

**PROBLEM TITLE**

Spot the Difference

**CHALLENGE**

Analysts need a more efficient technique to identify mission salient changes in activity from GeoJSONs in order to act on intelligence.

**BACKGROUND**

The National Geospatial Intelligence Agency (NGA) uses unclassified synthetic aperture radar (SAR) data to detect activity in remote locations, such as Iran, Iraq, and or Syria. Geo-spatial analysts use Geographical JavaScript Object Notation (GeoJSON), an open standard format designed for representing simple geographical features, along with their non-spatial attributes. Features include points (addresses and locations), line strings (streets, highways, and boundaries), and polygons (countries, provinces, and tracts of land).

In order to detect any activity, analysts receive a "coupled collect product" which compares two images taken 6-12 days apart, extracting and rendering changes as GeoJSON objects. If a change is detected, analysts search through Publically Available Information (PAI) and other classified geospatial intelligence to establish if the change is significant. However, the resulting change detection images are incredibly large files and the process of finding salient PAI and analyzing it against the GeoJSONs's is a time intensive and arduous task.

**OPERATIONAL CONSTRAINTS**

- The National Geospatial Intelligence Agency (NGA) requests the Internet Protocol addresses (IP address) from which the students are connecting in order to access the salient unclassified data behind the NGA's firewall.

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