



GLOBAL ACCESS TO THE RF ENVIRONMENT

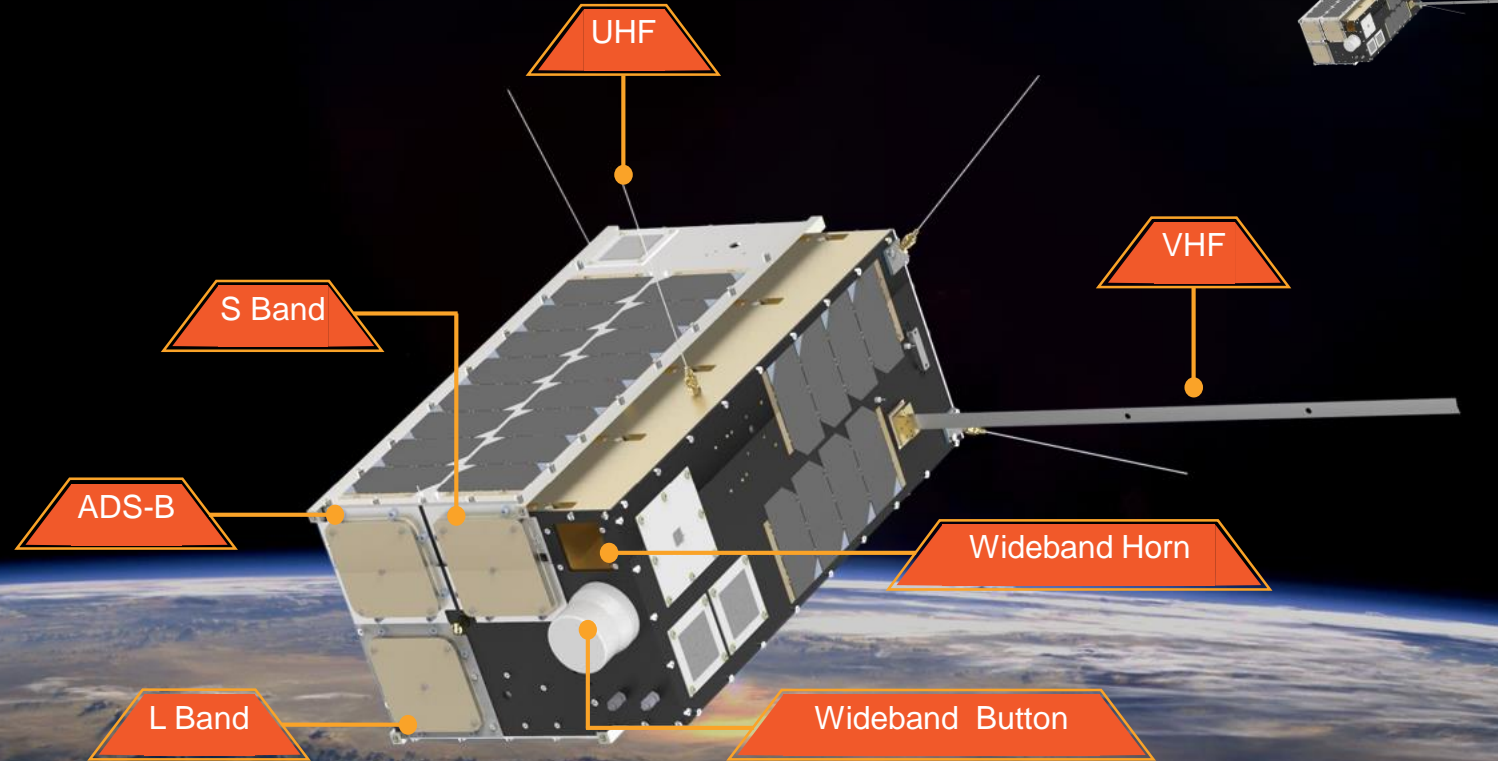


CLUSTER 1 SPECIFICATIONS



Three Satellites
Formation Flying
250 km Spread

144 MHz to 15 GHz
Frequency Range



Polar Orbit
575 km



Dimensions
27 x 20 x 40 cm
Mass 15 kg

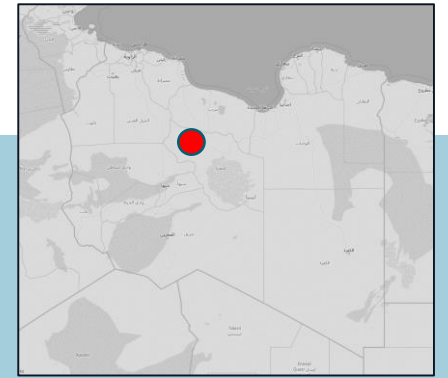
Satellite Cluster Successfully Launched December 3, 2018







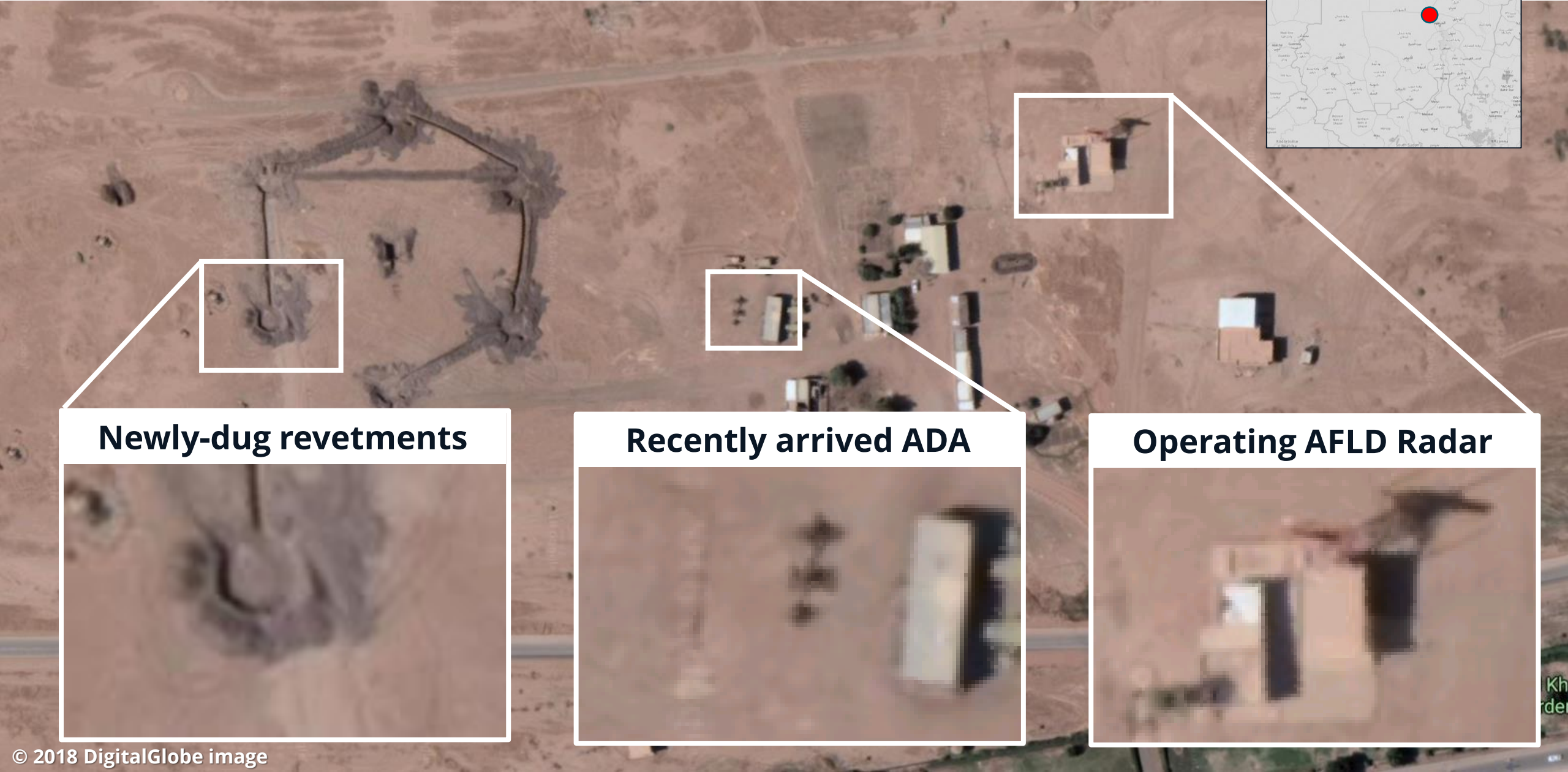
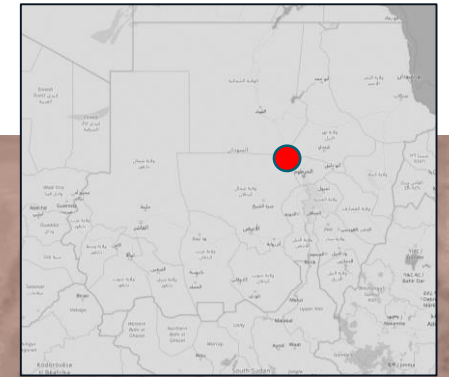
HawkEye³⁶⁰

