Applying Real-Time GIS

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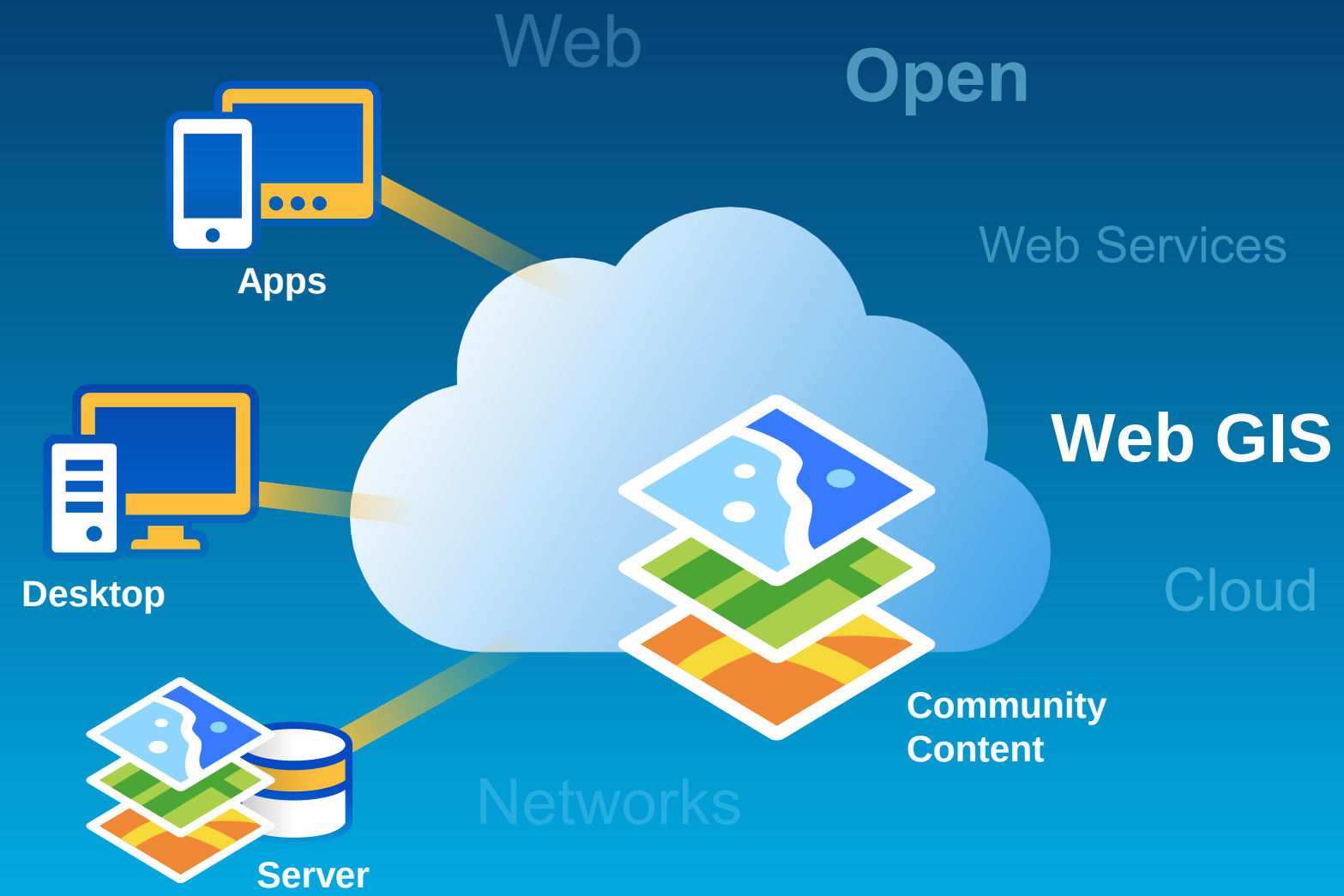
University of Redlands - Speaker Series
Center for Business GIS and Spatial Analysis

What is GIS?

Note: Embedded video is available at:
*http://video.esri.com/watch/3623/what-is-gis_question_*

GIS Is Evolving

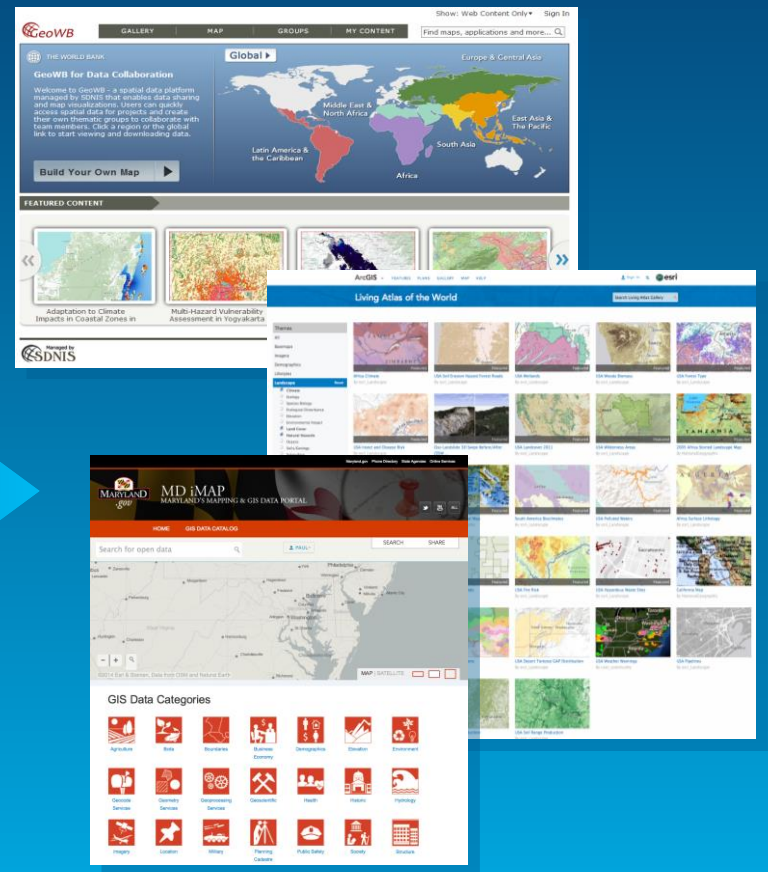
GIS is Becoming Part of an Interconnected Platform



- *Bringing Together Data, Technology, and People…*
- *…Creating a Framework for Solving Complex Problems*

