

F-root Anycast Placement Research using RIPE Atlas

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Goals of the Project

- Plan new F-root sites
- Optimise existing sites, if needed

RIPE Probe Measurements

Measurement 1030x:

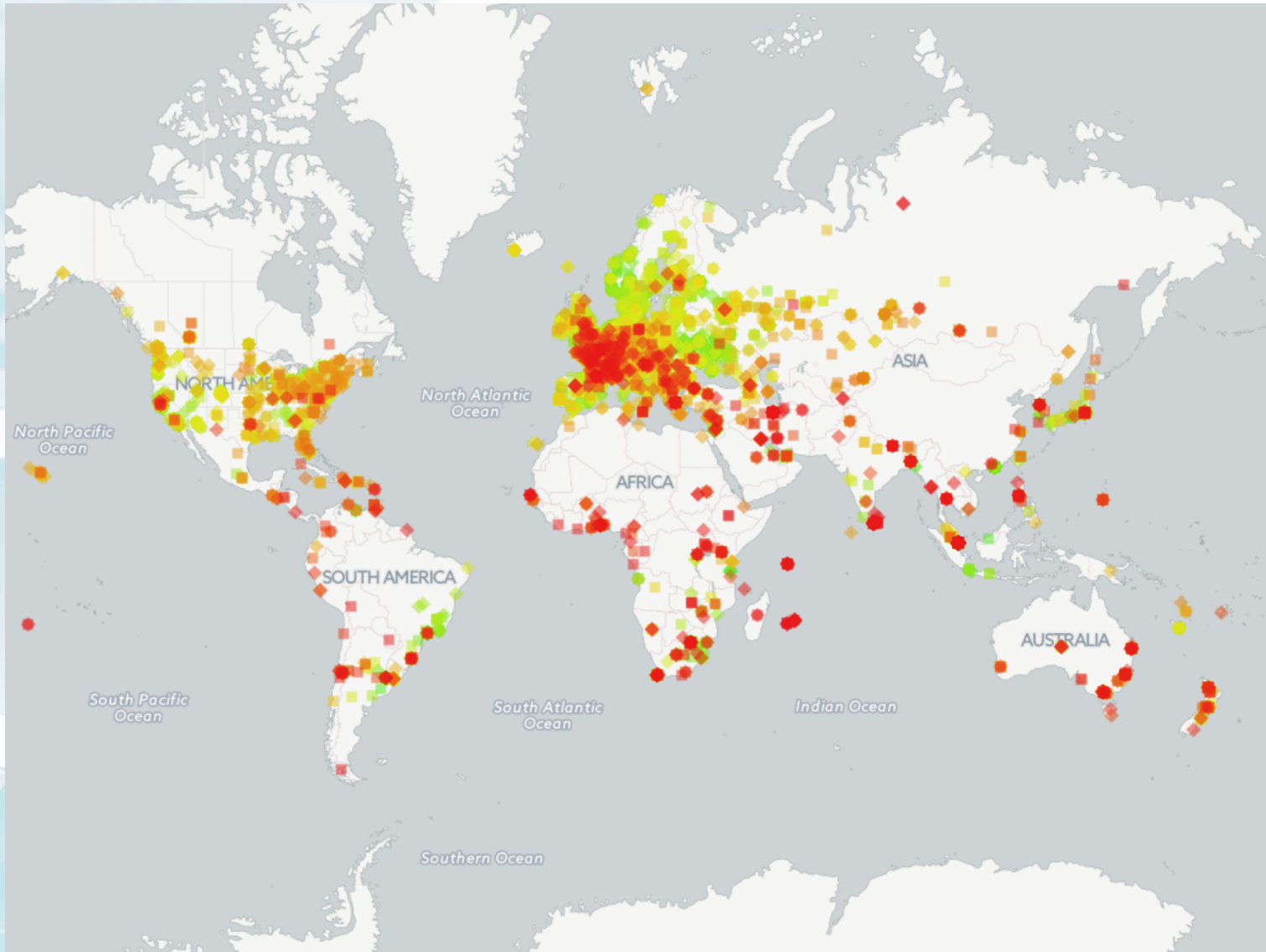
- Every root server, every 240s
- DNS Request
 `"hostname.bind CH TXT"`
- DNS Response IDs site and node, e.g.
 `ams1a.f.root-servers.org`
- Also records response latency

