ArcGIS Velocity

IoT and big data analytics with SaaS business model

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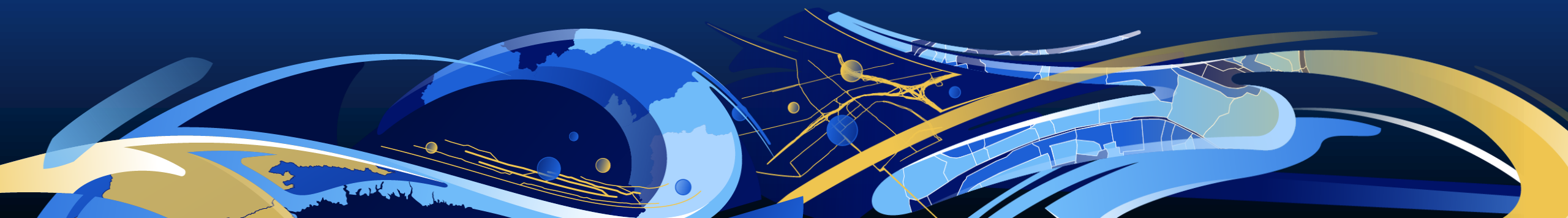


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Global Footprint
$ 1 500
Million in Sales
28 %
R&D Investment
9 000
Employees
2 000
Partners
350 000
Clients Worldwide
40+ %
Market share

Agenda

- ArcGIS Geospatial Platform
- ArcGIS Online
  - What it is?
  - Cloud backbone
- ArcGIS Velocity – IoT and big data analytics
  - Why go with SaaS model?
  - Solution capabilities
  - Value propositions
  - How it works

ArcGIS Geospatial Platform

…available as SaaS, PaaS, Public Cloud, On-Premises – no-code, low-code, custom

ArcGIS Online

ArcGIS Online

Esri's SaaS service for maps and analytics

Create map visualizations

Analyze Spatial Data

Create and Host Apps

Store data and Collaborate

In production since 2011
+9 million users and counting…

ArcGIS Online Cloud backbone

ArcGIS Online website

- Apps
- Content Management
- Search
- Identity
- Reporting

- Analytics
- Services
- Data

ArcGIS Online Cloud backbone

Azure PaaS

Azure Kubernetes

Azure SQL Database

Azure Cosmos DB

Azure Virtual Networks

Azure Load Balancers

Azure Databricks

Azure Storage

Azure Application Gateway

Compute

Storage

Networking

ArcGIS Online Cloud backbone

Azure AD

Key Vault

Azure Monitor

Application Insights

Event Hub

Azure DevOps

Azure Security Center

Azure Data Explorer

Azure Container Registry

Security

Monitoring

Operations

ArcGIS Velocity – IoT and big data analytics

Why go with SaaS model?

- **Customer offloads technical overhead / responsibility**

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- **Shared infrastructure**
  - Offsets costs
    - Reduced service costs
    - Reduced personnel costs

Why go with SaaS model?

- **Customer offloads technical overhead / responsibility**
- **Shared infrastructure**
  - Offsets costs
    - Reduced service costs
    - Reduced personnel costs
- **Customer Value**
  - Time to Market
  - Ease of Use
  - Ease of Deployment
  - More time to focus on content development
  - No requirement for Information Technology specialists
  - Simplified procurement process
  - Easily scalable
  - Transparent upgrades
  - …

Solution capabilities

- **Solving key challenges with real-time data needs**
  - High volume, complex, noisy
- **ArcGIS Velocity delivers a complete solution**
  - Managing and analyzing high volume and velocity data in support of mission critical applications in spatial context

Solution capabilities

- Capabilities
  - Ingest real-time sensor data
  - Analyze data to detect incidents
    - In real-time
    - In *near* real-time
    - Over time
  - Take action
- Scalable
- Resilient

Ingest & Visualize Real-Time Streaming Data

Configure feeds that connect to real-time information from multiple networks or IoT data sources

