Event-based Dissemination and Processing of Geospatial Information

ArcGIS GeoEvent Server

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esri Deutschland

1 Real-Time GIS

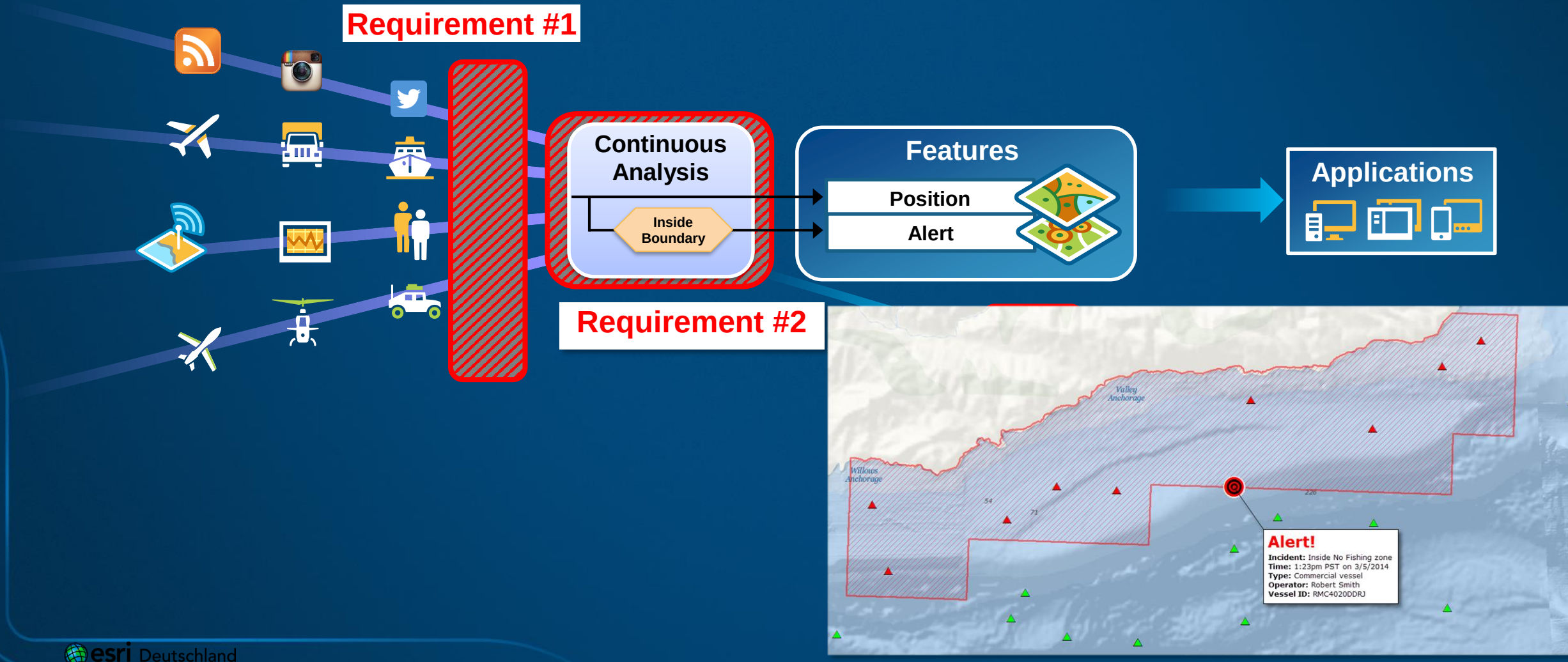
GIS Data

What has happened, what is happening, what will happen

The 'current' snapshot is outdated almost as soon as it's created…

Real-Time GIS Requirements

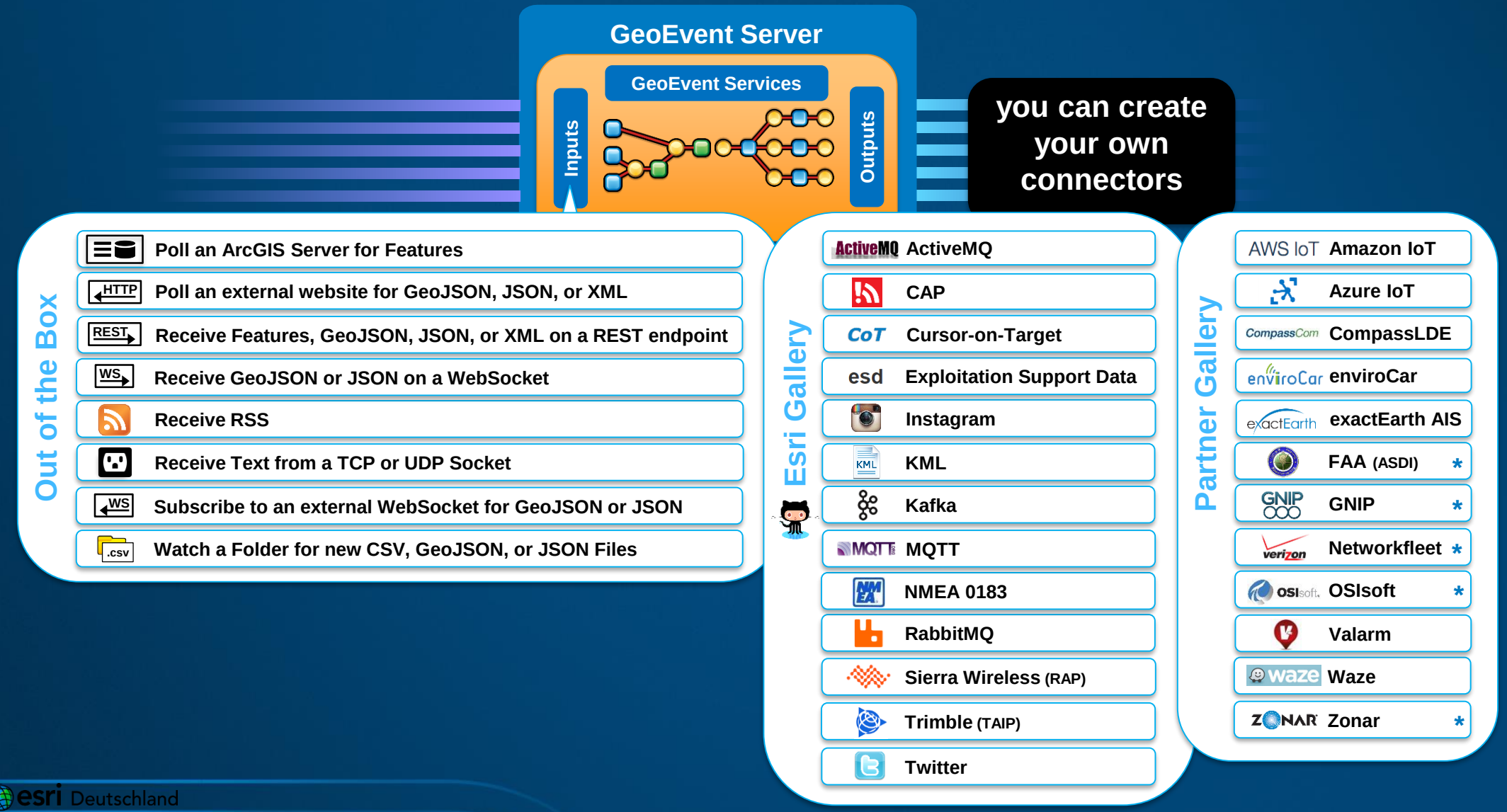
Ingestion, Analytics, Notifications and Alerting



