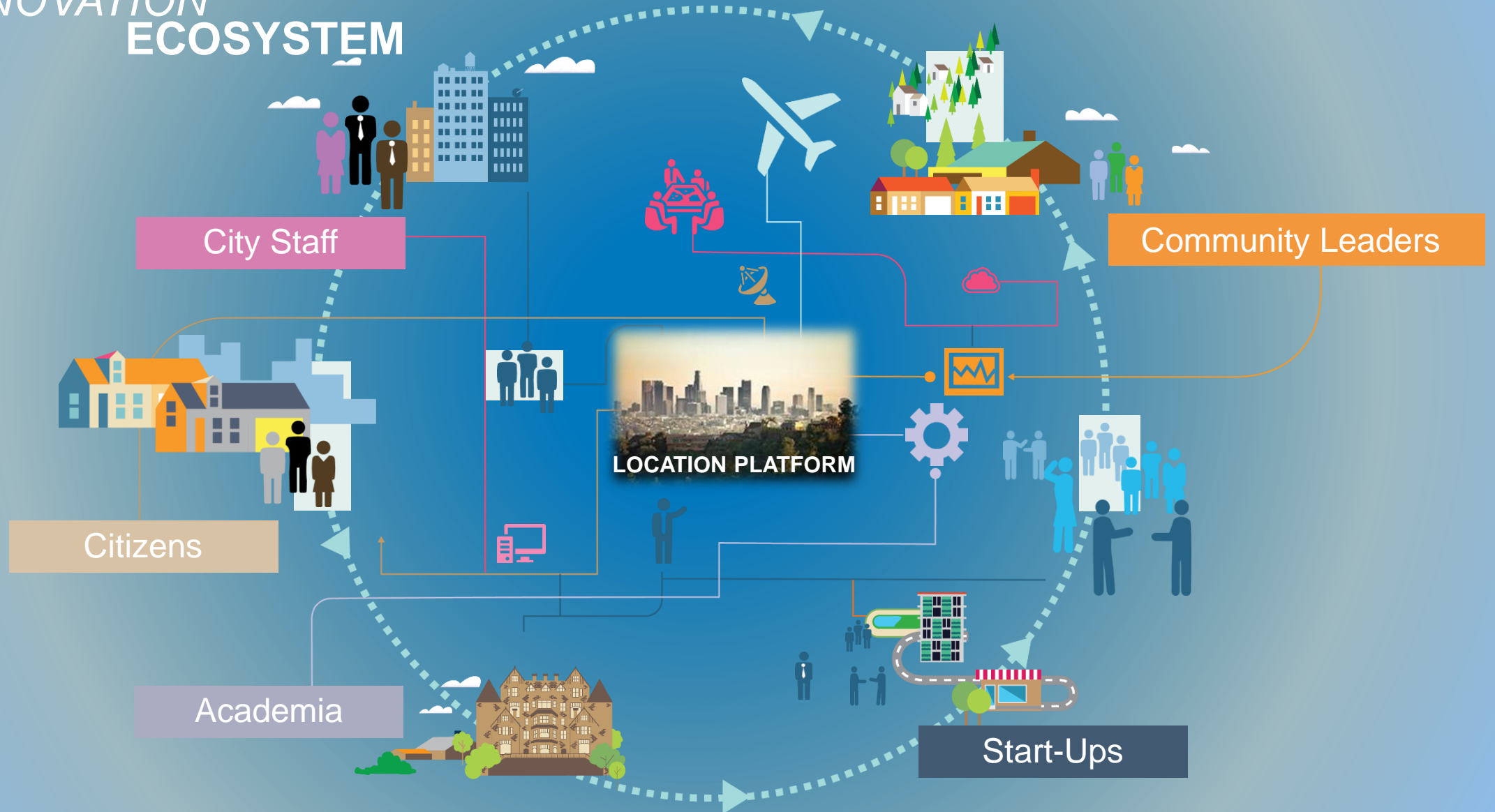
Boston, Minneapolis, Singapore, German Highways, DTE, Consumers, Dong Energie, Alliander,

