

HawkEye 360 Satellite System Tracked Chinese Activity near Galapagos

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A schematic from Hawkeye 360 showing how the system works.

ARLINGTON, Va. – The recent concentration of Chinese fishing vessels in the vicinity of the Galapagos Islands in the Eastern Pacific Ocean, accused of fishing inside the Ecuadorean Economic Exclusion (EEZ) around the islands, was tracked by a commercial satellite system that intercepts RF signals and can detect when a vessel turns off its AIS (Automatic Identification System).

HawkEye 360, a commercial satellite company which specializes in RF geo-analytics, collected RF data from the Chinese fishing fleet near Galapagos and published the data, which the company said “reveals the Chinese vessels deactivated their Automatic Identification System (AIS) tracking system hundreds of times to ‘go dark.’ “

The discovery of the Chinese fishing fleet near Galapagos raised protests from Ecuador and other nations, despite the denial on Aug. 24 by Chinese Ambassador Chen Guoyou that the fishing fleet did not penetrate the EEZ. The Ecuadorean navy sent vessels to investigate the fleet, later joined by a U.S. Coast Guard cutter.

The EEZ around Galapagos is larger than Spain and Portugal combined, and therefore “using traditional coast guard and airplane observation is near impossible making it easy for fishing vessels to ‘go dark’ and cross into the EEZ,” HawkEye360 said in a release.

According to Reuters, Ecuador’s government said that 149 of

some 325 vessels still fishing near the ecologically sensitive islands had turned off tracking systems to prevent monitoring of their activities.”

HawkEye 360 “discovered multiple instances of dark vessels within the EEZ boundary that didn’t correlate with AIS records – raising suspicion of illegal fishing without notice,” the company said. “HawkEye 360 also conducted a joint RF and SAR [synthetic aperture radar] collection with partner Airbus Defence and Space Intelligence. By fusing multiple forms of intelligence, they found many dark vessels and a better understanding of fleet activity.”

“During a six-week period from mid-July to the end of August, HawkEye 360 compared its geolocations against AIS data to filter out vessels that were routinely reporting their locations,” the release said. “The remaining hundreds of geolocations indicated previously unknown vessel positions. Of greatest concern, HawkEye 360 discovered multiple instances of RF activity within the EEZ immediately adjacent to the heart of the Chinese fishing fleet. None of these locations correlated with AIS records for the entire day when they were detected. Although it could be other types of vessels engaged in legitimate activity, these signals may be evidence of dark Chinese vessels crossing into the EEZ to conduct illegal fishing.

“Airbus’s automatic vessel detection extracted 58 vessels locations from the SAR image and provided estimated size and heading for each vessel,” the release said. “Comparing these locations against +/- 60 minutes of AIS data matched only 16 vessels to AIS tracking, again reinforcing the many gaps in the AIS record.”

The HawkEye360 satellite system also has been used to track Chinese forces along the Indian border and “dark” Iranian vessels at sea,” said John Serafini, chief executive officer of HawkEye360, in an Oct. 8 interview with Seapower.

Hawk360 has one satellite system currently in orbit. The system includes three satellites that fly in a cluster and triangulate RF emissions of 1 watt and greater, including S-band and X-band radars, Serafini said.

The company plans to launch a second system in December and will launch another five systems – roughly one per quarter – in 2021 and 2022. The first system was carried aloft by a Space-X rocket and has been in orbit for 20 months.

The data – all unclassified – from the satellites is sold to governments and private companies and organizations. Serafini was not at liberty to discuss specific customers, but said that they included U.S. defense, intelligence and civilian organizations, international defense and intelligence organizations, and commercial entities.

Serafini, a former U.S. Army officer, said that HawkEye360 raised \$130 million in private financing to launch and operate the company.