Skylight in IORIS

Presented to the MCG Meeting, Kenya

28 Feb 2025

Presented by
Elie El Sayah

MOVING FROM SITUATIONAL AWARENESS TO SITUATIONAL UNDERSTANDING AND ACTION

CRIMARIO II
INTERCONNECTING THE INDO-PACIFIC

The Skylight API

Skylight offers an application programming interface (API) to agencies that want to analyze Skylight data on the same screen as another application.

The integration of this API in IORIS:

- Enabled real-time **Skylight data access** in IORIS.
- Integrated **vessel tracking and detections**.
- **Overlaid** Skylight data with IORIS markers, AIS layer and Messages.
- Ensured secure data exchange within IORIS community Areas.
- Provided a **unified** operational picture on one Regional Map.

ON SKYLIGHT

Last Refreshed 19 Minutes Ago Refresh now

SKYLIGHT
A product of Ai2

Search for vessel

Notifications My Skylight

Areas Events (1) Filters (0) Clear

Past 24 Hours Reset Events List

TOREX

AIS Correlated Vessel Detection

TOREX

Barbados

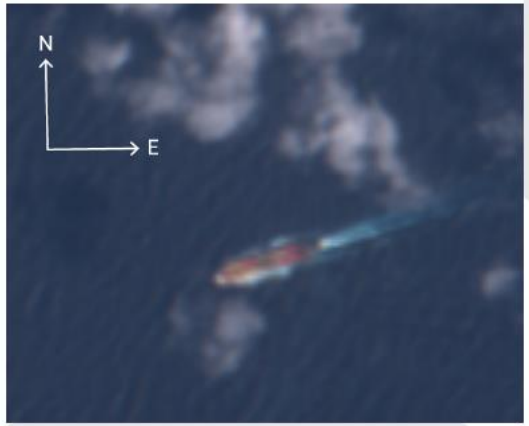
MMSI	314981000
Vessel Type	Tanker
IMO	9257814
Length	246 M

Event History

8 AIS Correlated Vessel Detection Events

Type

Optical Imagery



Bayhan
Dhamar
Nisab
Ataq
Al Jawf
Shihr
Mukalla
Ibb
Al Bayda
Mudiyah
Al Mahfid
Yemen
Ad Dala
Rasad
Izz Mawiyah
Ar Rahidah
Ahwar
Ja`ar
Lahij
Yemen
Yemen
Gulf of Aden
Alula
Qandala
Bosaso
Bargal
Las Khurey
Lughaya
Badhan
Erigavo
Berbera
Iskushuban
Hafun

Tracks Legend

7.56° E Lat, Lon:: 12.8591, 57.2021

30 nm

9:00 PM 10:00 PM 11:00 PM 12:00 AM 1:00 AM 2:00 AM 3:00 AM 4:00 AM 5:00 AM 6:00 AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM 5:00 PM 6:00 PM 7:00 PM 8:00 PM

CRIMARIO II
INTERCONNECTING THE INDO-PACIFIC

IORIS 27 February 2025 UTC 22:12:33 Local Time 17:12:33 | English | Home | Notifications 0 | Admin | Help | Chat | User Directory | Maritime Directory | My Tools | Log Off

Indian Ocean Hub | Area Admin | About | Contacts | Area Tools

Regional Map 29%

Marker Source Filters
- Custom Markers
- Collaboration Center Markers
- Imported Markers
- Custom Form Markers

Marker Type Filters

Map Layers
- Base Layer: Standard
- Overlay Nautical Map
- Show EEZ Layer
- Draft Markers
- AIS Layer
- AIS Trace Layer

AIS Data Filters

Skylight Layers

Marker Time Filters

Range Indicators

Yemen, Sana', Aden, Gulf of Aden, Berbera, Bosaso, Qandala, Bargal, Aluula, Hafun, Badhan, Erigavo, Las Khorey, Iskushuban, Qardho, Bayla, Qalansiyah, Shihr, Sayhut, Haswayn, Nishtun, Qishn, Ar Raydah As Sharqyah, Ad Dale'ah, Huraydah, Say'un, Marib, Al Madid, Jihanah, Bayhan, Nisab, `Ataq, Al Jawl, Al Mahfid, Mudiyah, Al Bayda, Ad Dala, Rasad, Ahwar, Ja`ar, Lahij

Cursor Position: 16.07453 / 53.92481

TOREX

AIS Correlated Optical Imagery

Event Date/Time
2025-02-27 T 07:26:30 GMT
Lat, Lon: 13.0490, 48.5707

TOREX
Barbados

MMSI	314981000
Vessel Type	Tanker
IMO Number	9257814
Length	246 m

© 2025 - BCN Group (Build Number: 20250122.1)