IBM, Cisco, Schneider, Osisoft, Oracle, Microsoft, Ericsson, Metrotech,

University of Michigan Mobility Transformation Center

THE HUB

An INNOVATION
ECOSYSTEM



Delivering exactly the right content at exactly the right time anywhere

based on where we are,
where we are going

based on intent, life style,
demographics





Services platform – smart services



Software-defined platforms – smart data

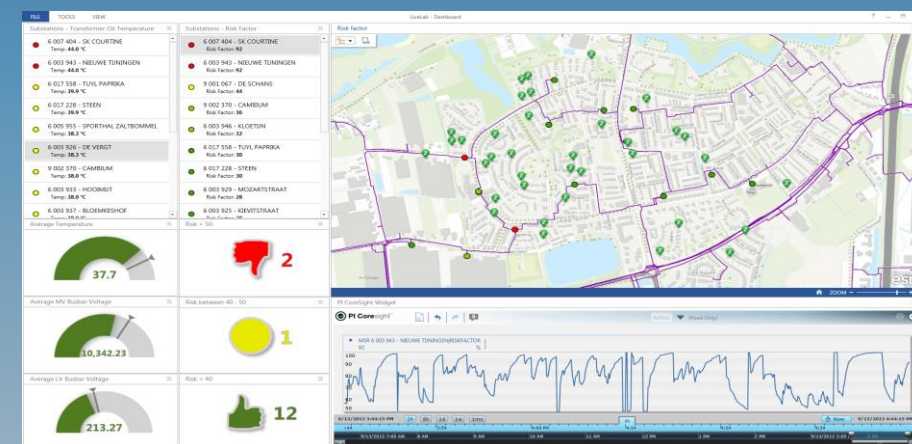
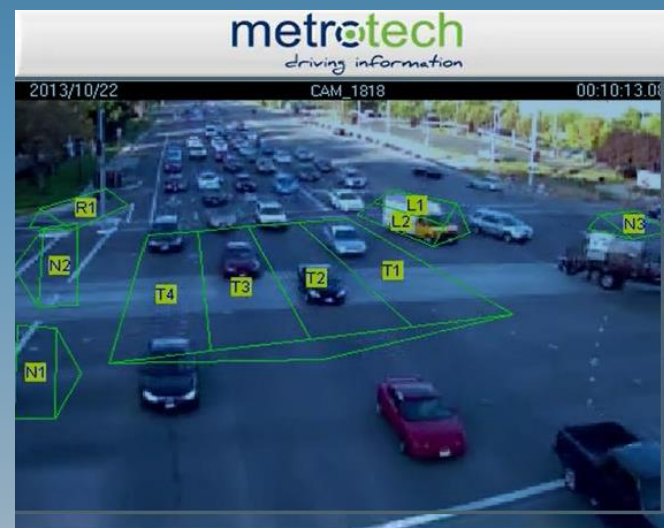
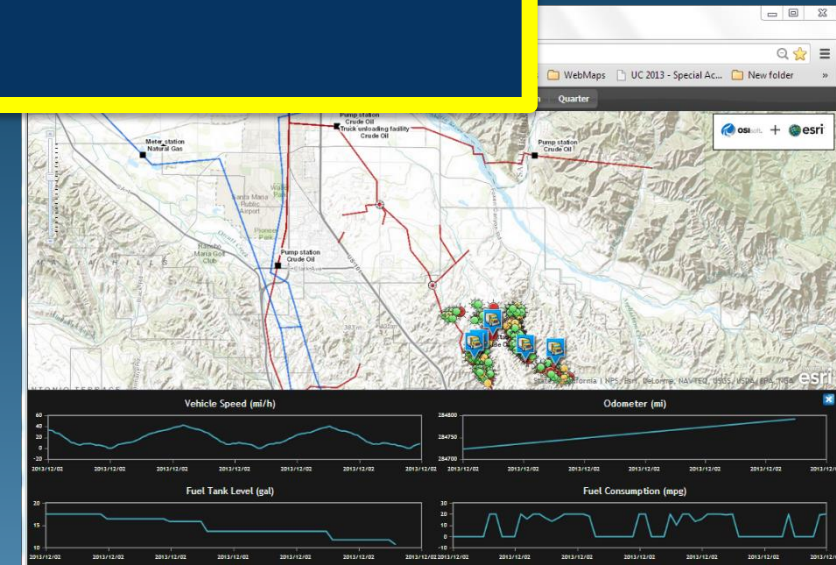
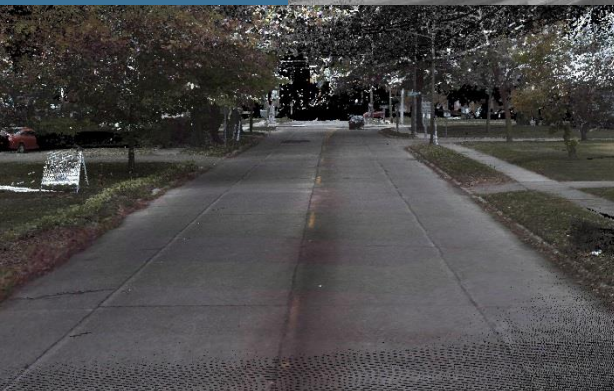


Networked infrastructure – smart spaces



Networked infrastructure – smart spaces

- Sensor locations, status, points of interest
- Geocoding and routing



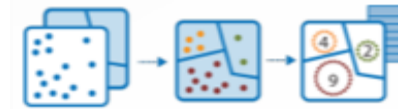


Software-defined platforms – smart data

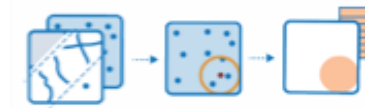
- Data fusion
- Spatial analytics & patterns
- Predictive forecasting & temporal data