RIPE Probe Visualisations

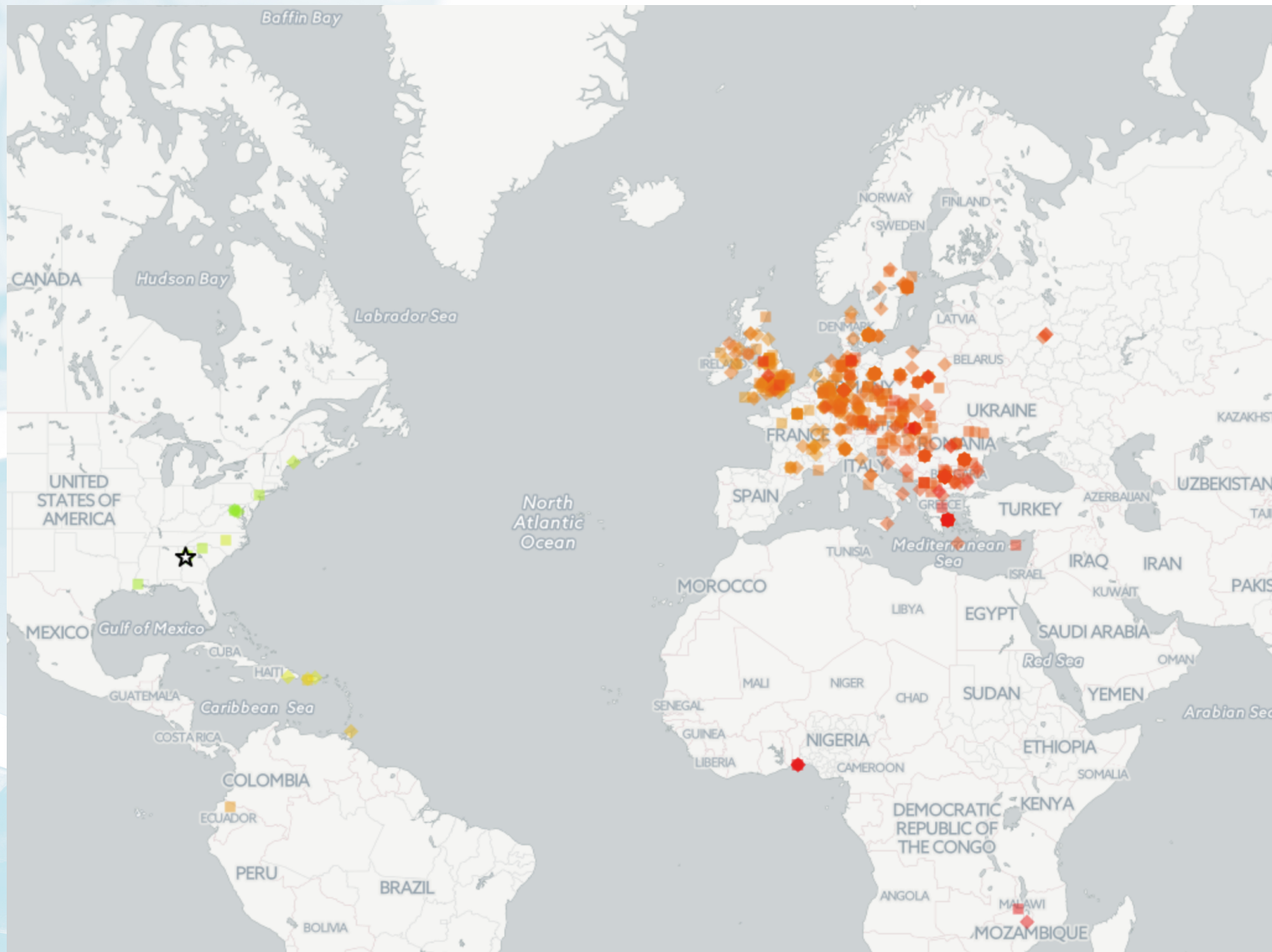
<https://atlas.ripe.net/results/maps/>

- not flexible enough for this analysis
- rolled my own using their API and OpenStreetmap

Global View of F-root Latency (red = 200ms+)



US Transit Misconfiguration (ATL1)