Independent Geolocation in GPS-denied Environments



-  HE360-enabled Beacon
-  Press-reported fighting

Multi-INT Fusion & Change Detection



Newly-dug revetments



Recently arrived ADA

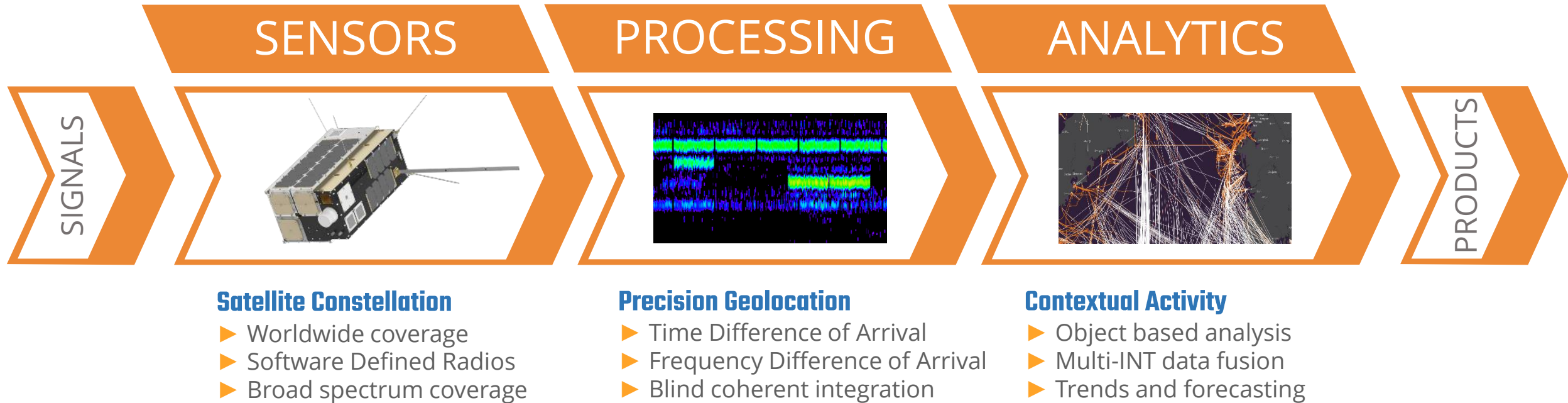


Operating AFLD Radar

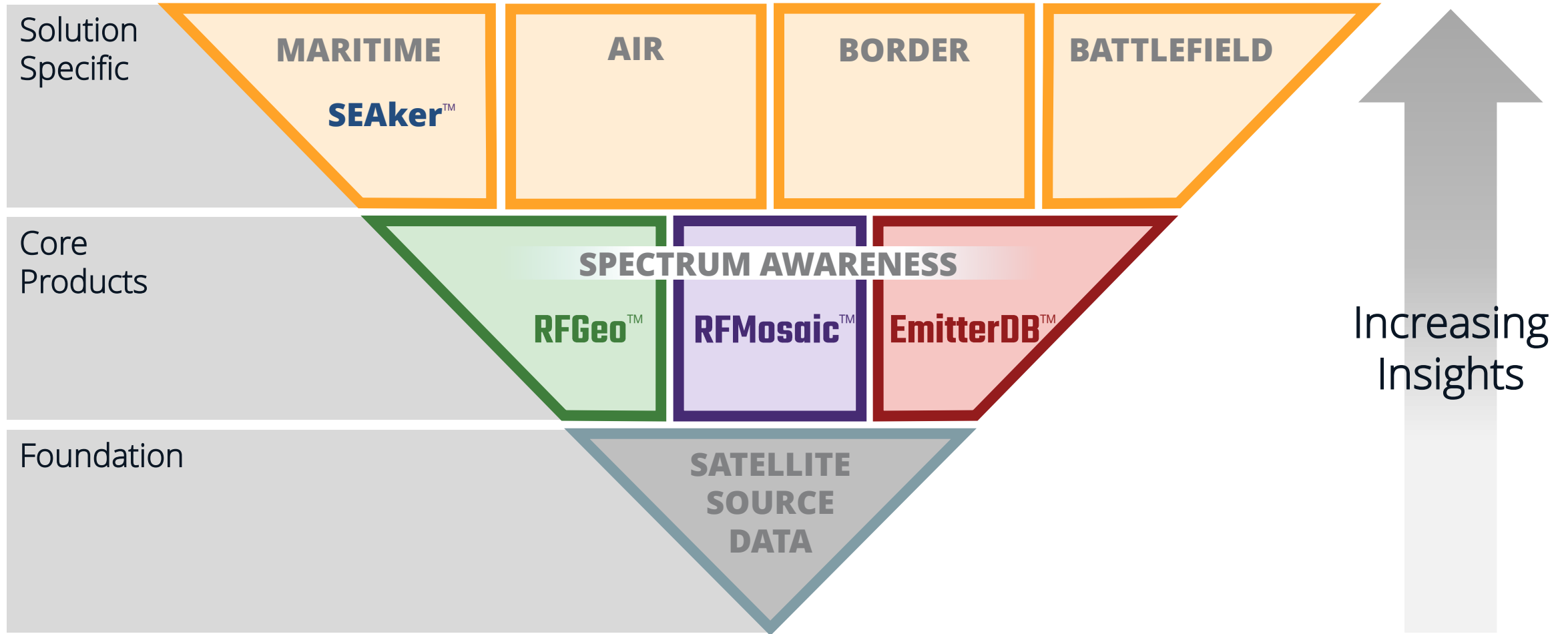


TECHNOLOGICAL APPROACH

We operate the first-of-its-kind satellite constellation that detects radio-frequency signals and converts them into actionable information.



