

# Mystery: 12 Ships' AIS Positions Thousands of Miles Off, and Circling

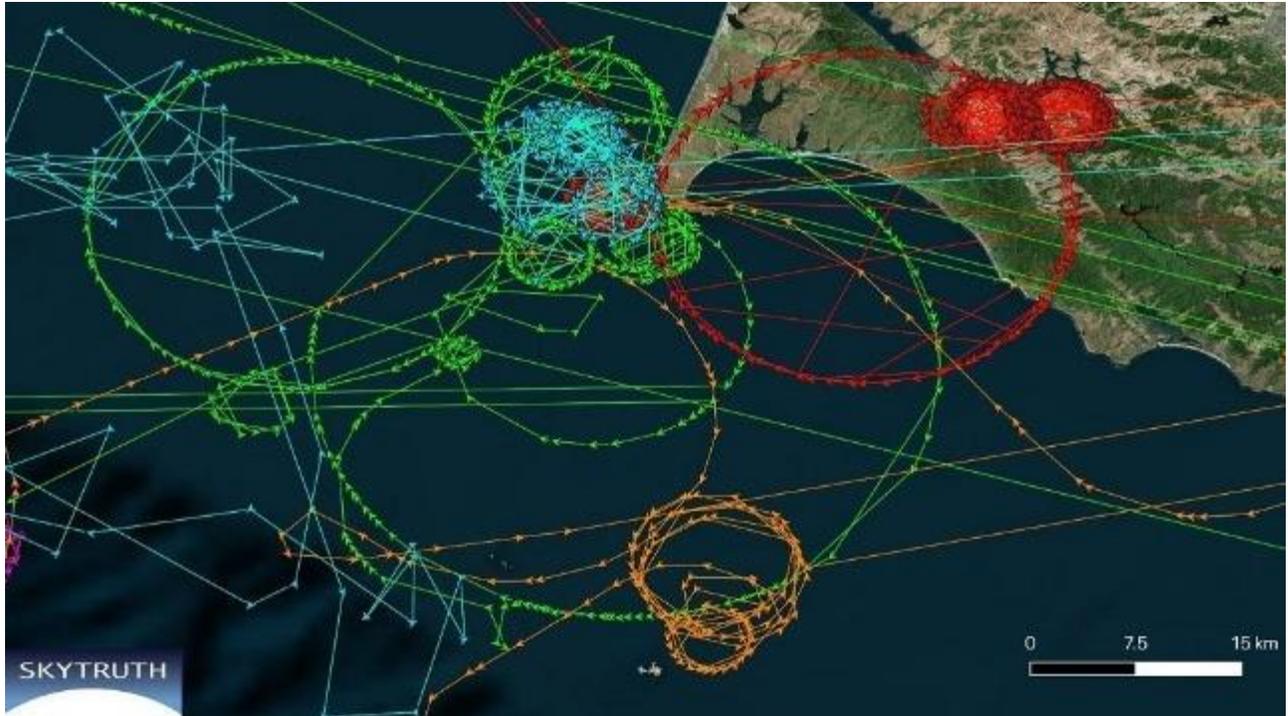


Illustration courtesy SkyTruth / RNT Foundation

BY [DANA GOWARD](#) 06-03-2020 05:21:45

The locations of twelve ships as reported by their Automatic Identification Systems (AIS) were thousands of miles in error. Most were displayed as circling an area northwest of San Francisco according to the environmental non-profit SkyTruth.

The circling phenomena has been previously observed in GPS-based reporting systems for fitness trackers in China and Iran, and for shipboard systems near a variety of Chinese ports. In all those cases, though, it was clear that the real location was fairly nearby the false and circling locations.

In the most recent observations, the real locations of the ships were thousands of miles away. Literally on the other side of the globe in most cases.

These findings were briefed at the annual meeting of the Resilient Navigation and Timing Foundation on the 5th of May. The researcher, Bjorn Bergman of SkyTruth, said that he was able to verify the vessels' approximate true location by examining the field of view of the satellite receiving the AIS position reports. A satellite that could only see the Gulf of Guinea in West Africa, for example, received AIS information that placed the vessel offshore of Pt Reyes in

northern California. The vessels' true locations were also confirmed by their position reporting before and after the "displacement" events.

When asked at the briefing if this was the result of GPS spoofing or some fault in the vessels' AIS system, Bergman replied that he was uncertain. It is fairly clear that previous vessel "circling" incidents in China were some form of GPS interference. GPS-based fitness tracker reporting was similarly affected in the same area and at the same time. There are, as of now, no similar supporting data for these long-range maritime displacement and circling events.

Analysis is also hampered by the low number of vessels involved. Bergman has only found twelve instances of this kind of behavior.

Further deepening the mystery is that the vessels are of much different types and operations. Pilot boats, work boats, tugs, cargo, and passenger vessels have all been involved. And these vessels have been located in every region of the world save North America.

The length of these disruptions has also varied greatly. The shortest recorded was a reefer ship for less than half an hour. A crew boat was "displaced" for over 16 days.

Most of the vessels reported circling positions off the coast of Northern California, though two were displaced to Madrid, one to the vicinity of Hong Kong and another to the Chinese city of Shanwei. The vessel impacted for the longest time first reported a false position offshore of northern California. Over the following days the false location drifted almost a thousand miles to the east moving inland as far as Utah.

Bergman openly admits that he is at a loss to explain this phenomenon. It seems to be related to GPS and the kind of "circle spoofing" previously observed in China and Iran. Yet the lack of much commonality between the vessels and incidents makes any further deductions or inferences difficult.

For now, it remains a true mystery. The RNT Foundation is encouraging anyone with insights or ideas to send them to [inquires@RNTFnd.org](mailto:inquires@RNTFnd.org) to be shared with Mr. Bergman and other analysts. A video of Bergman's presentation at the RNT Foundation's annual meeting is available on this page.

<https://www.maritime-executive.com/editorials/mystery-12-ships-ais-positions-thousands-of-miles-off-and-circling>

Mr Bergman has also recently posted a short paper on these instances on SkyTruth's website at <https://skytruth.org/blog/>

*Mr. Dana A. Goward is the President of the Resilient Navigation and Timing foundation. He formerly served as the maritime navigation authority for the United States.*

The opinions expressed herein are the author's and not necessarily those of The Maritime Executive.