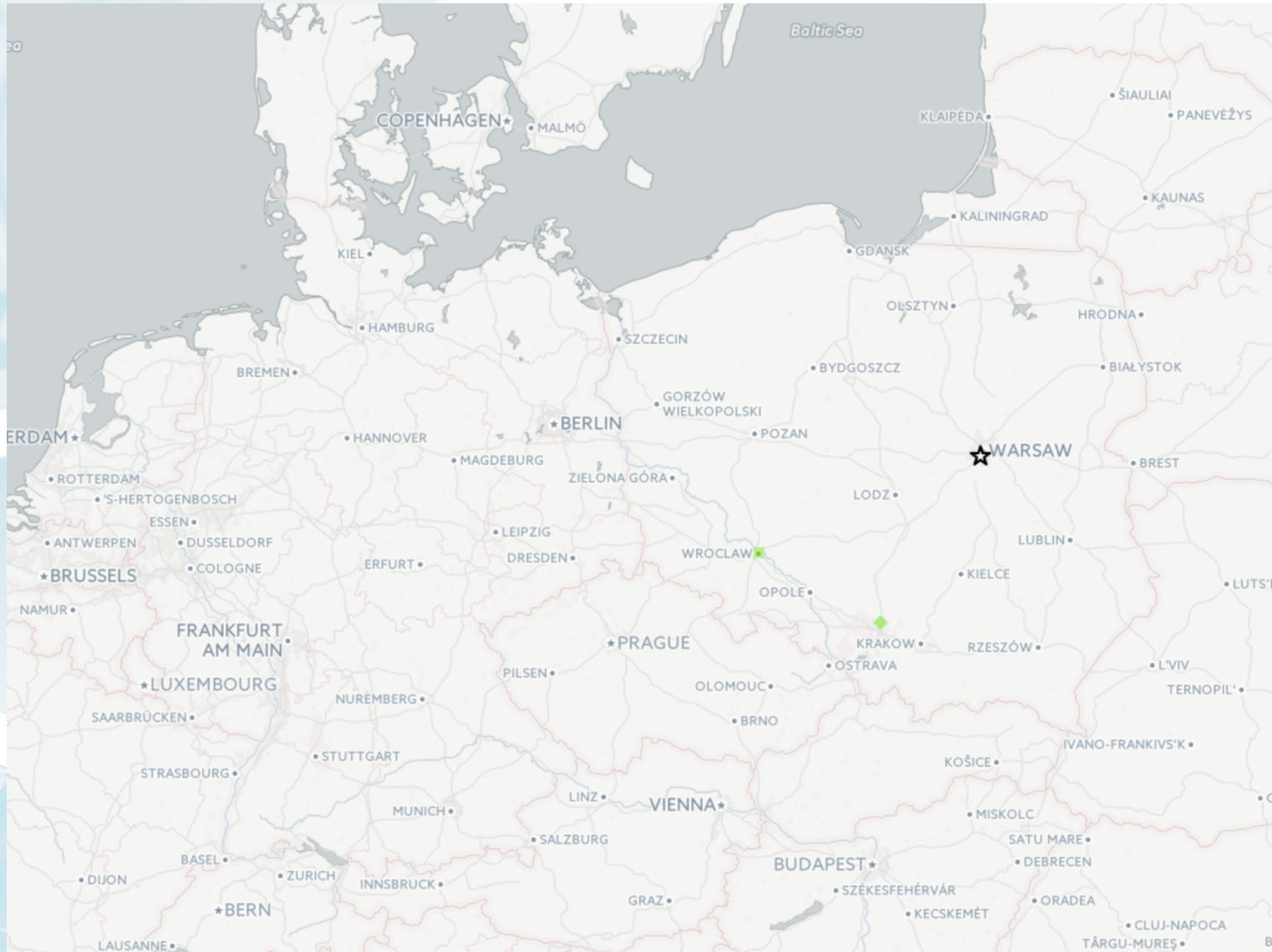


ATL1 - post reconfiguration

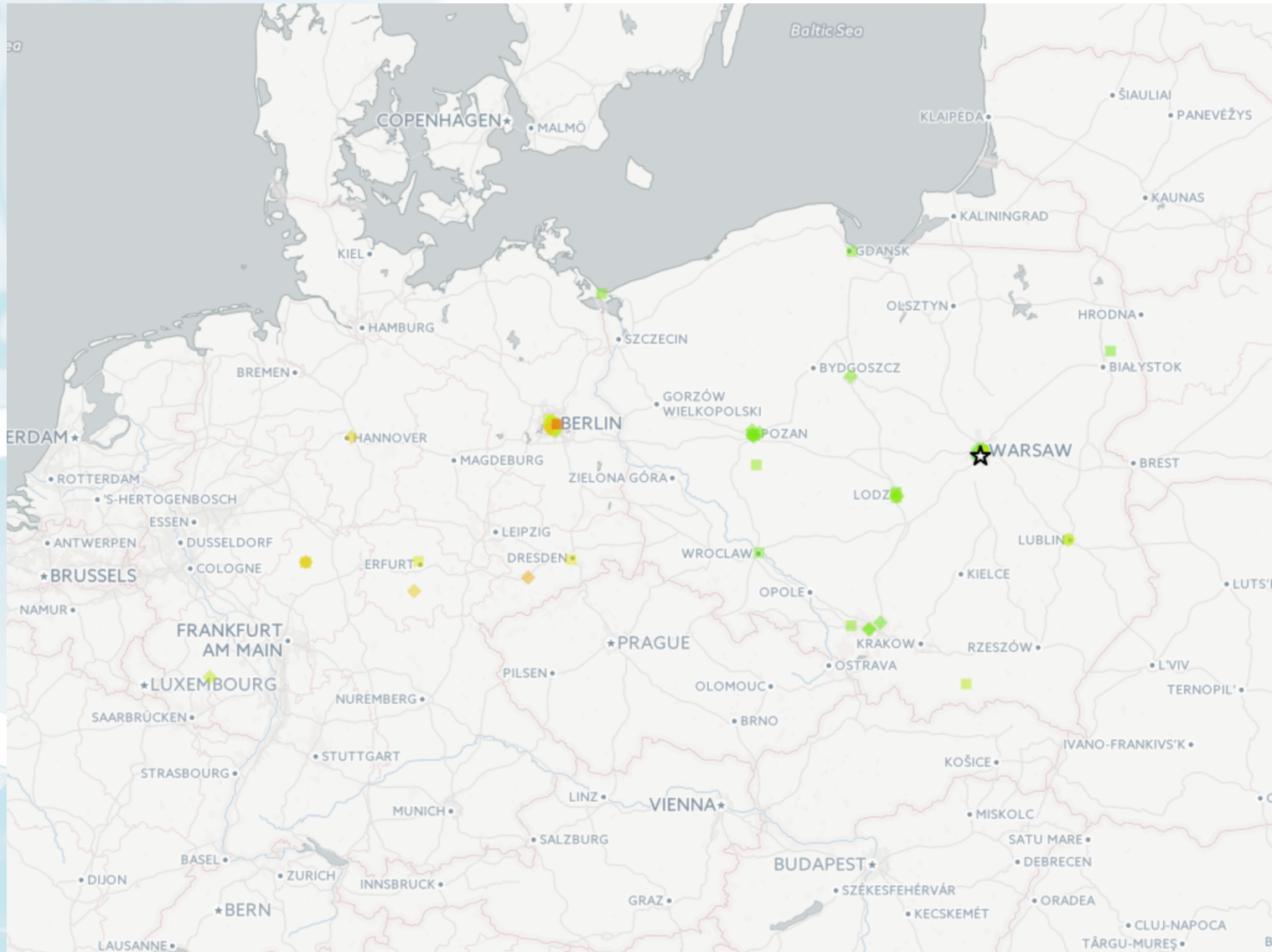


A world map showing the distribution of 25 countries marked with red squares and one country marked with a black star. The red squares are located in the United States (California, Texas, Florida), Mexico, Central America (Guatemala, Costa Rica, Haiti), South America (Colombia, Peru, Brazil, Bolivia, Paraguay, Uruguay, Argentina), Europe (Ireland, Germany, France, Italy, Austria, Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Greece, Turkey), and Africa (Nigeria). The black star is located in Argentina. The map includes labels for major bodies of water (Hudson Bay, Labrador Sea, North Atlantic Ocean, Gulf of Mexico, Caribbean Sea, Mediterranean Sea, Red Sea) and numerous countries across all continents.