GIS Integrates All Types of Information

Web Maps and Services



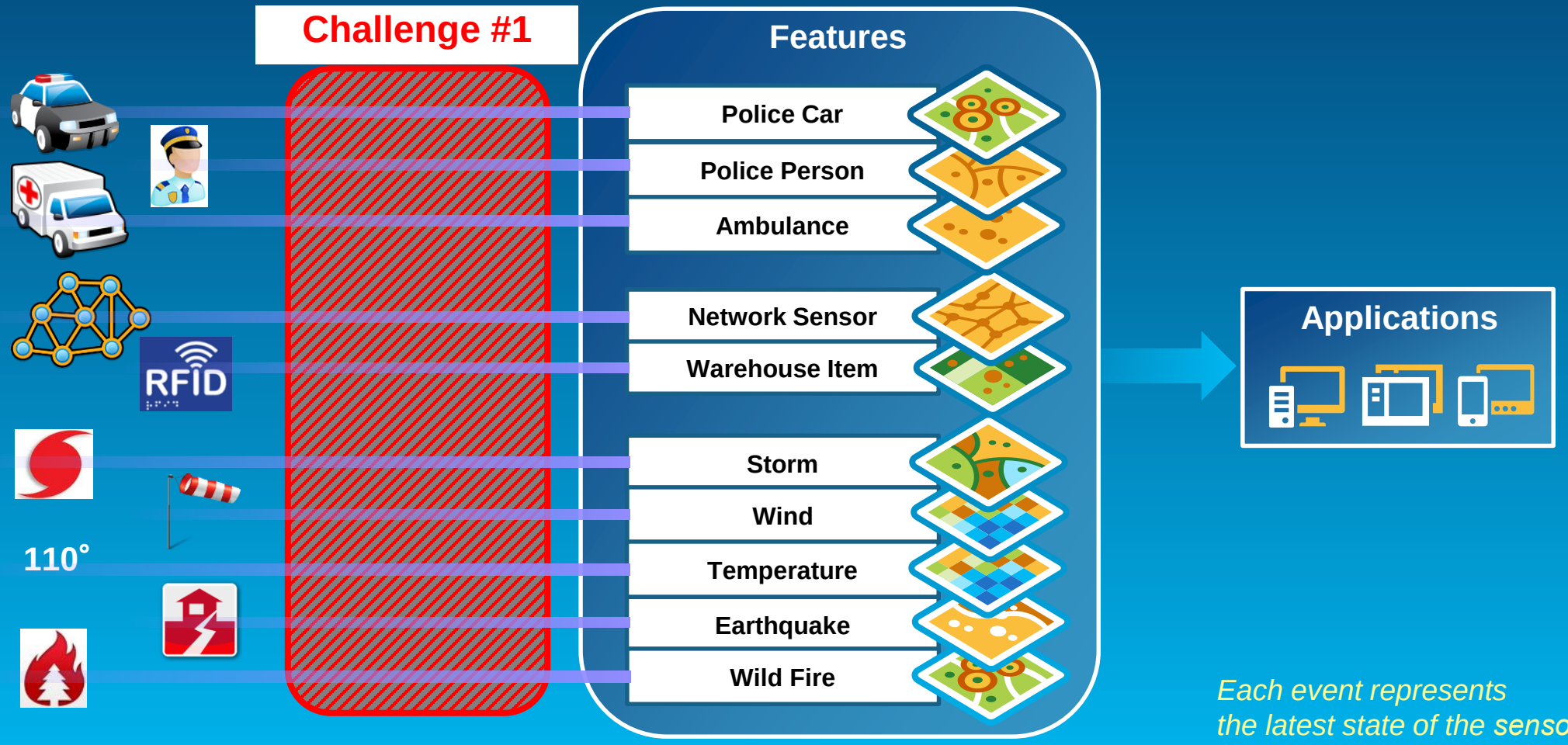
GIS Data

What has happened, what is happening, what will happen

*The **'current'** snapshot is outdated almost as soon as it's created…*

Real-Time GIS Data

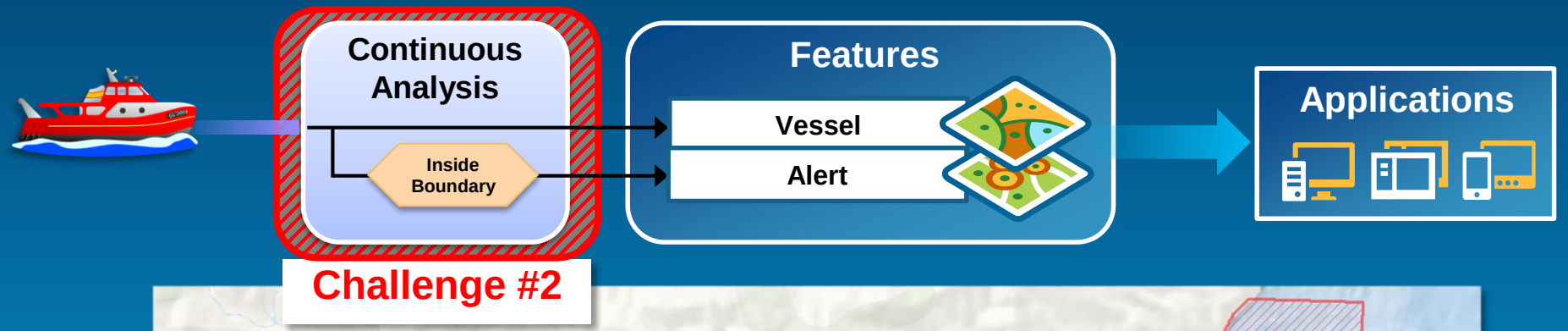
Continuous stream of events flowing from sensors



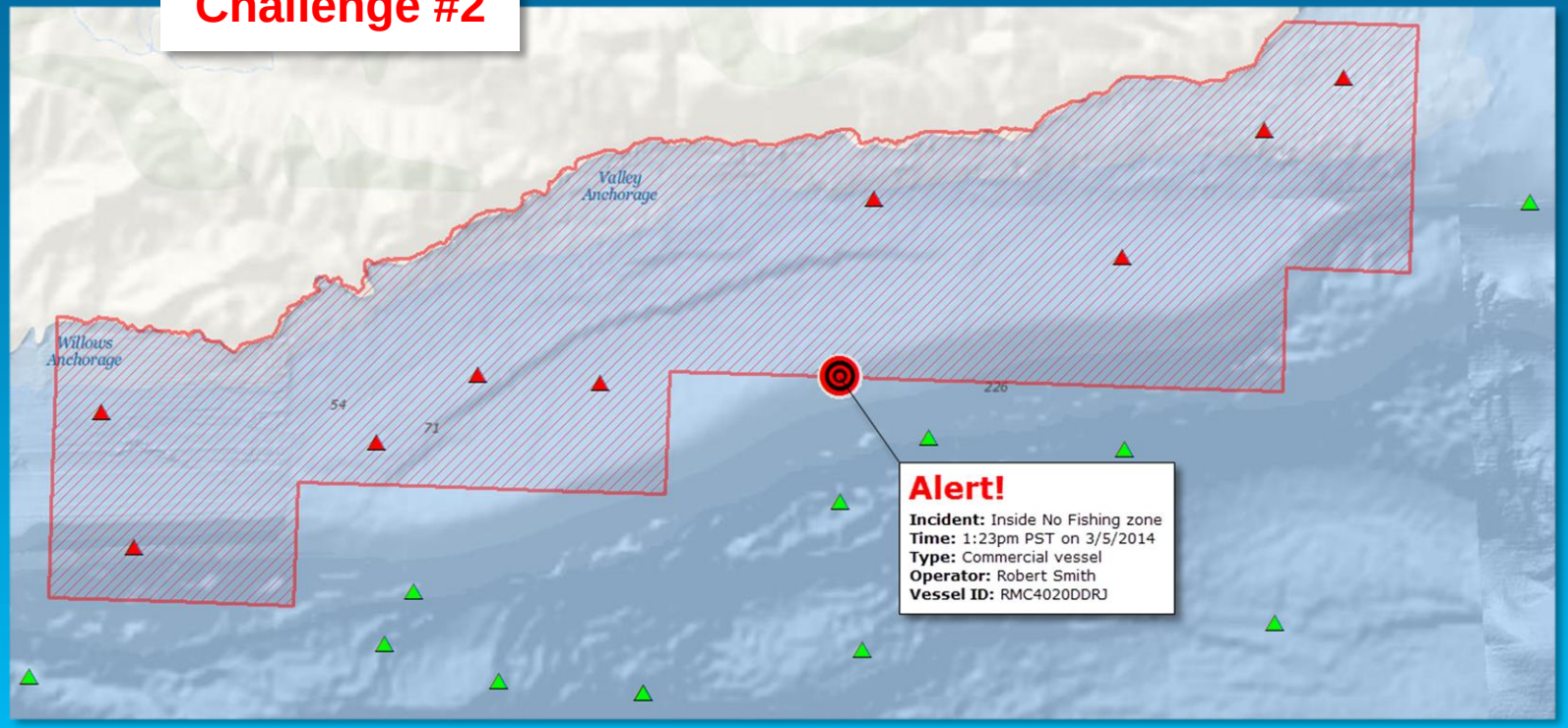
Each event represents the latest state of the sensor…

Real-Time Analytics

What fishing vessels are inside designated “no fishing” zones?