2 Ingestion & Dissemination of Events

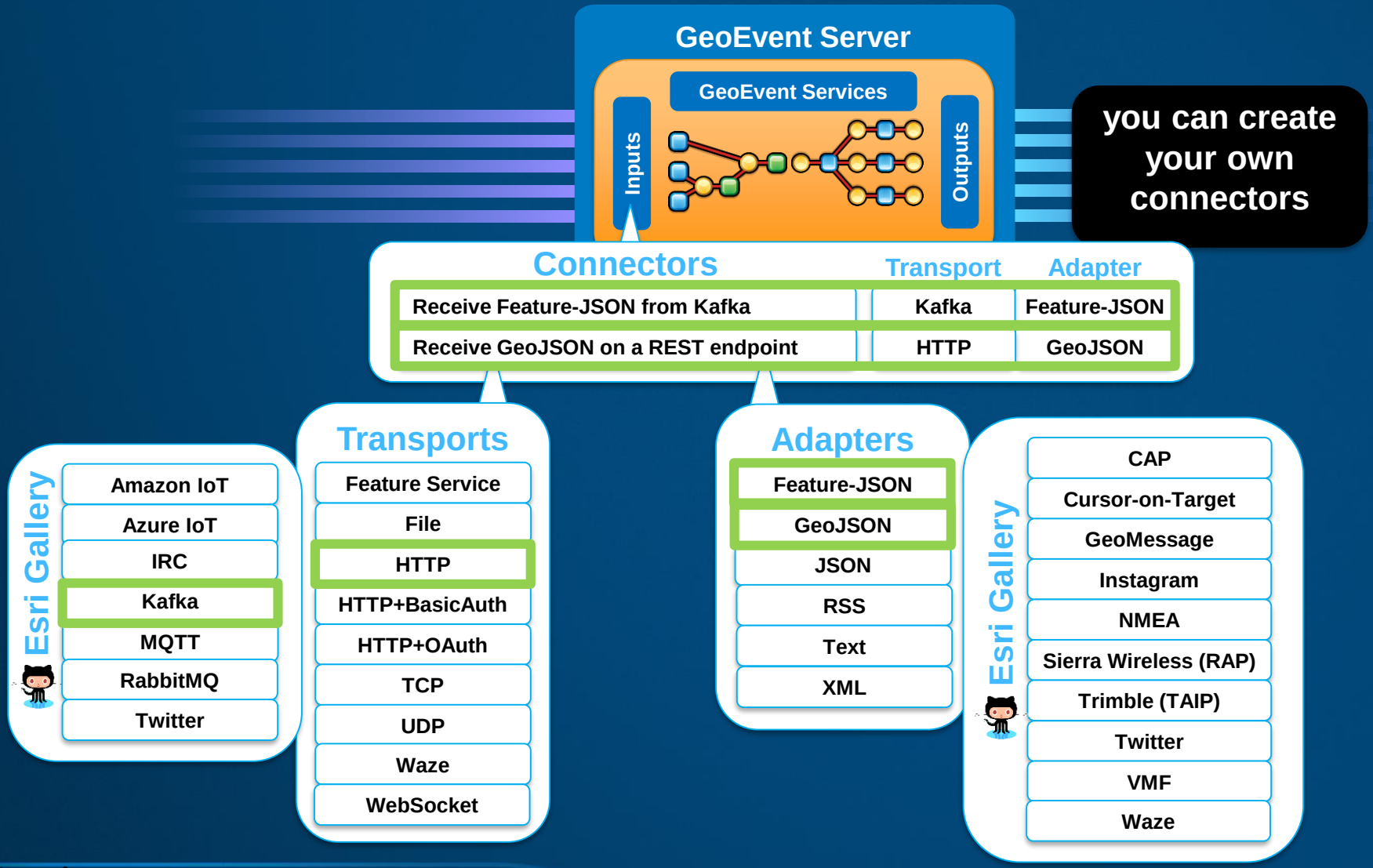
Ingestion

use an existing input connector



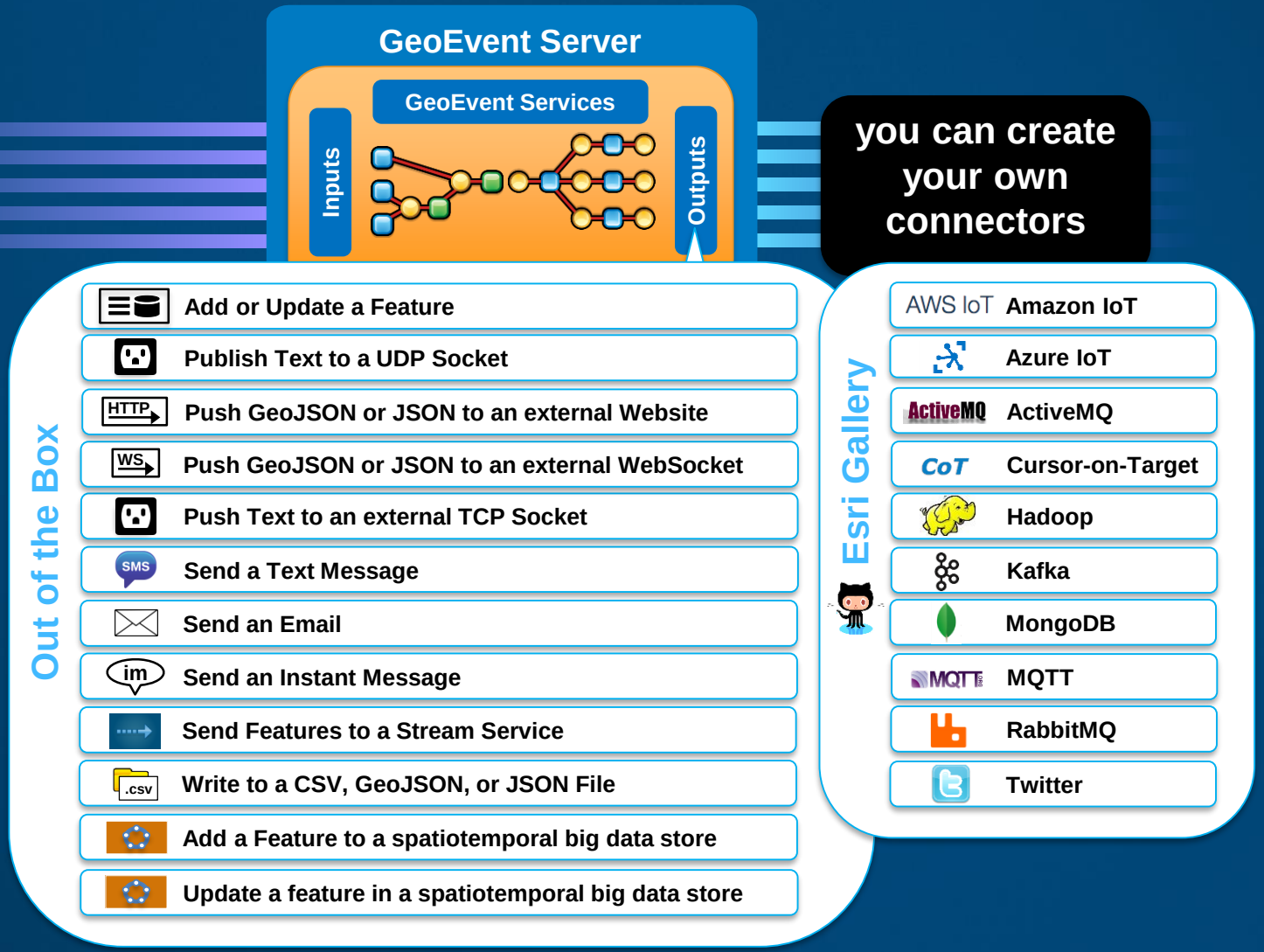
Ingestion

configure a input connector by pairing a transport & adapter together



Dissemination

use an existing output connector

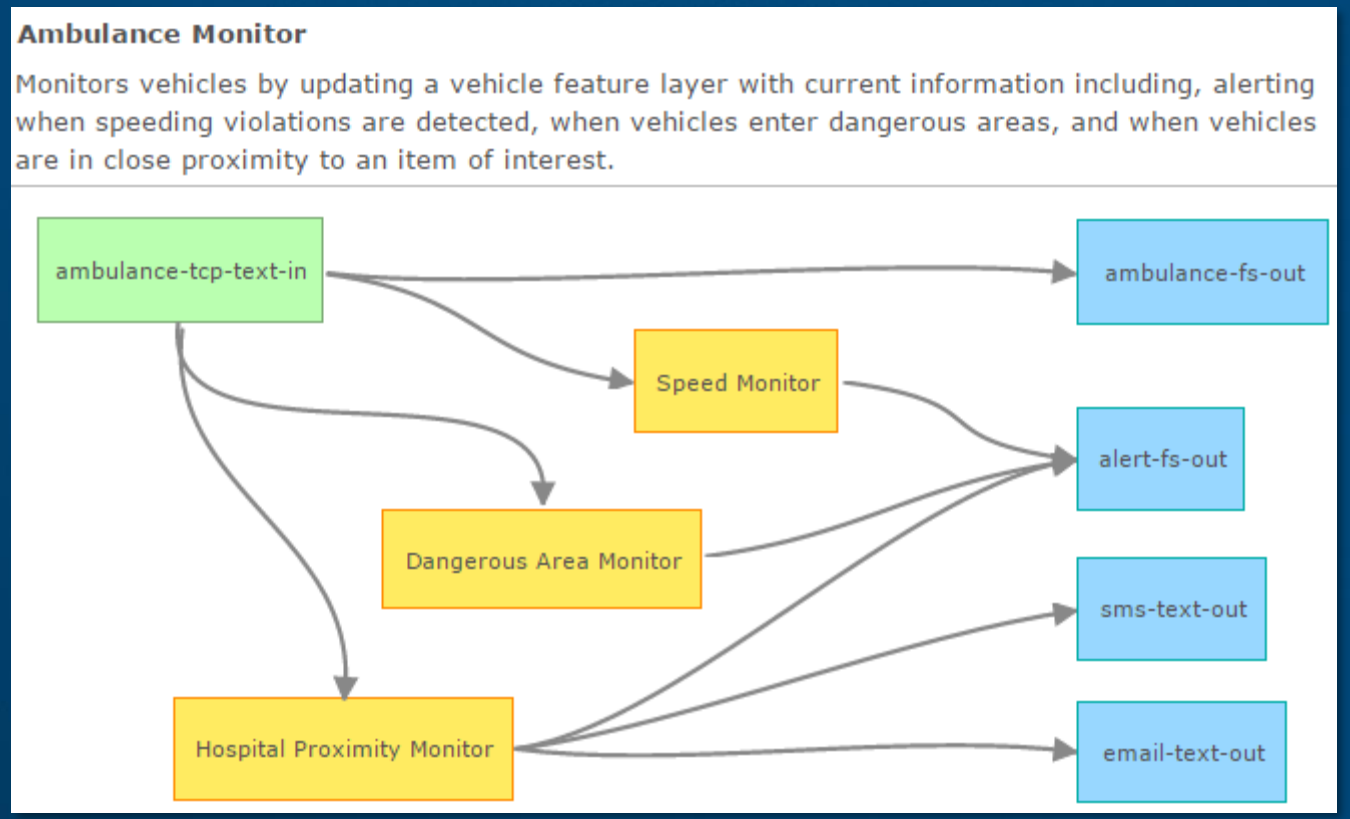


3 Real-Time Analytics