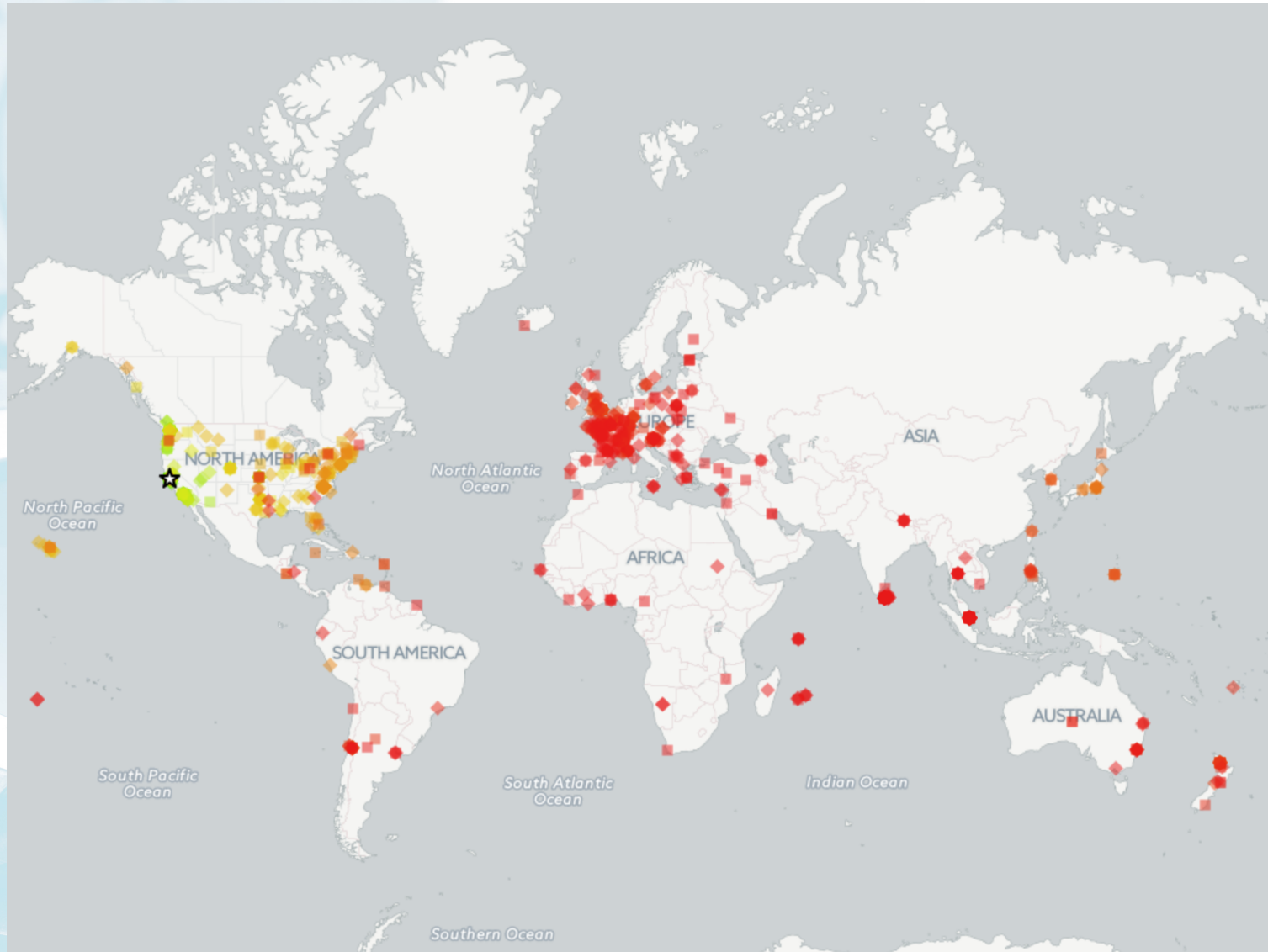
PLIX route server NO_EXPORT too strict



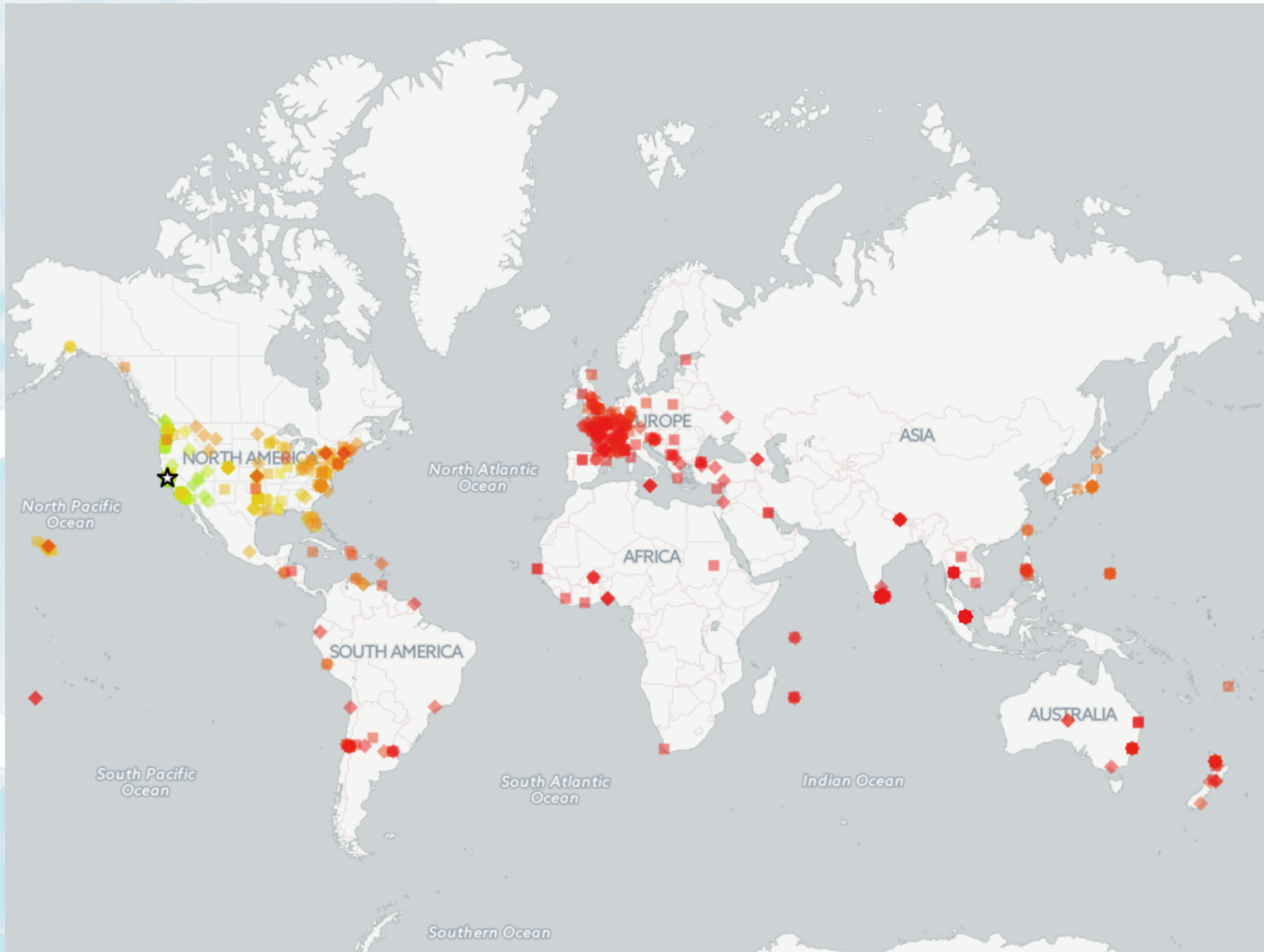