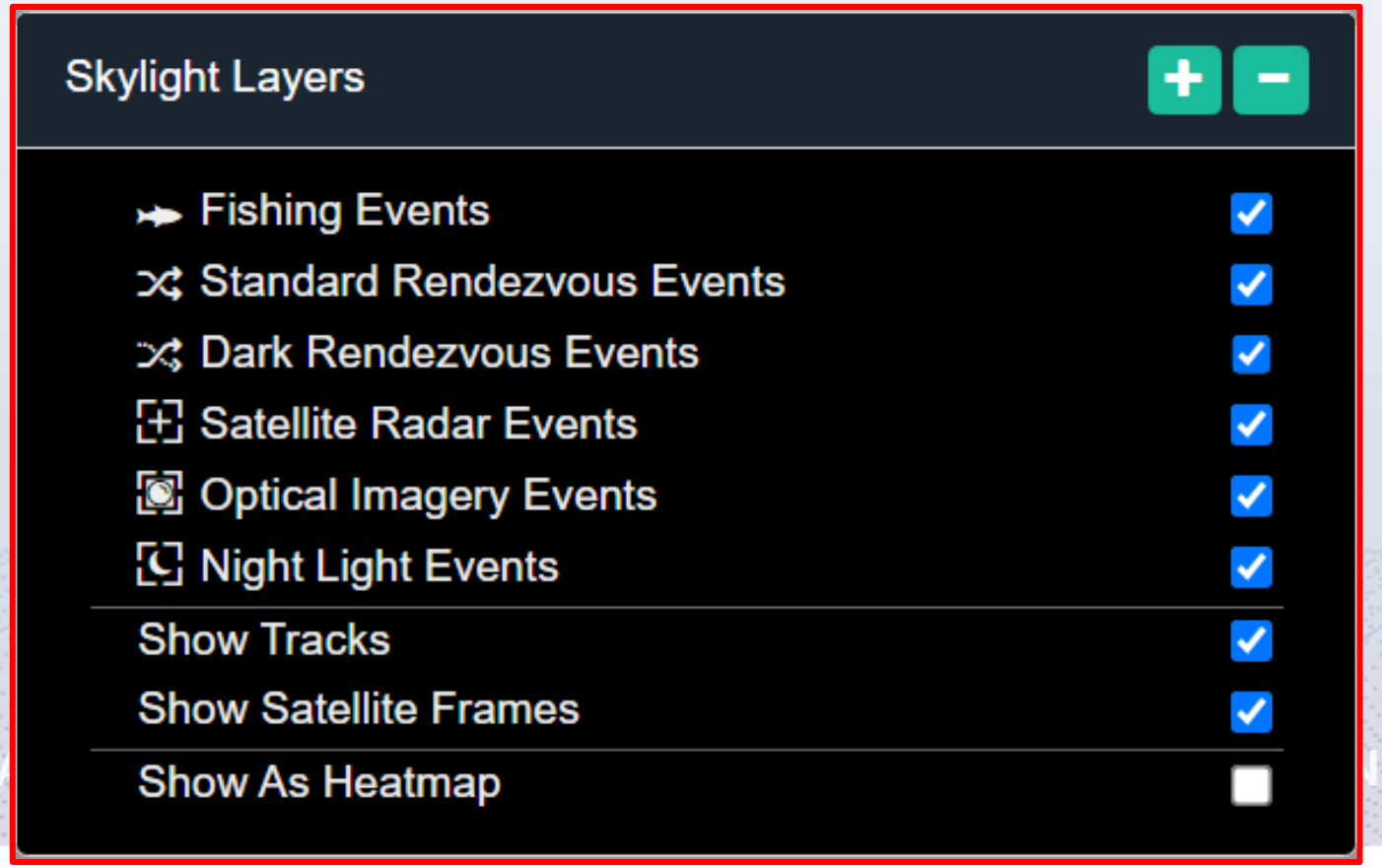
CRIMARIO II INTERCONNECTING THE INDO-PACIFIC

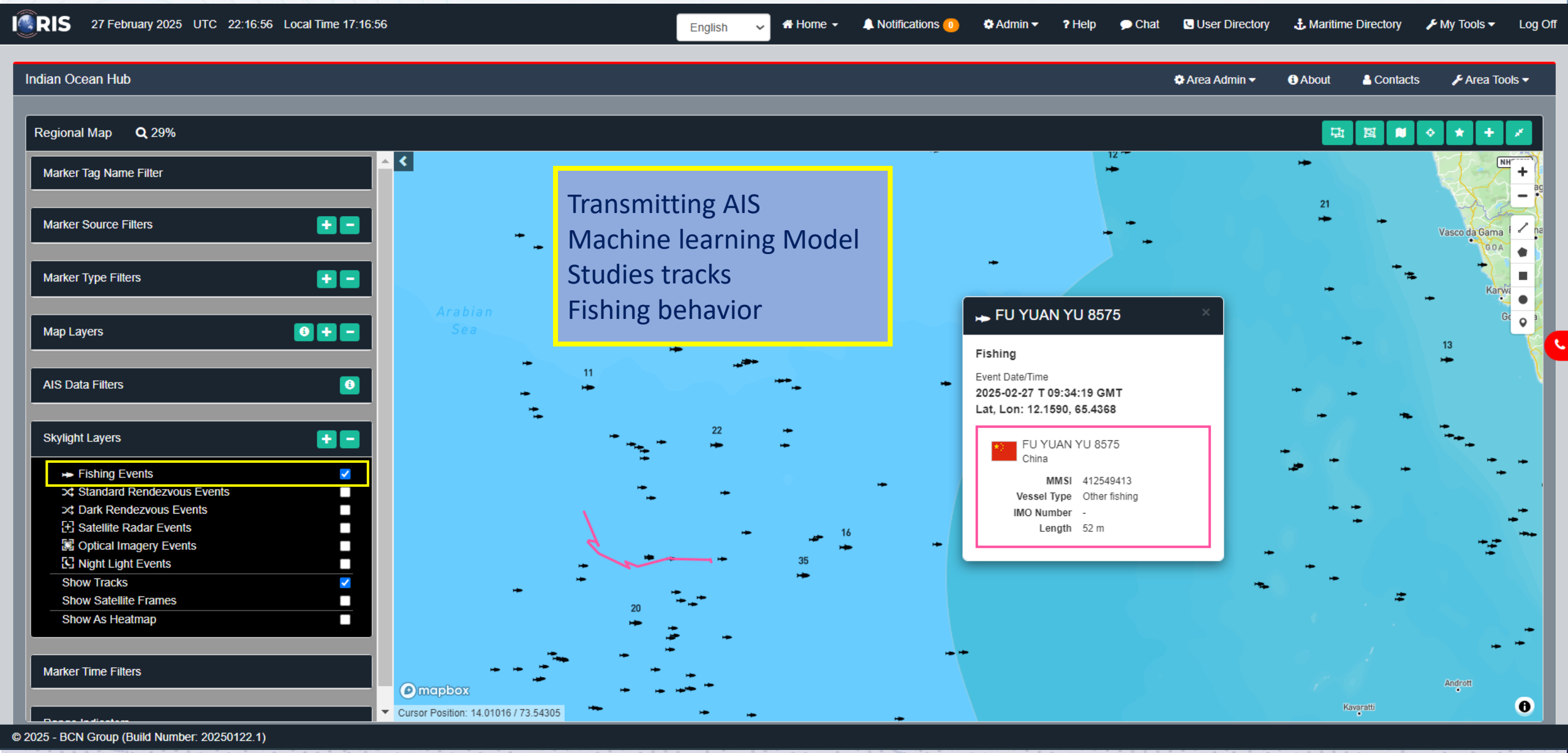
ON IORIS

Fusing Skylight and IORIS

What do we integrate the data in the current API?

Skylight Events:



