

The background features a complex network visualization with numerous nodes and connecting lines in shades of green, purple, and blue. The nodes are represented by small circles and some are labeled with numbers. The lines form a dense web that tapers towards the right side of the image. The Kinetica logo is positioned in the top left corner.

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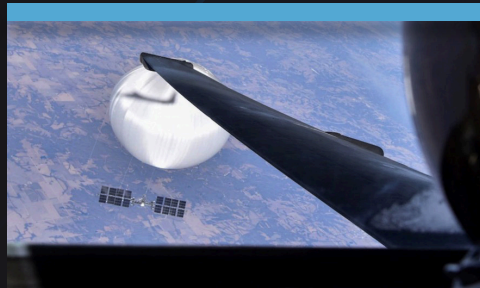
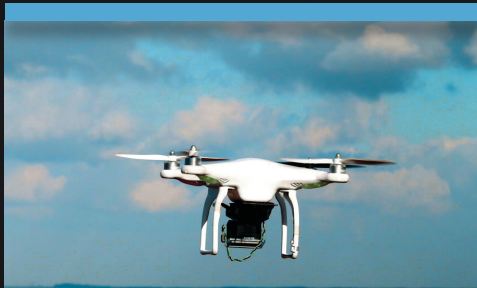
Kinetica: Advanced Air Domain Analytics

Dr. Chad Meley, CMO at Kinetica

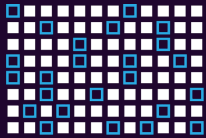
Advanced Air Domain Analytics

Major Challenges:

- Analysts need to detect and evaluate issues in real-time
- Objects are evolving and becoming harder to detect and track



Challenges in Air Domain with Current Technology

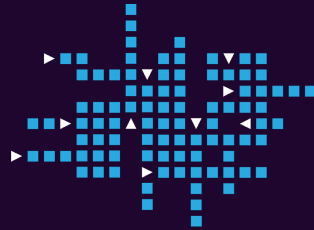


Requirement:

High-speed processing and efficient algorithms that can analyze large volumes of data quickly and accurately.

Current Technology Issue:

Conventional analytic databases incur latency issues that add precious minutes to deriving insights.



Requirement:

Must be able to fuse numerous sources such as radars, satellites, and aircraft into a composite view of objects using sophisticated spatial and temporal join techniques.

Current Technology Issue:

Conventional databases are limited in the number of spatial and temporal joins they can handle, resulting in data hitting the floor.



Requirement:

Must be able to visualize the common operation picture with atomic level details.

Current Technology Issue:

Conventional databases must summarize the data in order to visualize, resulting in lost information.

A - 23 854 45 1
B - 28 1 85 3
C - 47 1
PRO - 485
HT - 7465 2

101
13
490

48,044

44,895

81,643

32,094

20,117

12,804

76,063

28,462

The Kinetica Solution

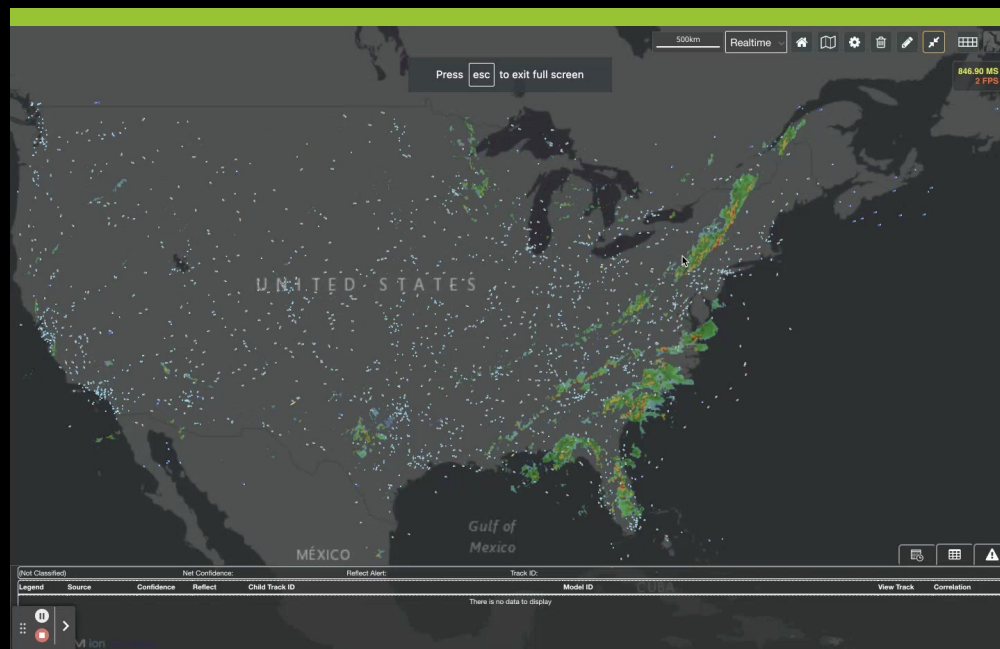
Fast and Efficient Advanced Air Domain Analytics

Leverages the full corpus of data across hundreds of sources at once, including

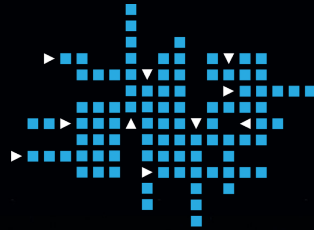
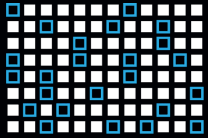
- Aircraft beacons
- Flight plans
- Terrestrial Radar
- Satellite imagery
- Weather data
- And more.

Provides common operational picture to monitor flights and detect potential threats.

In this **Air Domain Demo**, you can see how it works. Tracks overlay a map of North America, allowing operators to analyze different regions or select individual tracks for deeper examination.



Kinetica for Air Domain Analytics



- Ability to query fresh data that is constantly changing—in real time to detect threats faster
- Fuses complex sets of geospatial data points from multiple sources that change over time for a more accurate composite view
- Real-time data visualizations to track flight paths over greater distances and time periods at both the summary and atomic detail level

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End