PLIX Fixed



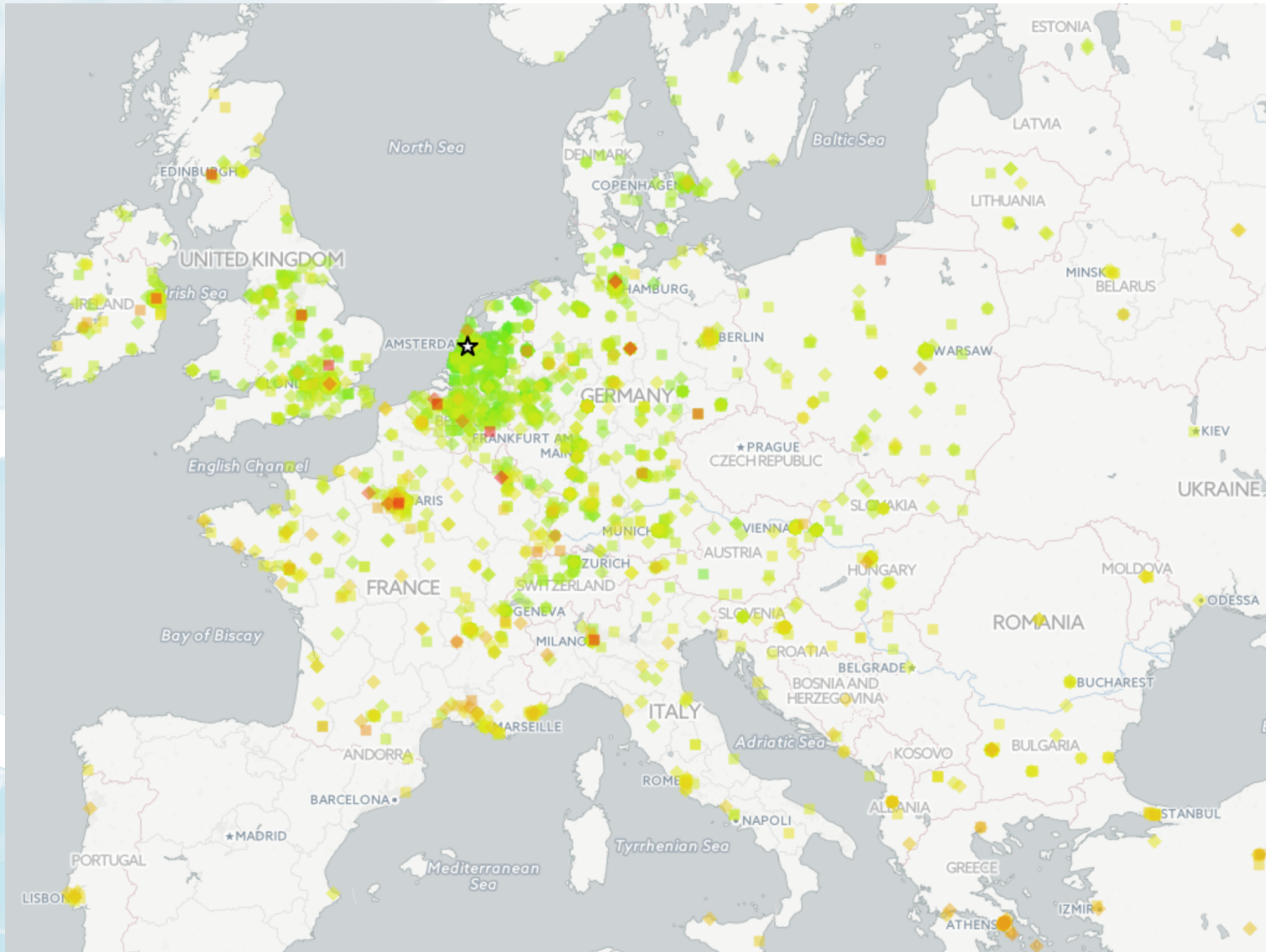
PAO1 over-connected - long reach IXes harmful?