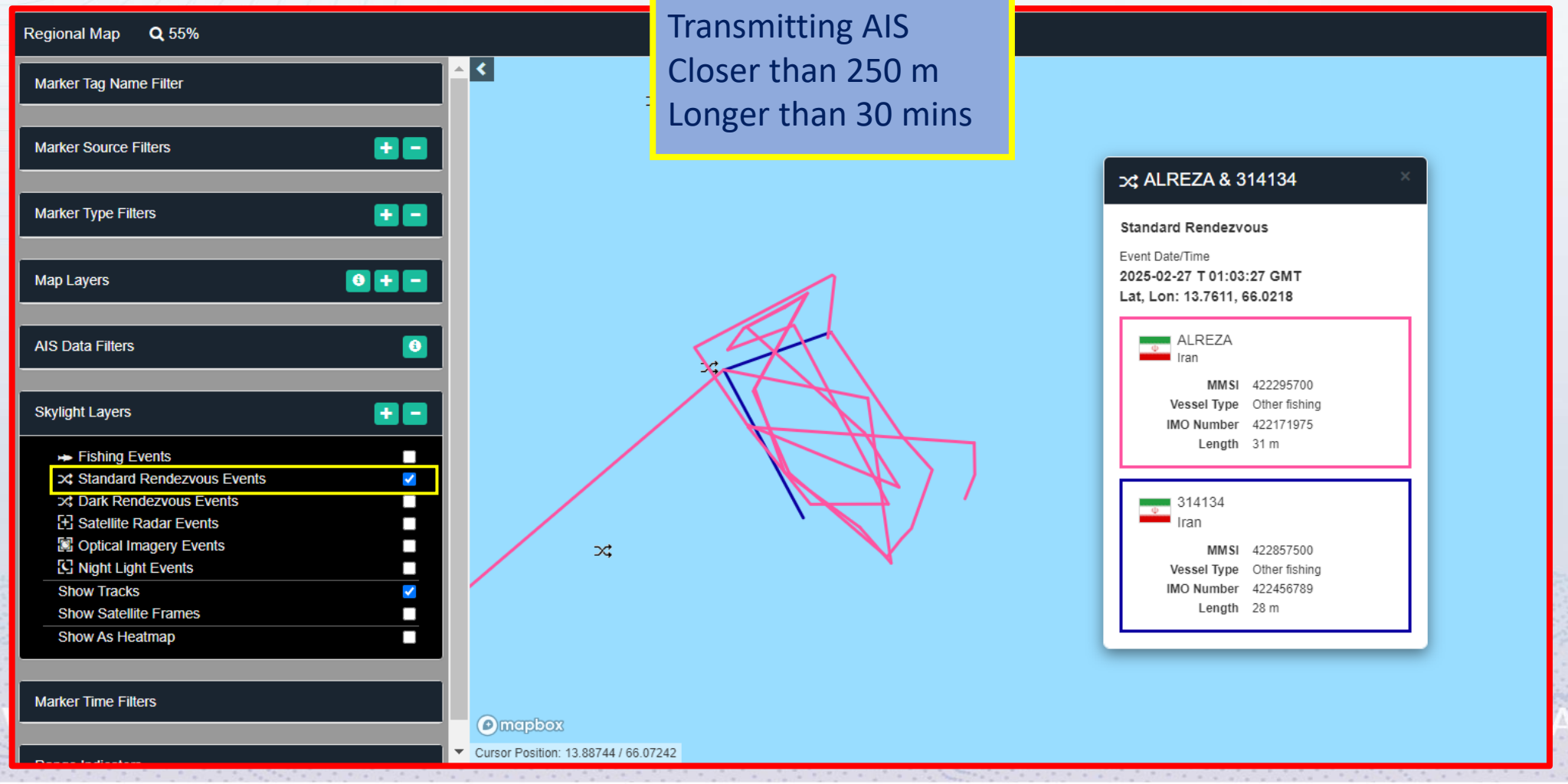


CRIMARIO II
INTERCONNECTING THE INDO-PACIFIC

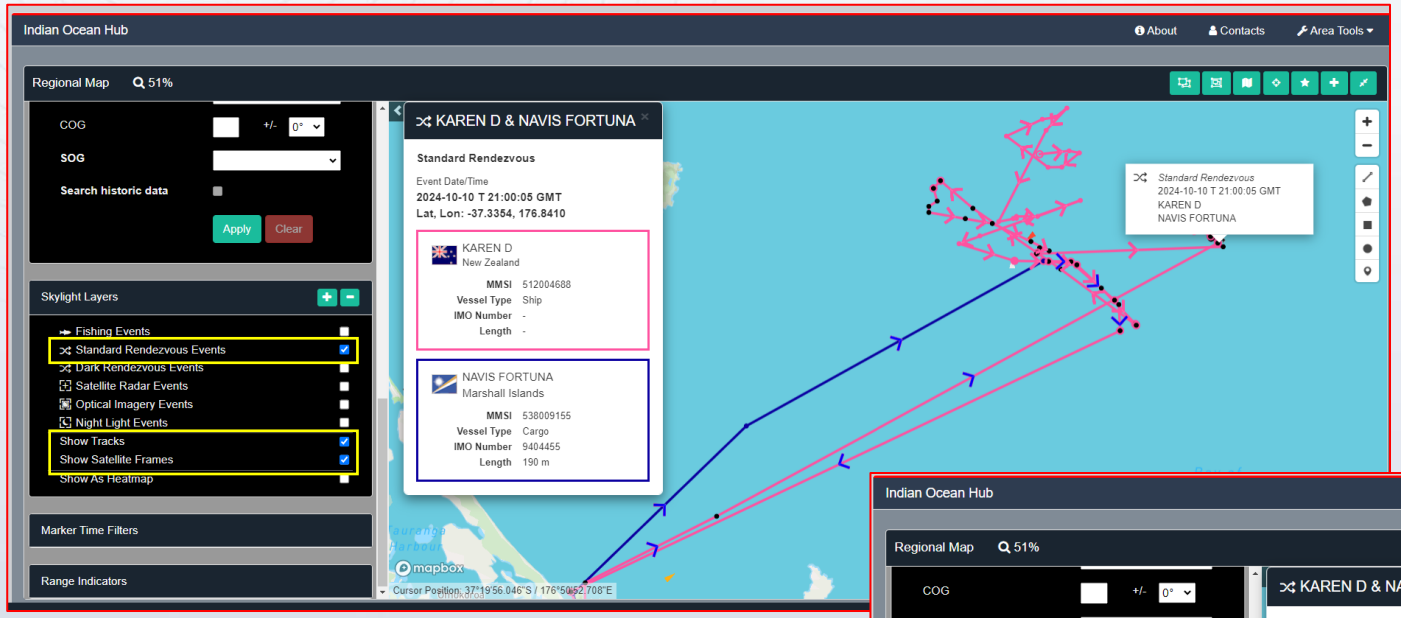
Fishing Events

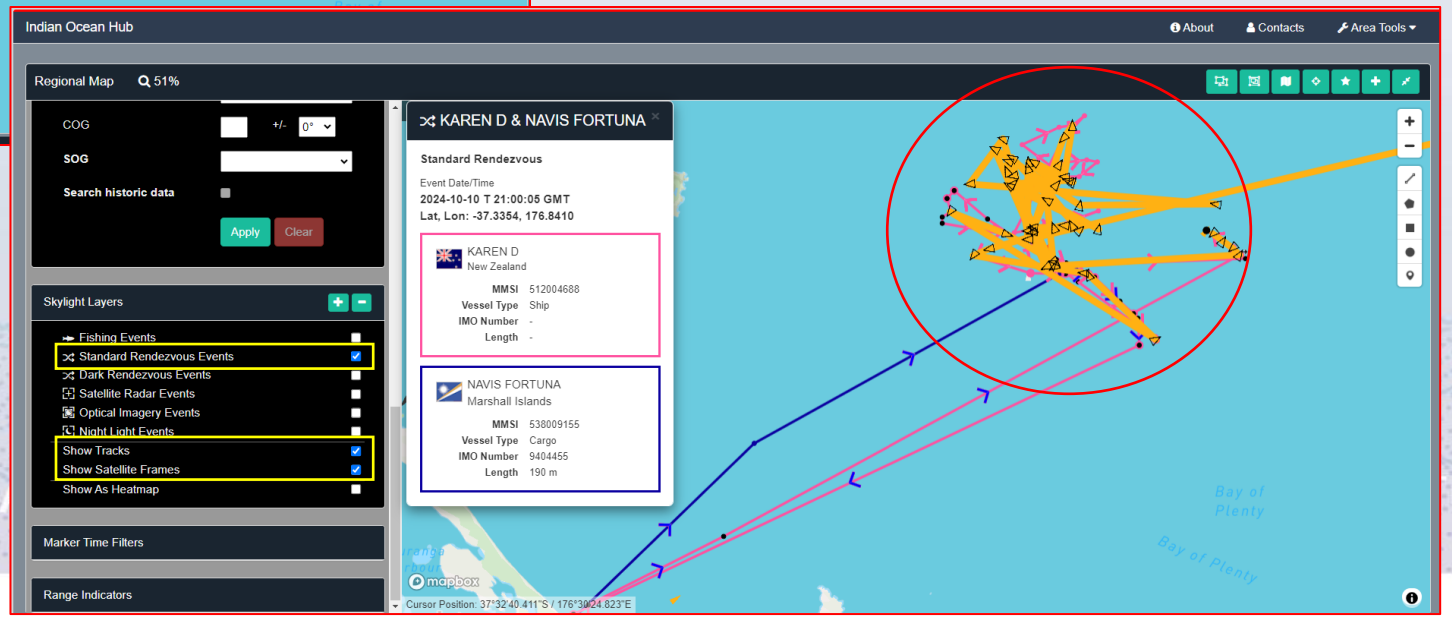
Standard Rendezvous

2 Vessels
Transmitting AIS
Closer than 250 m
Longer than 30 mins

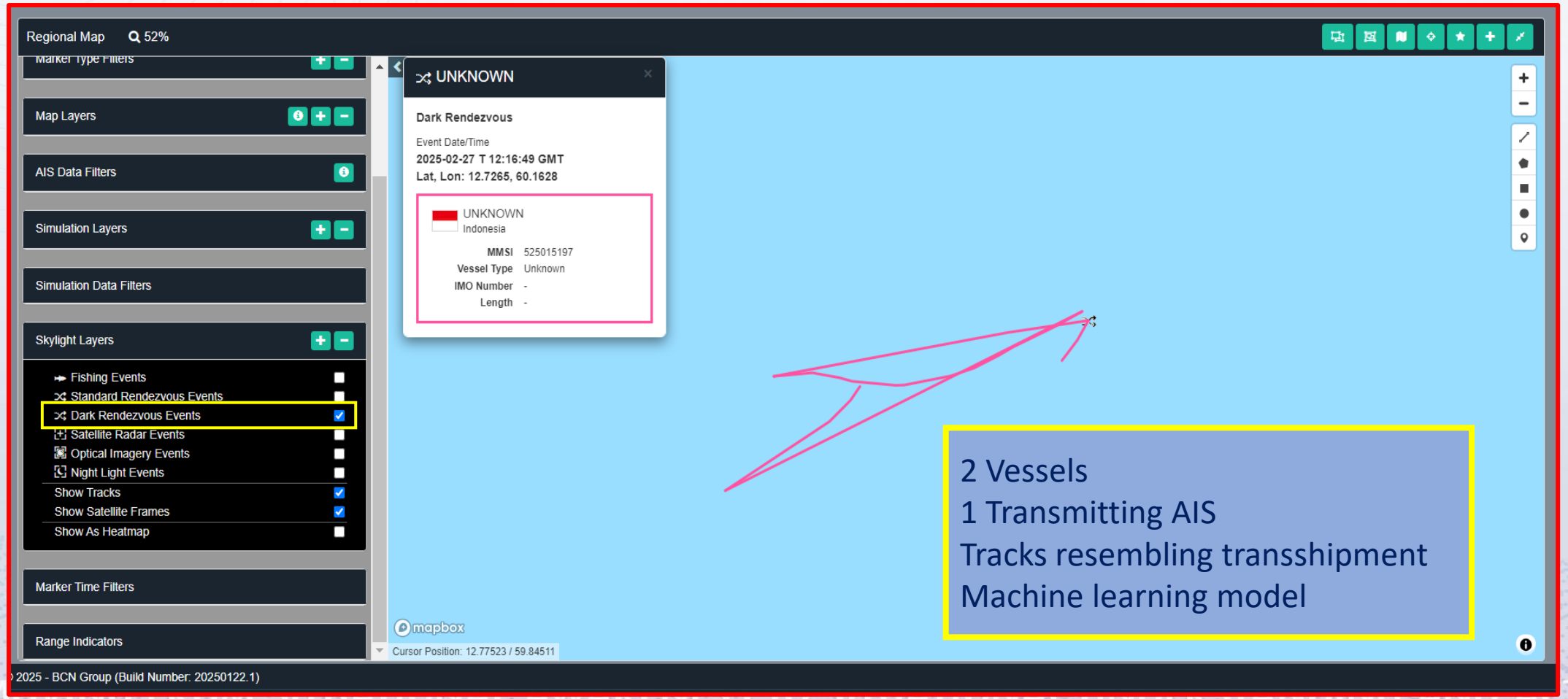


Standard Rendezvous



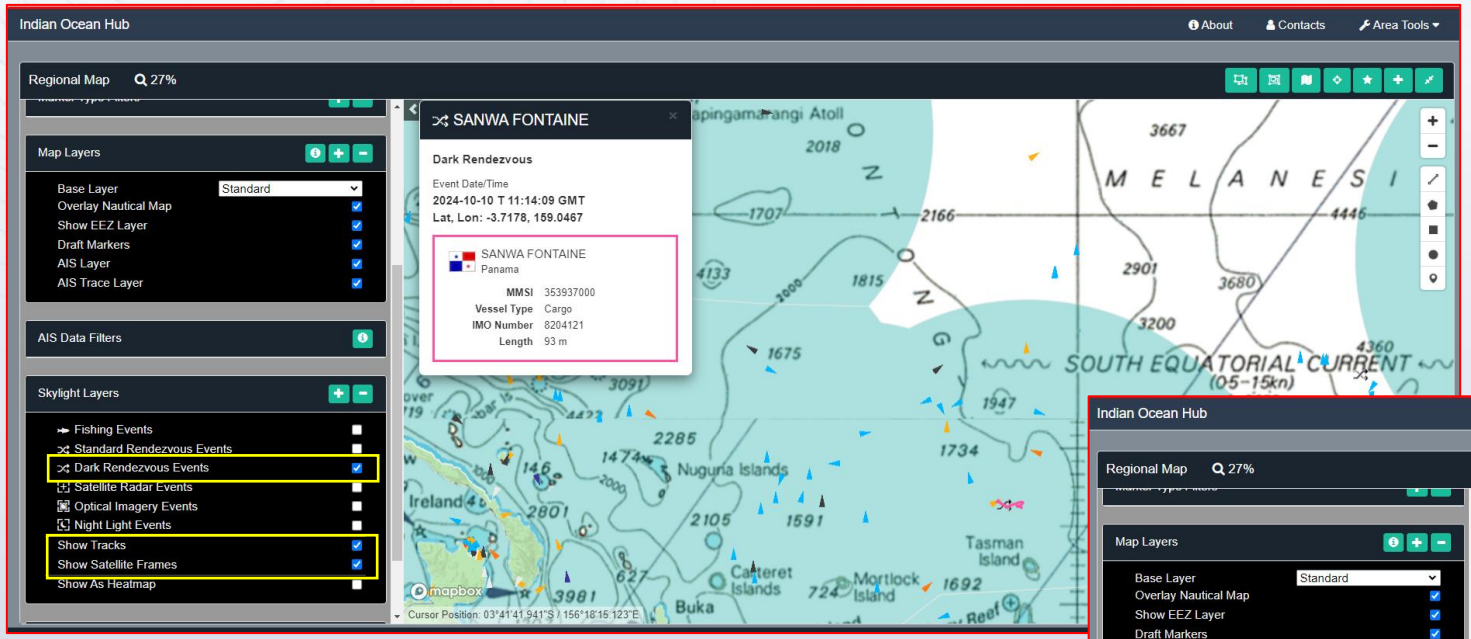


