



Maps for Dashboards

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Why dashboards?

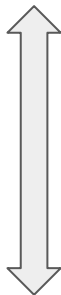
Operational Intelligence

- Performance metrics
- Real time
- Curated

80% use case

Less interactive

Value in seconds



Analytics

- Search
- Historical data
- Drill-down
- Investigate

20% use case

More interactive

Value in hours



Adding maps ...

Geo users generally have higher expectations (*)(**)

- Must be interactive
 - Zooming, panning
- High data density/volume
- Multiple data models on single screen
 - “Layers”
- 4D is expected
 - Space&time



* Blame GIS

**Compared to non-geo sensor data (e.g. OTel)



Design tips

Examples from:

- [Cumbra Vieja eruption sensor data](#)
- [Spain historical fire data](#)
- [Louisville 311](#)

Using [Elastic Stack](#) (open source)

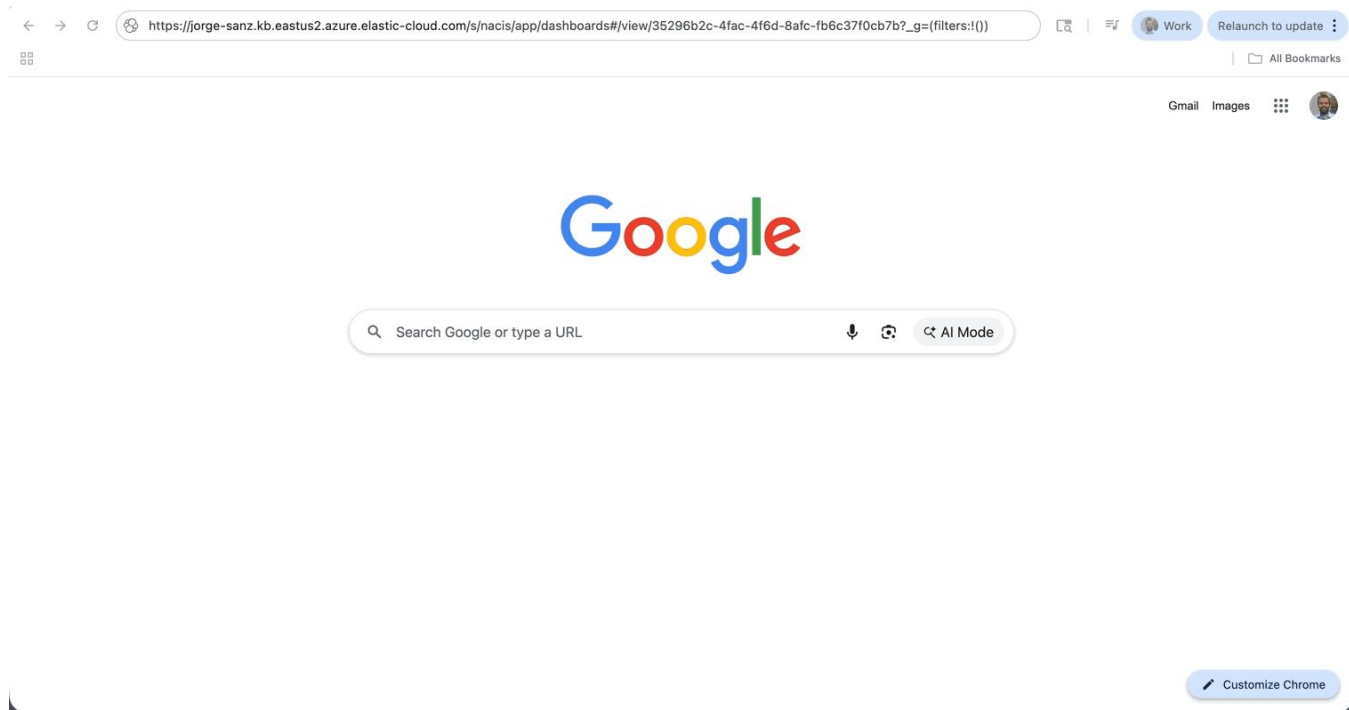


Organize thematically

Maps go together

Make Maps optional

- Not all users care about geo
- **Opt-in reduces load tim**





Link navigation

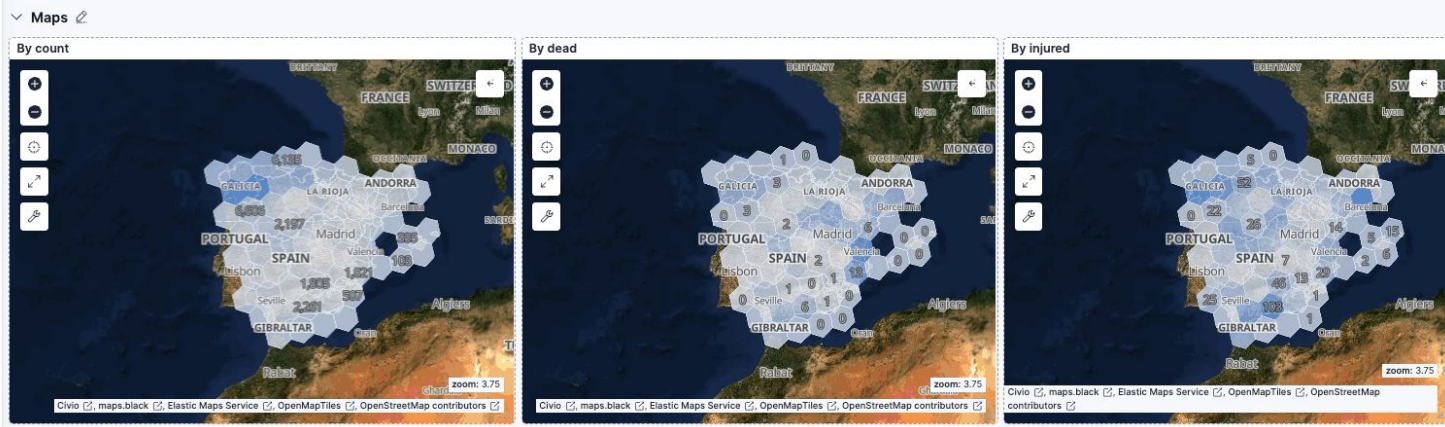
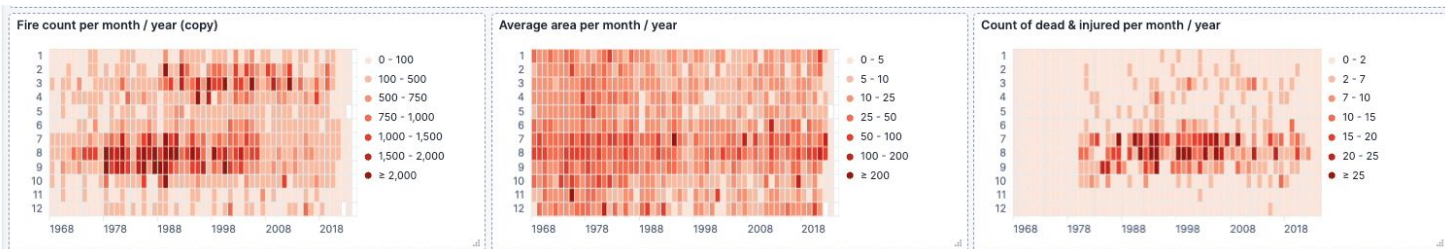
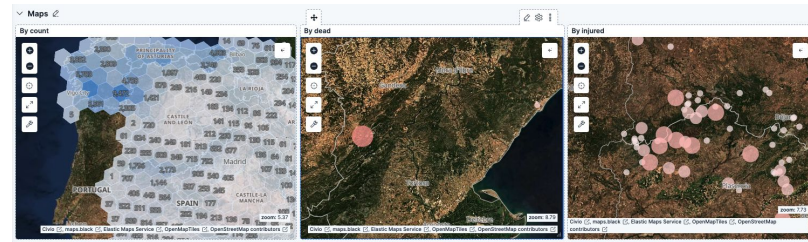
¿Where am I?