- Measuring size, shape, and distribution
- Determining proximity and how places are related
- Finding the best locations and paths
- Detecting change and quantifying patterns
- Making predictions

Aggregate Points



Summarize Nearby



Summarize Within



Find Existing Locations



Find Similar Locations



Calculate Density



Find Hot Spots



Create Buffers



Extract Data



Field Calculator



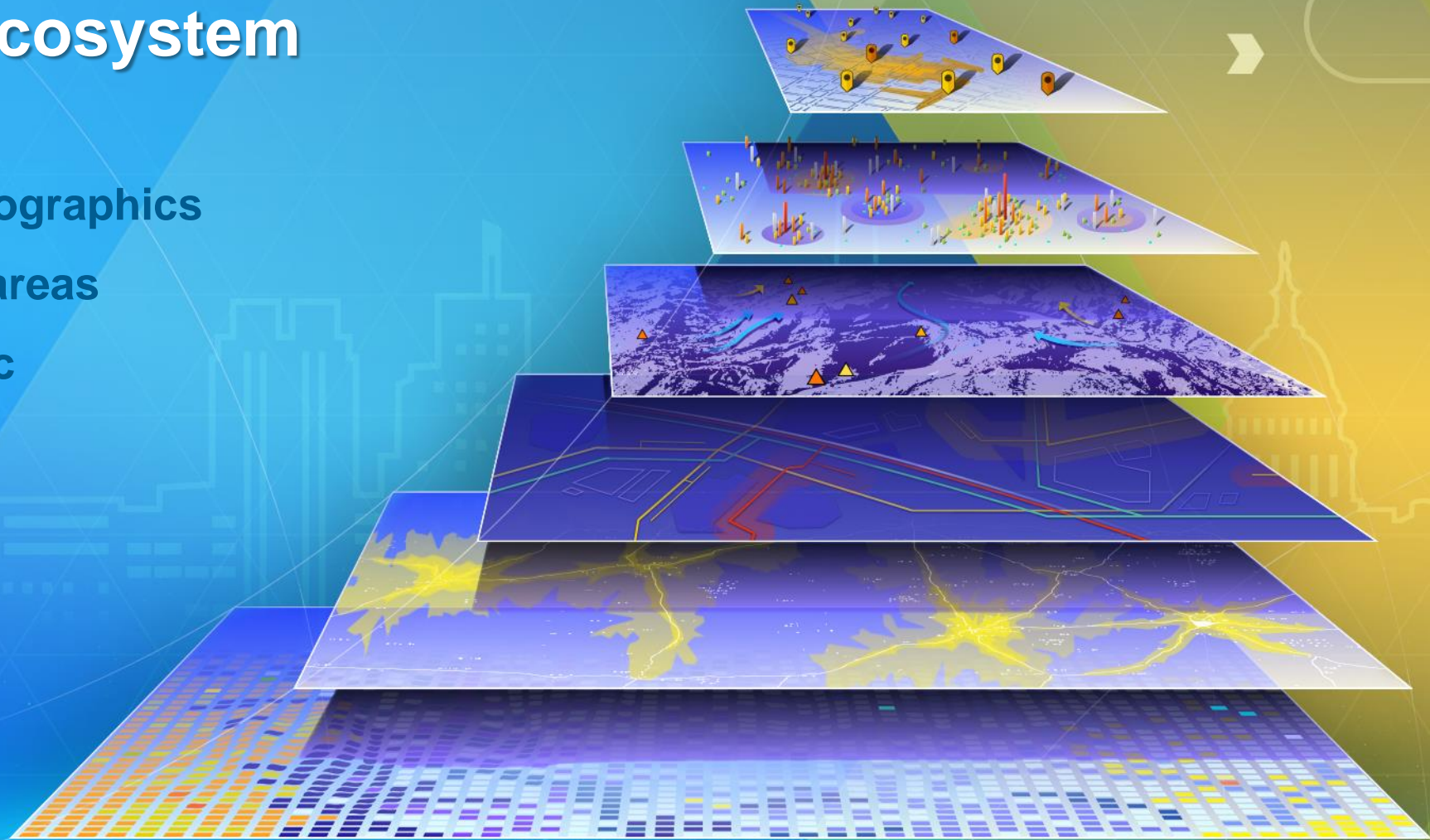
Bringing together data from an ecosystem

Lifestyle, demographics

Construction areas

Weather, traffic

....



vector and raster data



Services platform – smart services

- Visualization
- Location based services – geofencing and triggering



Software-defined platforms – smart data



Networked infrastructure – smart spaces



Golden Gate

YERBA BUENA ISLAND

San Francisco

CAMPAIGN

Starbucks

STORES

48

FILTER STORES

AVG. HOUSEHOLD INCOME

30 100 300K

MOBILE MESSAGE

20% off all beverages

Distance (meters):