Analyze Data In Real-Time

Process individual observations as they are ingested

Push Automated Actions & Alerts

Trigger alerts and actuate devices under specific conditions

Perform Batch Analysis on Stored Data

Use big data analytics to gain insights from massive datasets

Share Information & Findings

Share your analysis results with others

ArcGIS Velocity

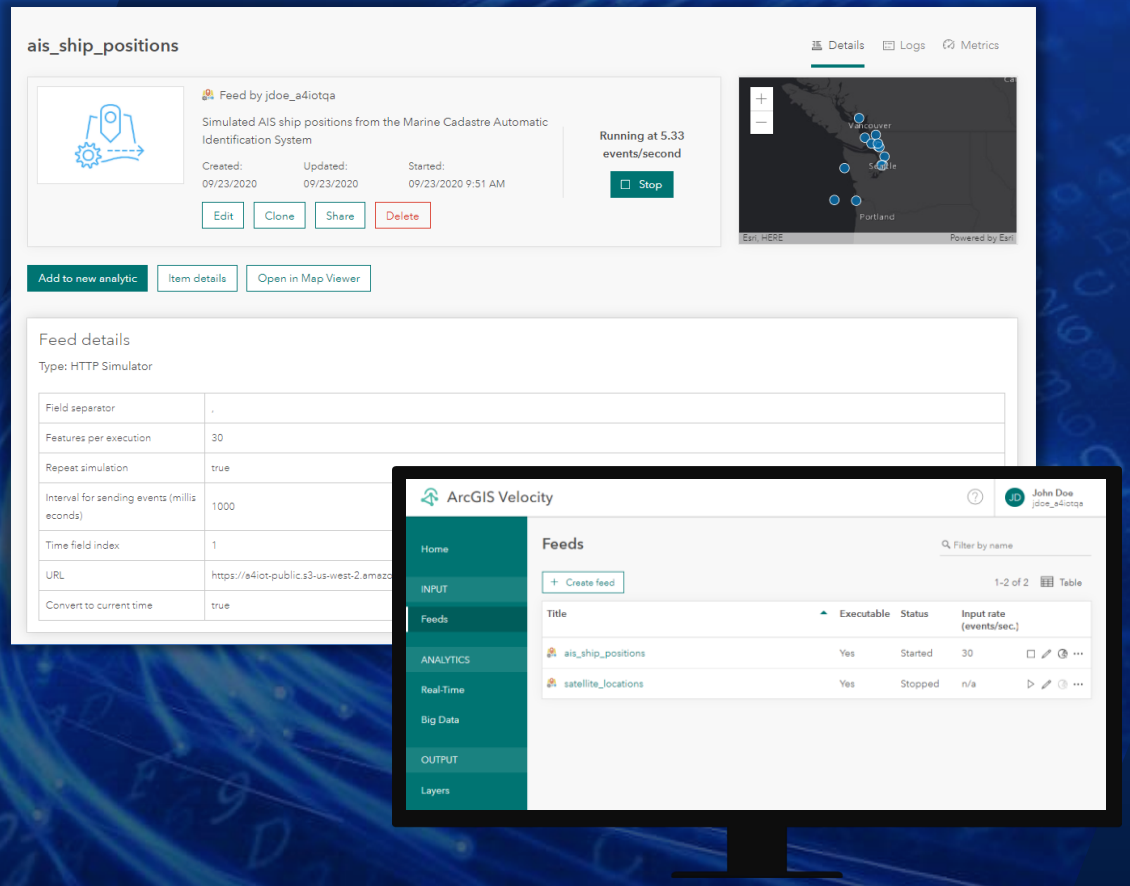
Leverage sensor and IoT data for geospatial reasoning

…connects to industry leading cloud IoT platforms, data lakes, and sensor vendor APIs

Feeds

Ingest and visualize real-time data streams

- **Connect to data sources**
  - ArcGIS (Feature & Stream Layers)
  - Cloud IoTs (Amazon, Azure, Cisco)
  - Web & Messaging (HTTP, Kafka, MQTT, RSS…)
- **Schema auto-discovery**
- **Behaves like a stream layer**
- **Immediate display of new data**

