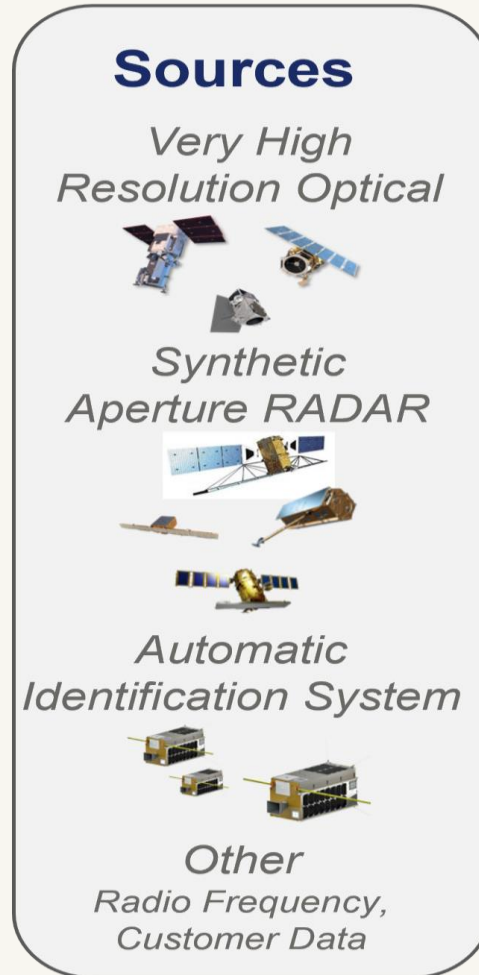


Maritime Security: Evolution of the Problem Statement

Primary Drivers

- Vast Oceans
- Limited Capacity of Sensors
- Dynamic Objects (Ships)
- Positional Accuracy of Sensors (No Landmarks, Off the Coast)



Challenges

- AIS Manipulated
- EO - Clouded
- SAR - Identification, Sea State
- RF - Accuracy
- GPS - Jamming, Spoofing
- Shadow Fleets - Reflagging

Informative Solutions

-

Intelligent Solutions

RISK 01 · STRAIT OF HORMUZ

97% DECLINE IN HORMUZ TRANSIT

Operation Epic Fury and the subsequent closure of the Strait of Hormuz by the IRGC drove transit volumes down 97%. The largest shock to oil markets in more than 50 years.

-97% STRAIT OF HORMUZ TRANSITS IN MARCH 2026	1,100+ VESSELS AFFECTED BY GPS JAMMING	-87% CRUDE SHIPMENTS BOUND WEST OF HORMUZ
+330% SAUDI CRUDE EXPORTS FROM RED SEA PORT OF YANBU	-91% DRY BULK CARRIER TRANSITS THROUGH HORMUZ	-62% WEEK-ON-WEEK CRUDE AND CONDENSATE LOADINGS

RISK 04 · DARK ACTIVITY & THE DARK FLEET

Dark activity continued to surge, with Windward's tracked dark fleet of vessels operating outside international rules based order, expanding as sanctioned regimes sustained oil flows to support their isolated economies.

DARK FLEET REACHES 2,108 VESSELS IN Q1

2,108 DARK FLEET VESSELS	+45 DARK FLEET GROWTH: Q1 VS. Q4 2025	48% SHARE OF DARK FLEET VESSELS SANCTIONED
22% SHARE OF DARK FLEET VESSELS FLAGGED TO RUSSIA	1.77M BARRELS PER DAY OF IRANIAN CRUDE EXPORTED VIA THE DARK FLEET	100 NON-TRANSMITTING VESSELS IN THE RIAU ARCHIPELAGO

SOURCE: WINDWARD MARITIME AI™ · Q1 2026

RISK 06 · FALSE FLAGS & FLAG HOPPING

290 TANKERS BROADCASTING FALSE FLAGS IN Q1

The use of false registries, flag hopping, and false flags remains widespread to obscure vessel identity. As seizure pressure intensified in Q1, flag hopping declined, but the number of falsely flagged vessels increased.