HIERARCHY OF RF INSIGHTS



EXAMPLE EMITTER TYPES



Push-to-Talk
Radios



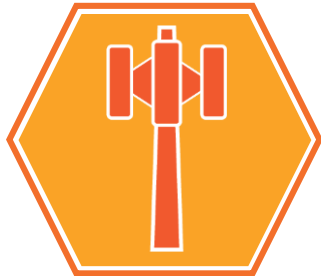
Satellite Phones



Maritime Radars



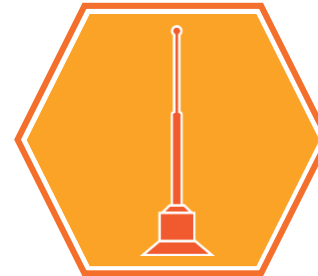
Very Small Aperture
Terminals



Cellular
Towers



Automatic Identification
System (AIS)



GNSS EMI

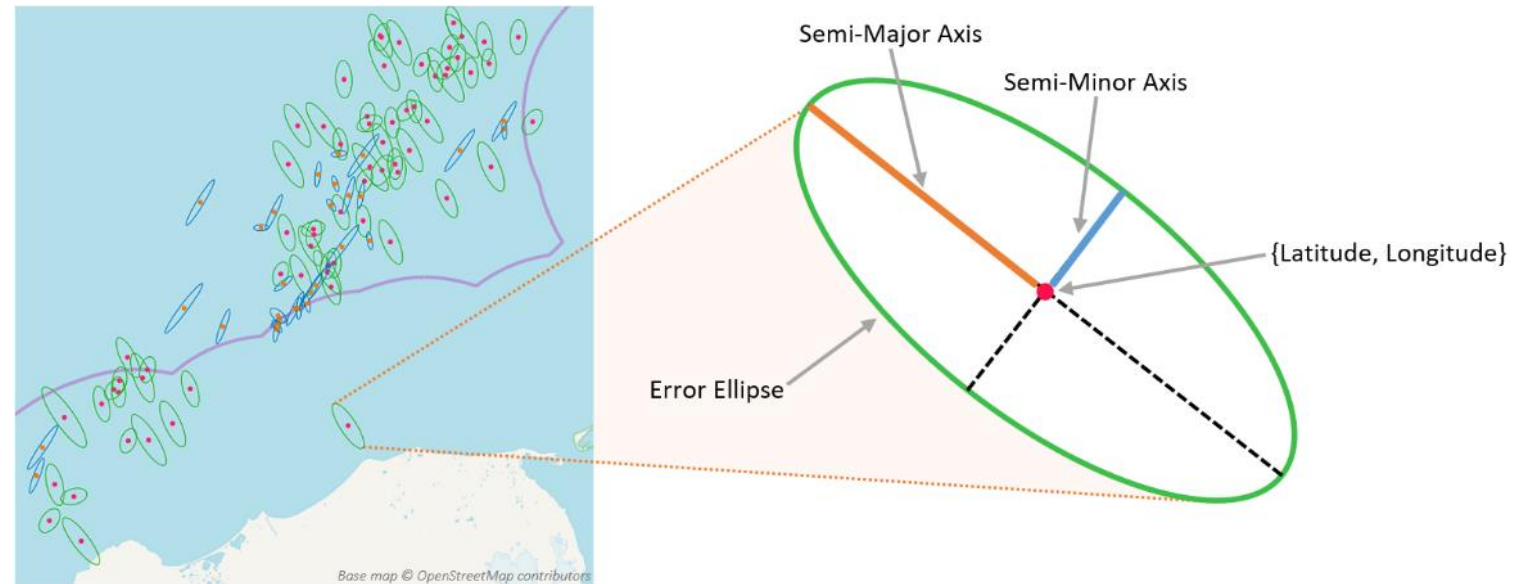


Emergency
Radiobeacons

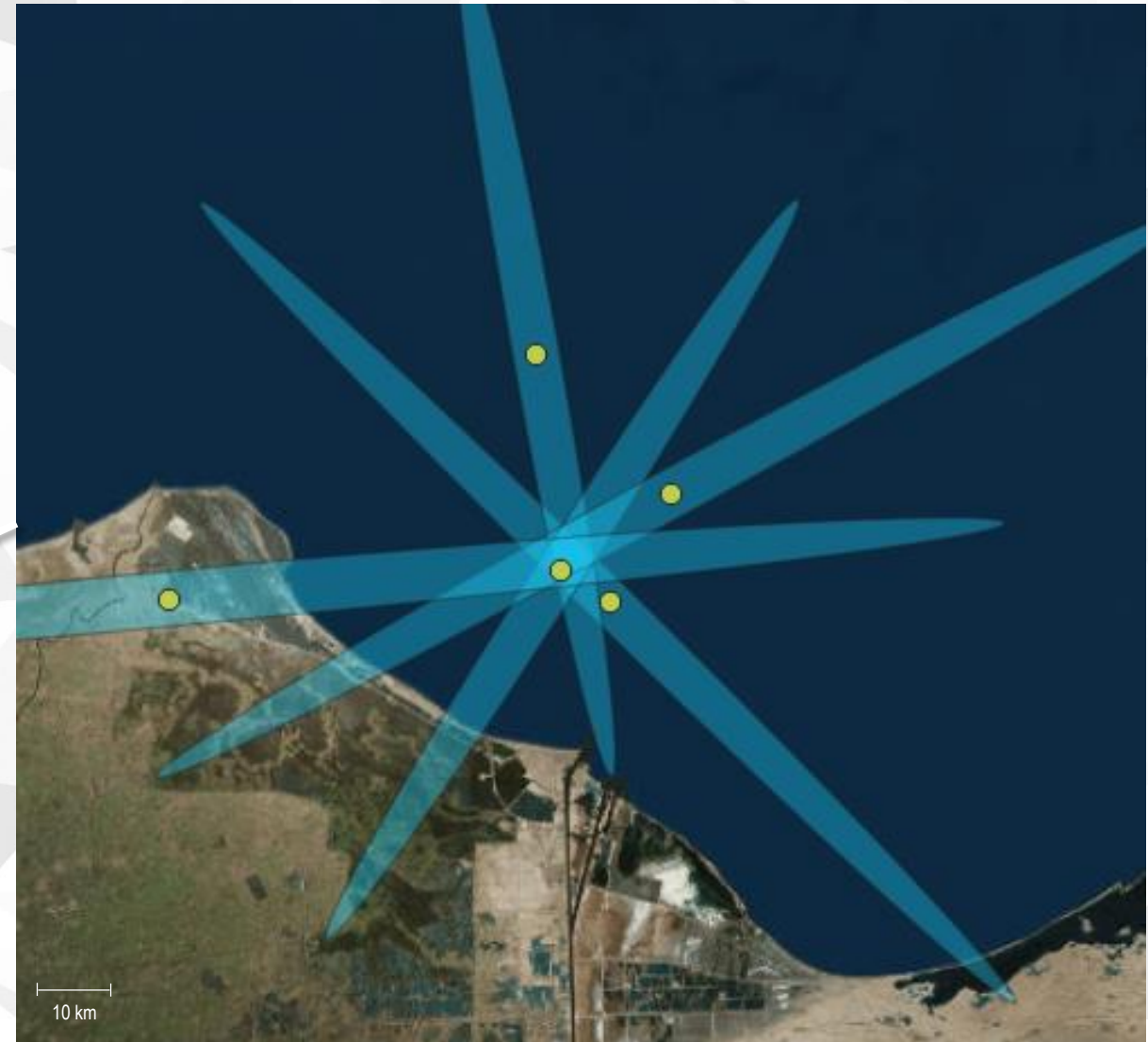