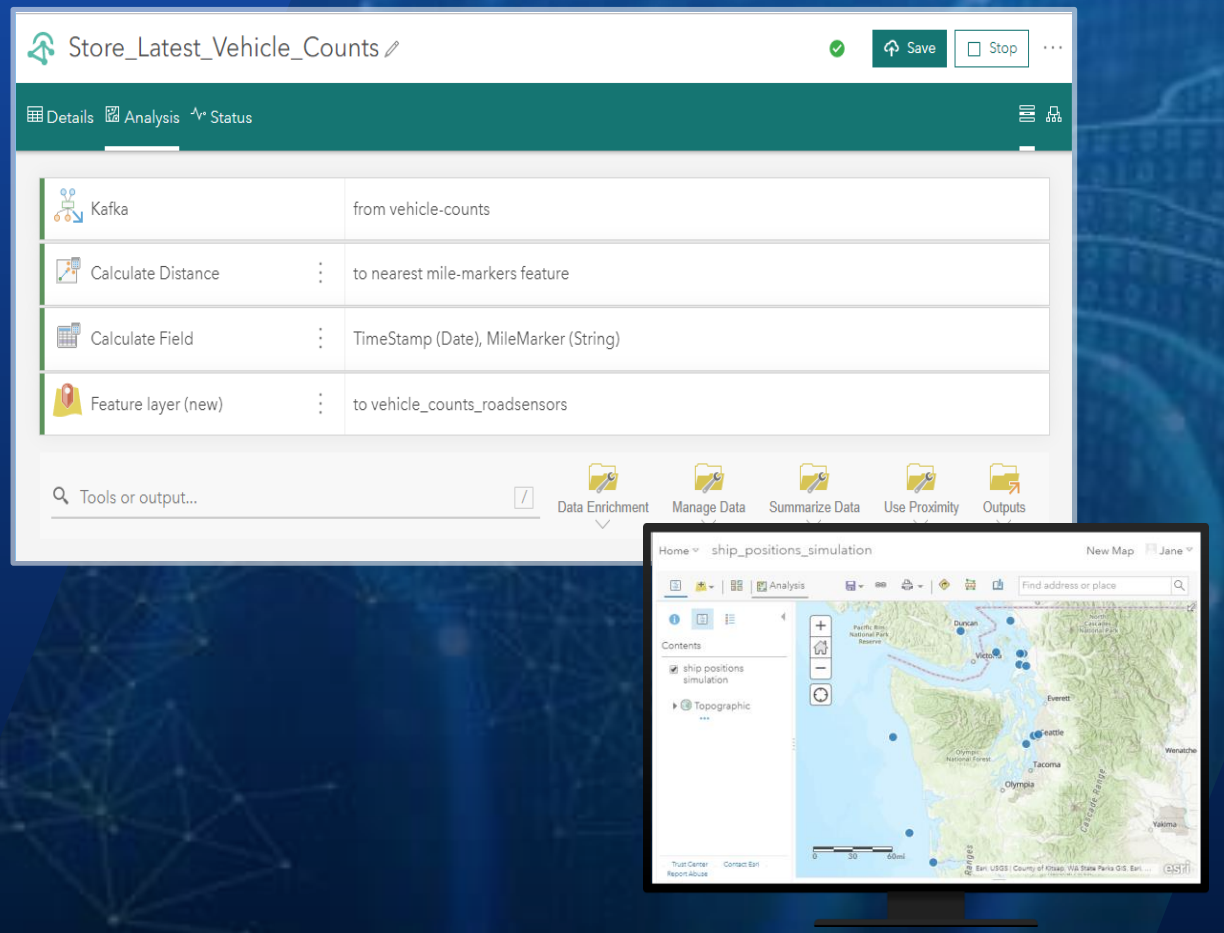


…discover and share real-time data streams as items in ArcGIS

Real-Time Analytics

Process and analyze real-time data streams

- **Input Sources**
  - Feeds (one or more)
  - Static data sources (enrichment, joins)
- **Analytic Tools**
  - Build a pipeline of zero to many….
  - Analyze individual observations
- **Outputs**
  - ArcGIS services
  - Alerts & Notifications (Email, Actuations)
  - Amazon S3, Azure Blob Store, Kafka, RabbitMQ