-26% FLAG HOPPING: Q1 VS. Q4 2025	290 TANKERS BROADCASTING FRAUDULENT REGISTRY FLAGS	20 FRAUDULENT REGISTRIES VS. 18 IN Q4 2025
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88% of ships using fraudulent registries sanctioned

RISK 02 · GPS JAMMING

In the first weeks of the Iran war, AIS effectively became unreliable: more than 1,100 vessels were impacted by GPS jamming, with 959,627 events recorded in the Middle East Gulf alone, accounting for 98% of all incidents. The Black Sea ranked a distant second with 7,630 cases.

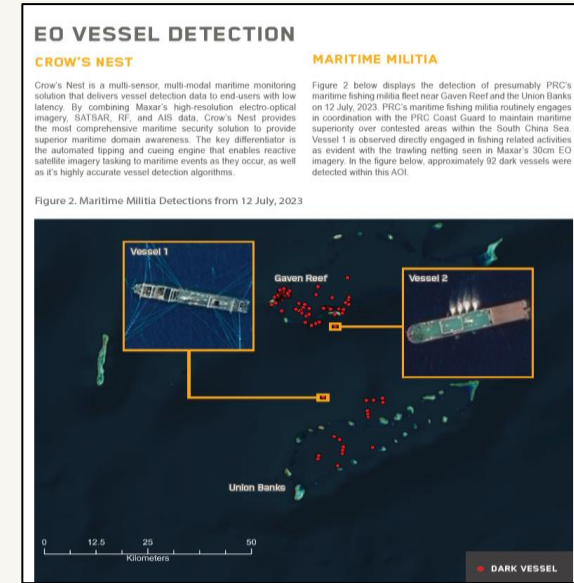
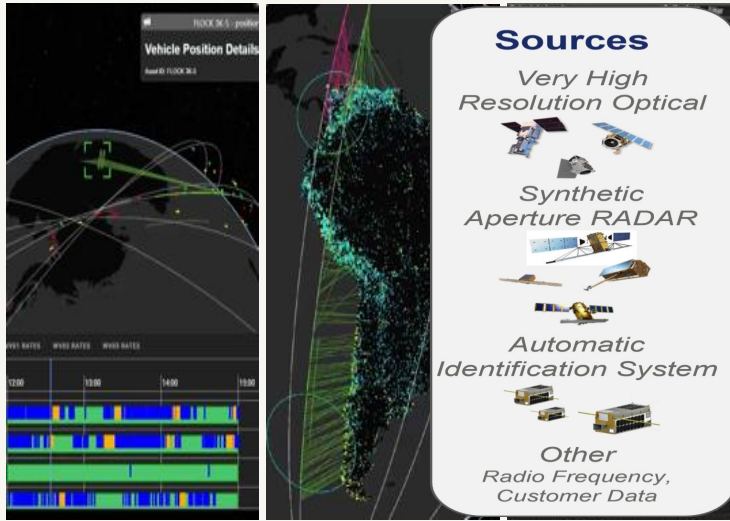
978K GPS JAMMING EVENTS IN Q1

978K GPS JAMMING EVENTS IN Q1	98% IN THE MIDDLE EAST GULF	1,100+ VESSELS AFFECTED IN MIDDLE EAST GULF
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WINDWARD PUSCO INTELLIGENCE LAYERS

X AIS COMPROMISED | SAR CONFIRMED | RF CORRELATED | EO VERIFIED

Maritime Needs Intelligent not Informative Solutions



Tasking

All WX Persistent Monitoring

- Automated tasking across multiple satellite constellations
- Integrates electro-optical, SAR and your own assets
- Dramatically increases sites you can monitor simultaneously

Production

Data fusion

- Advanced automated co-registration software
- Creates analysis-ready datasets at scale
- Eliminates manual data fusion processes

Insights

AI analytics

- Object detection models and third-party technologies
- Identifies mission-relevant activity and patterns
- Delivers intelligence through UI or secure API