Applying Real-Time Analytics

GeoEvent Services

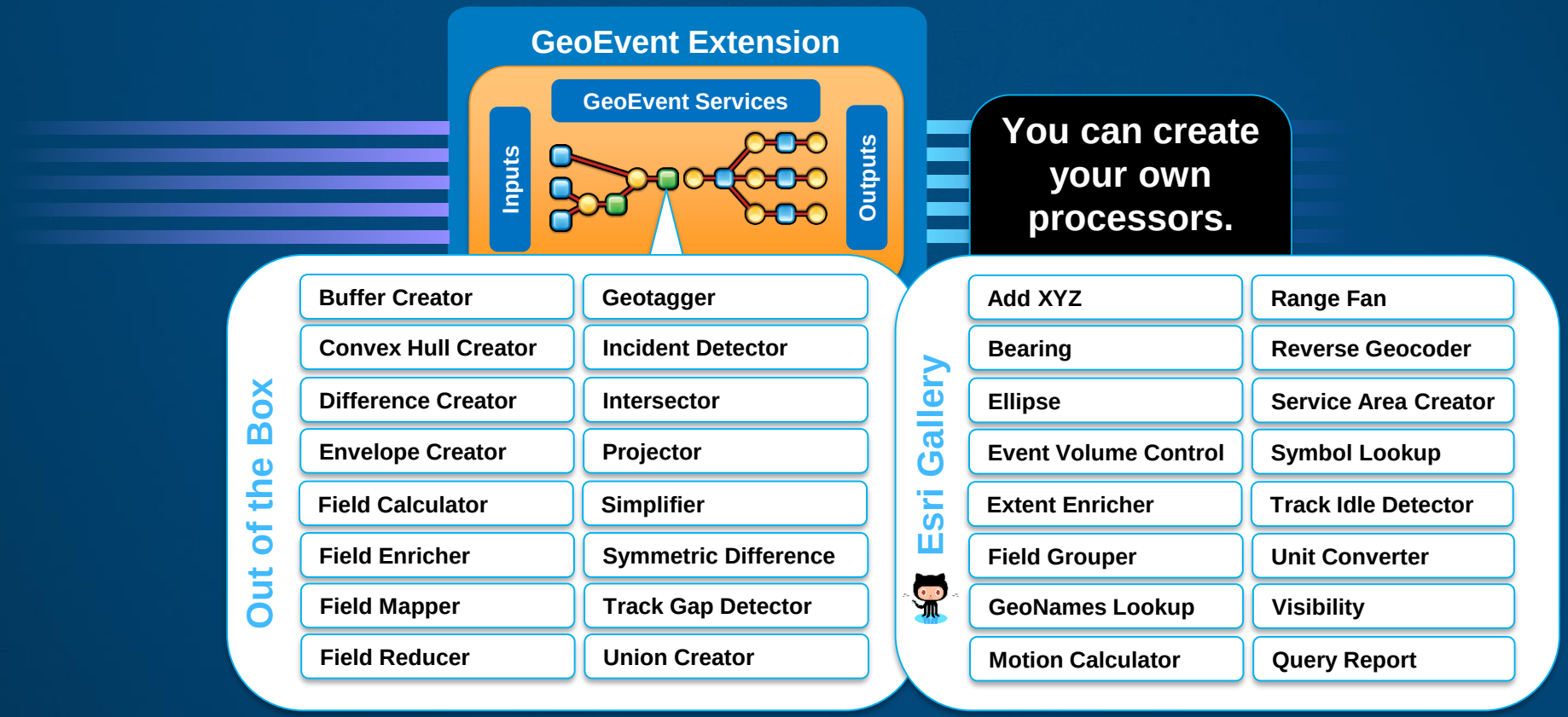
- A **GeoEvent Service** defines the flow of GeoEvents
  - The **Filtering** and **Processing** steps to perform
  - what input(s) to apply them to
  - and what output(s) to send the results to



Performing continuous analytics in ArcGIS

Processors