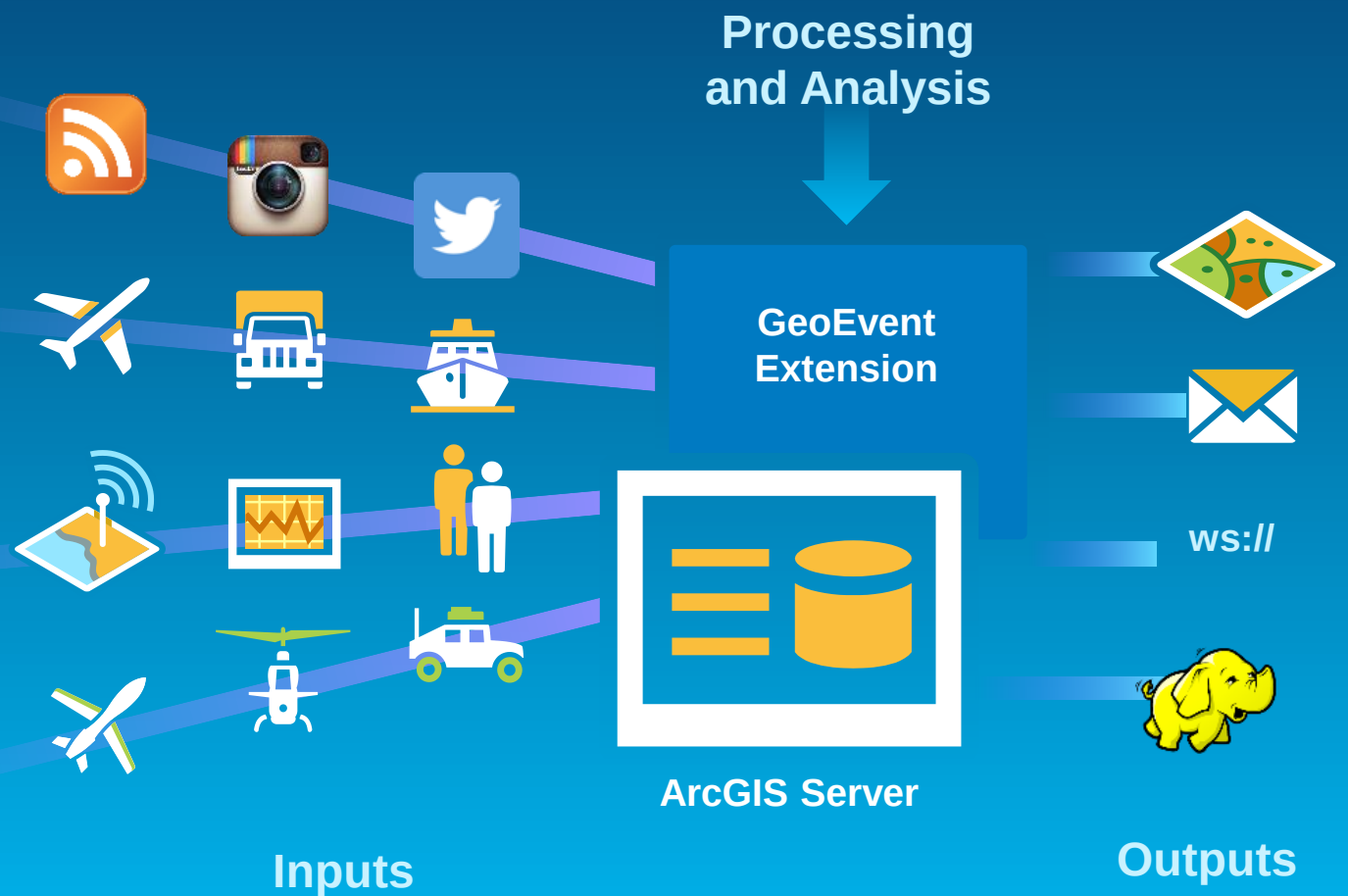
Challenge #2



Real-Time Notifications and Alerting

Tell a parent when their child leaves school property

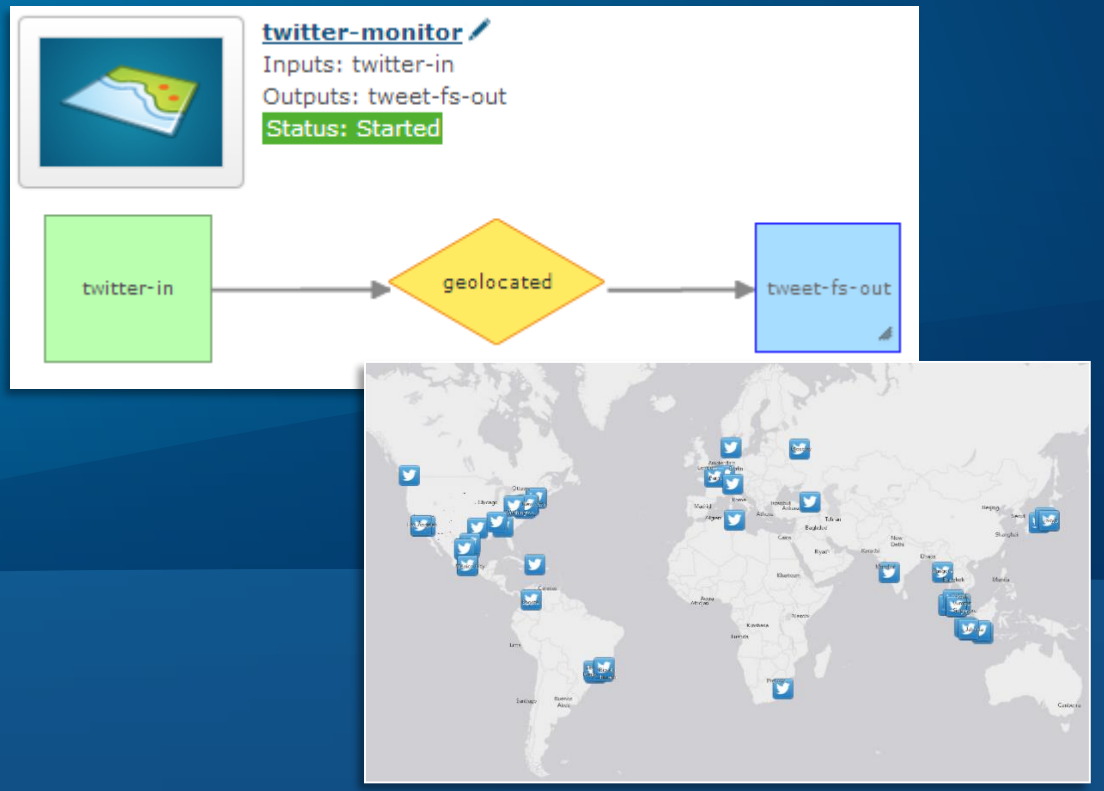
Real-Time GIS with the GeoEvent Extension