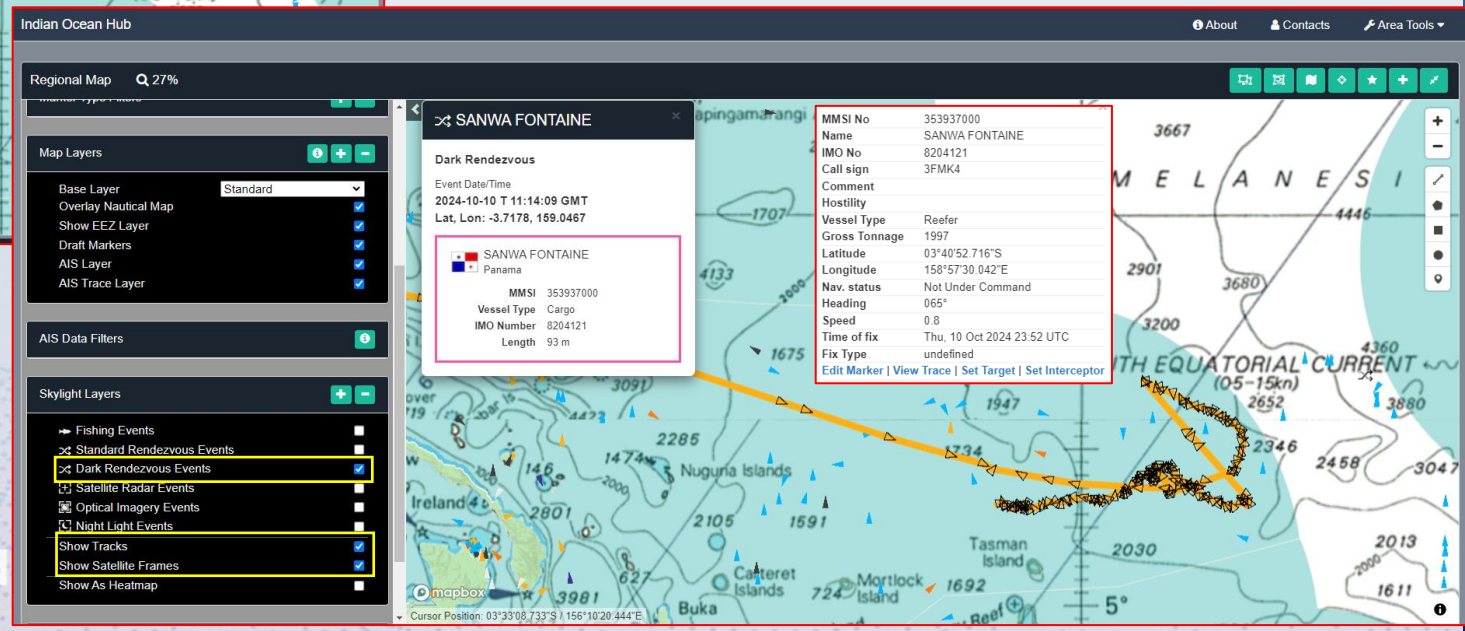
Dark Rendezvous



2 Vessels
1 Transmitting AIS
Tracks resembling transshipment
Machine learning model

Dark Rendezvous





MOVING FROM SITUATIONAL AWAREN

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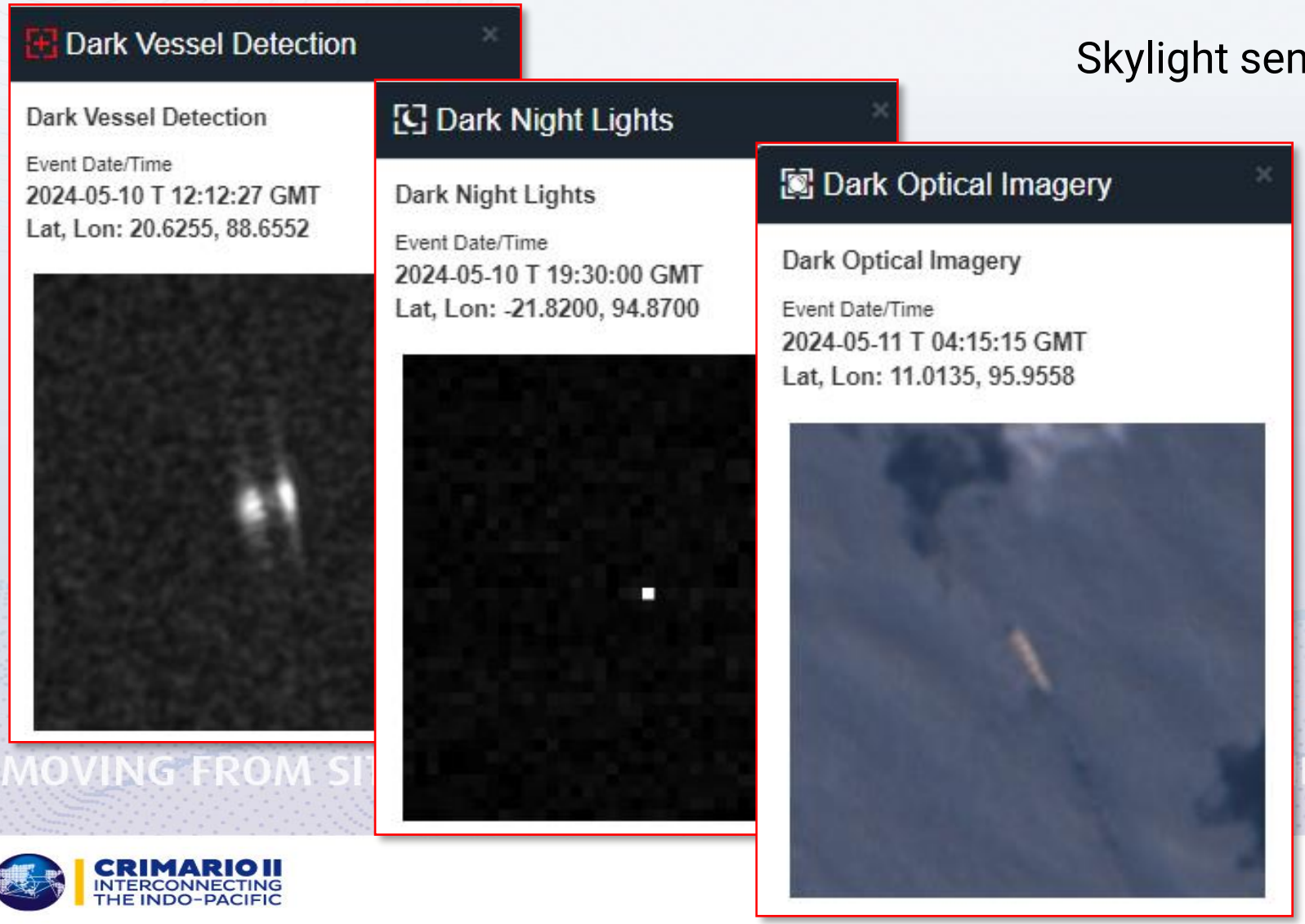
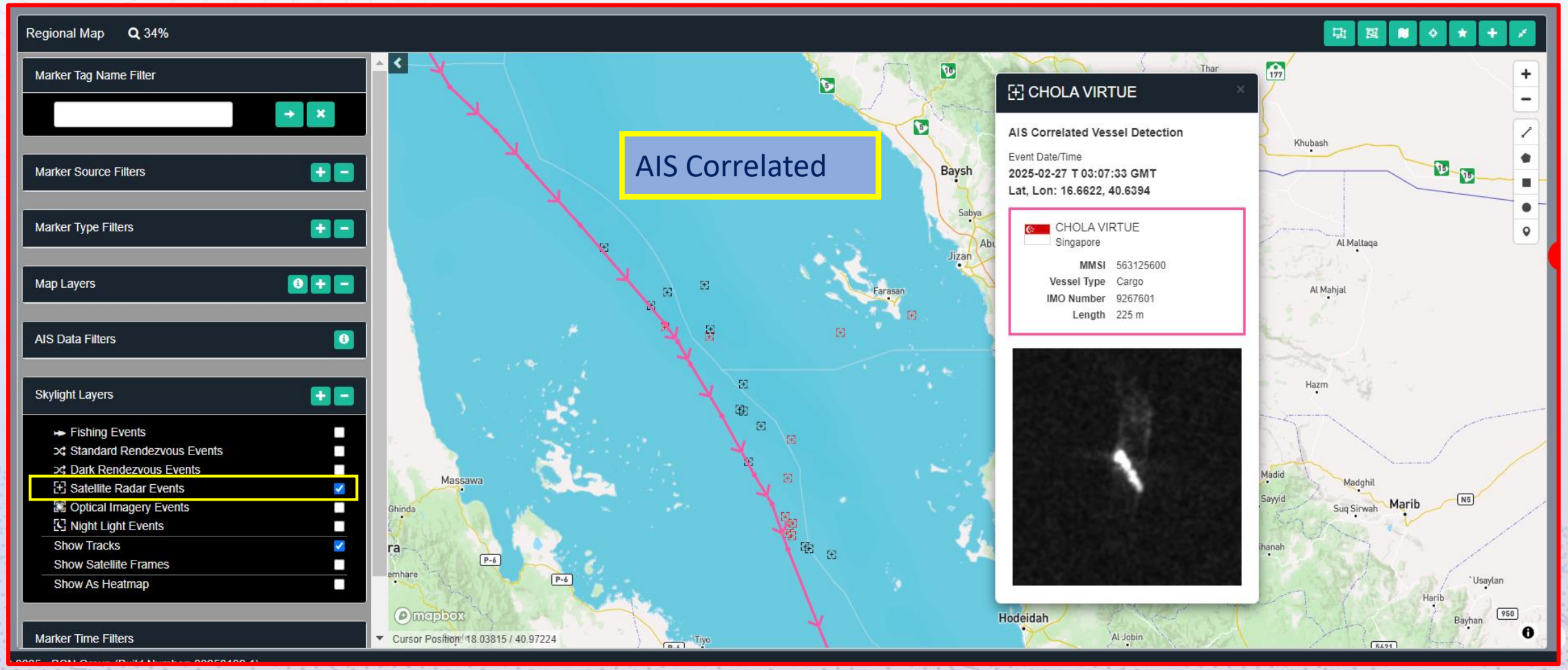
Skylight Sensor Sources