Avoids map litter

Very messy when different maps are in different spots

Avoids users having to toggle

Show more maps, instead of more layers

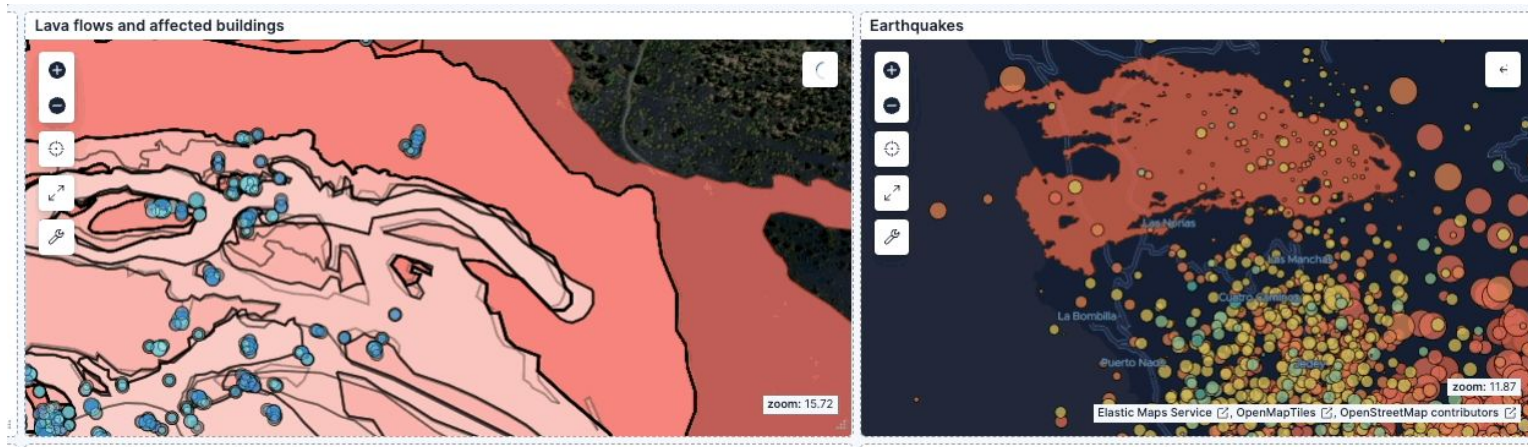




.. or unlink navigation

Retain context with an reference
map at smaller scale

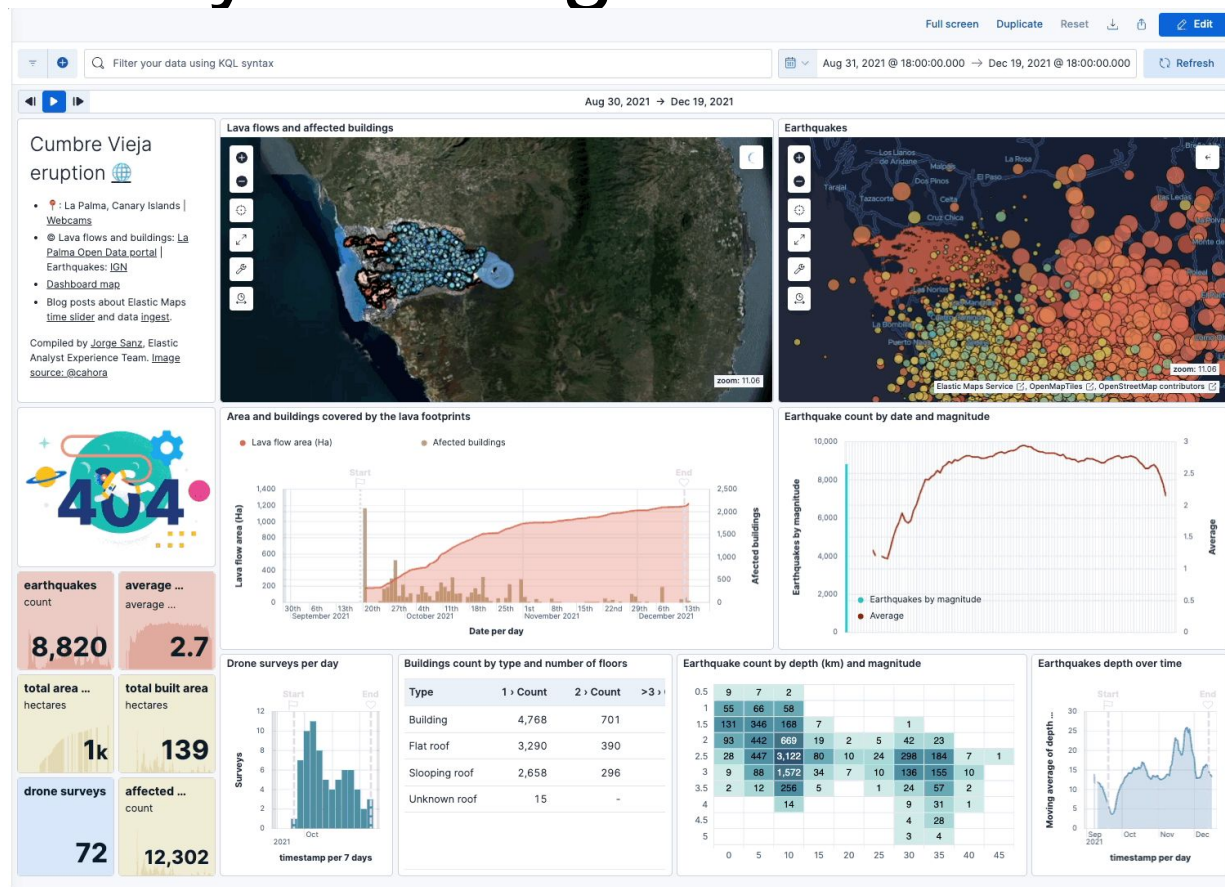
Fix reference map in place!