Demo

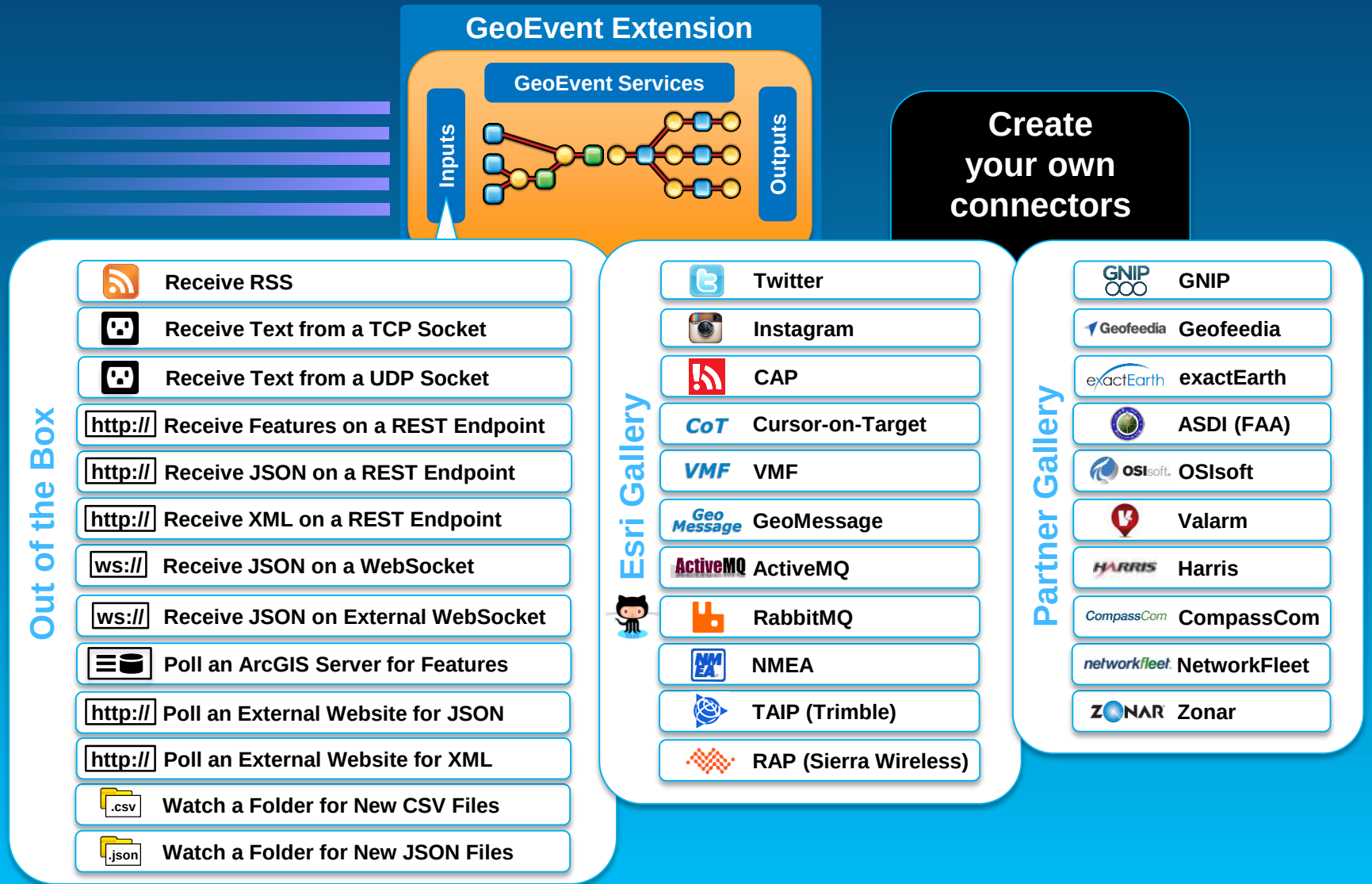
Working with Real-Time Data

Social Media Monitoring



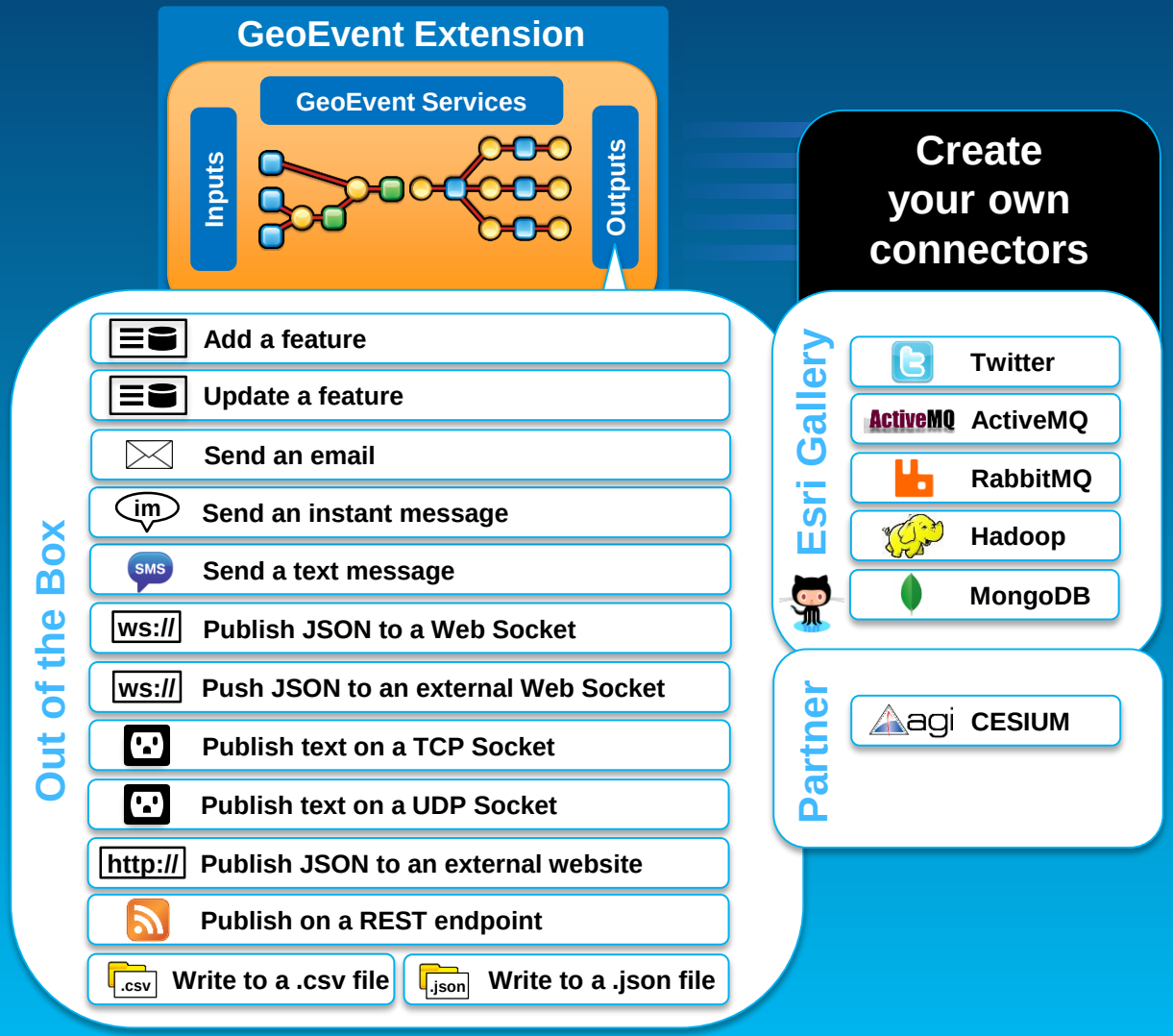
Receiving Real-Time Data

Input Connectors



Sending Real-Time Data

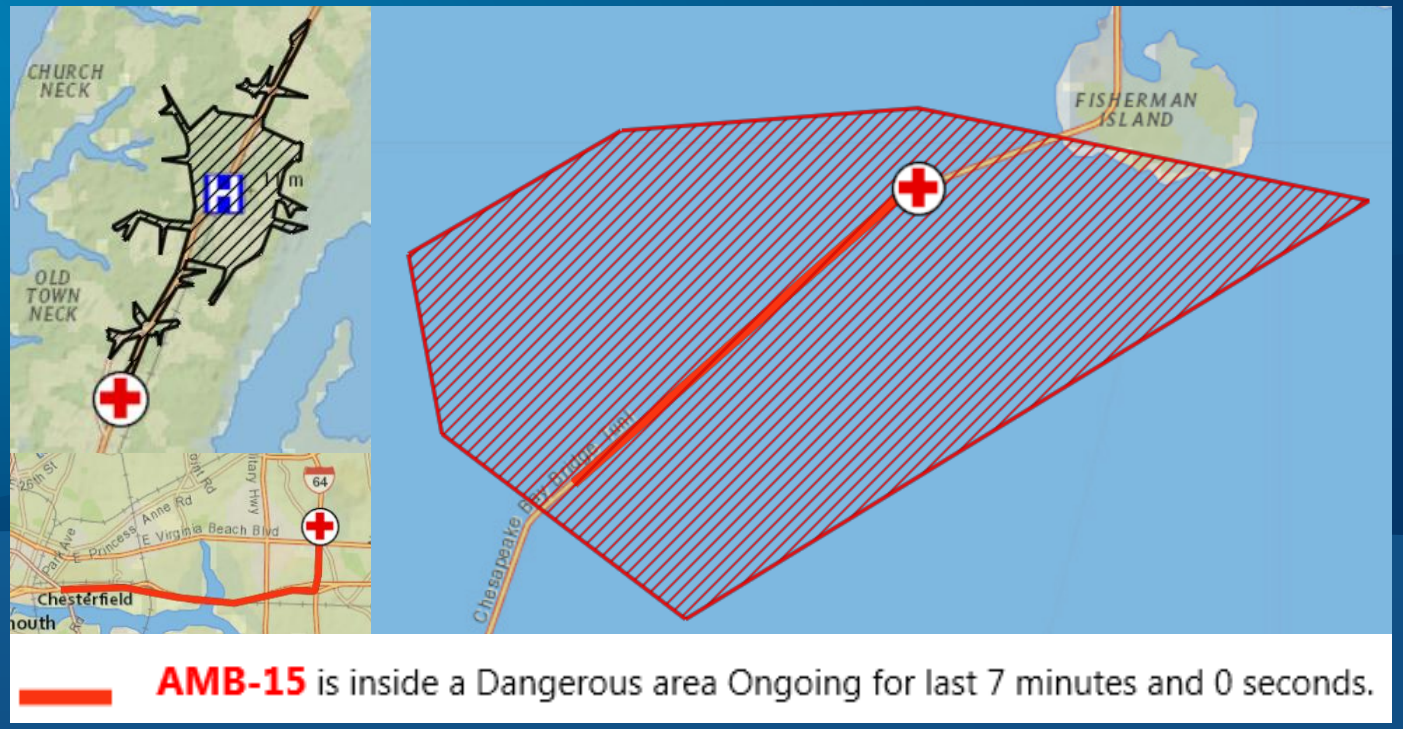
Output Connectors



Demo

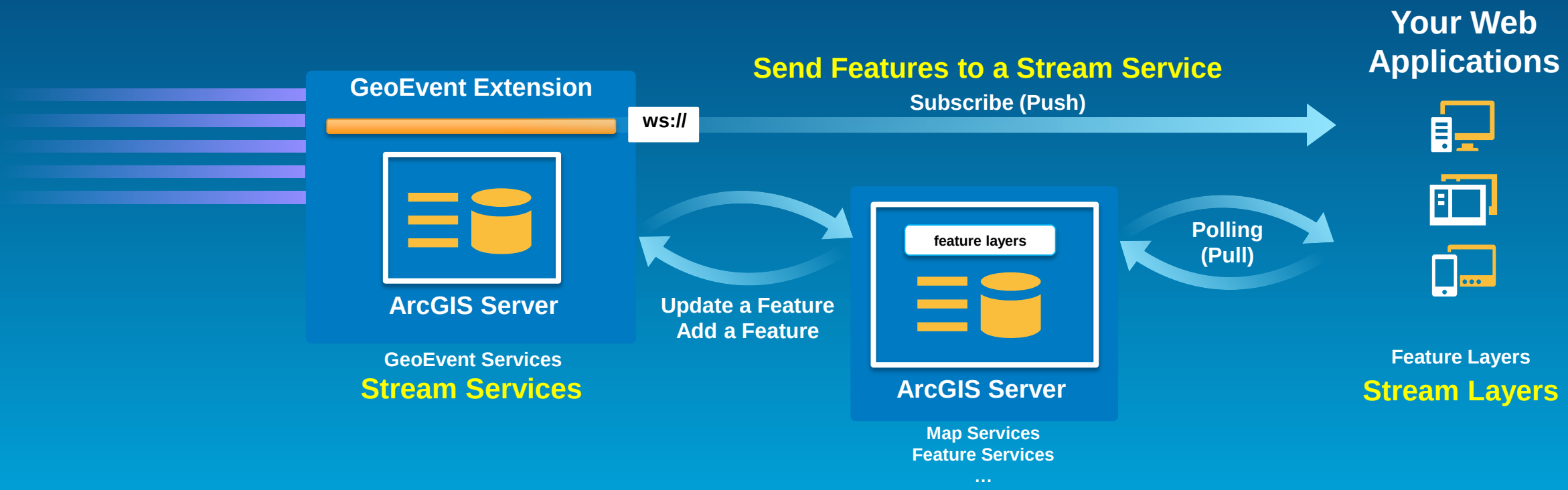
Applying Real-Time Analytics