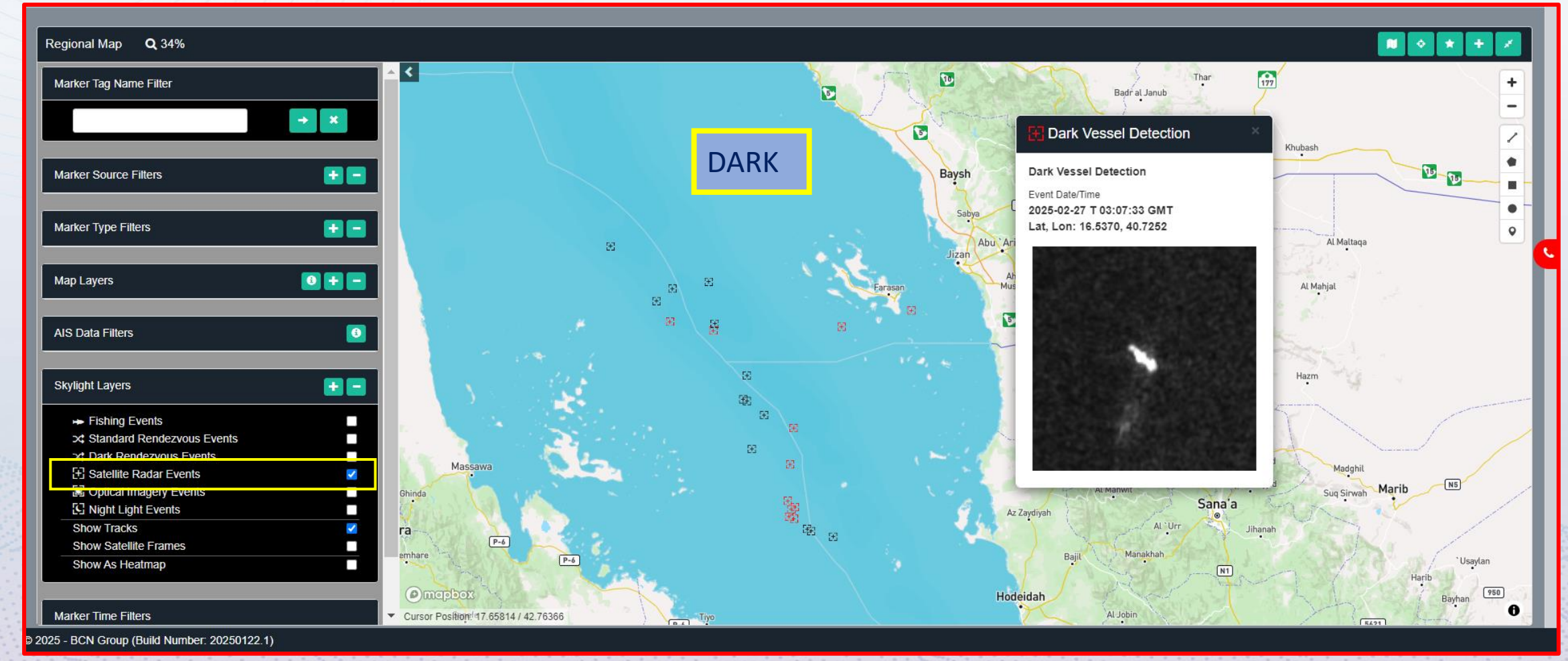
Skylight sensor data available within IORIS:

- Sentinel-1;
- Sentinel-2; and
- VIIRS - Night Lights

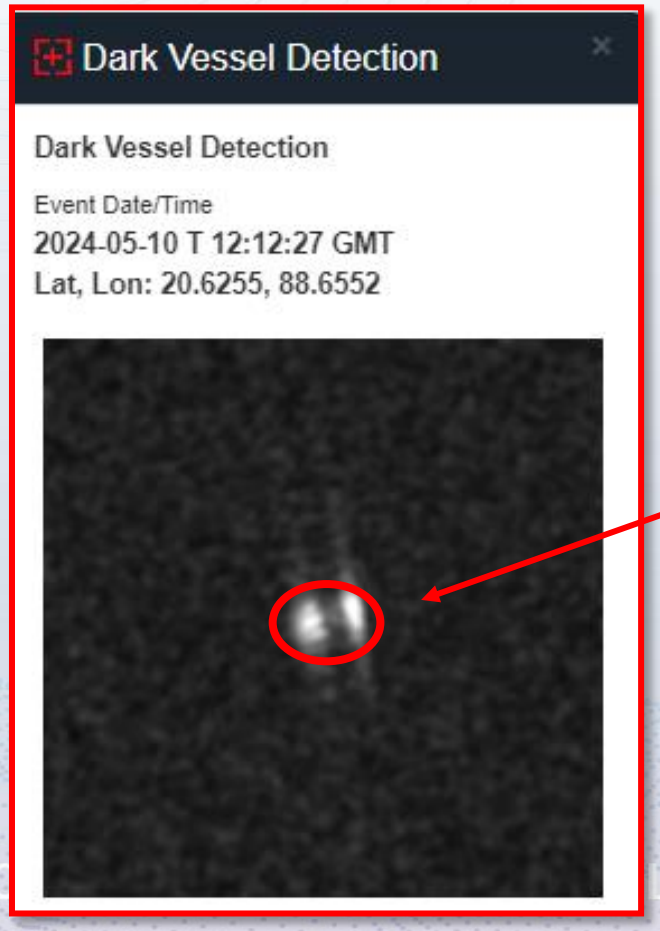
SAT RADAR Event



SAT RADAR Event



SAT RADAR Event

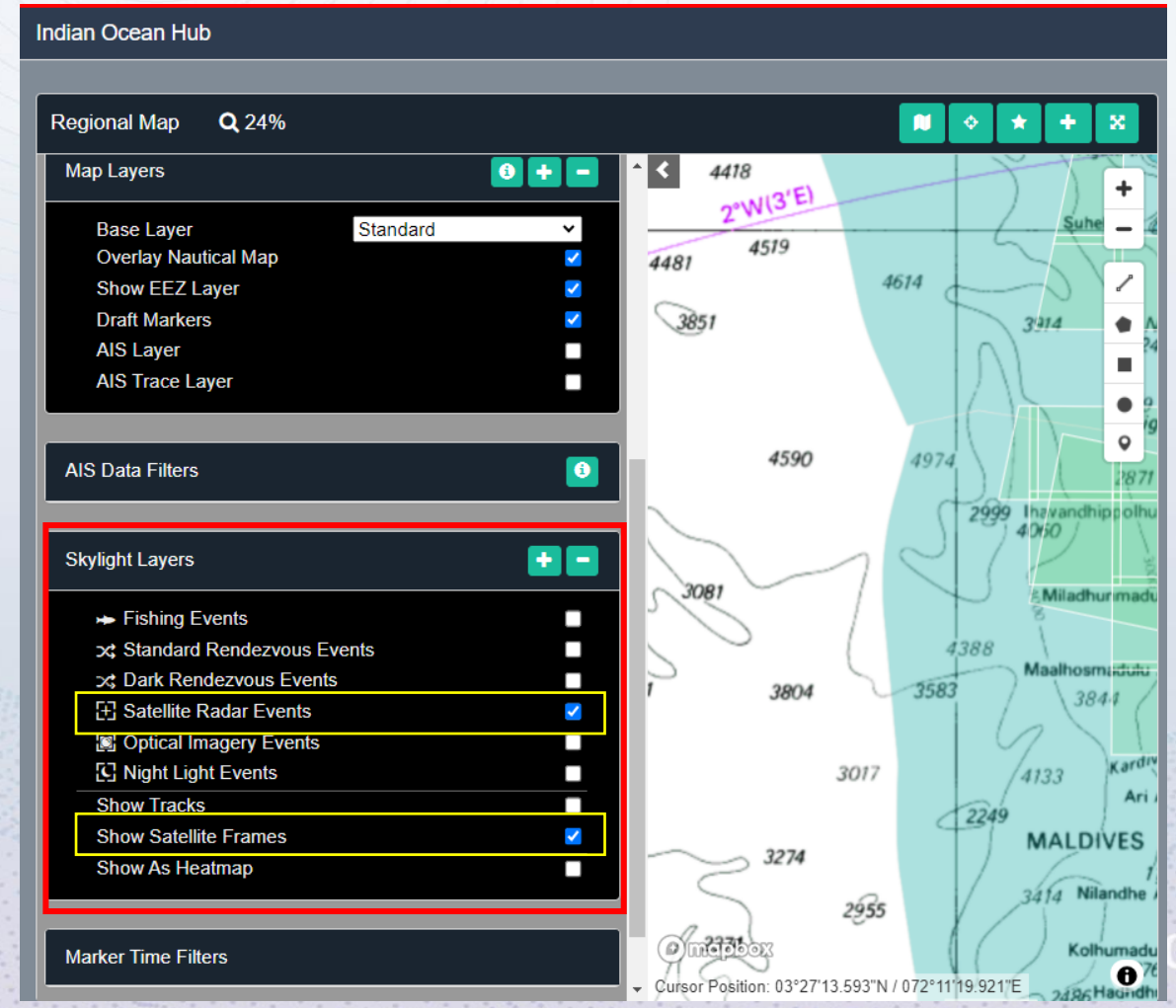


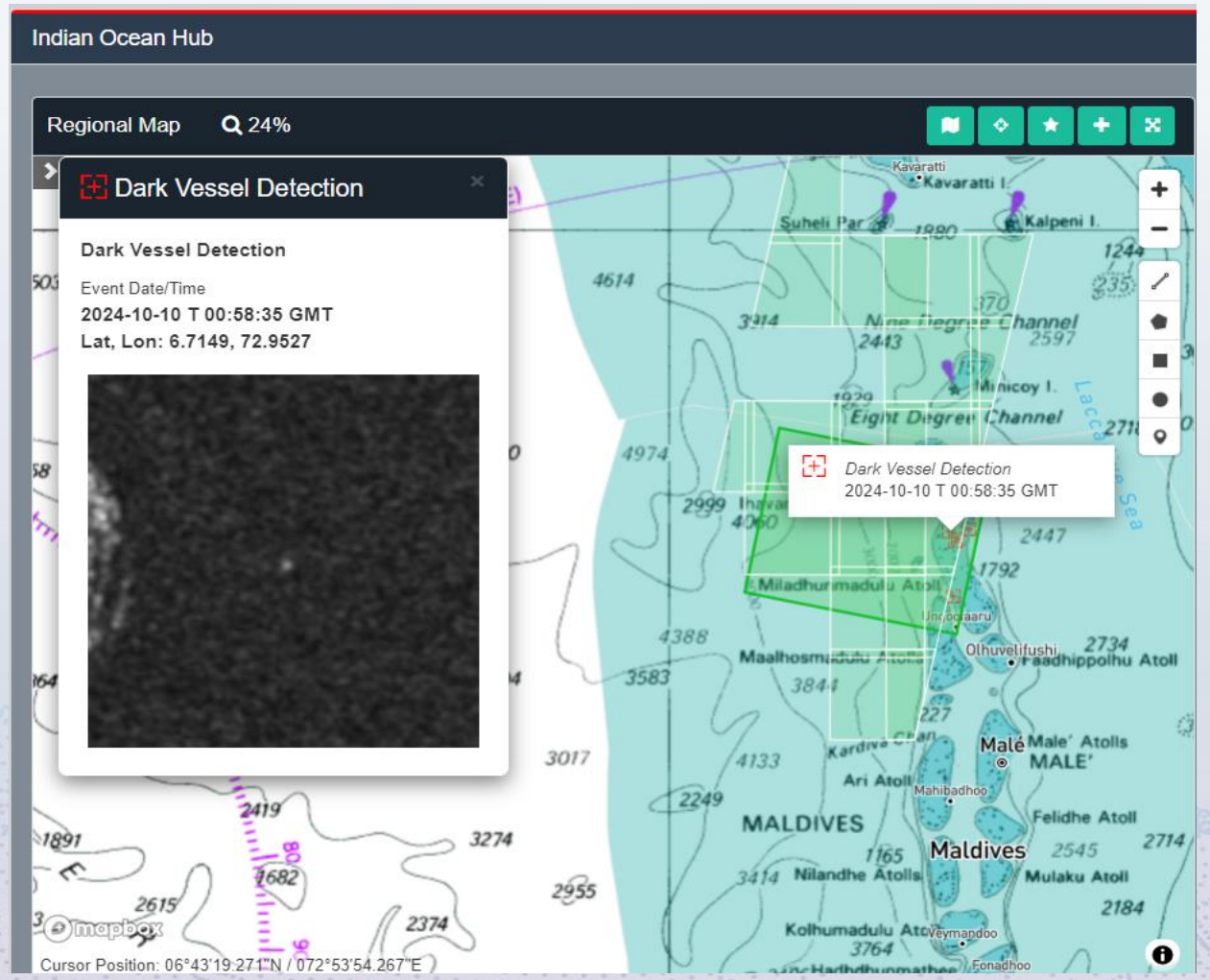
Sentinel-1 is a Synthetic Aperture Radar (SAR), providing continuous all-weather, day-and-night imagery.

SAR bounces a microwave radar signal off the earth's surface.

Rough surfaces appear brighter, as they reflect the radar in multiple directions.

SAT RADAR Event





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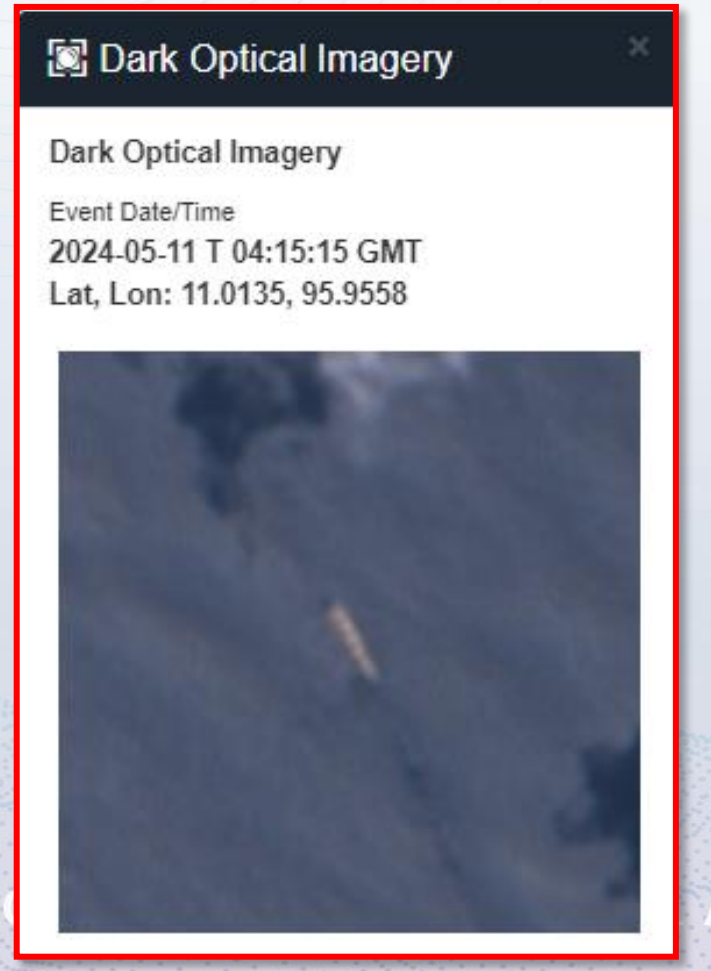
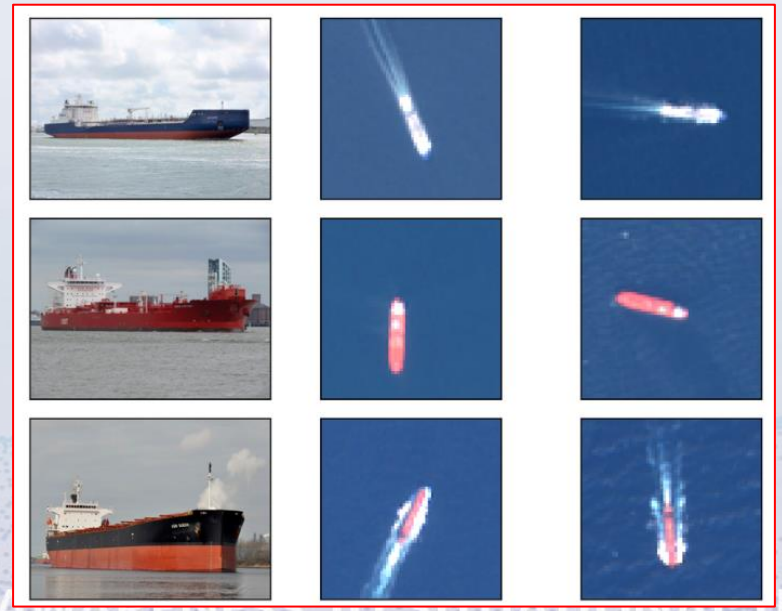
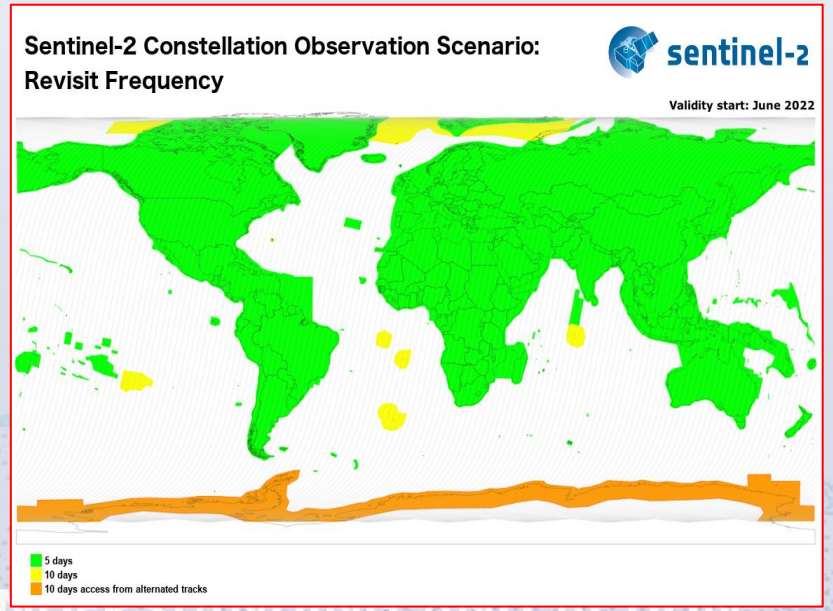
Optical Imagery

