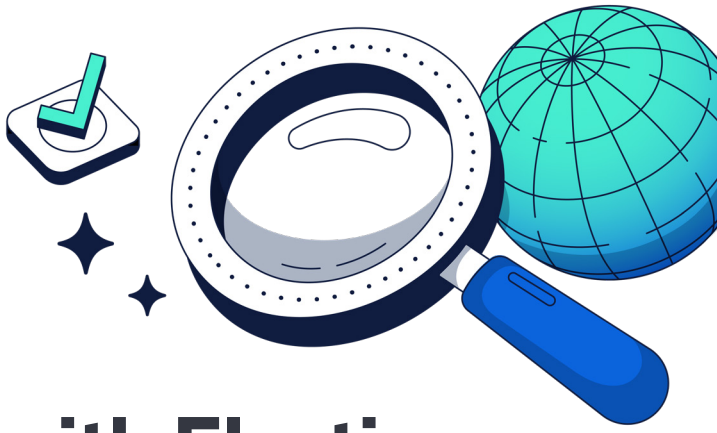
elastic | The Search AI Company



Geospatial mission search and analysis with Elastic

Spatial data isn't new, but it is more important than ever and is being incorporated into new datasets that haven't traditionally been used in spatial analysis. Existing search and analytics tools weren't built to combine spatial dimensions with data sources like logs, metrics, text documents, or security events. Elastic 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 a comprehensive view of mission data.

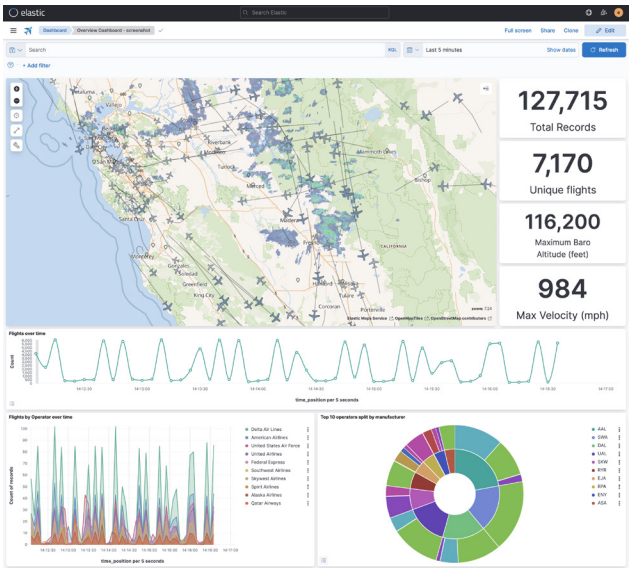


Figure 1. Elastic Maps dashboard showing real-time flight data overlaid with NOAA-hosted radar tiles.

Integrated spatial analysis

With Elastic, spatial data doesn't have to be siloed off in a specialized datastore, 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 Elastic and from standards-compliant external sources, link layer styling (heat maps, cluster, grid, hex grid) 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.

Users can also search data via geospatial filtering — such as a bounding box, a center and radius, an arbitrary polygon, and a given geo_shape field from an index. They can also perform bulk and metric aggregation based on location and use this to create category maps.

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 geospatial aggregations over a hexagonal grid, create multilevel aggregations using both spatial and non-spatial data to compare the density of Boeing's 737 versus the Airbus A320 across the world's airspace, or use more advanced statistical methods like anomaly detection, principal component analysis, or Getis-Ord Gi.

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Real-world mission success

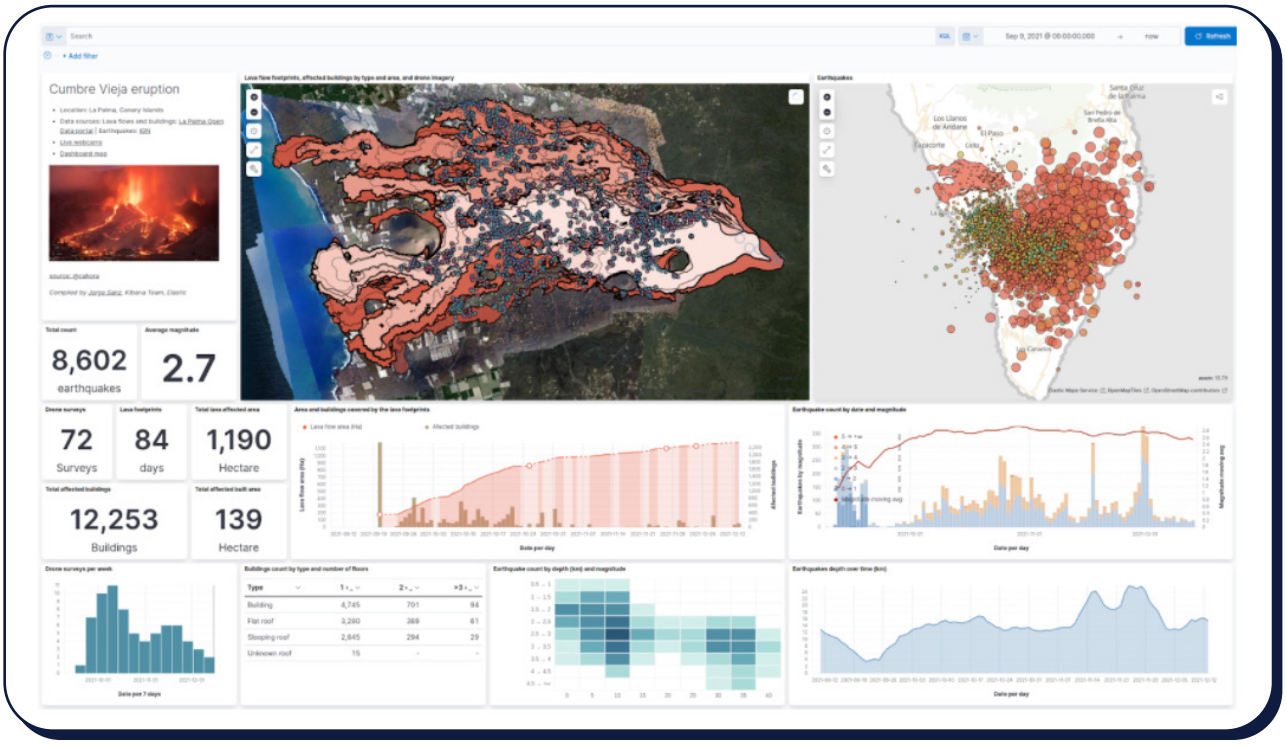
Organizations from all industries use geospatial features and spatial analysis in Elastic to meet key mission objectives.

- **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 its 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 its 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.
- **US Army Corps of Engineers (USACE)** uses Elastic geospatial and machine learning capabilities in its navigation portal to accelerate response times, efficiently allocate funding, and make real-time decisions.

Faster, smarter decision-making

Today's datasets are big and tomorrow's will be bigger. Empowering analysts with Elastic's geospatial capabilities can provide insights that drive faster, smarter, real-time decision-making. Organizations that use 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.

Contact Elastic to learn how we can help you advance your mission and achieve program objectives: elastic.co/contact/publicsector



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