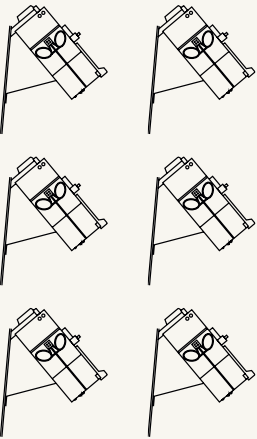
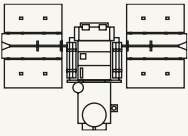
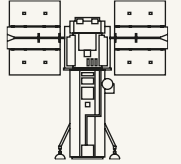
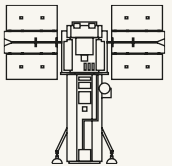
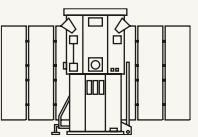
Maritime Sentry

Detect and track vessels across
thousands of sq km of ocean

Seamless integration across sensors

Sentry integrates multiple sensors, including your own, with advanced production and AI-driven analytics—delivering near real-time visibility across hundreds of locations at once.

The Vantor Constellation

	 WorldView™-1 50 cm	 WorldView-3 20 cm	250 + PETABYTE DATA ARCHIVE
WorldView Legion® 30 cm-class	 WorldView-2 50 cm	 GeoEye-1 50 cm	

Bring Your Own Data

SAR Synthetic Aperture Radar	AIS Automatic Identification System	NEWS FEED	AI MODELS
EO Electro-Optical	RF Radio Frequency	SATELLITES & SENSORS	PROCESSES & REQUIREMENTS

Maritime Sentry

Maritime Sentry delivers near real-time operational and threat intelligence in the maritime domain by bringing together automated multi-sensor tipping and cueing with advanced machine learning to identify vessel activity over broad areas.

Integrating very high-resolution electro-optical, synthetic aperture radar and AIS data with advanced ML algorithms, users can detect and identify adversarial vessels or those used for illicit activity across thousands of sq km of ocean within minutes of collection. Using a proprietary AI capability and access to Vantor's unrivaled archive of 30 cm-class satellite imagery, Maritime Sentry software can also pinpoint the location of most dark vessels anywhere in the world.