100 300

POWERED BY
esri

YERBA BUENA ISLAND

San Francisco

CAMPAIGN METRICS : Starbucks 31

COUPONS TRIGGERED

39

COUPONS CLAIMED

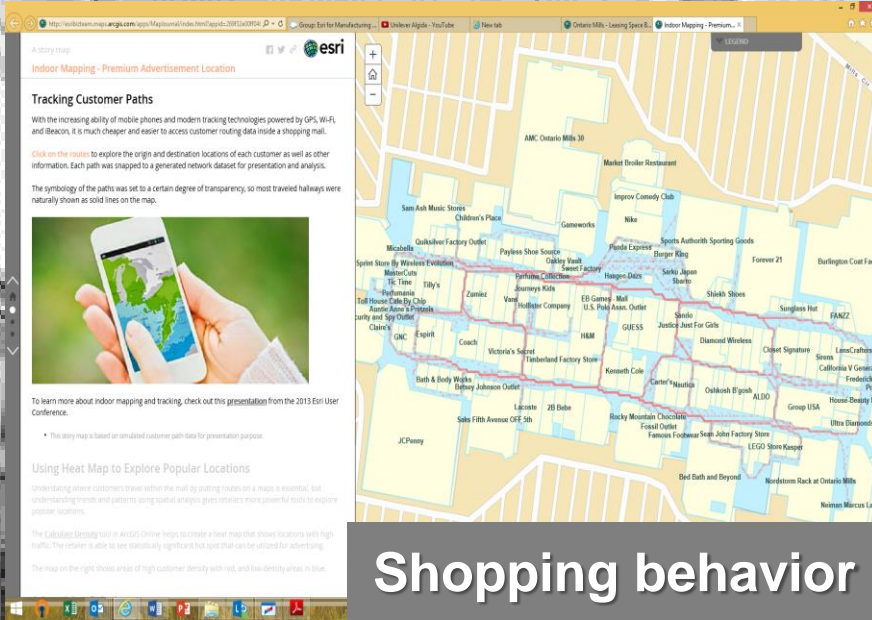
12

SELECTED STORE MESSAGE

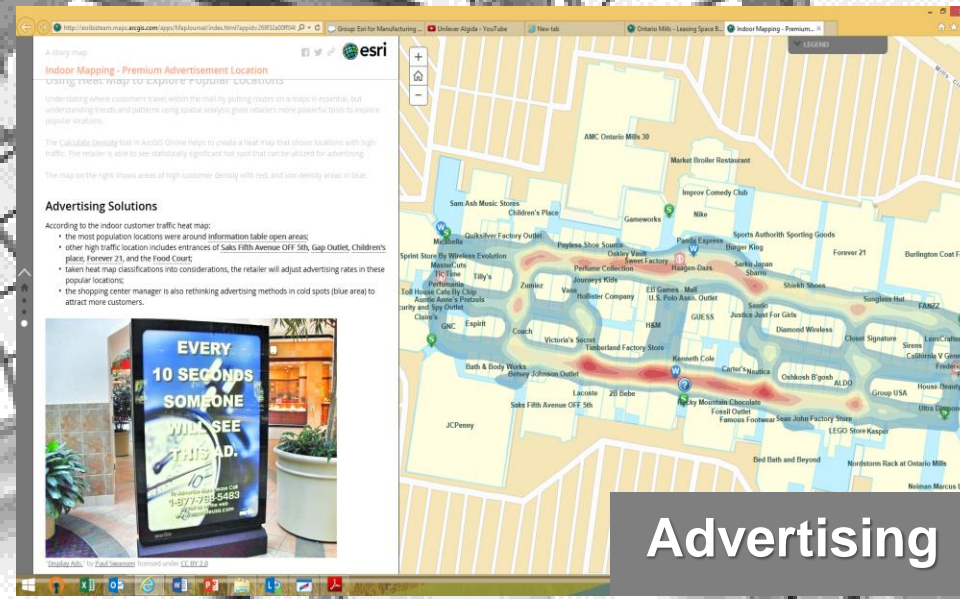
20% off all beverages



POWERED BY
esri



Shopping behavior



Advertising

Checkout Counter Design

The space of checkout counter can increase sales if well utilized. The tricky part is to find balance between displaying impulsive items and avoiding blocking the area. So a strategic approach to identify the most popular merchandises in store is necessary.

According to the traffic density map, the items that customer would most likely to purchase include seasonal clothes and dresses, so the retailer decided to put **complementary accessories** such as belt and fashions jewelries at checkout, and would also switch to scarves and cloves according to the changes in seasonal clothing.