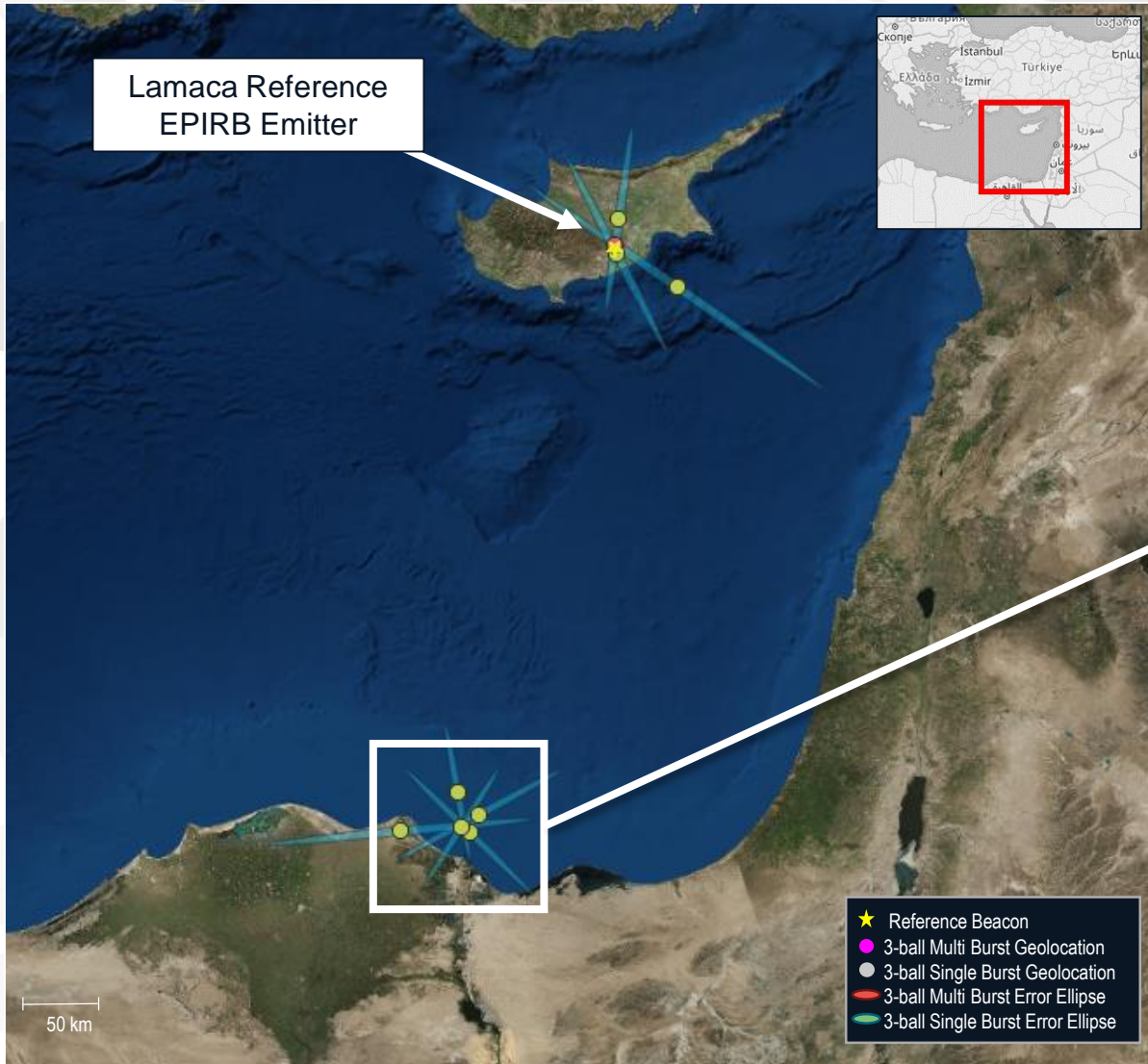
GEOLOCATION ACCURACY

RFGeo™ offers precision geolocation with an associated error ellipse

- ▶ Accuracy varies based on:
 - Type of signal
 - Signal to noise ratio
 - Geometry of measurement
- ▶ Ellipse empowers users to better interpret results
- ▶ Single RF result might have several kilometers error
- ▶ Can achieve <0.5 km error by correlating multiple results