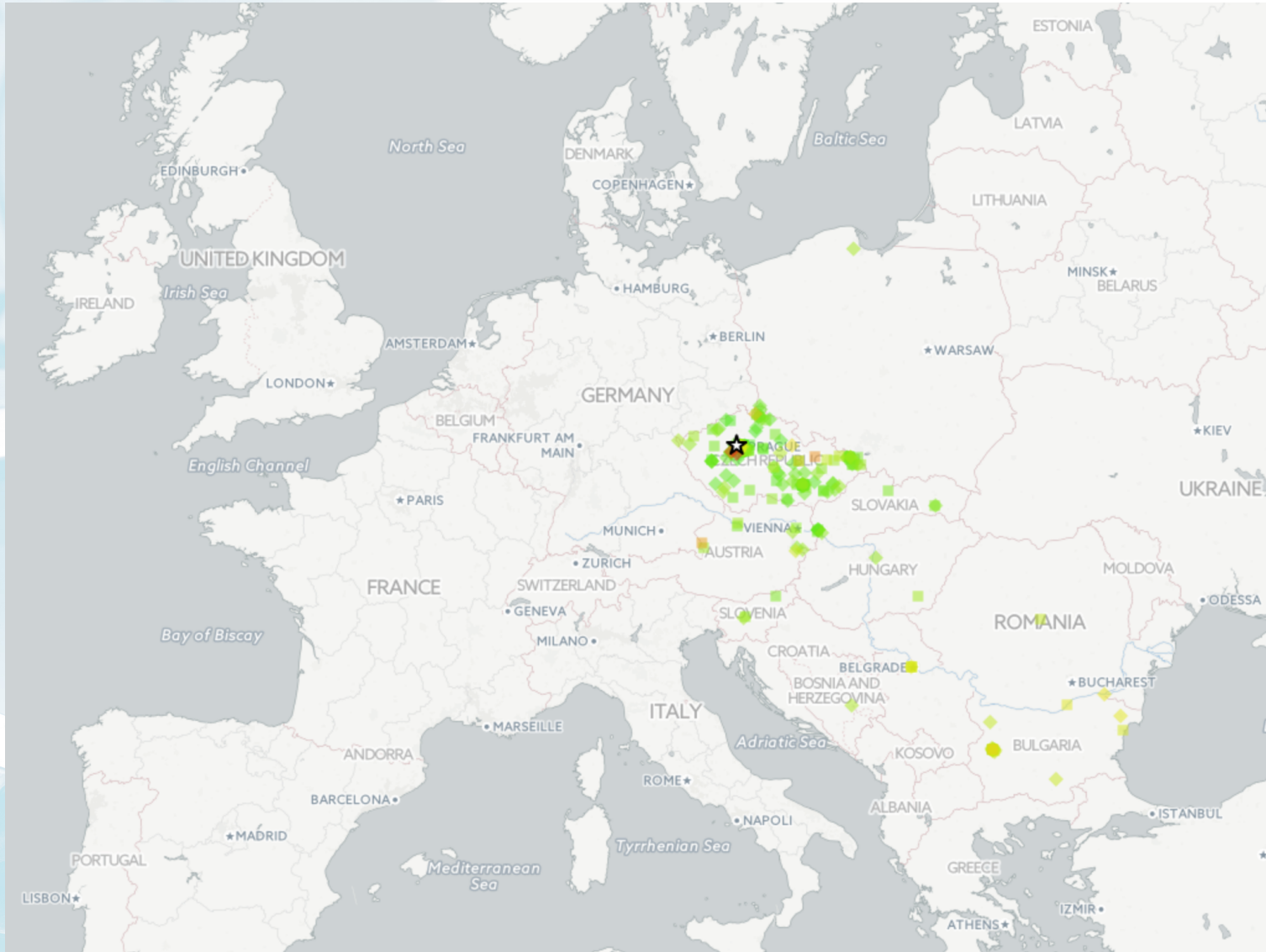
PAO1 after dropping route announcement to AS174