- You can perform continuous analytics on events as they are received using a processor.

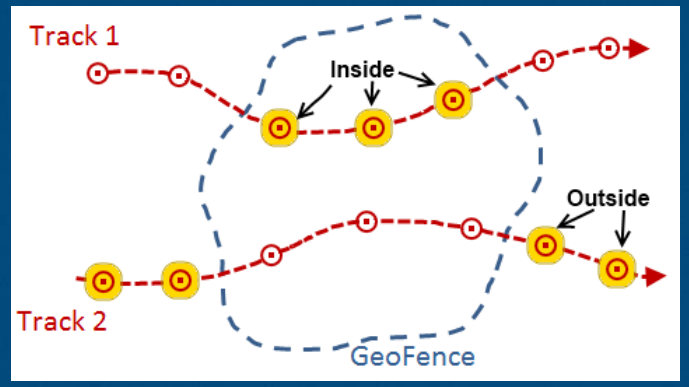


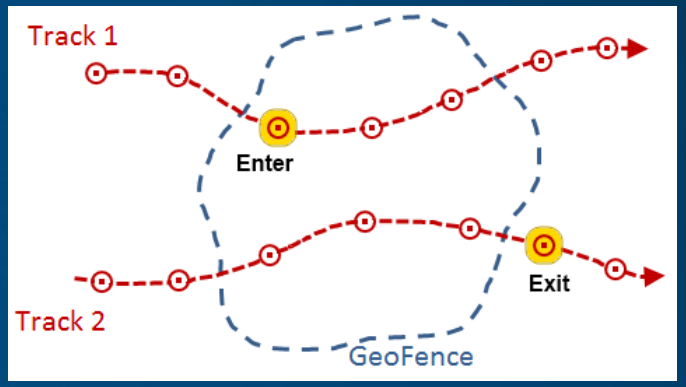
Additional Real-Time Spatial Analytics

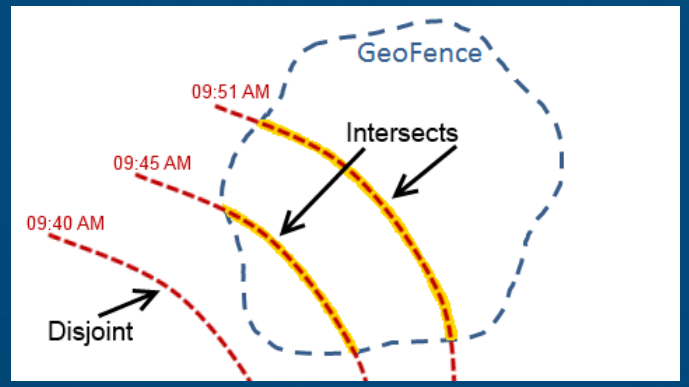
Spatial condition evaluation

- **Spatial operators:**

inside	outside
enter	exit
intersects	disjoint
touches	contains
crosses	equals
overlaps	within