Let user filter by drawing

Easiest way to allow for geo-filtering

Determine data on which it should filter (especially for dashboards with lots of sources)



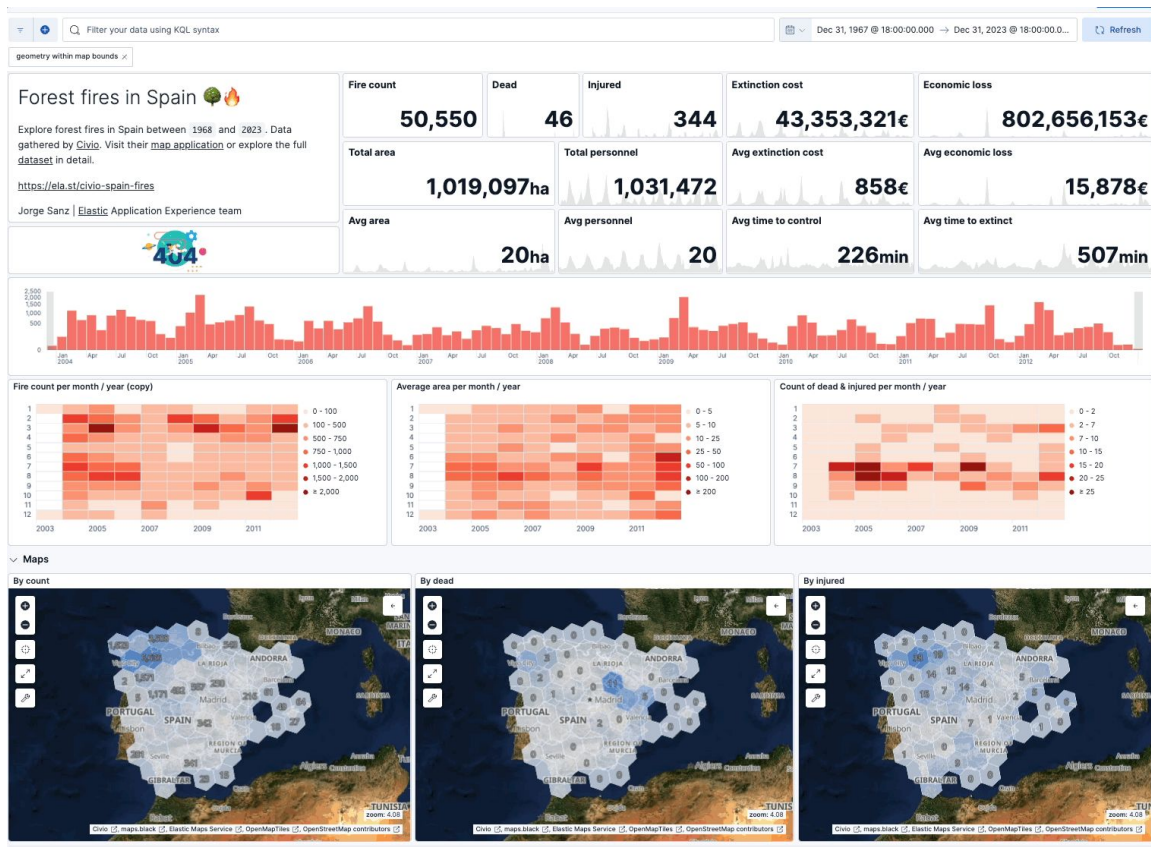


... or filter on navigation

Great for exploratory
data analysis

**Provision your
platform!**

This spams your
database with queries.





Filter only target data

Must be able to choose where filter applies

Don't filter away contextual data!

Ensure contextual data is unaffected by filter state

Last lava flow footprint
> Source details

Layer settings

Name: Last lava flow footprint

Visibility: Zoom levels 0 → 24

Opacity: 75 %

Attribution: [Add attribution](#)

☒ Include layer in fit to data bounds computation

☒ Show tooltips

Tooltip fields

timestamp

[Add](#)

Top hits

Entity: constant

Documents per entity 1: 100 1

Sort field: timestamp

Sort order: descending

☐ Dynamically filter for data in the visible map area

Filtering

[Set filter](#) [Add a filter to narrow the layer data.](#)