Vehicle Monitoring



New Way to Visualize Real-Time Data in Web Apps

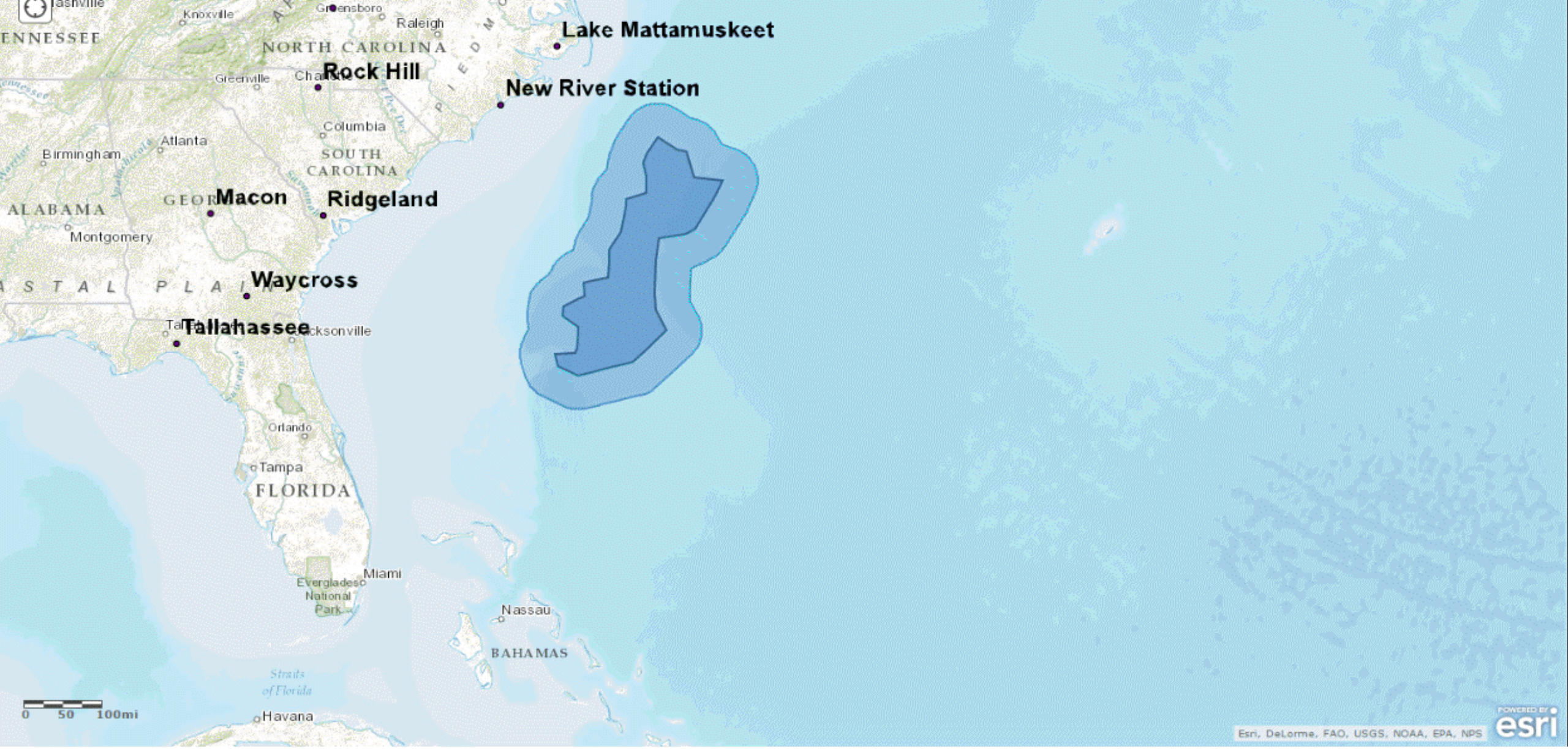
Stream Services



Demo

Where are you from?

Put yourself on a map



Real-Time GIS Example

Weather Warning

Real-Time GIS Example

Convoy Separation

Success Stories

GeoEvent Extension

BOSTON ATHLETIC ASSOCIATION
Boston Marathon®