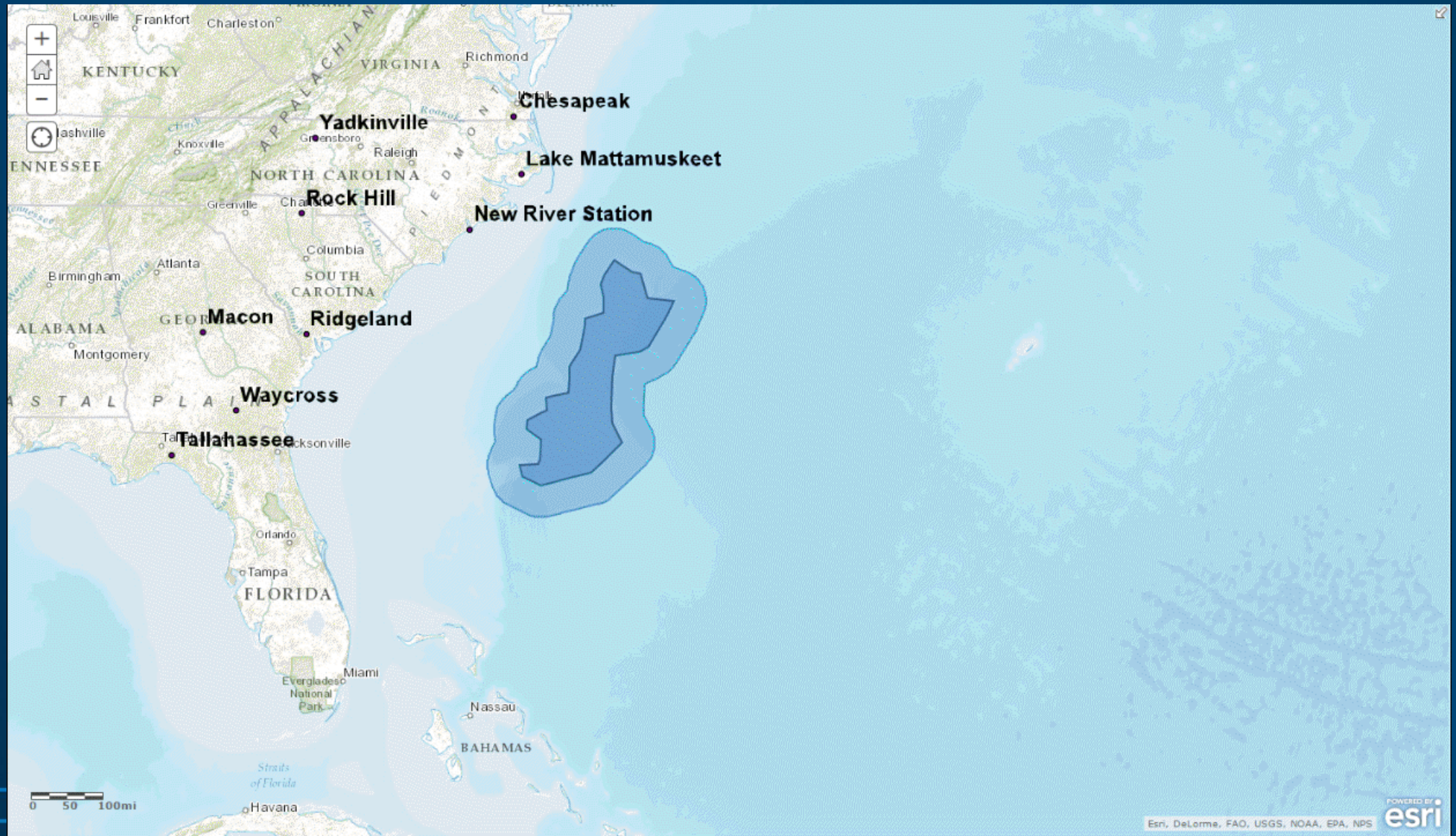






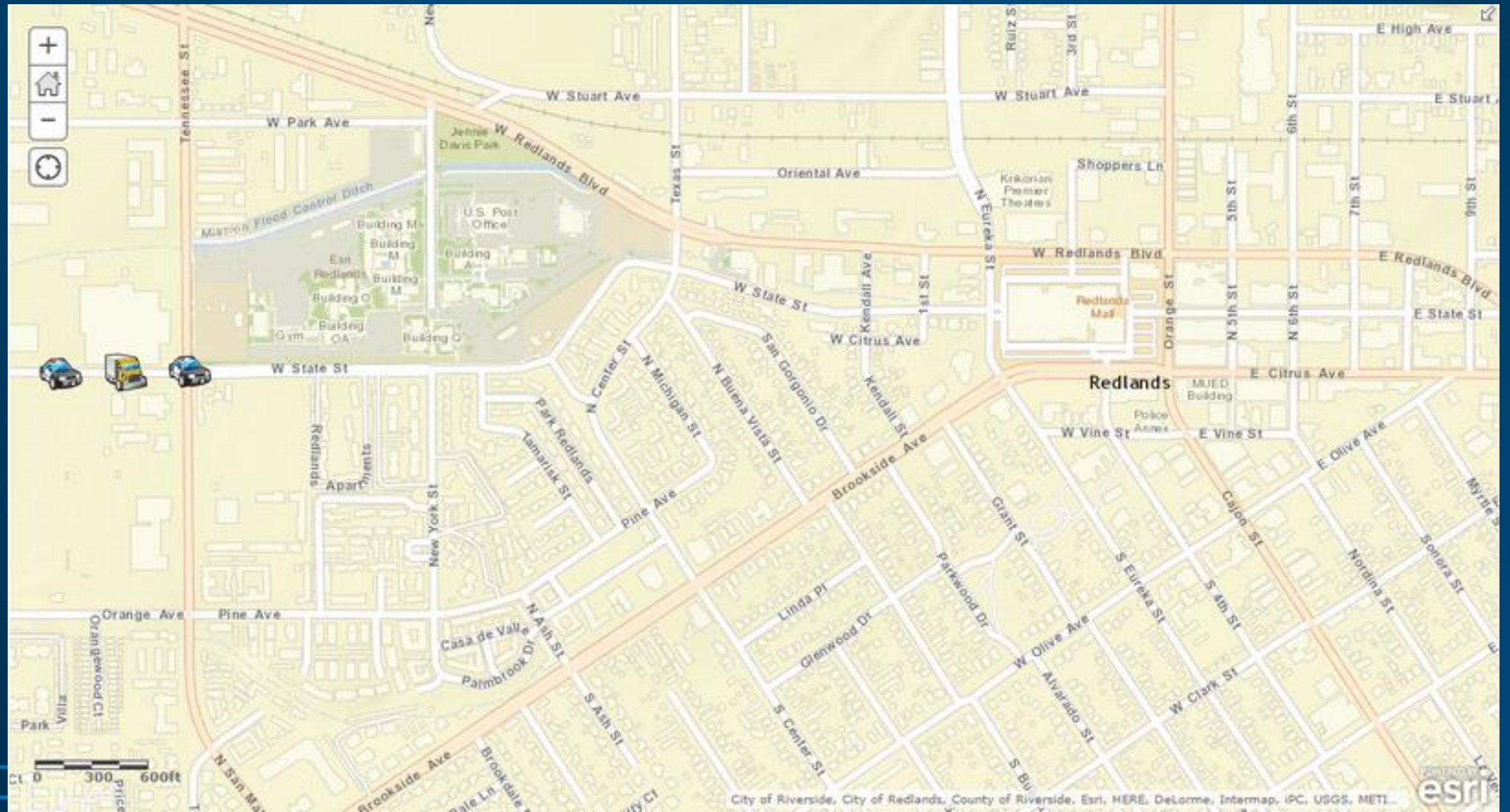
Additional Real-Time Spatial Analytics

Example – Impending weather notifications



Additional Real-Time Spatial Analytics

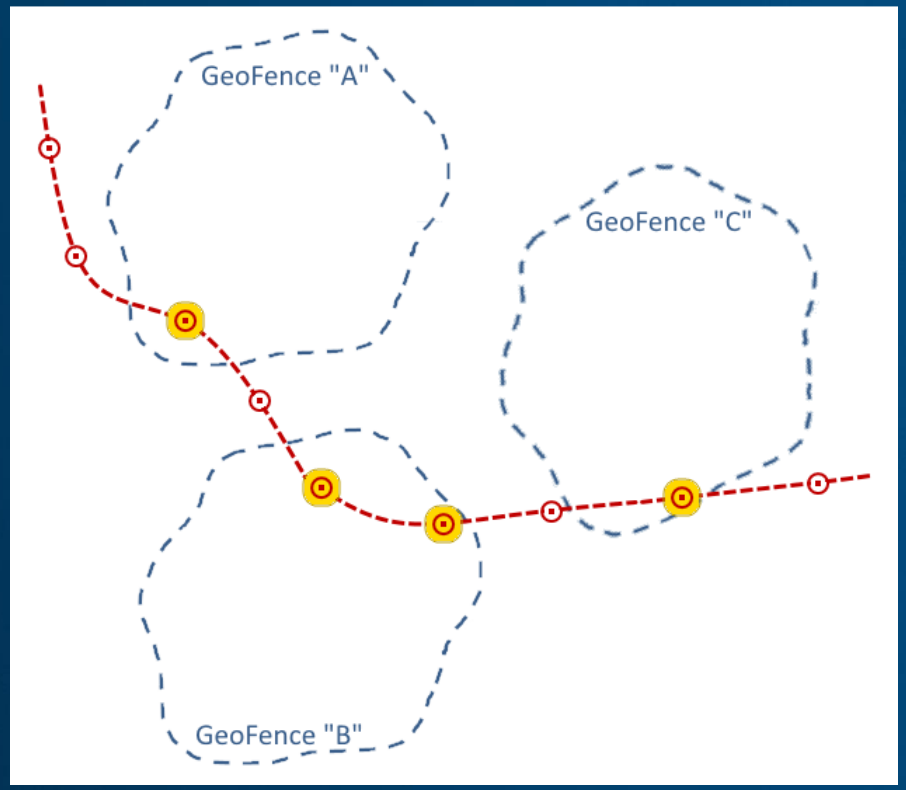
Example – Convoy separation alerting



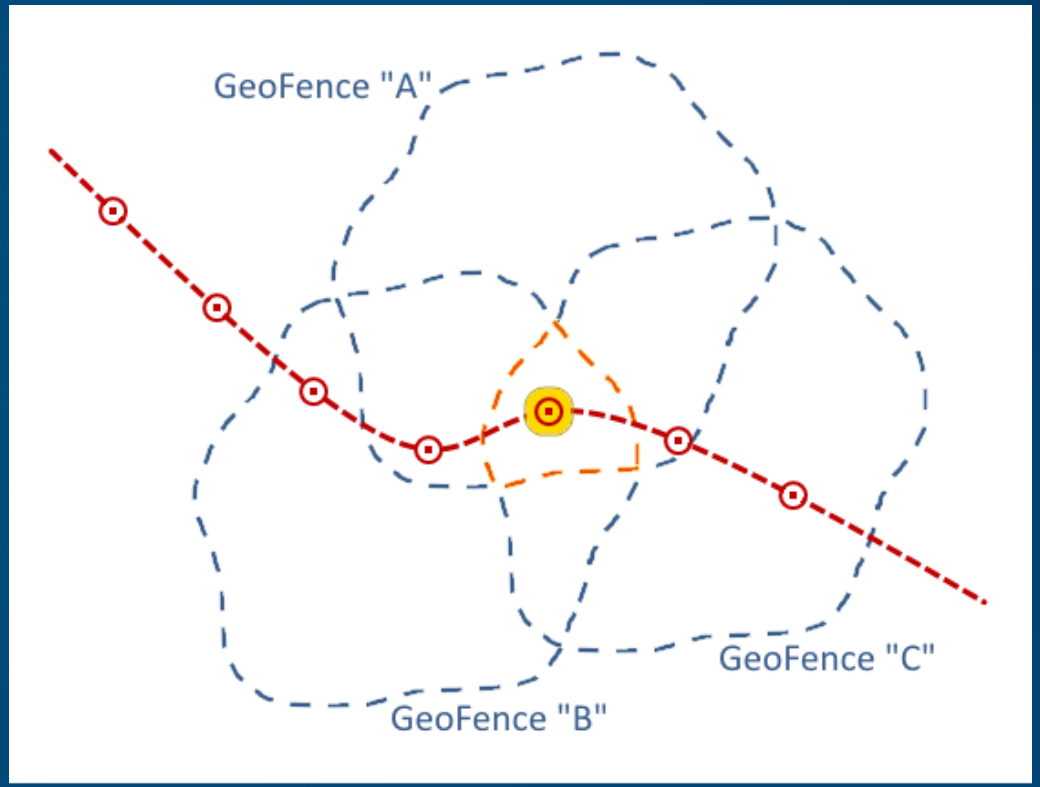
Additional Real-Time Spatial Analytics

