



Visualizing geospatial and time series data for law enforcement

Case Study

Challenge

Identifying coordinated criminal activity across time and place is a main focus—and a constant challenge—for analysts in law enforcement (LE). Dutch police had an initiative to cripple illegal drug production by compiling data on locations of illicit laboratories and dates they were seized, and the associated impact of that illegal activity on the surrounding communities.

Detailed information from Open-Source Intelligence (OSINT) reports could be scraped from local newspapers, which provided LE with unwieldy spreadsheets filled with said addresses and dates. While effective for collecting data, tables in spreadsheets are not ideal for analysis, especially if the primary goal is to discover key connections. Mapping the time and location of incidents, and exploring relationships between them requires an effective visualization strategy.

The Dutch police enlisted the International Anti Crime Academy (IACA) for guidance to visualize the geospatial and time-series context of illegal drug production, using their OSINT reports of seized drug laboratories as a starting point.

Solution

IACA recommended Kineviz GraphXR. Its no-code data transformation enabled LE analysts to quickly plot manually-scraped data from CSV files to geospatial maps. Analysts found this workflow simple to reproduce and iterate upon. On the maps, they could now visualize multiple layers of information including date and time, demographics, and property types such as private homes, apartments, warehouses, and vehicles.



The [International Anti Crime Academy \(IACA\)](#) is a Netherlands-based training center providing courses in Open Source Intelligence (OSINT) techniques to combat criminal activity. Since 2013, they have taught and certified law enforcement, intelligence, and public safety investigators and analysts in over 60 countries.

Most importantly, this enriched understanding is helping to inform future LE strategies. The analysis was based on reports of seized laboratories in the Netherlands between 2012 and 2021.

Results indicated that, contrary to expectations:

- Drug laboratories were more prevalent in urban city centers versus rural areas.
- Seized laboratories tended to be located in newly rented apartments and warehouses with owners between 40-60 years old.

GraphXR accelerates time to insight by enabling analysts and business users to make 'needle-in-haystack' discoveries that evade traditional analytic workflows.



"GraphXR is a major time-saving tool. You can immediately see the patterns and connections in your data when you make a visualization. Otherwise, it's just text."

- Stephan Santman, Head of Education, International Anti Crime Academy

From a high-level analysis, the Dutch police could run additional predictive analysis to guide monitoring of specific regions, expediting LE discovery of continually emerging illegal drug operations.

Leveraging GraphXR's effective visualization of open-source intelligence data enables LE to expand and iterate upon their findings, so as to better utilize preventive measures.

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