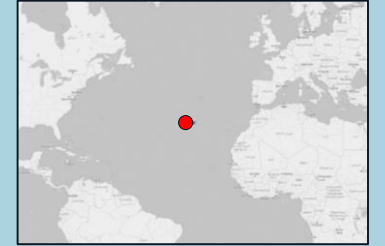


EPIRB GEOLOCATION



VHF GEOLOCATION

VHF Collection
26 FEB 2019
14:11:27 UTC



● VHF Channel 70



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VHF GEOLOCATION

VHF Collection
26 FEB 2019
14:11:27 UTC

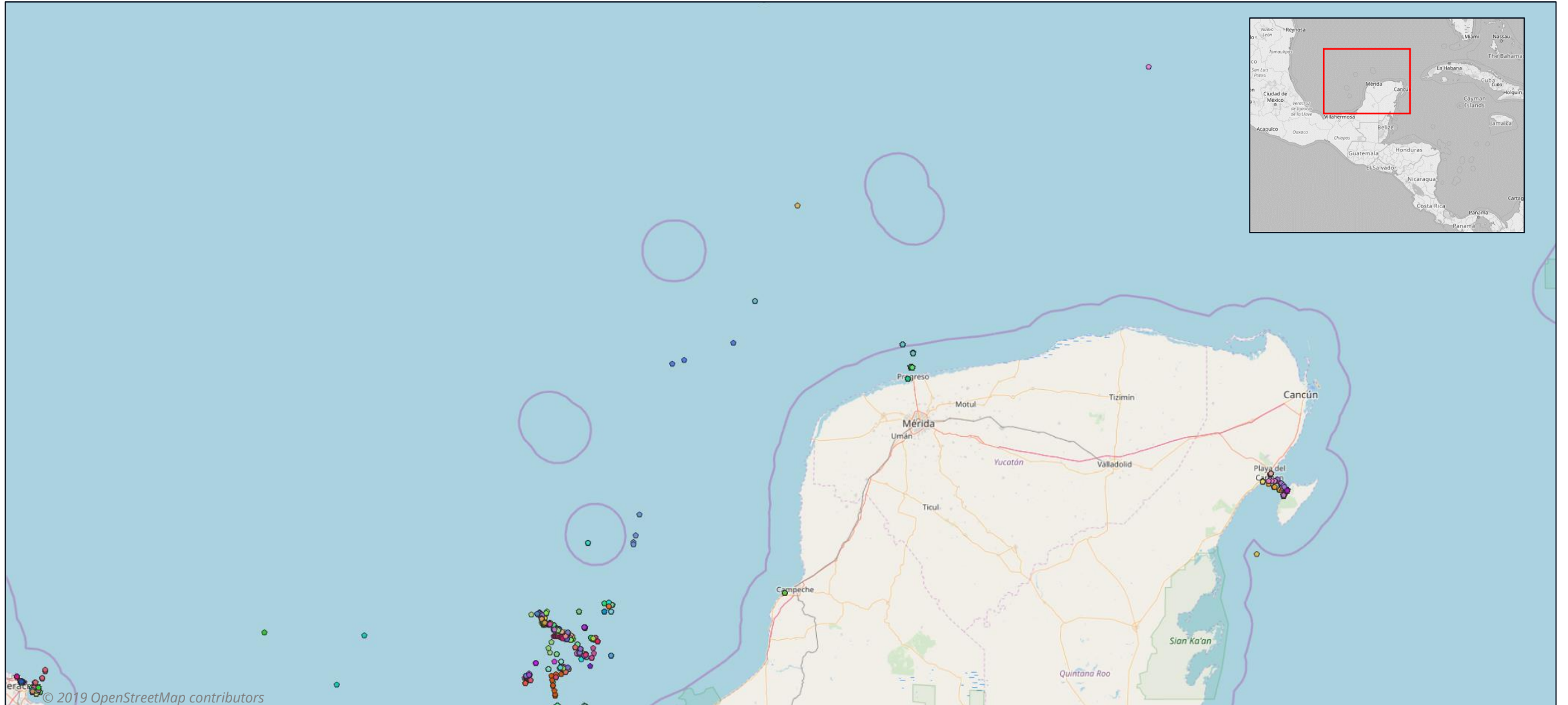


- AIS reported location
- VHF Channel 70

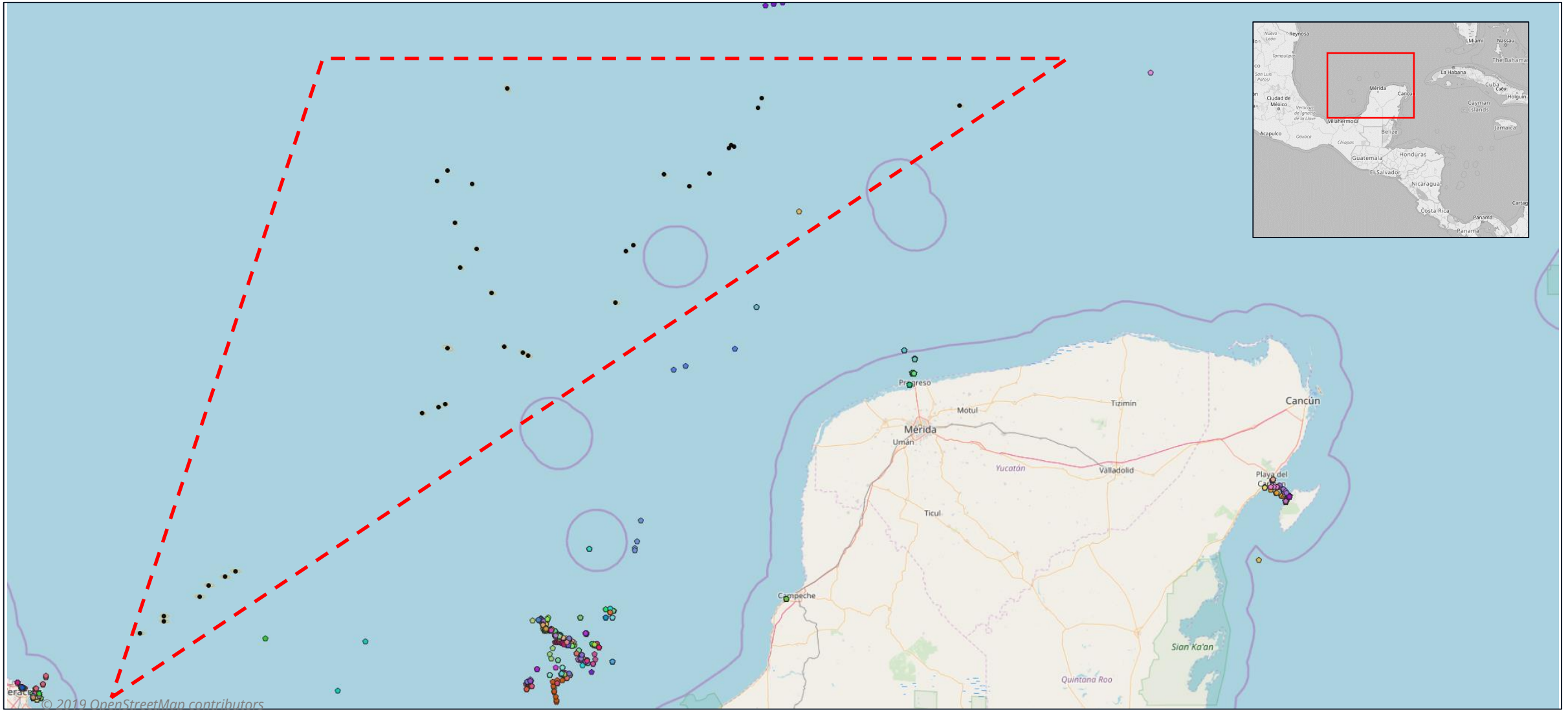


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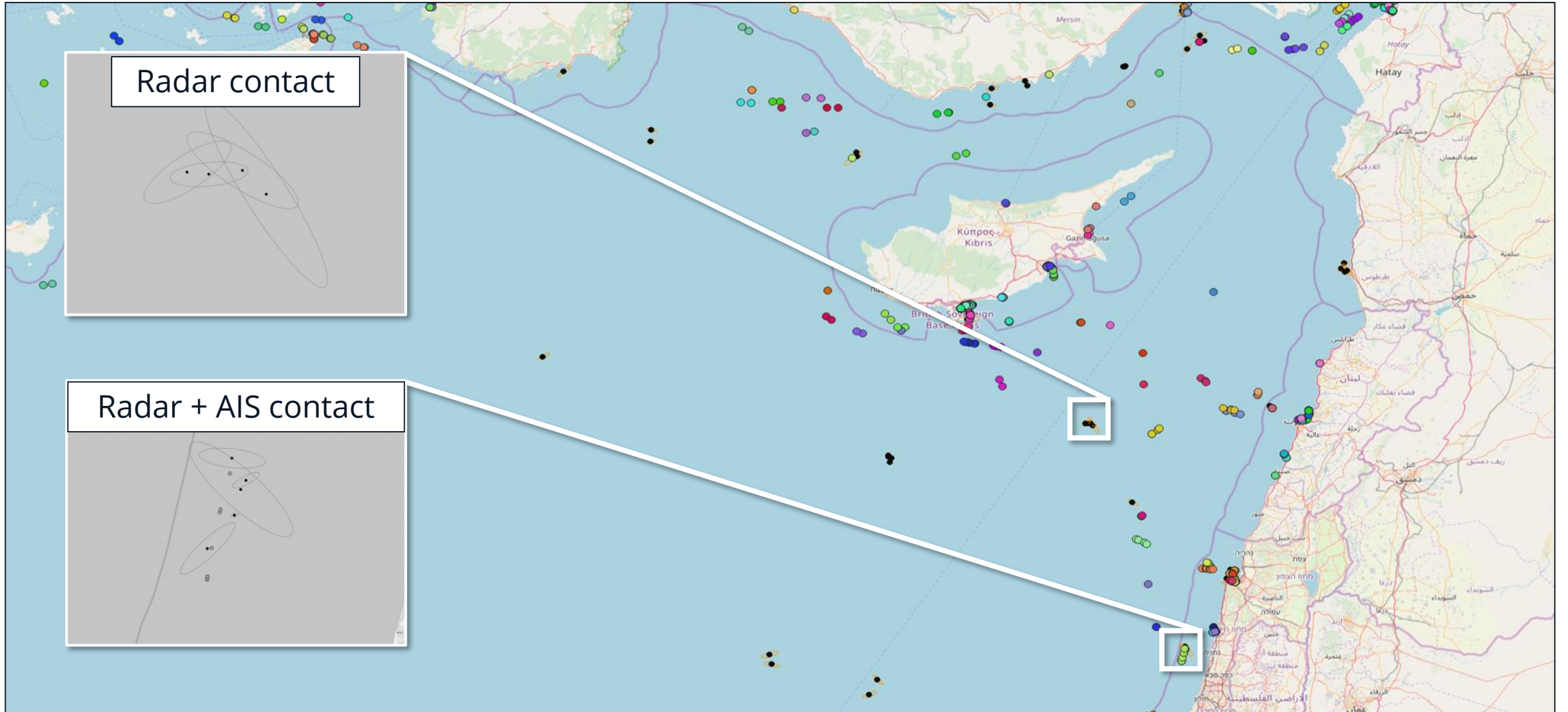
MARITIME MONITORING USING AIS