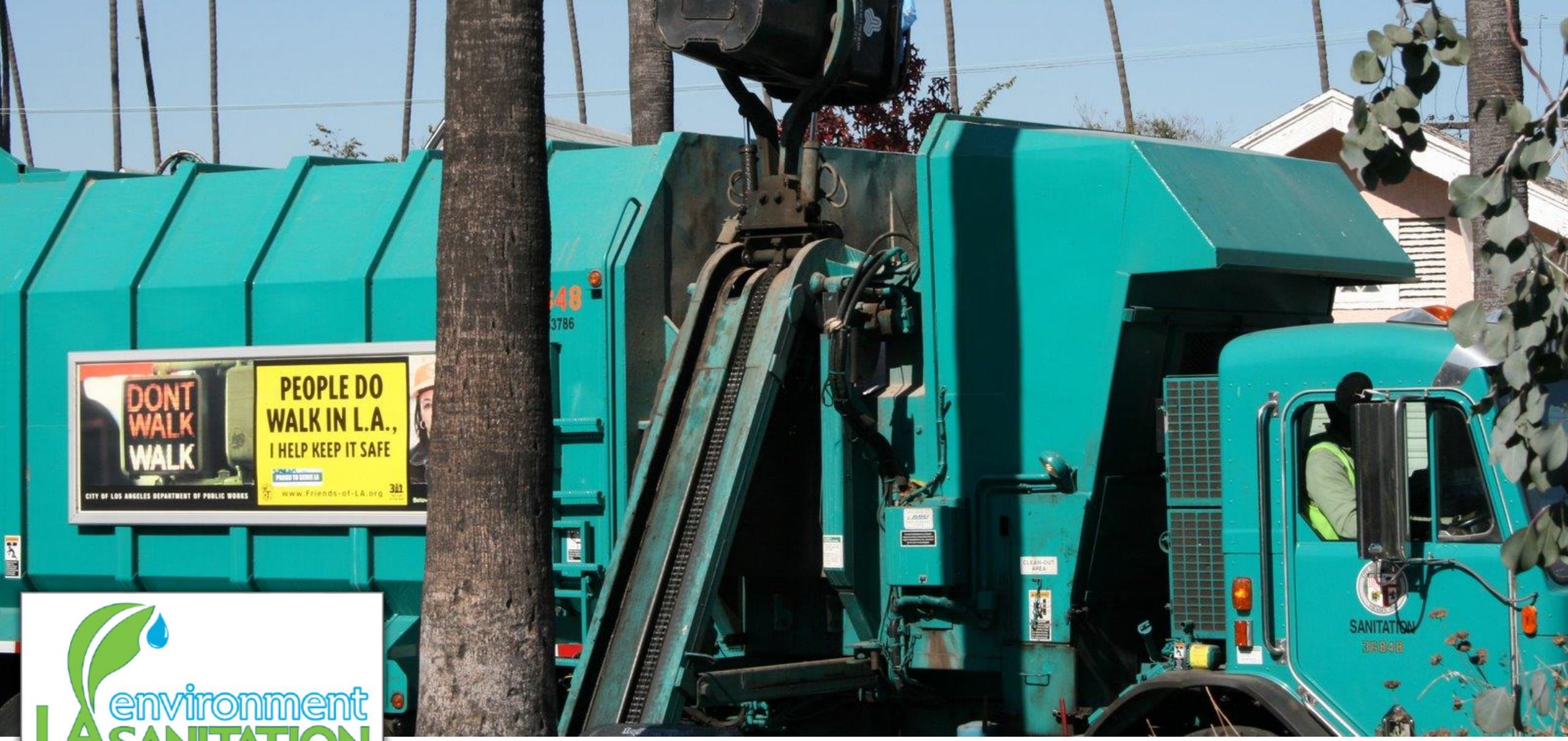
Public Safety

Boston Marathon 2014

IRONMAN

Incident Management

2014 Ironman World Championship



environment LA SANITATION
CITY OF LOS ANGELES

Local Government

Vehicle & Asset Monitoring

DONG energy

Alternative Energy

Sensor Network Monitoring

The Internet of Things (IoT)

An emerging trend

The Internet of Things (IoT)