GeoFence scope

- Specify a GeoFence scope: Any or All
- Any GeoFence



- All GeoFences



Additional Real-Time Spatial Analytics

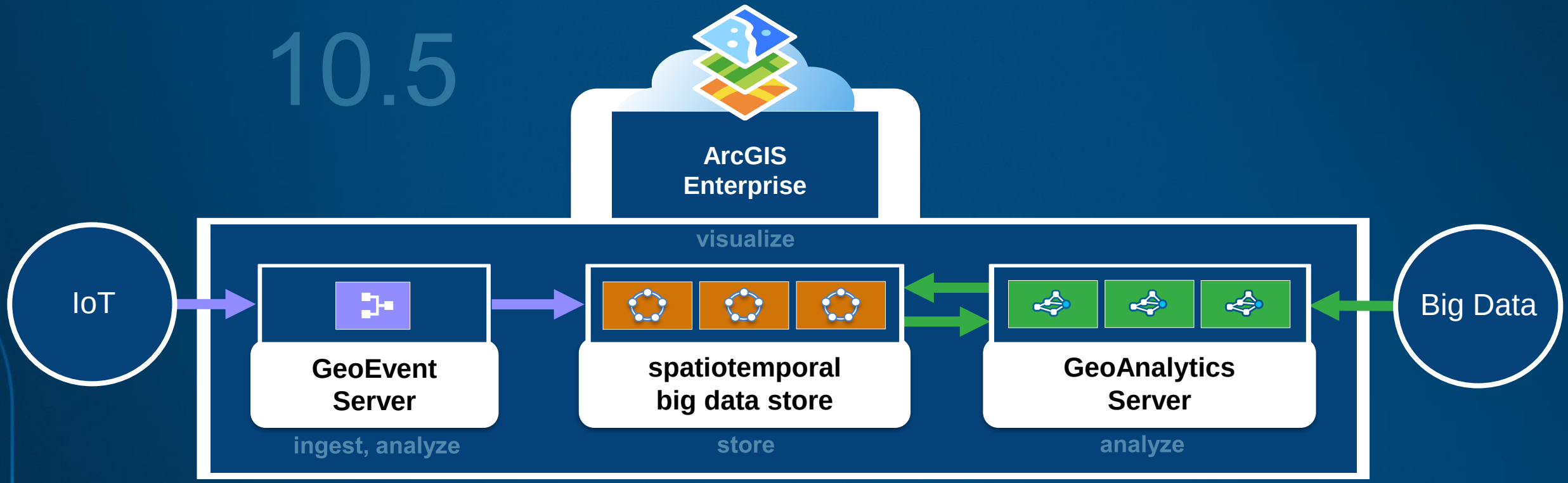
Example – Territory adherence alerting

4 ArcGIS Enterprise

ArcGIS Enterprise

with real-time & big data capabilities

10.5

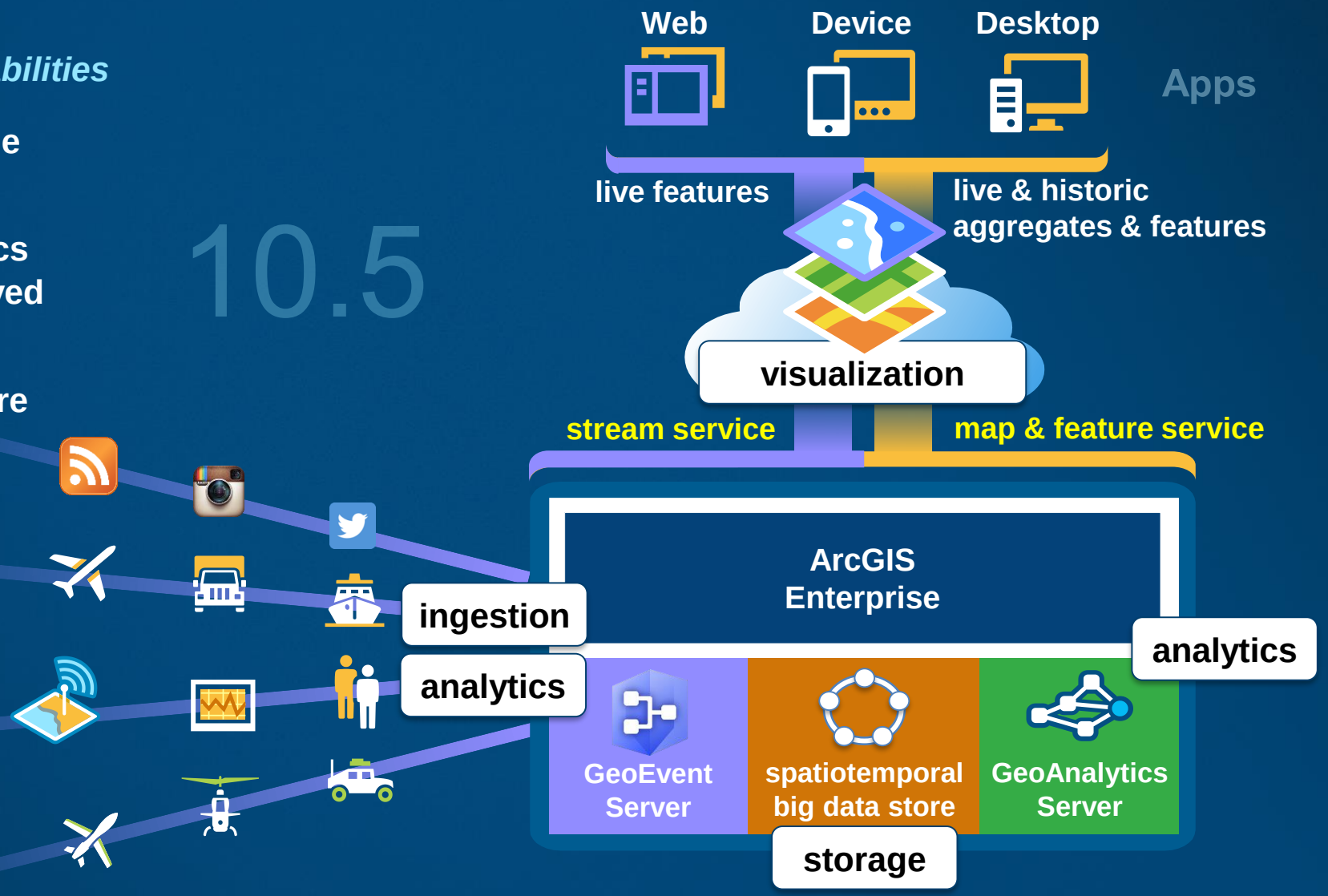


ArcGIS Enterprise

with real-time & big data capabilities

- Ingest high velocity real-time data into ArcGIS
- Perform continuous analytics on events as they are received
- Store observations in a spatiotemporal big data store
- Run batch analytics on stored observations
- Visualize high velocity & volume data:
  - as an aggregation
  - as discrete features
- Notify those who need to know about patterns of interest