☐ Apply global search to layer data

☐ Apply global time to layer data

☒ Re-fetch layer data on refresh



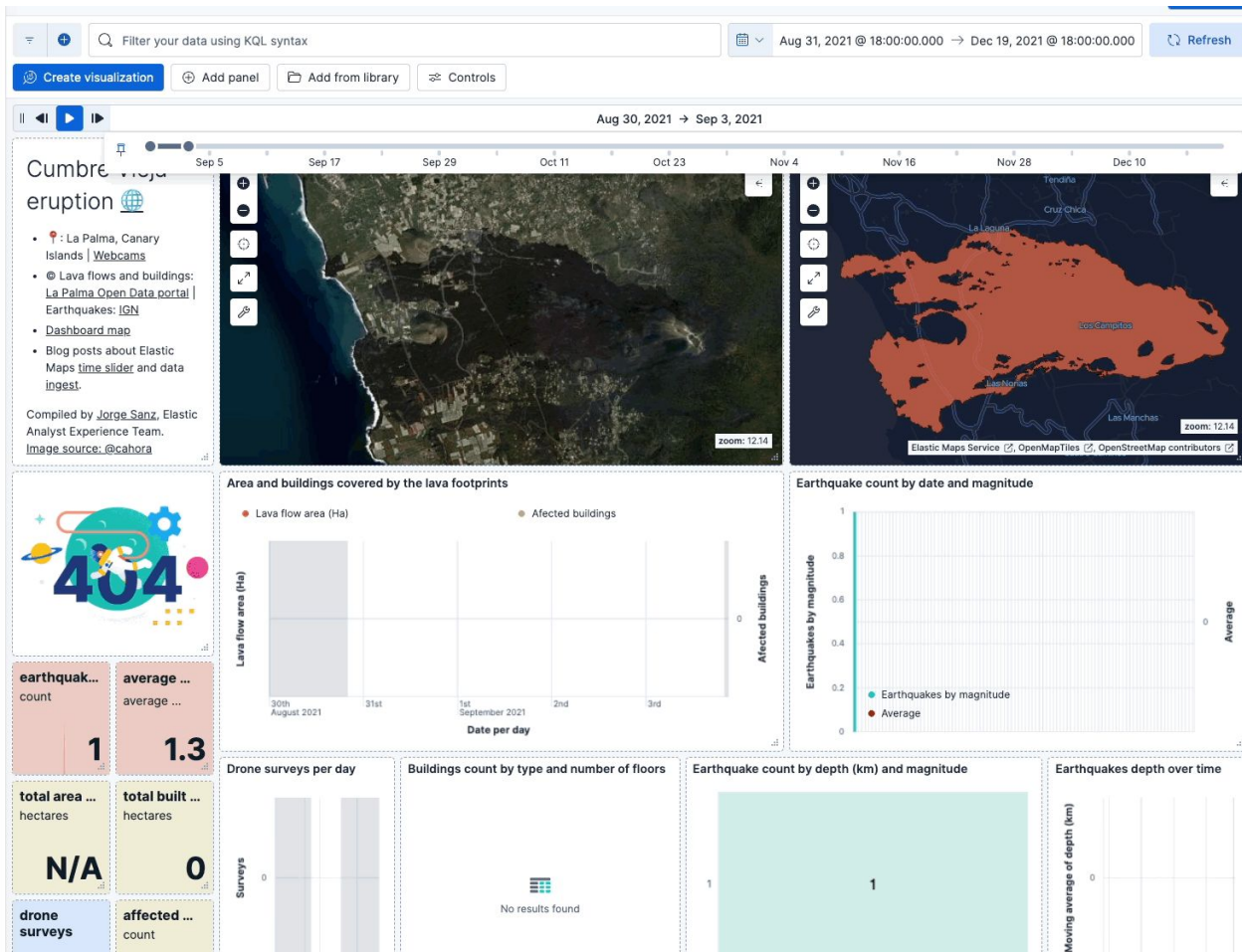
Playback

Times slider

- Animate
- Manual

Agg the right way

- Accumulate from start