Everything Connected

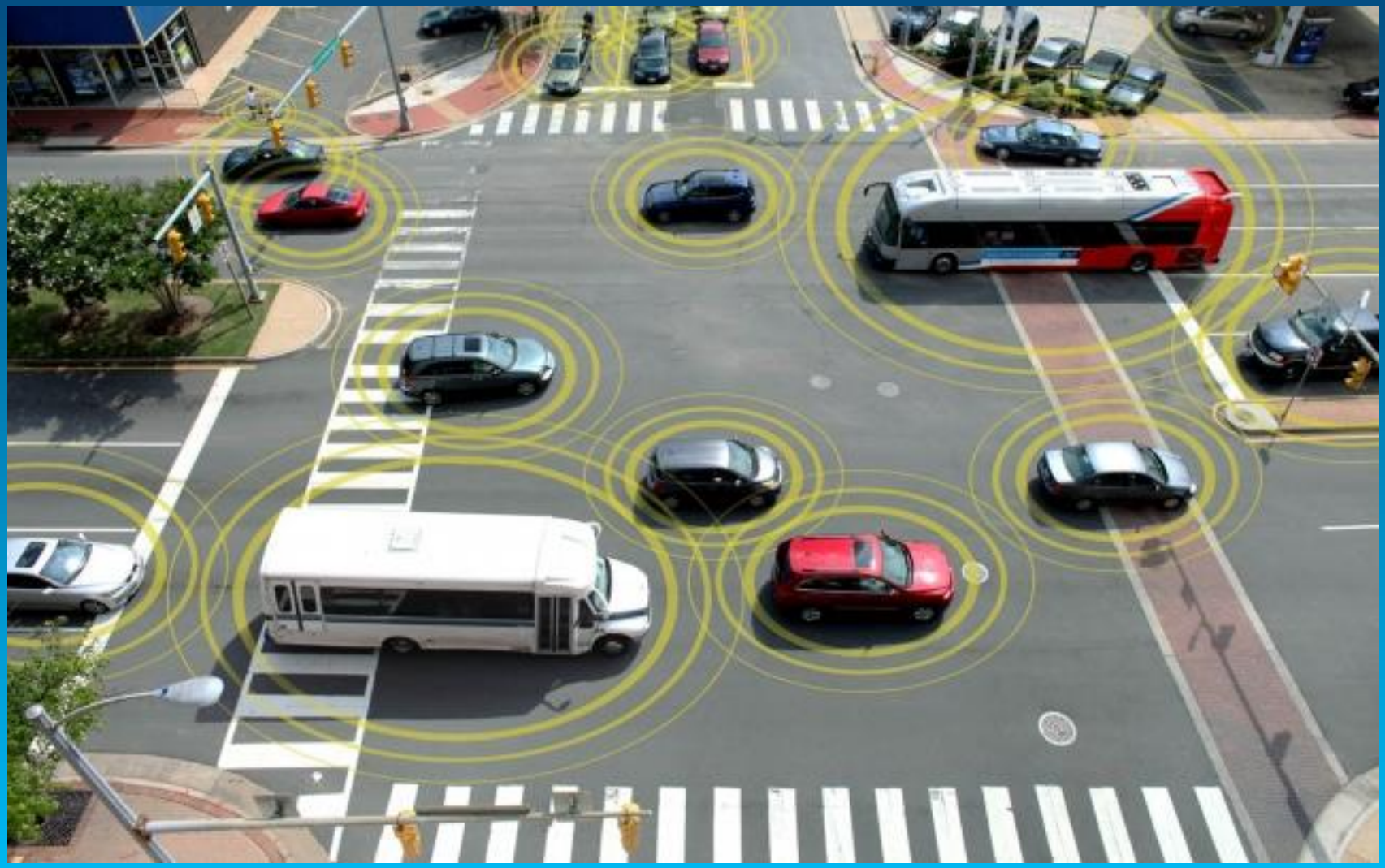
- More things are connected to the Internet than people
- Over 16 billion devices are connected at the end of 2014 (20% more than in 2013)

Prediction: 40.9 billion devices connected by 2020

(Forbes, http://www.forbes.com)