10.5

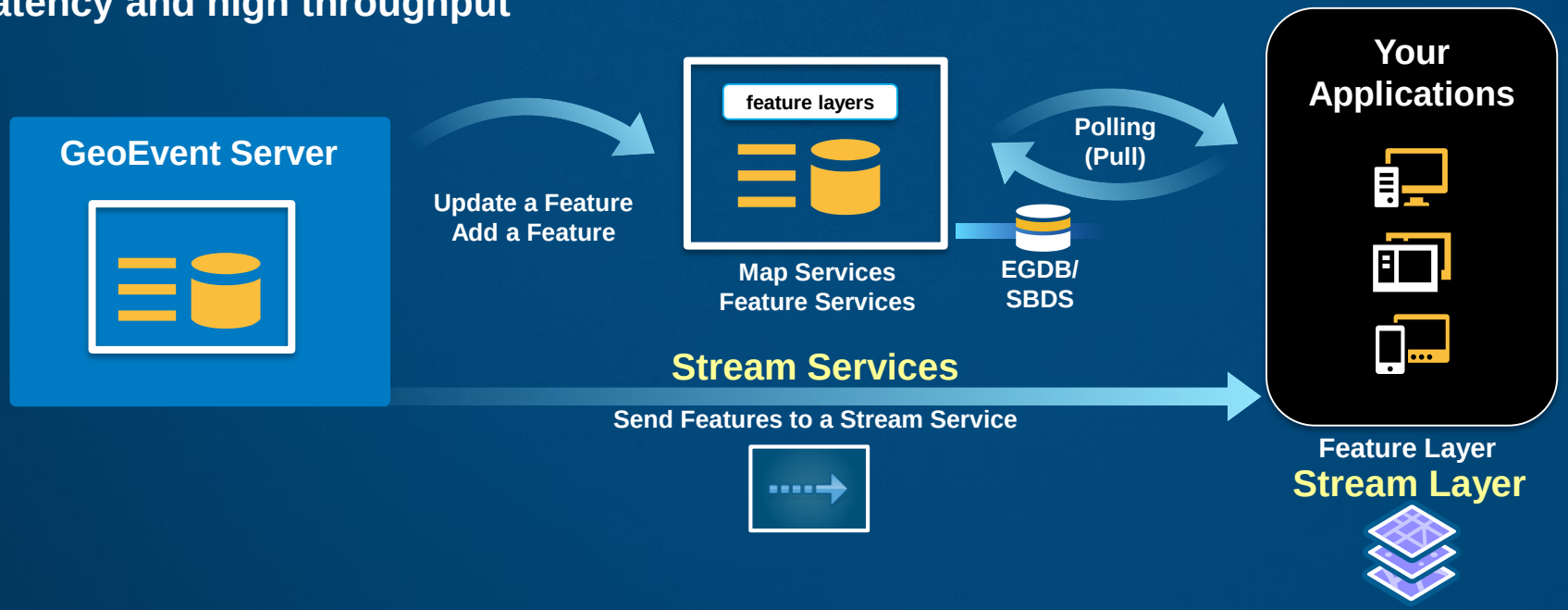


5 Visualization

Getting Real-Time Data into Web Apps

Two patterns

- Feature layers **pull** from feature services
  - Web apps poll to get periodic updates
  - Must be backed by an enterprise geodatabase (EGDB) or spatiotemporal big data store (SBDS)
- Stream layers **subscribe** to stream services
  - Web apps subscribe to immediately receive data
  - Low latency and high throughput

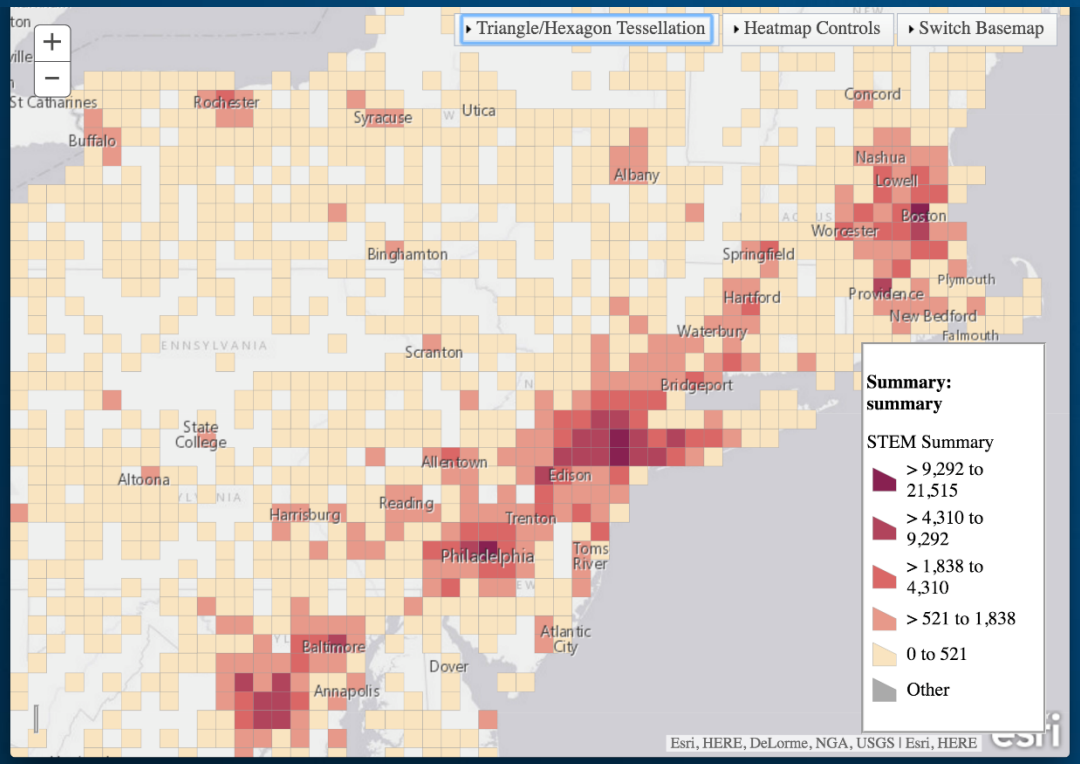


spatiotemporal big data store

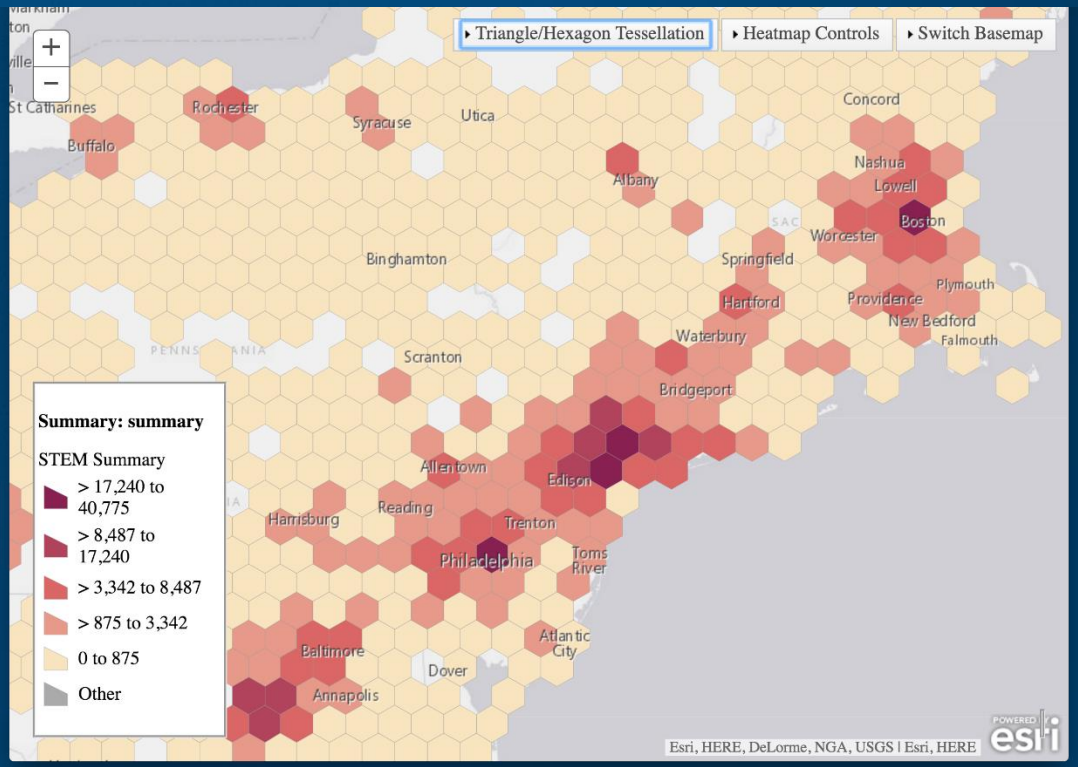
10.5 enhancements

10.5

- **spatiotemporal big data store & map service aggregation capabilities:**
  - **enhanced aggregation capability to support on-the-fly square & hexagon aggregation**



square aggregation



hexagon aggregation

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