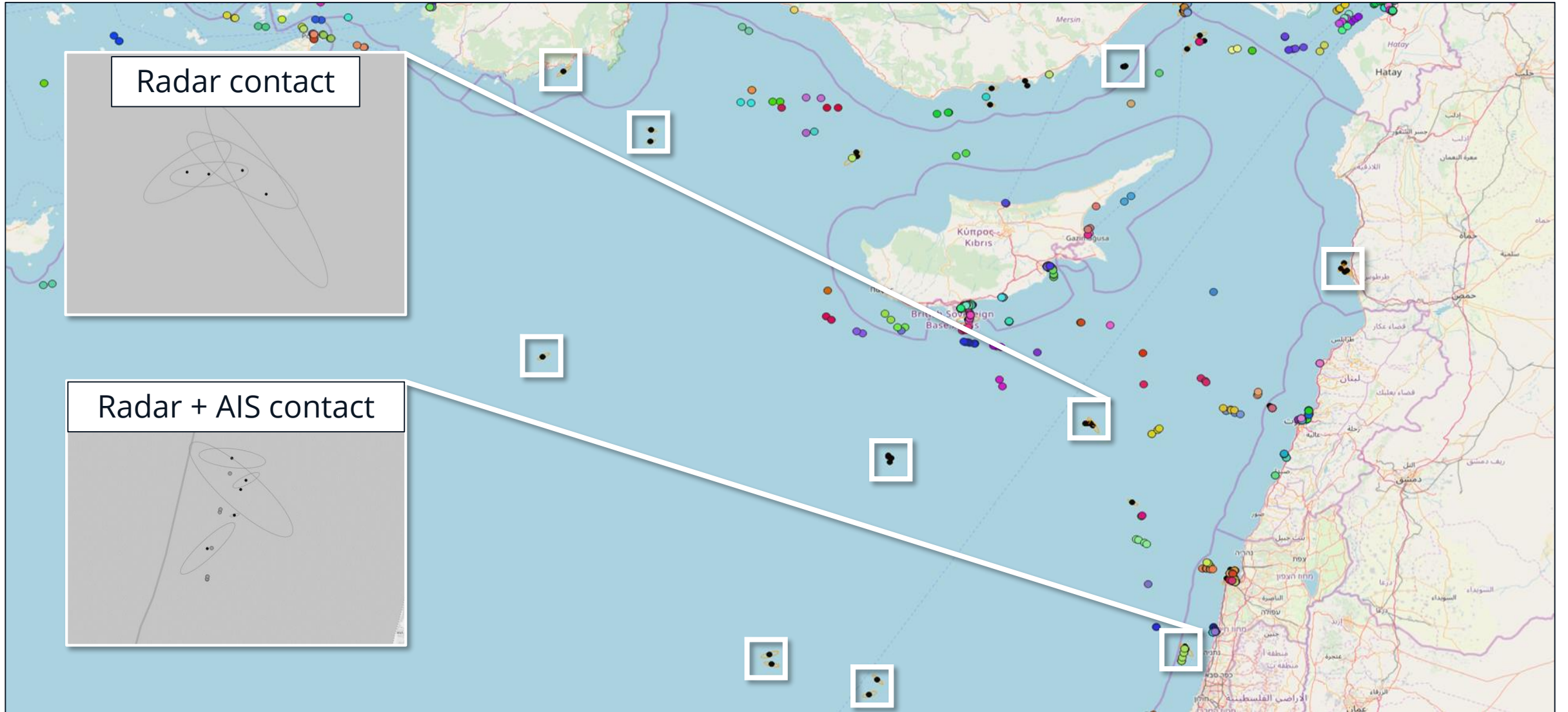
MARITIME MONITORING USING AIS + VHF



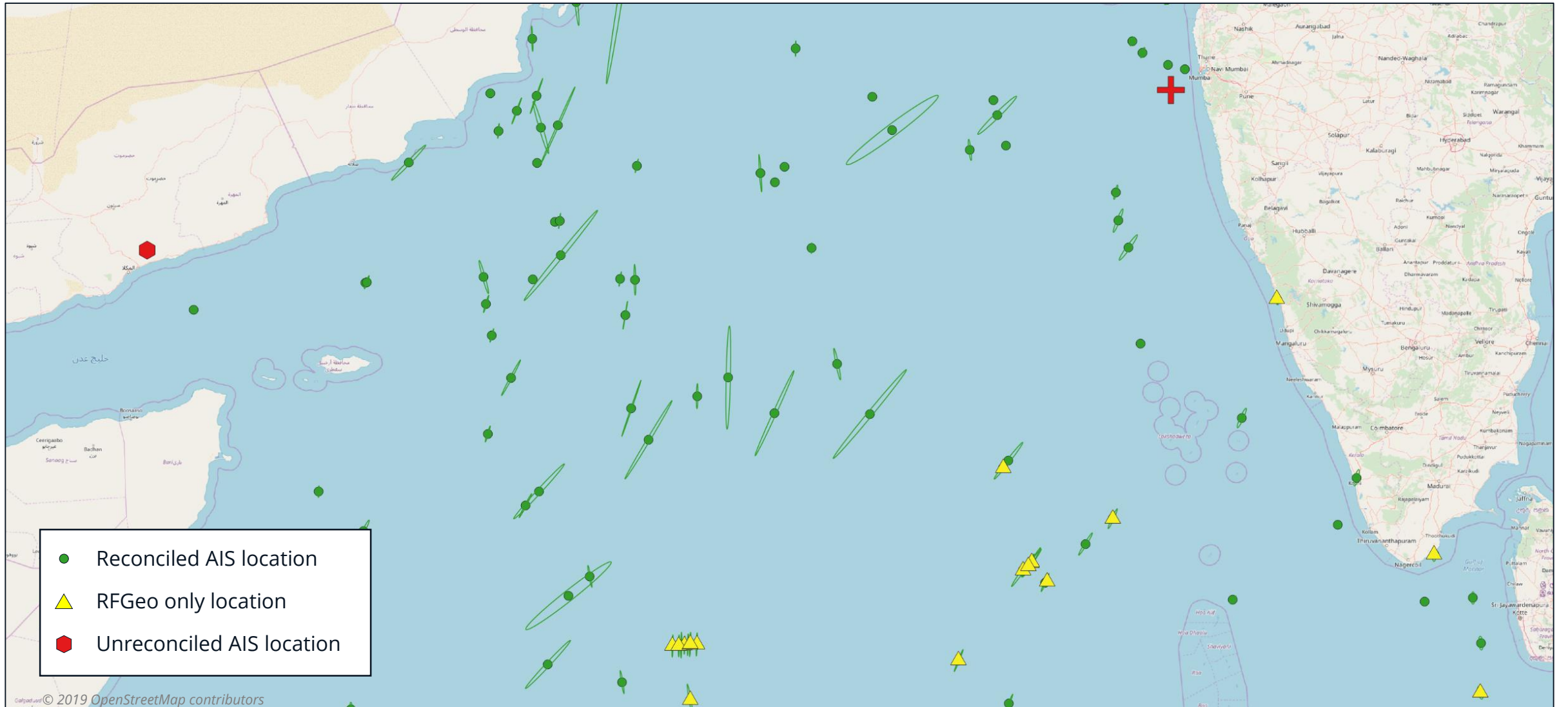
X-BAND RADAR GEOLOCATION



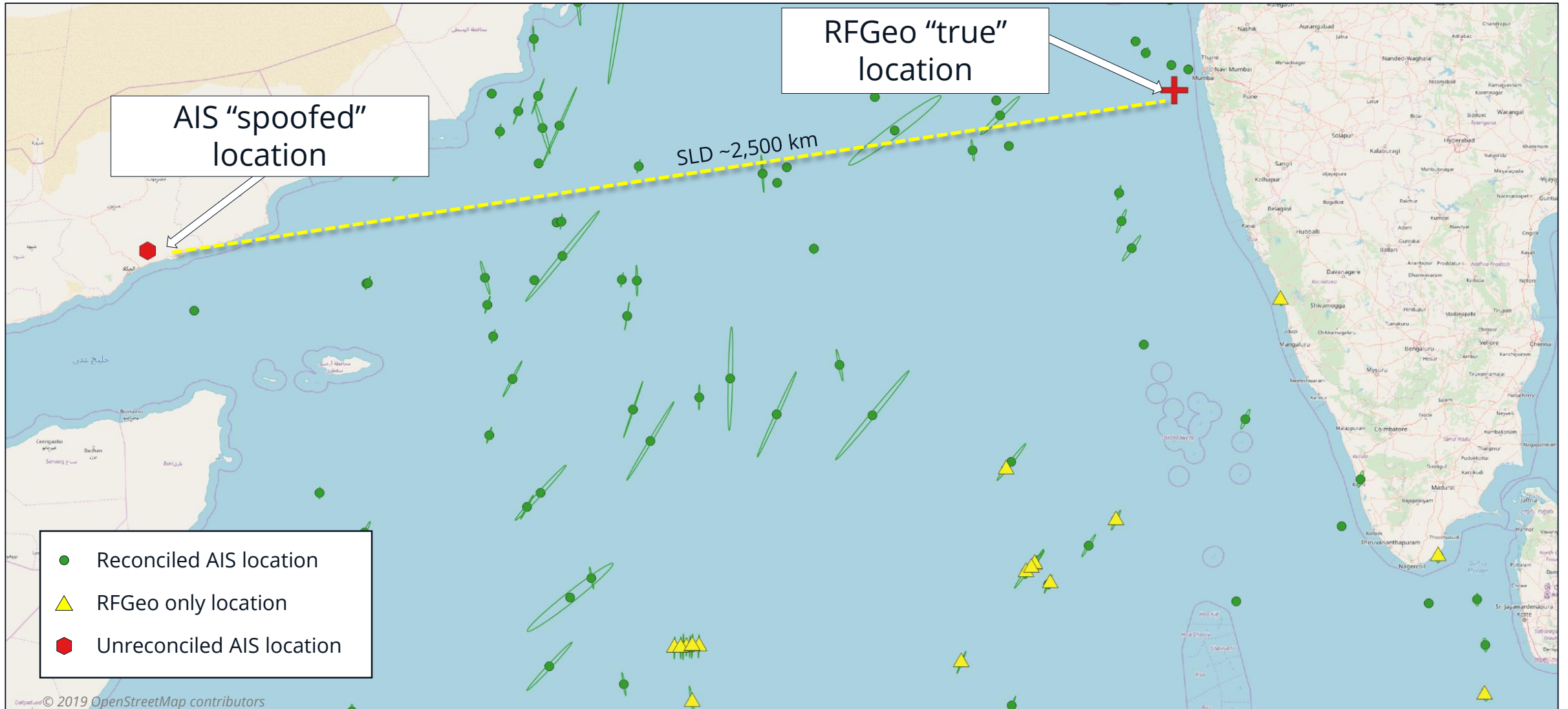
X-BAND RADAR GEOLOCATION