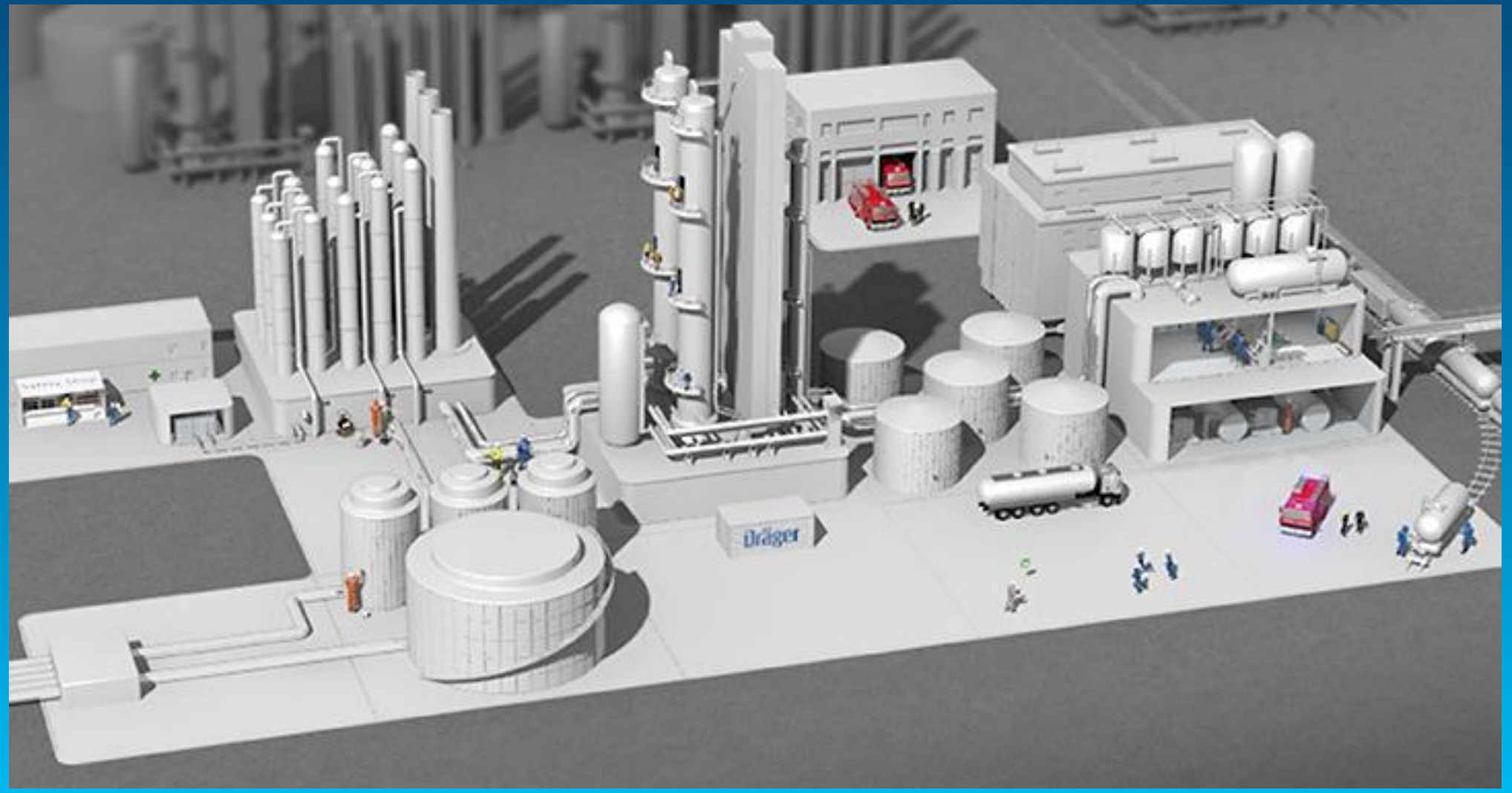
Connected Vehicles

Smart Traffic



Connected Buildings

Smart Workplace



Connected Environment

Smart Agriculture

Connected People

Student Proximity

A modern solution for frantic and frequent head counts…

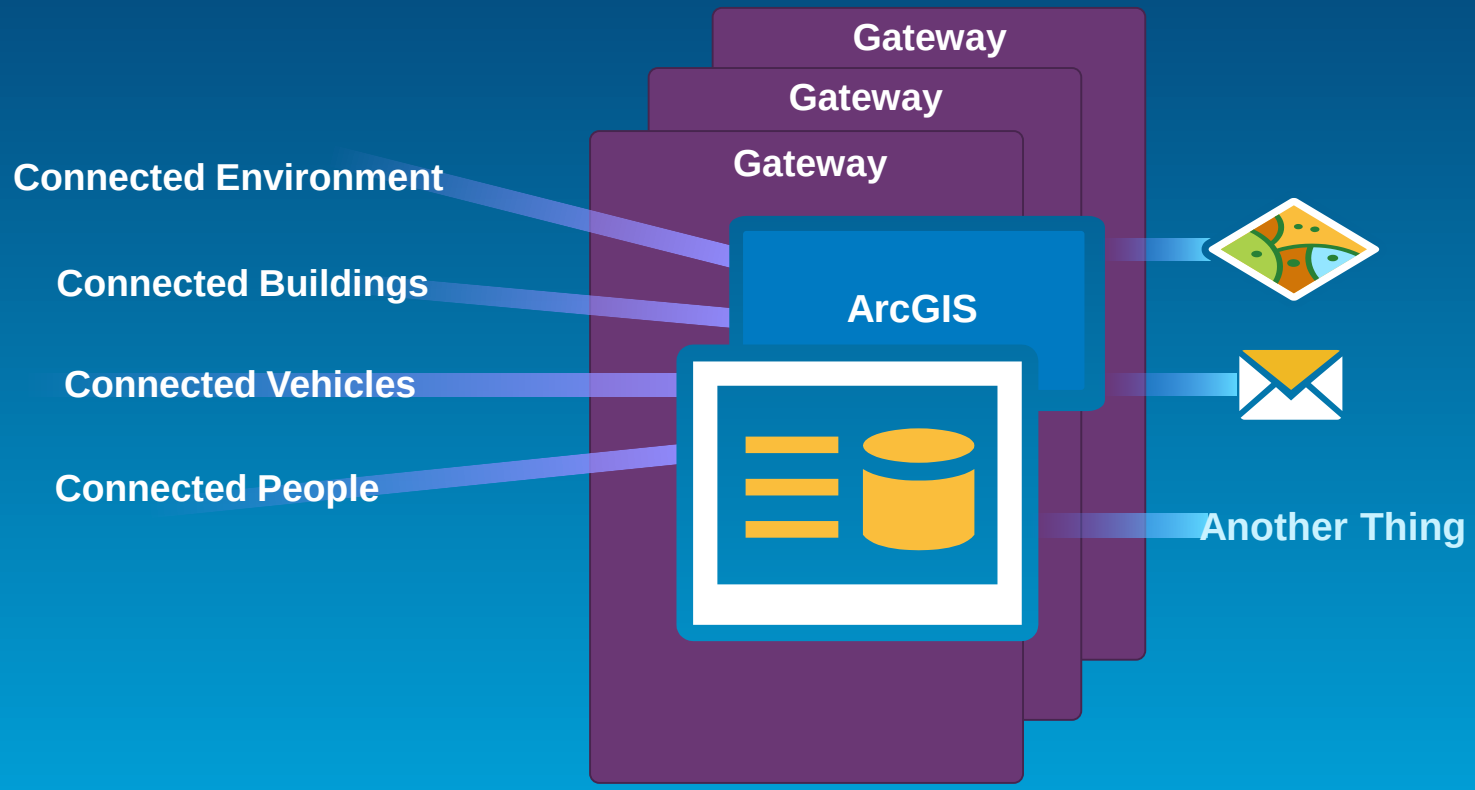
IoT Example

Firefighters

The Internet of Things (IoT)

Everything connected

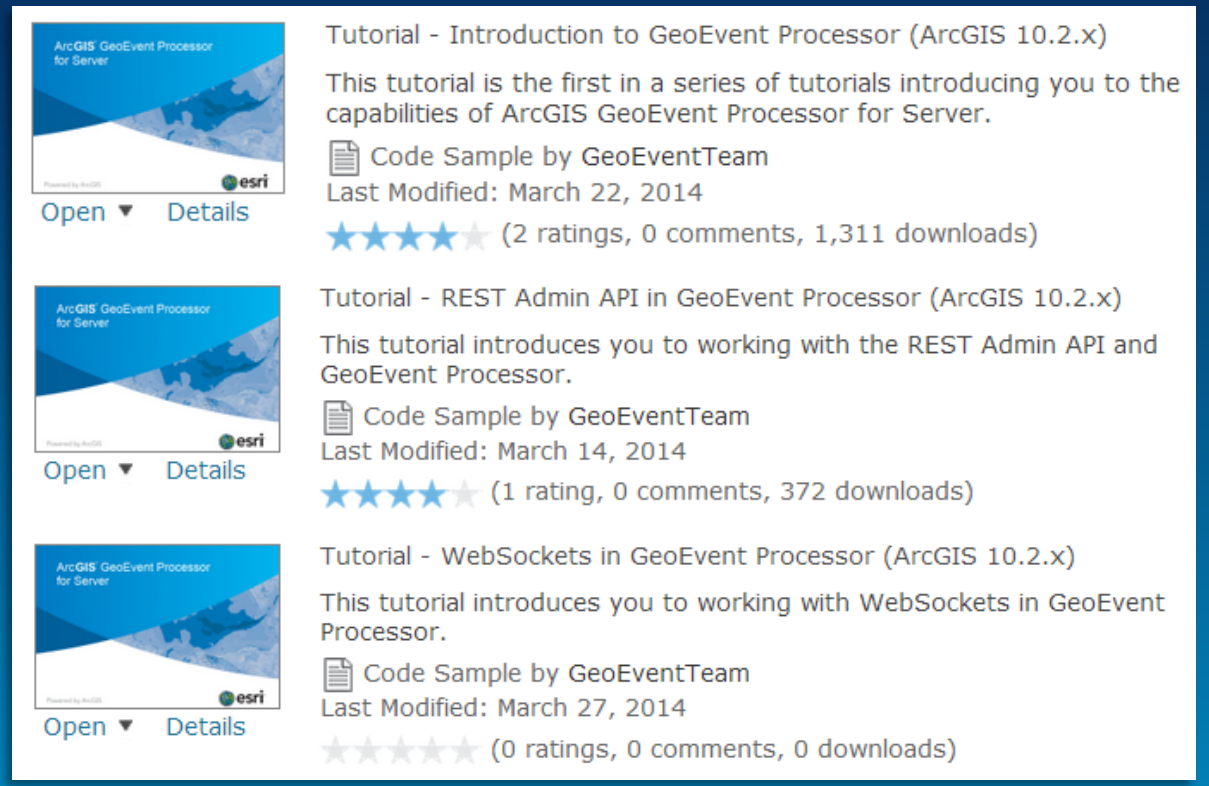
- Geospatial reasoning is needed amongst the Internet of Things.
- Performing geospatial reasoning closer to the things can improve their ability to sense.
- When meaningful patterns are found things can notify people or even other things.



Want to learn more?

Real-Time GIS Resources

- Tutorials @ links.esri.com/geoevent
  - Introduction
  - Notifications
  - RSS
  - WebSockets
  - Working with HTTP
  - GeoEvent Caches
  - REST Admin API



- Real-Time GIS Community @ geonet.esri.com/groups/real-time-gis

- GeoEvent Extension forum @ geonet.esri.com/community/gis/enterprise-gis/geoevent

Questions/Comments?