- Filter to time window



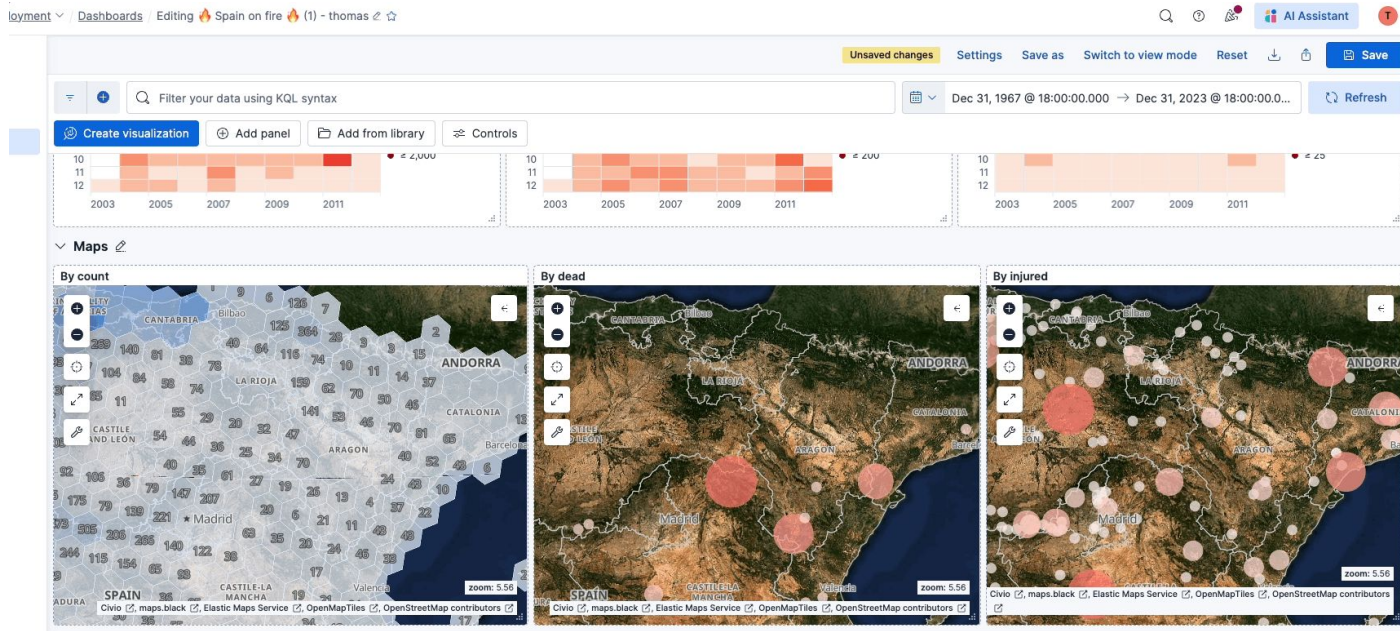


Show raw data

Mostly show aggregations

... but allow for individual data points

Make optional
Decision makers don't care and dashboard can get cluttered.