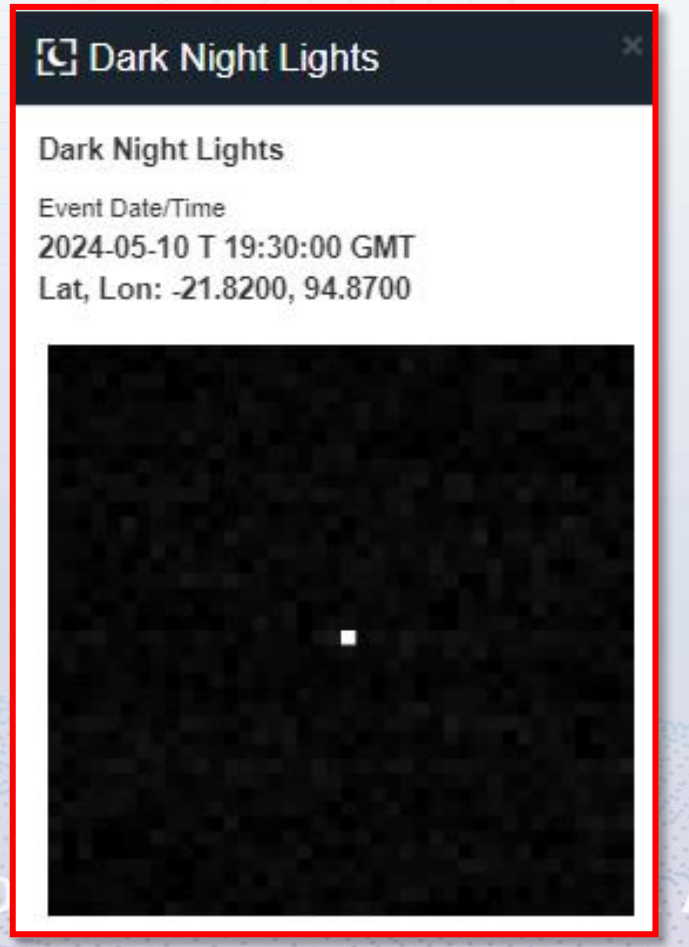


Sentinel-2 is an optical satellite constellation consisting of two Satellites.





Night Lights



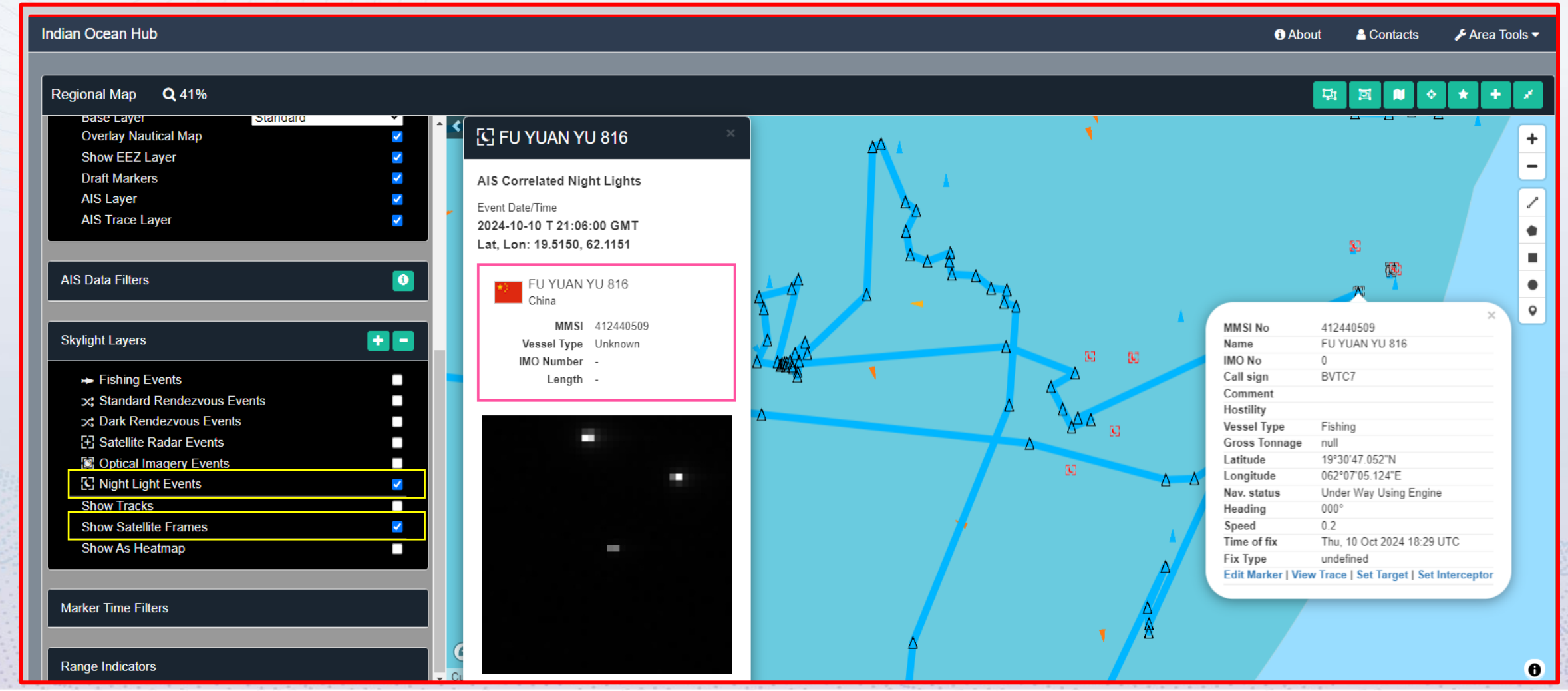
Night Lights uses the data based on the Visible Infrared Imaging Radiometer Suite (**VIIRS**)

Night only capability – 01:00 – 04:00

Weather dependent

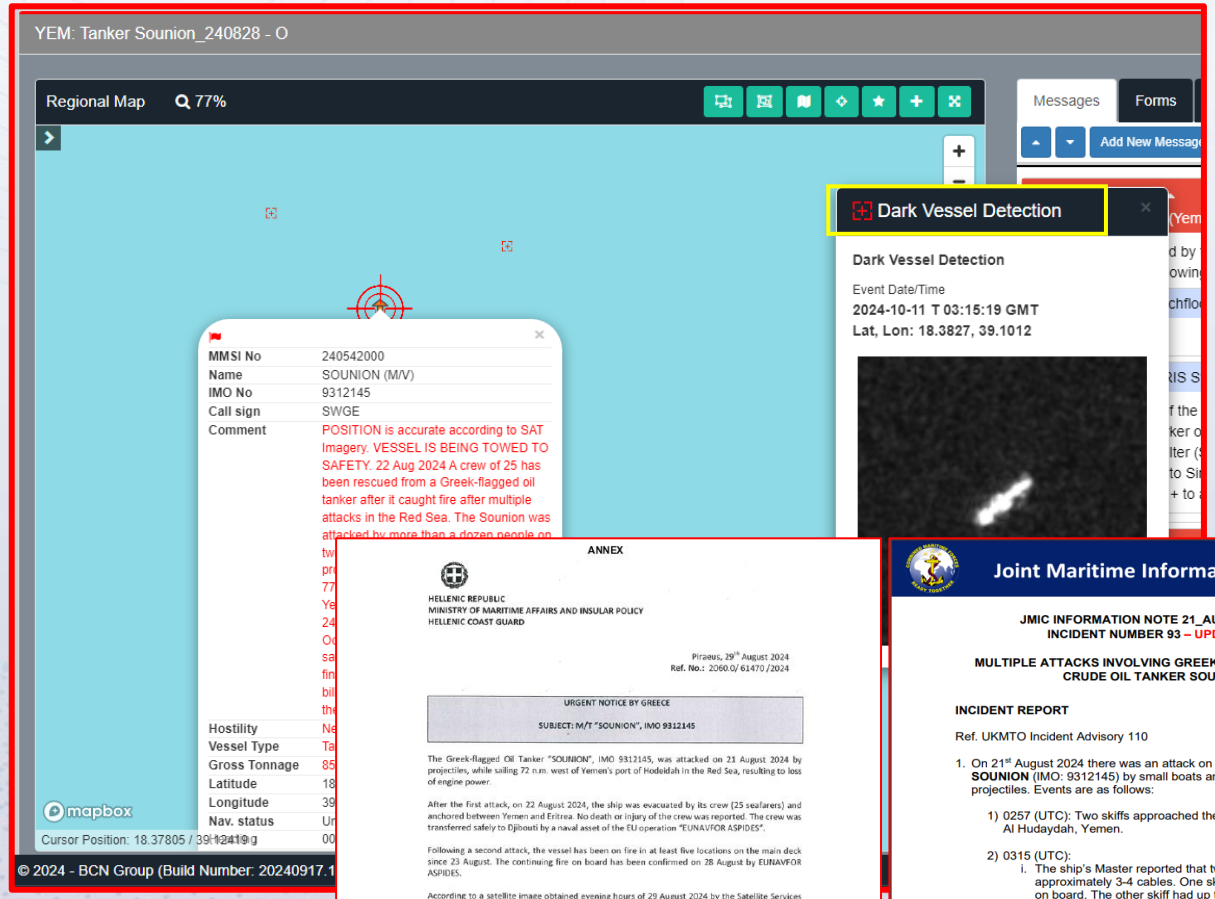
Focusing on vessels that use light

Night Lights



ST Sounion

Operational Use



ANNEX

HELLENIC REPUBLIC
MINISTRY OF MARITIME AFFAIRS AND INSULAR POLICY
HELLENIC COAST GUARD

Piraeus, 29th August 2024
Ref. No.: 2060.0/ 61470 /2024

URGENT NOTICE BY GREECE

SUBJECT: M/T "SOUNION", IMO 9312145

The Greek-flagged Oil Tanker "SOUNION", IMO 9312145, was attacked on 21 August 2024 by projectiles, while sailing 72 n.m. west of Yemen's port of Hodeidah in the Red Sea, resulting to loss of engine power.