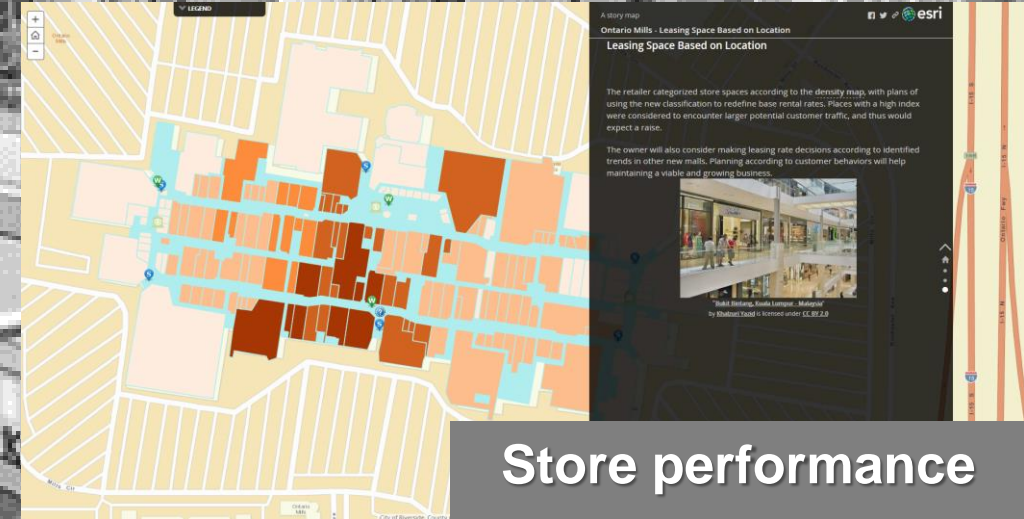
Analysts have also identified that customers are likely to make a purchase of clearance clothing, so they utilized the back wall **behind the checkout counter** to display brands, deals, and promotions on clearance items.

The retailer added two **POS** stations in high traffic density areas for store associate to assist in fast checkout. The **purple pushpin** on the map shows the location of newly added POS.

[Click here to cross-reference customer density map/go back to previous view.](#)



Check out counters

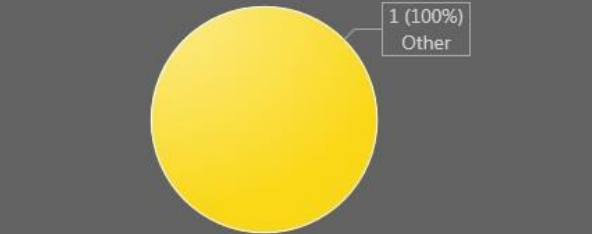


Store performance

1 Priority Events

Number of incidents currently being tracked on the WebEOC priority events board.

DISTRIBUTION OF PRIORITY EVENTS



MEDICAL TENTS

48 Runners

Current runners receiving medical attention.

MEDICAL TENTS

304 Runners

Total runners who have received medical attention.

EMS STATUS

7 Active Calls

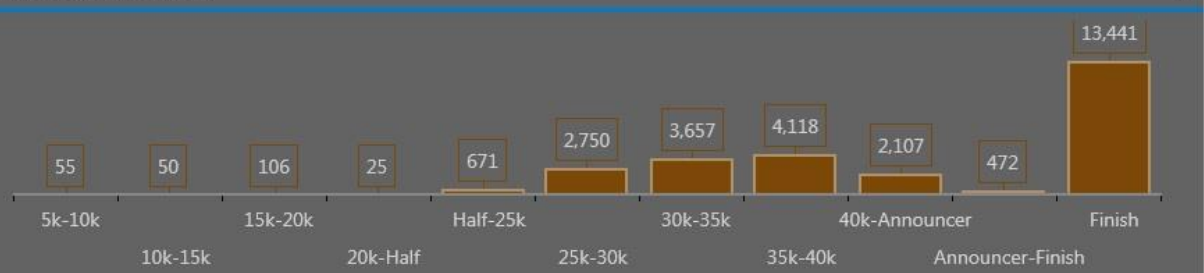
Active EMS calls for medical service.

EMS STATUS

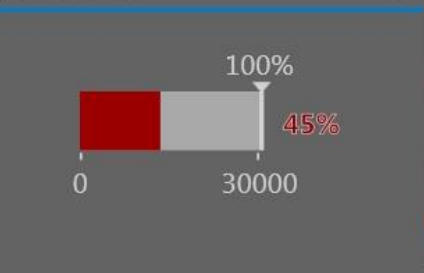
30 Total Calls

Total EMS calls for medical service.