Searching unstructured text

E.g. 311 transcript

At least weekly there is a tan/brown pit bull running around our neighborhood. He will not let anyone near him to see if he has tags. He aggressively barks when you try to approach him.



Keyword search

“Pit bull”, “aggressive”, “running around”, ... -> phrases or snippets that match the original text will match

Filter your data using KQL syntax

Layers

- louisville_311_s
- Basemap

Add layer

louisville_311_s

Source details

Layer settings

Name

Visibility

Zoom levels 0 → 24

Opacity 75 %

Attribution Add attribution

Show tooltips

ES|QL

Run query

Refresh

```
1 from louisville_311_s | WHERE MATCH (description, "")
```

1 line LIMIT 1000 1 warning

Dynamically filter for data in the visible map area

Filter by location

but “dog” doesn’t!



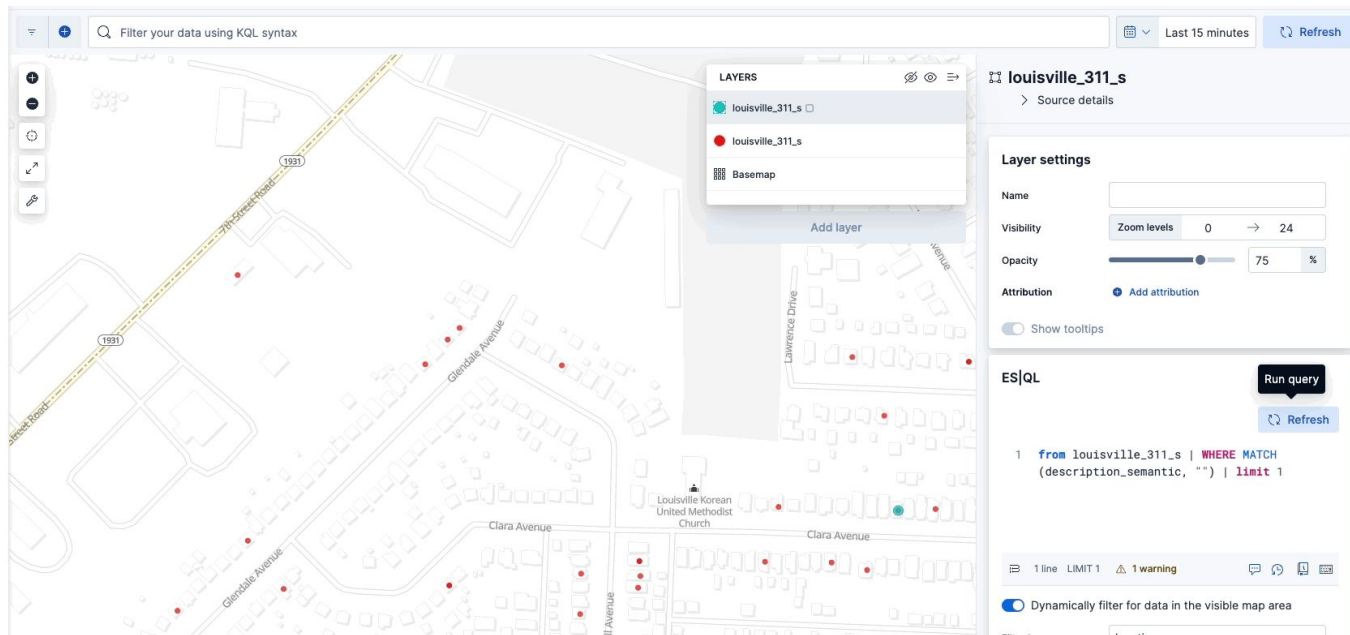
Semantic search

Use ML model

“Stray dog”
“Dangerous animal”
...



Queries can match
meaning, rather
than match words





Thank you!

Aim for goldilocks ***balance***:

- Value at-a-glance $\longleftrightarrow$ Ad-hoc investigation
- Maps support the story
- Tune:
 - Navigation
 - Aggs vs samples
 - Filtering
 - Text search

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