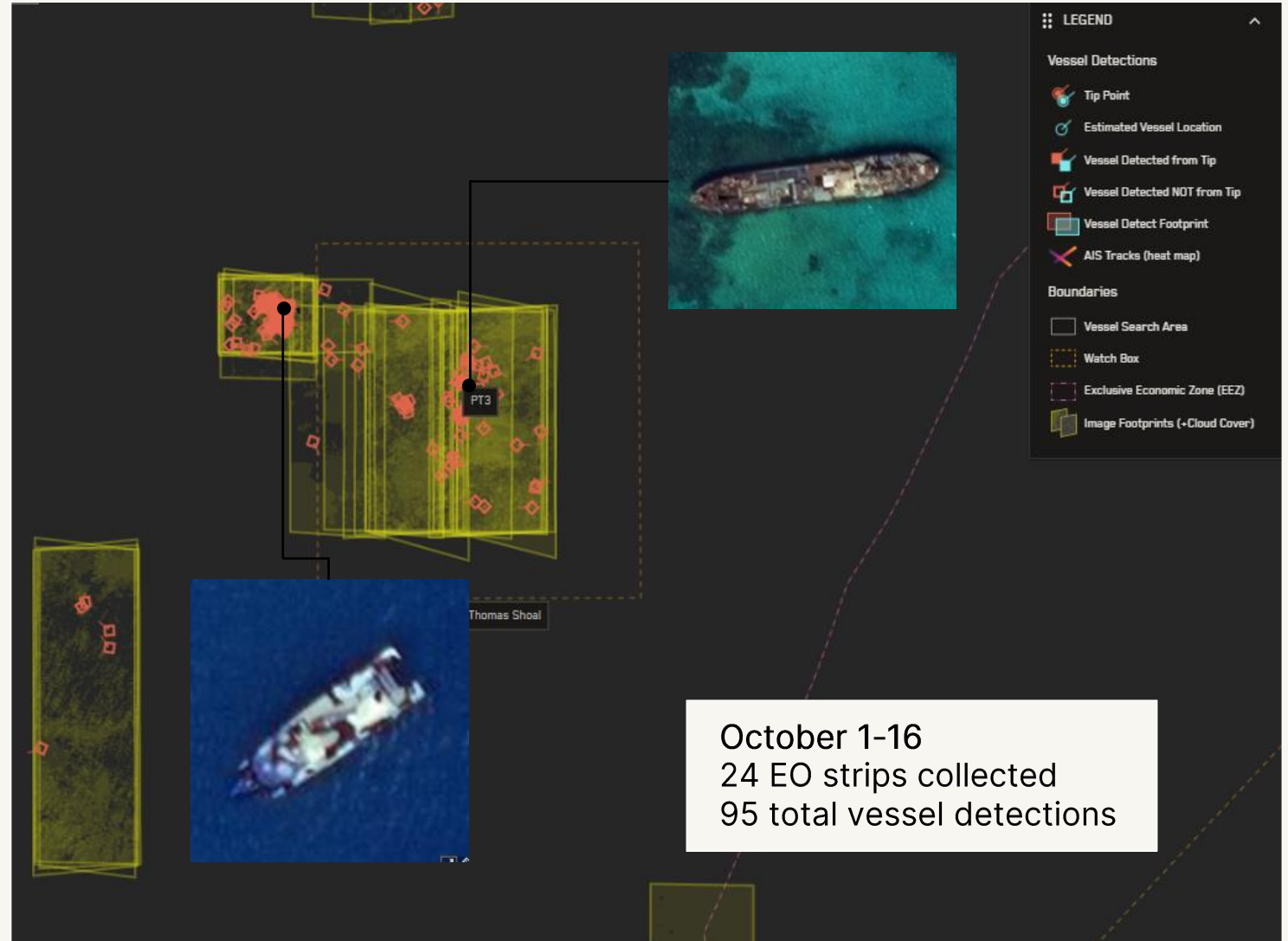
	EO	AIS
Type	Dredging	Cargo Ships, Carrying DG, HS, or MP, IMO hazard or pollutant category X
Length (m)	400	399
Width (m)	60.9	56
Speed (kts)	--	--
Heading	329.5°	296°

Watch boxes for Vessel Detections

How do Watchboxes work?

Anytime Vantor collects an image on any satellite, regardless of purpose or customer, if that image intersects the Watchbox, the system will automatically process that image for vessel detections and deliver to end user.

- Passive means to receive vessel detections without needing to directly task for imagery or have an active ruleset.
- Ideal alternative to receiving EO vessel detection data over locations where demand for Vantor imagery is high and direct tasking requests are intermittently successful
- Vessel detection data derived from Watchbox delivered in near real-time.

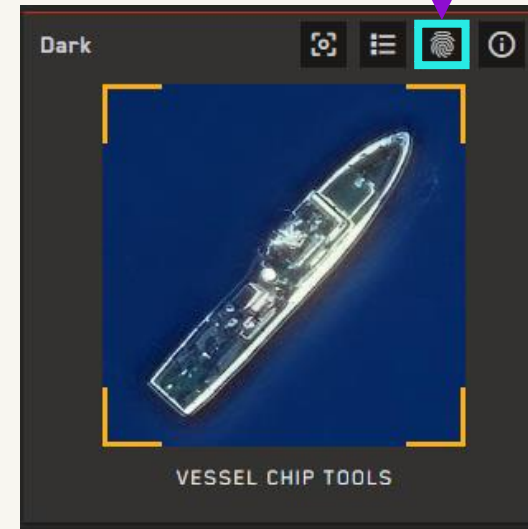


Maritime Sentry: Vessel Fingerprinting Overview

- Query **~1.3 million+** detections in Vessel Capture Record Database (VCRD) using command in app
- Vessel Fingerprinting takes advantage of two Vantor EO imagery differentiators:
 1. Industry-leading resolution
 2. 250+ PB archive of imagery
- Both correlated and non-correlated (“dark”) vessel detections probed for matches
- Ability to export results to zip file or email for external analysis
- VCRD automatically updated with each new vessel detection generated.