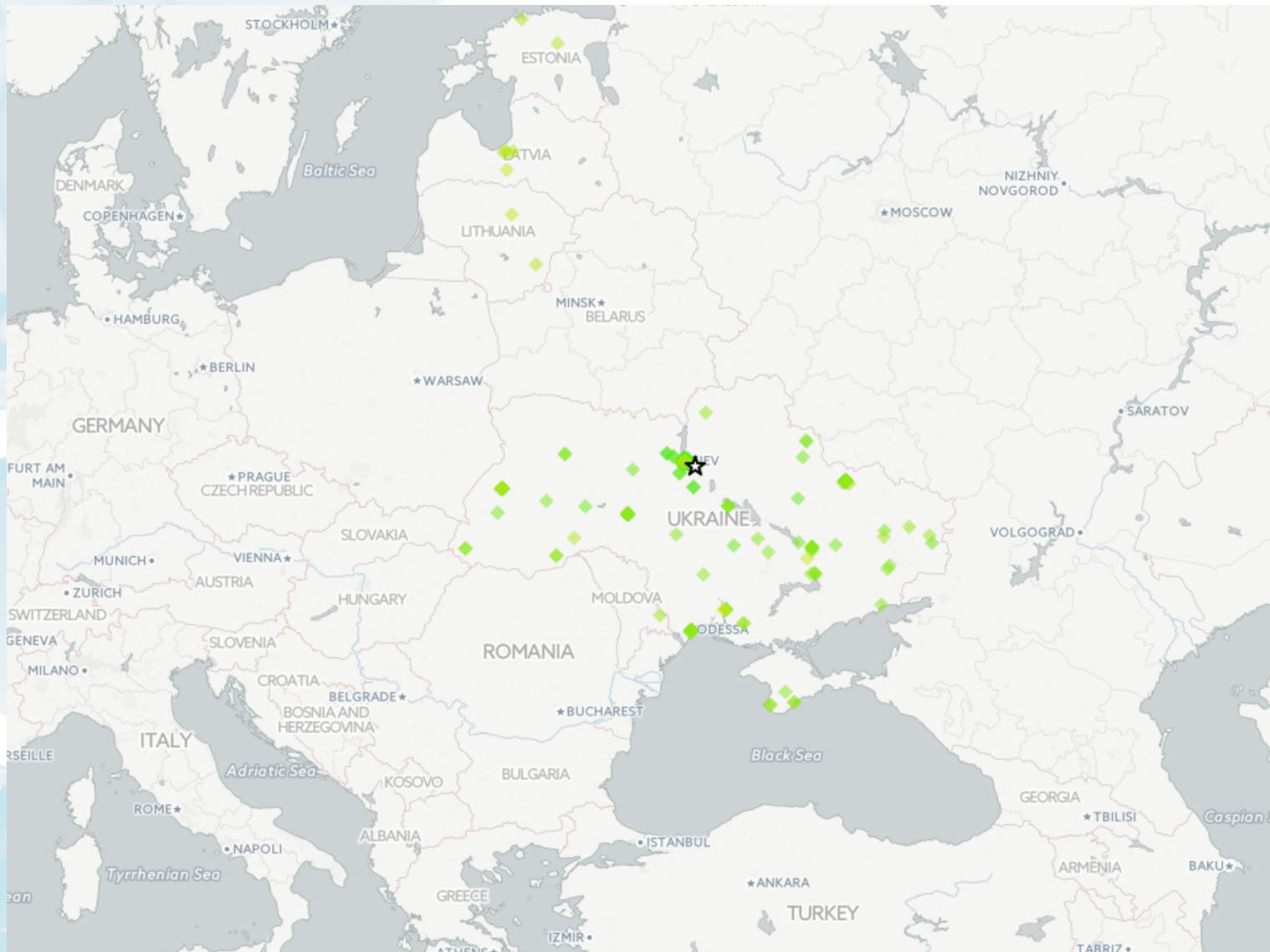
A closeup on AMS1



PRG1 probes



KBP1 probes - political boundaries?





Any Questions

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