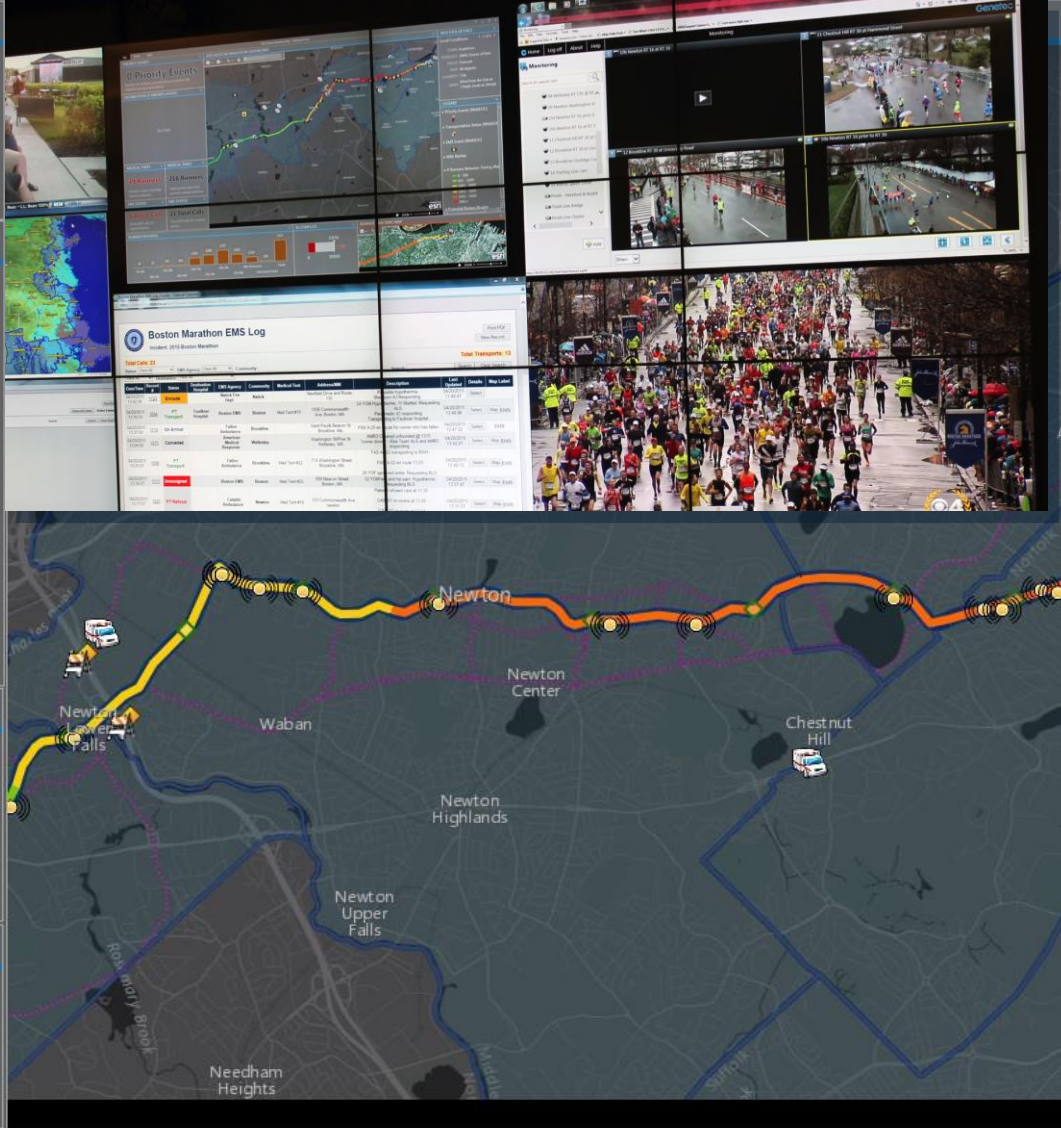
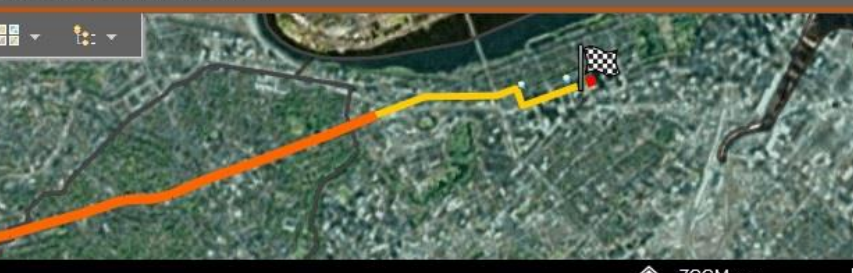
RUNNER PROGRESS



% COMPLETE



RUNNER TRACKING MAP



Local Conditions

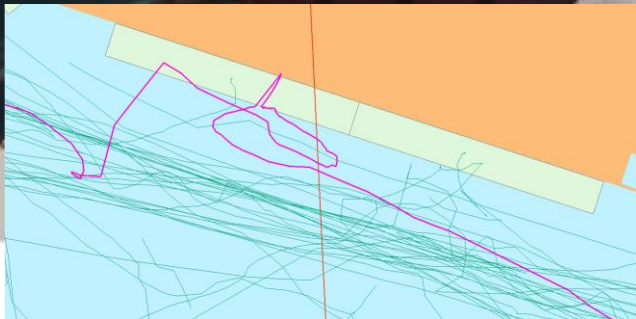
TOWN Hopkinton
FORECAST 100% Chance of
PRECIP Light Rain
TEMP 47 degrees
HUMIDITY 83%
WIND Wind from the E
9mph, Gusts to 2