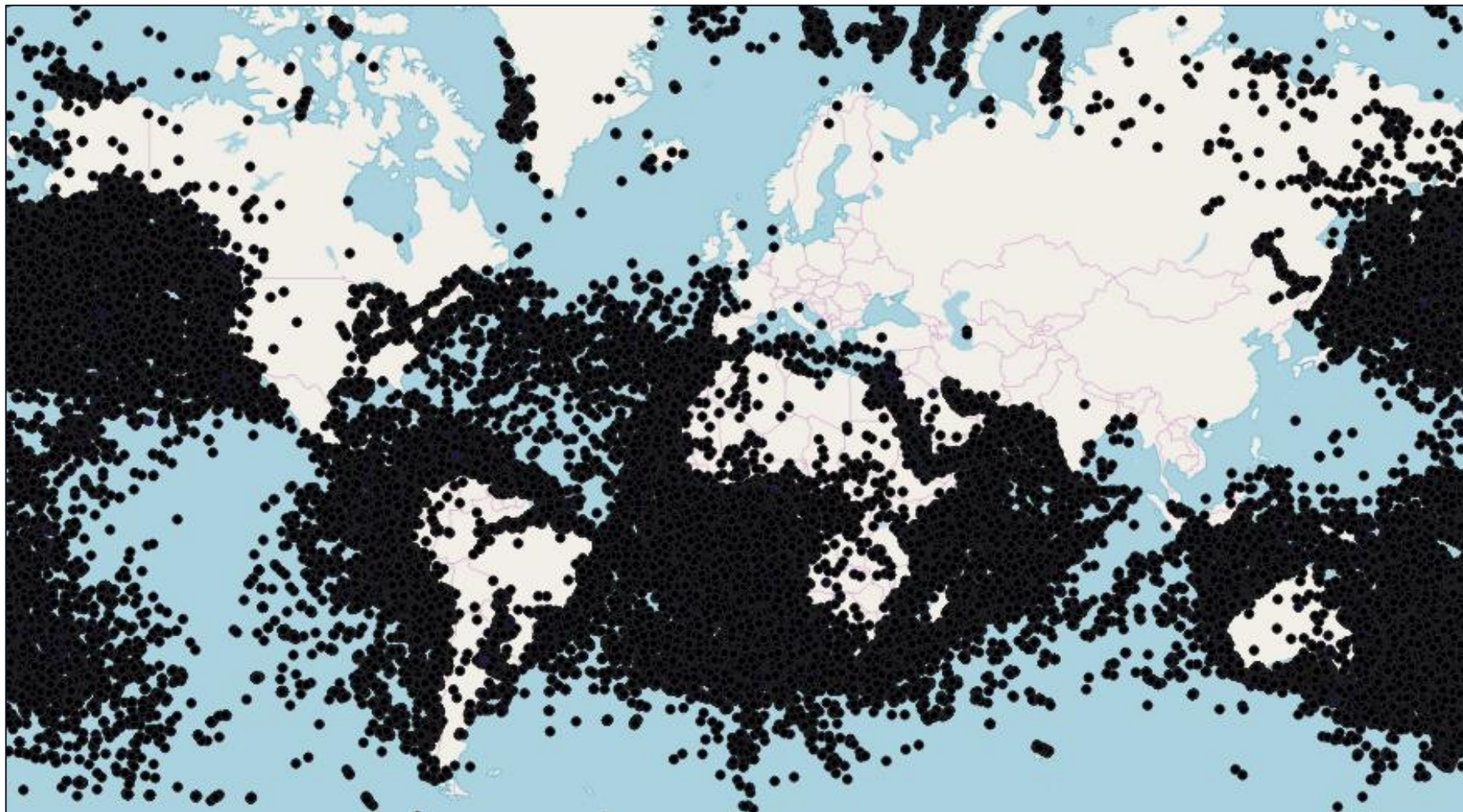
INDEPENDENT AIS GEOLOCATION



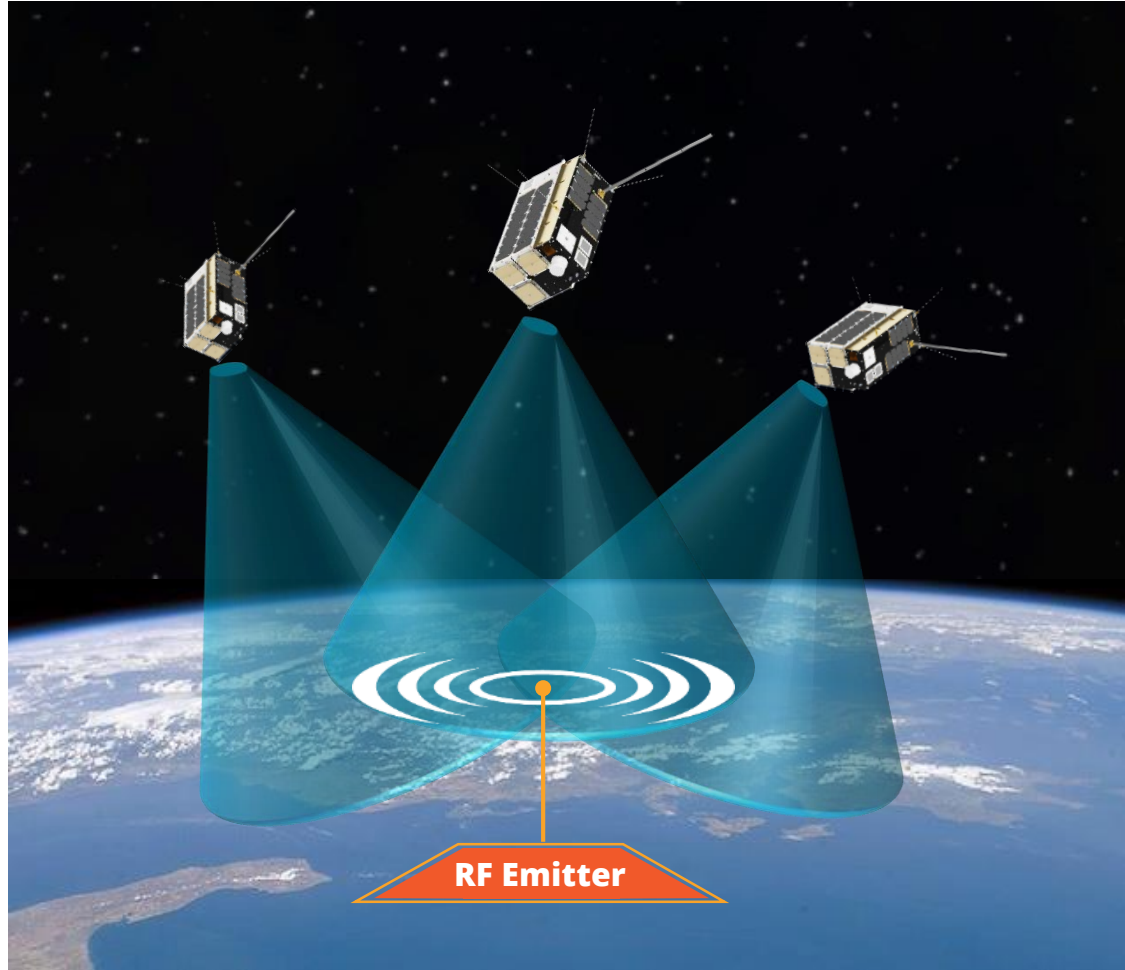
AIS ANALYSIS



AIS GEOLOCATION SINCE MARCH



FIRST OF ITS KIND



Formation flying satellite clusters



Independently geolocate a variety of radio emissions



Identifies and describes the behaviors of emitters



Patented processing methods and proprietary algorithms



HawkEye³⁶⁰

BOOTH • E6

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