1. Query VCRD

Executes search to find optical matches of probe vessel in VCRD.



2. View Results

List of possible matches with corresponding confidence scores based on algorithmic calibration. Matches can be viewed on the map.



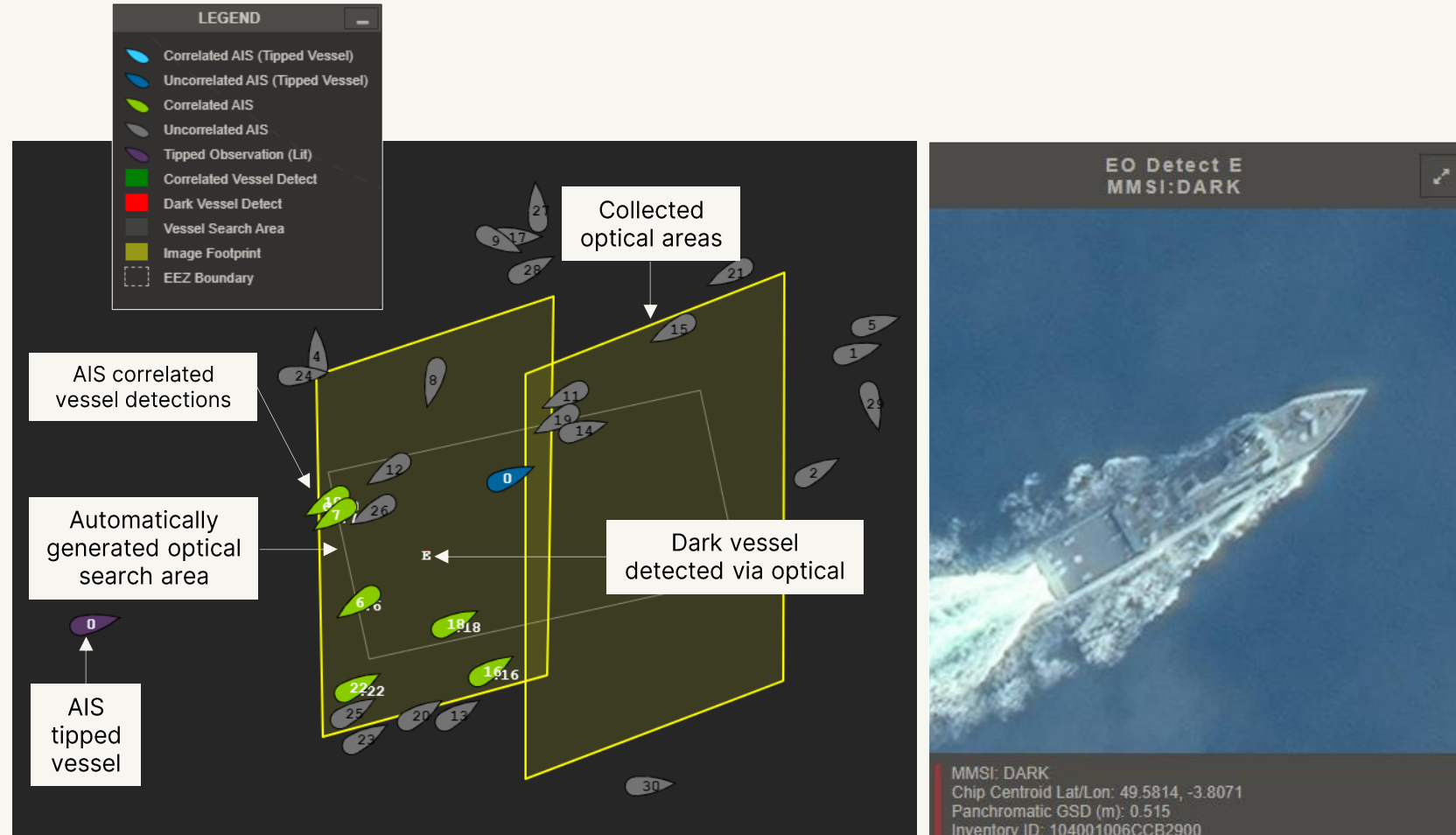
AIS-to-EO Tipping Ruleset