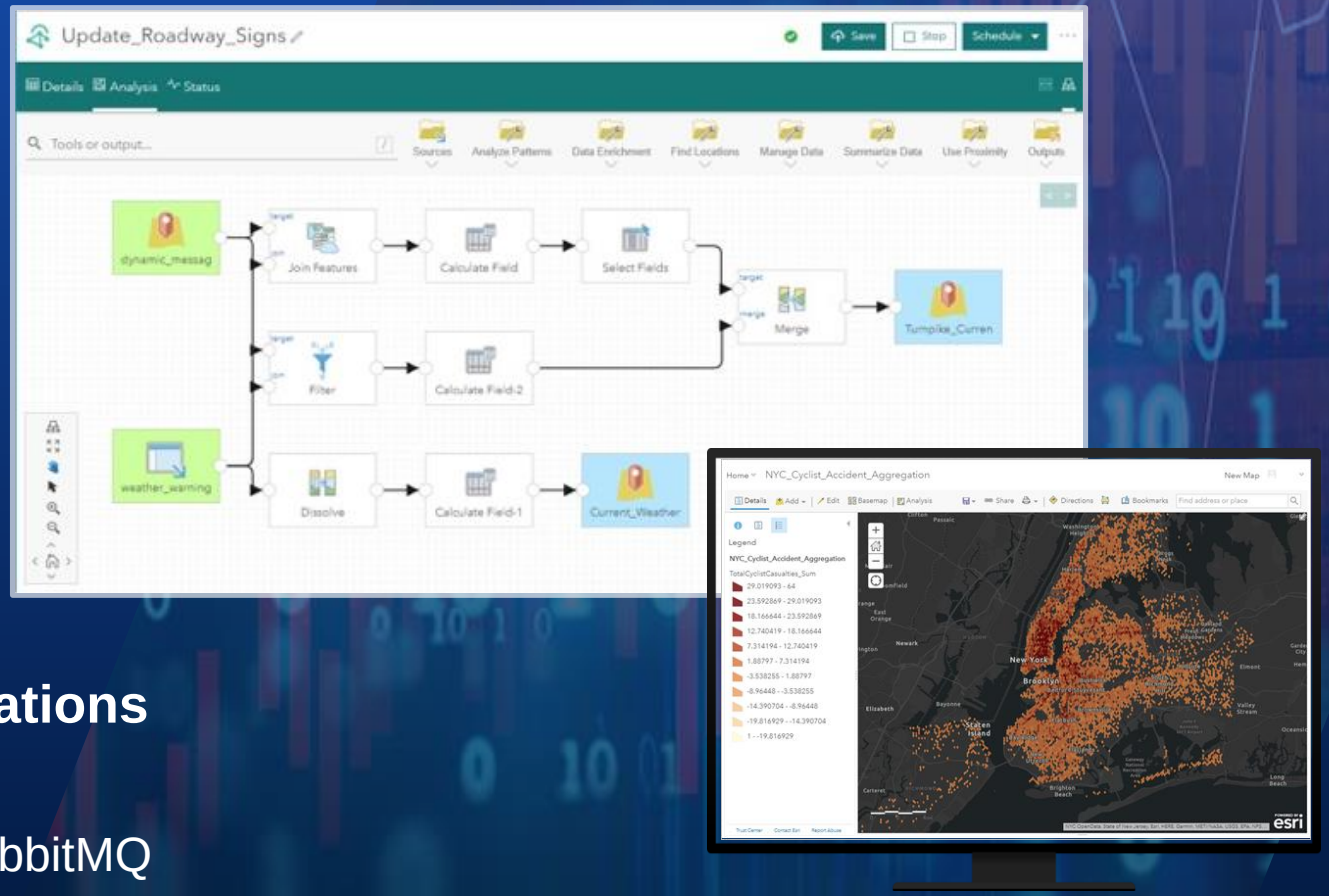


…generating alerts from and triggering actions to IoT devices in real-time

Big Data Analytics

Perform batch analysis on stored big data

- **Input Sources**
  - ArcGIS (Feature Layers)
  - Cloud (Amazon S3, Azure Blob)
  - Web & Messaging (HTTP, RSS…)
- **Analytic Tools**
  - Analyze Patterns
  - Find Locations
  - Manage, Summarize, Enrich Data
- **Output results to one or more destinations**
  - ArcGIS services
  - Amazon S3, Azure Blob Store, Kafka, RabbitMQ



…big data analysis pipelines on demand or scheduled for recurring execution

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Questions?