# Geospatial Search and Analysis with the Elastic Stack

Spatial data isn't new, but it is more available than ever and is being incorporated into new datasets that haven't traditionally been used in spatial analysis. Existing search and analytic tools weren't built to combine spatial dimensions with data sources like logs, metrics, text documents, or security events. The Elastic Stack enables users to integrate spatial data with a broad range of other data types such as text, numbers, dates, and IP fields. Combining traditional data sources with spatial data adds another dimension to analysis, providing new insights to drive real-time decision making.

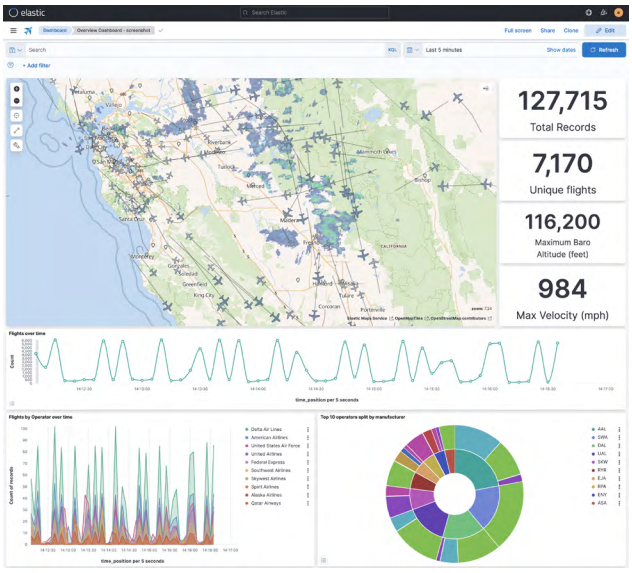



Figure 1. Elastic Maps dashboard showing real-time flight data overlaid with NOAA-hosted radar tiles.

## Democratizing spatial analysis

With the Elastic Stack, spatial data doesn't have to be siloed off in a specialized data store, so users don't need to be GIS specialists to make use of it. Elastic Maps is a simple but powerful interface that helps democratize spatial analysis. Users can layer data from sources inside the Elastic Stack and from standards- compliant external sources, link layer styling to data values to help discern and identify different features, and search and filter layers like any other data to focus on what is relevant. Customized maps can be shared or embedded into Kibana dashboards, Canvas workpads, or external applications.

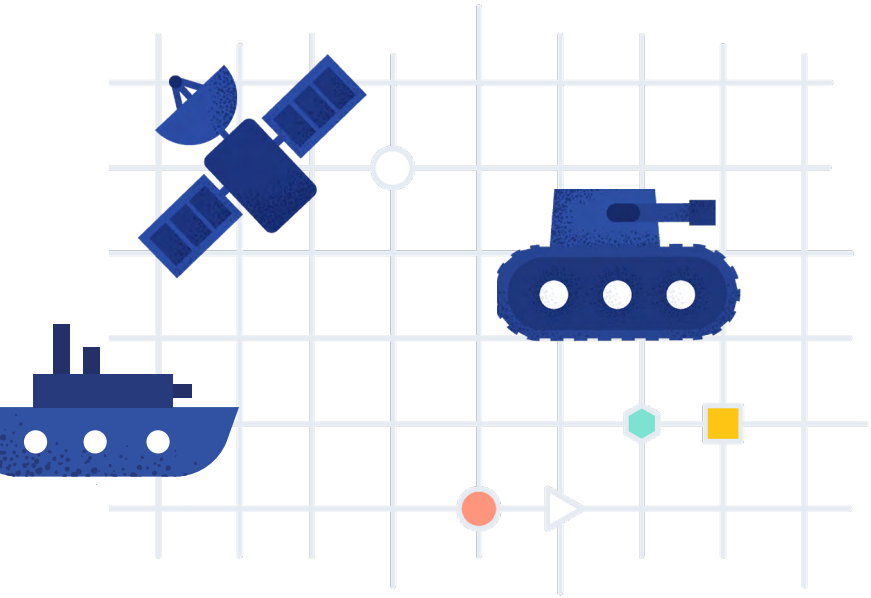
Figure 1 showcases the fusion of data attributes into a multidimensional analytic dashboard. In this visualization, real-time flight data is overlaid with NOAA-hosted radar tiles in Elastic Maps to create a dashboard with aggregate metrics, time series data, and entity data on flight operators and plane manufacturers. A wildcard search for all variants of 737s also gives a quick filter to focus the investigation Outside of Elastic Maps, users can investigate complex spatial relations to conduct geo-spatial aggregations over a hexagonal grid, create multi-level aggregations using both spatial and non-spatial data to compare the density of Boeing's 737 vs. the Airbus A320 across the world's airspace, or use more advanced statistical methods like anomaly detection, principal component analysis, or Getis-Ord Gi*.

## Global users finding value with Elastic

Customers from all industries use geospatial features and spatial analysis in the Elastic Stack to meet key business objectives.

- BlackSky monitors the globe from space, the air, the ground, the internet, myriad sensors, and numerous other sources. All of the data from these disparate sources is gathered in their Elastic-powered analytics engine, correlated, and compared with analytic algorithms to identify trends, patterns, and anomalies. With fast ingest, analysis, and search, Elastic gives BlackSky near real-time geospatial intelligence.
- FURUNO Japan builds radar systems, navigational instruments, and sonar technologies. By deploying Kibana and Elastic Maps as part of their Elastic Observability solution, FURUNO has more insights into on-ship data use and can help customers balance the cost and performance of ship-to-shore connectivity.
- Maxar is an industry leader in geospatial search and analytics, handling data volumes at a "ludicrous" scale. They use Elastic in their GDBx product to drill down on over 90 PBs of vector imagery because it enables spatial search, discovery, and aggregations creatively and at scale.



## Faster, smarter decision making

Today's data is big and tomorrow's will be bigger. Empowering analysts with Elastic's spatial capabilities can provide insights that drive faster, smarter, real-time decision making. Users who partner with Elastic as they grow from megabytes to petabytes of data and from local development to global production will have simple, scalable, and cost-efficient tools to support that growth.

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