Completely customizable rulesets based on AIS vessel attributes:

MMSI or IMO	Vessel Flag
Vessel Dimensions	Vessel Call Sign
Vessel Types	Vessel Speed
Vessel Name	Vessel Heading

A single ruleset can:

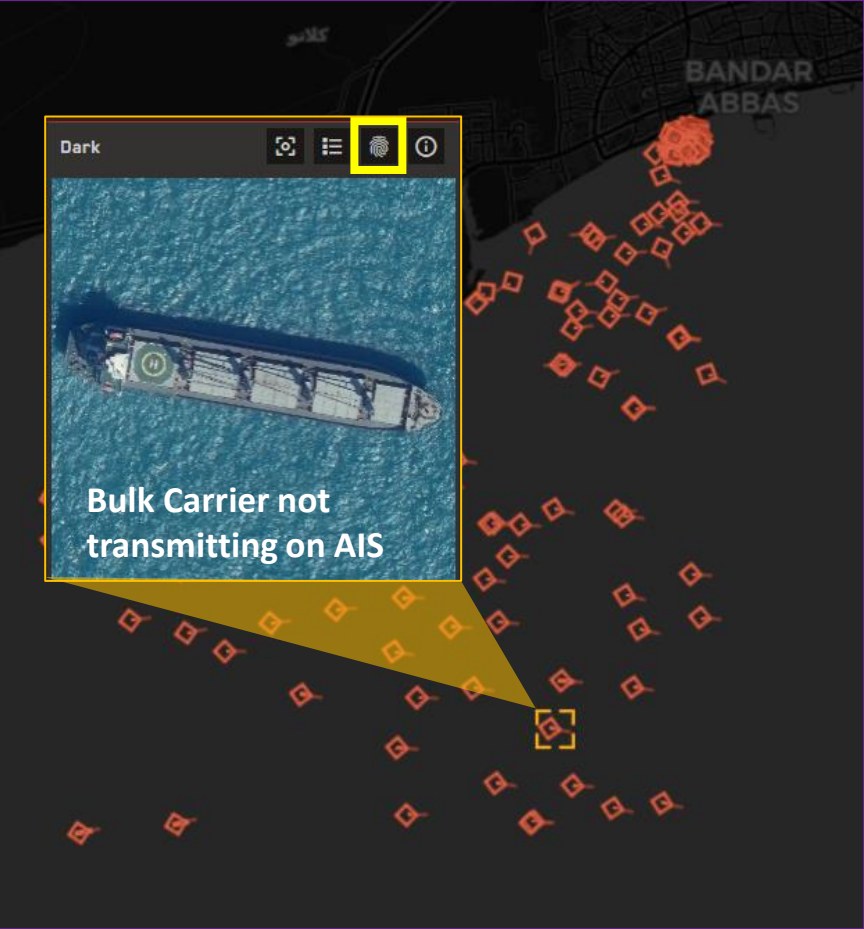
- Contain multiple vessel targets to monitor
- Be constrained to only tip within defined areas