LEGEND

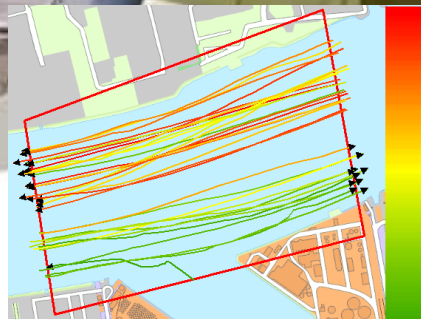
- Priority Events (WebEOC)
- Transportation Status (M)
- EMS Event (WebEOC)
- Mile Marker
- # Runners Between Time
 - 0 - 500
 - 501 - 1000
 - 1001 - 2000
 - 2001 - 3000
 - 3001 - 5000
 - 5001+
- Potential Bypass Routes



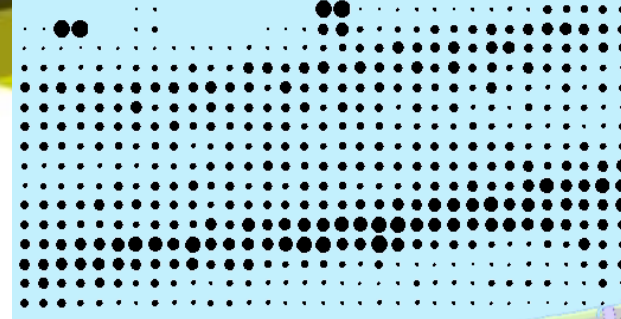
Safety and collision analysis



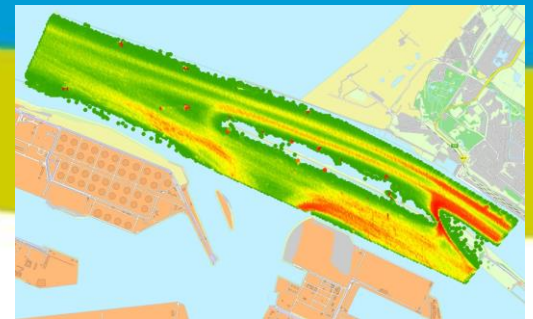
Speed analysis