After the first attack, on 22 August 2024, the ship was evacuated by its crew (25 seafarers) and anchored between Yemen and Eritrea. No death or injury of the crew was reported. The crew was transferred safely to Djibouti by a naval asset of the EU operation "EUNAVFOR ASPIDES".

Following a second attack, the vessel has been on fire in at least five locations on the main deck since 23 August. The continuing fire on board has been confirmed on 28 August by EUNAVFOR ASPIDES.

According to a satellite image obtained evening hours of 29 August 2024 by the Satellite Services of European Maritime Safety Agency (EMSA), a potential spill of about 2.2 n.m. length has been detected. The position of the oil spill matches with the location of the ship.

Under the said circumstances, the condition of the tanker, which carries 150,000 tons of crude oil, poses a serious environmental hazard for the Red Sea marine environment.

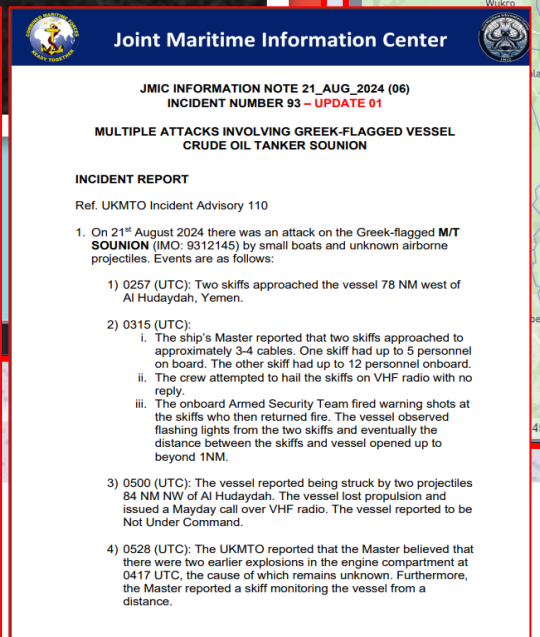
Greece urges all nations and all actors involved to assist in preventing the environmental hazard and resolving the situation the soonest possible.

This information is submitted pursuant to Article 198 of the United Nations Convention on the Law of the Sea (UNCLOS).

It is kindly requested to disseminate the present notice to all IMO Member States.

THE DIRECTOR GENERAL FOR SHIPPING

REAR ADMIRAL H.C.G.
LAGADIANOS NIKOLAOS



Joint Maritime Information Center

JMIC INFORMATION NOTE 21_AUG_2024 (06)
INCIDENT NUMBER 93 – UPDATE 01

MULTIPLE ATTACKS INVOLVING GREEK-FLAGGED VESSEL CRUDE OIL TANKER SOUNION

INCIDENT REPORT

Ref. UKMTO Incident Advisory 110

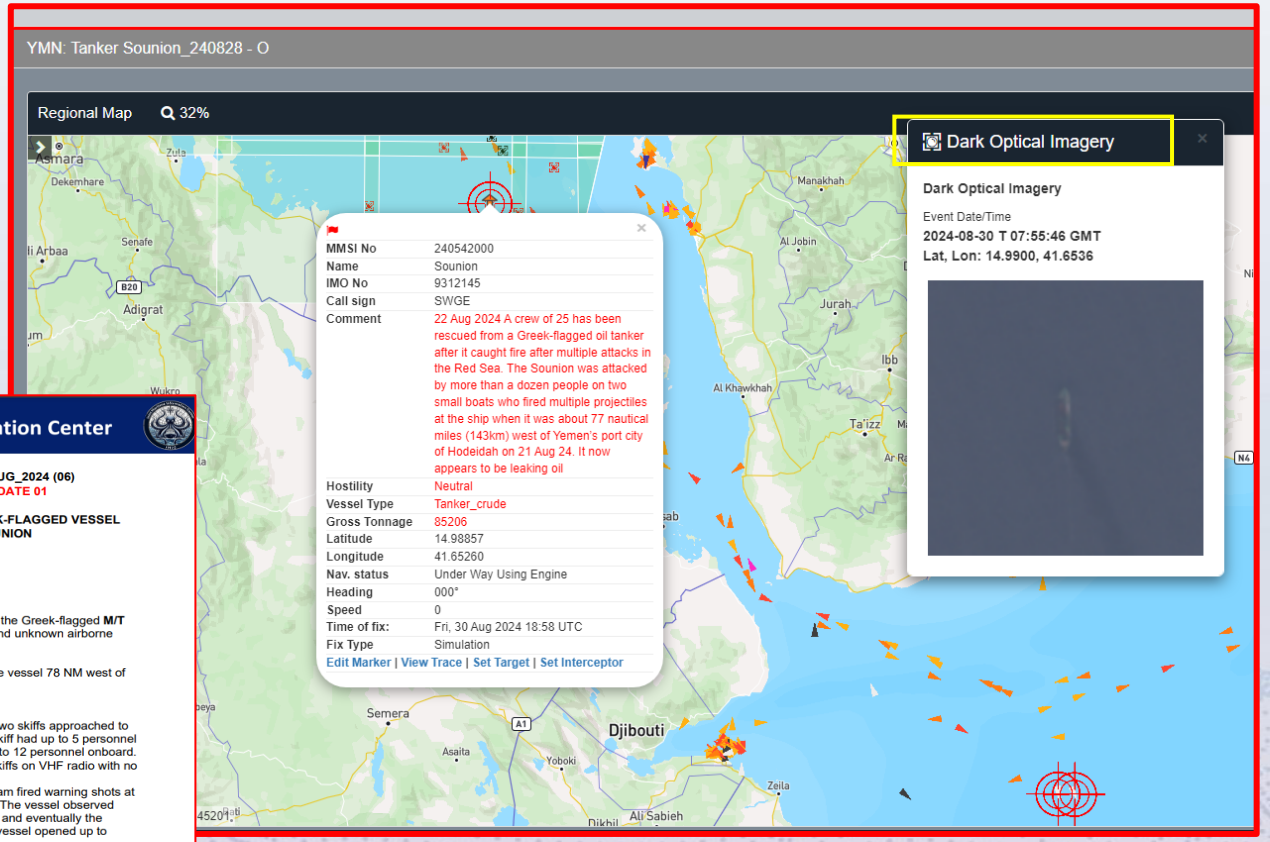
1. On 21st August 2024 there was an attack on the Greek-flagged **M/T SOUNION** (IMO: 9312145) by small boats and unknown airborne projectiles. Events are as follows:

   1) 0257 (UTC): Two skiffs approached the vessel 78 NM west of Al Hudaydah, Yemen.

   2) 0315 (UTC):
      i. The ship's Master reported that two skiffs approached to approximately 3-4 cables. One skiff had up to 5 personnel on board. The other skiff had up to 12 personnel onboard.
      ii. The crew attempted to hail the skiffs on VHF radio with no reply.
      iii. The onboard Armed Security Team fired warning shots at the skiffs who then returned fire. The vessel observed flashing lights from the two skiffs and eventually the distance between the skiffs and vessel opened up to beyond 1NM.

   3) 0500 (UTC): The vessel reported being struck by two projectiles 84 NM NW of Al Hudaydah. The vessel lost propulsion and issued a Mayday call over VHF radio. The vessel reported to be Not Under Command.

   4) 0528 (UTC): The UKMTO reported that the Master believed that there were two earlier explosions in the engine compartment at 0417 UTC, the cause of which remains unknown. Furthermore, the Master reported a skiff monitoring the vessel from a distance.



Improvements and future plans

IORIS will launch it **Version 4** in May 2025

Enhance SKYLIGHT interface with IORIS to offer:

→ a multi-source
→ single display
→ fused and integrated
maritime surveillance system and open standards for maritime data exchange

Contact Us:

Website: www.ioris.org

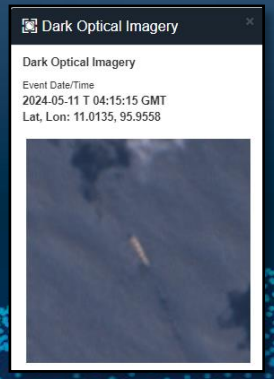
LinkedIn: CRIMARIO II

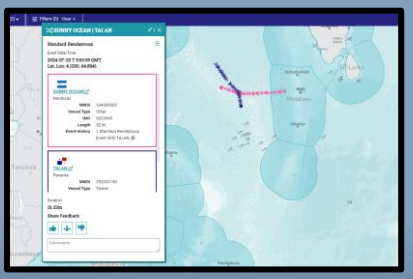
Facebook: Crimario II - Project

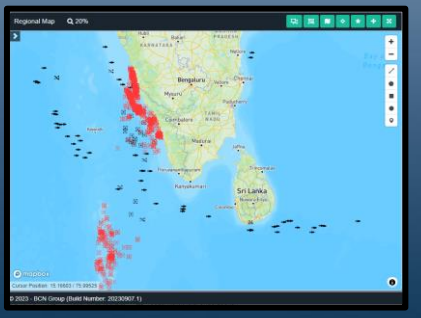
X: CRIMARIO II

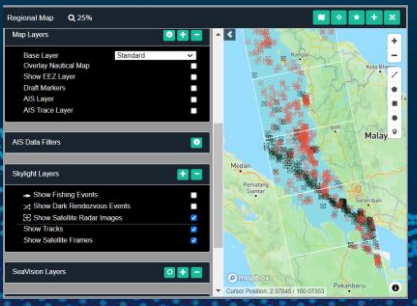
YouTube: EU CRIMARIO

Email: info@ioris.org









MOVING FROM SITUATIONAL AWARENESS TO SITUATIONAL UNDERSTANDING AND ACTION

CRIMARIO II
INTERCONNECTING THE INDO-PACIFIC

QUESTION?