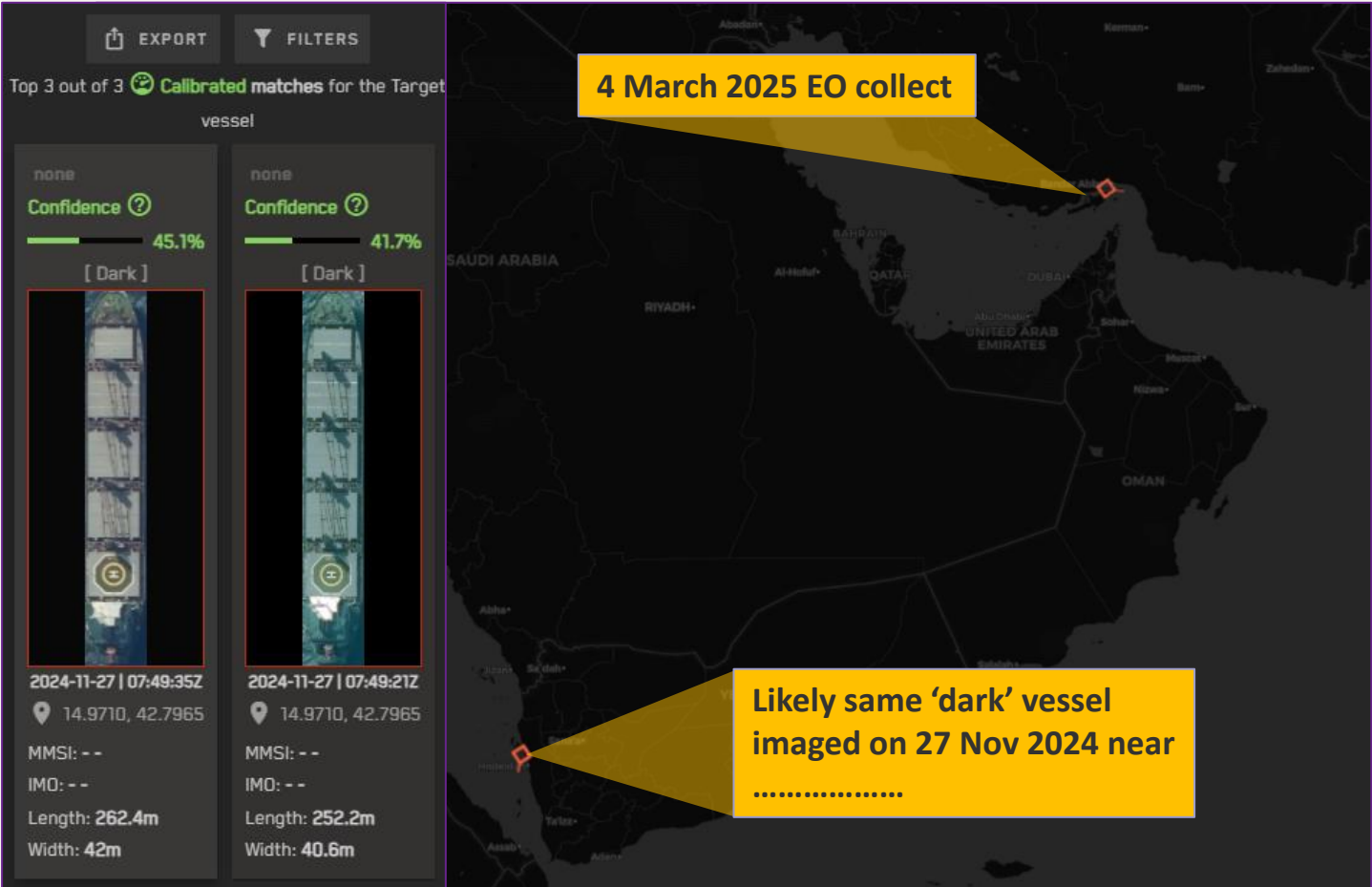
Real World Application of Vessel Fingerprinting

Exhibit A

1. 04 March 2025 (WV3):.....



2. Fingerprinting Match of Vessel in -----on 27 Nov 2024



Vessel Fingerprinting Use Case: Show a relationship between two locations based on the presence of the same 'dark' vessel. In this case, the vessel is possibly involved with smuggling between and