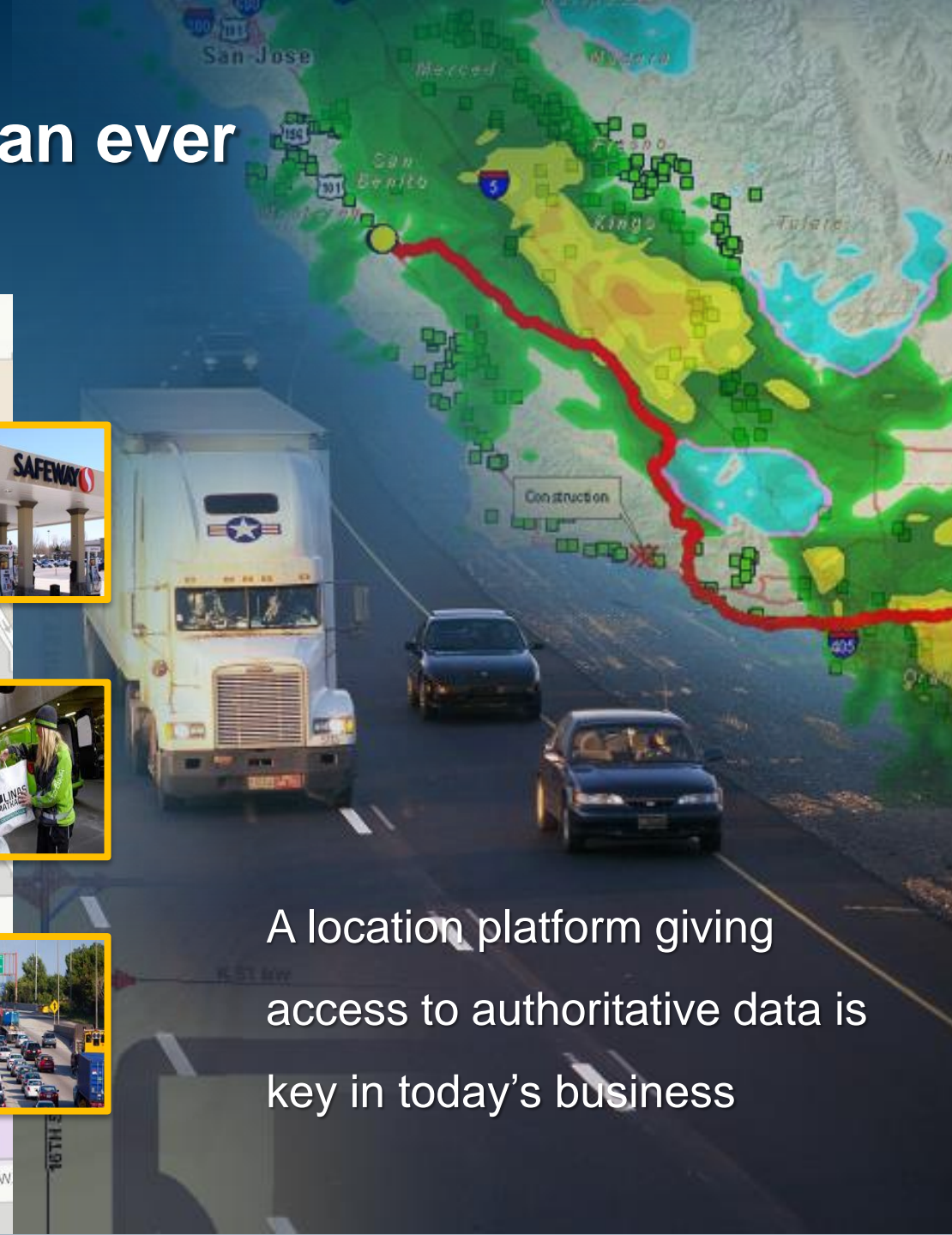
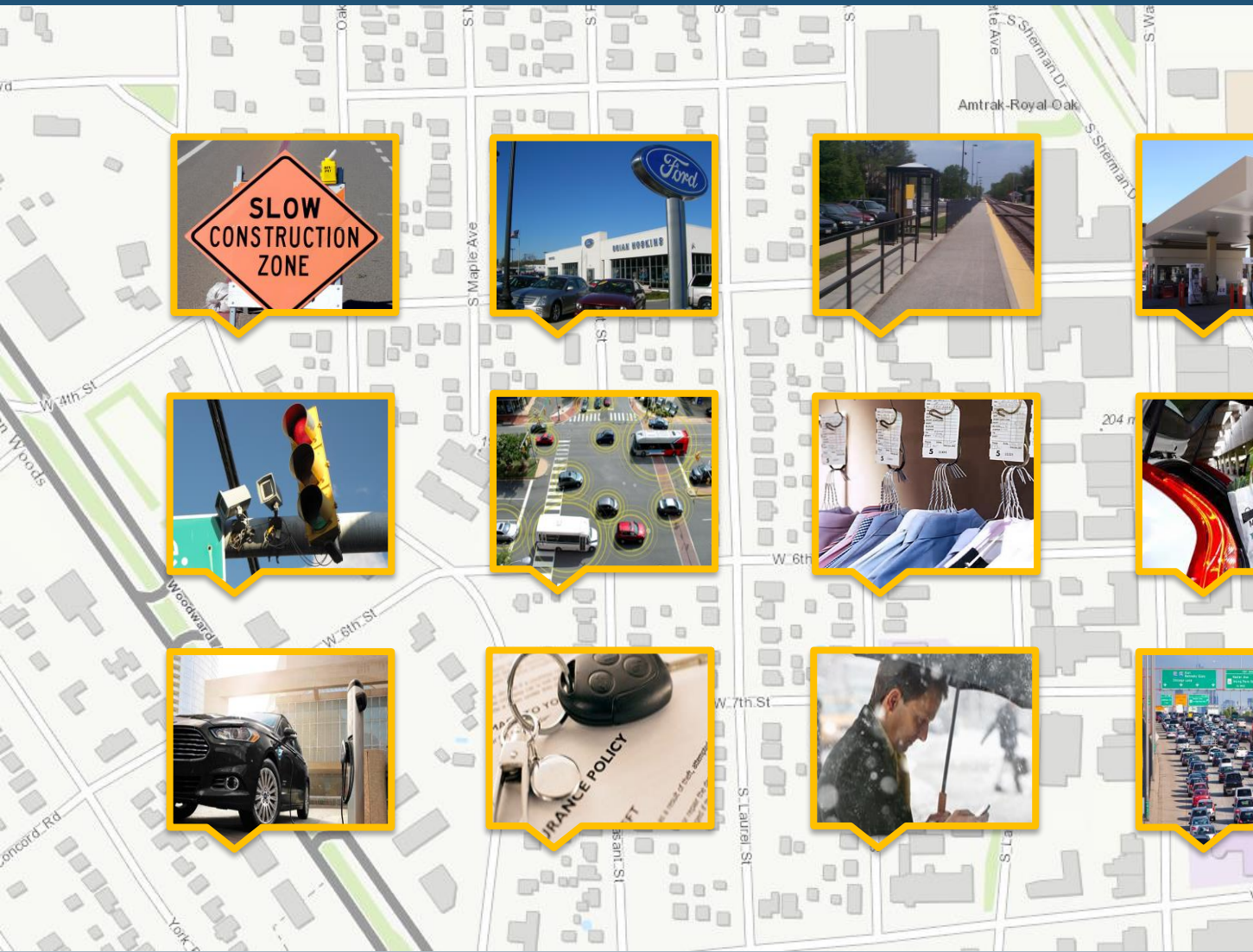
Most used routes



Ship density



Location is now more relevant than ever



A location platform giving access to authoritative data is key in today's business



weather

precision agriculture

smart grid

fleet management

indoor navigation

smart mobility

smart city

soil sensors

water gauges

soil sensors