

A satellite with solar panels is shown orbiting Earth from space. The Earth's surface is visible, showing blue oceans and white clouds. The satellite is white with black solar panels.

UBOTICATM
SPACE:AI

LIVE EARTH INTELLIGENCE
KNOW NOW, ACT NOW

The NewSpace Renaissance
February 2025



SPACE:AI

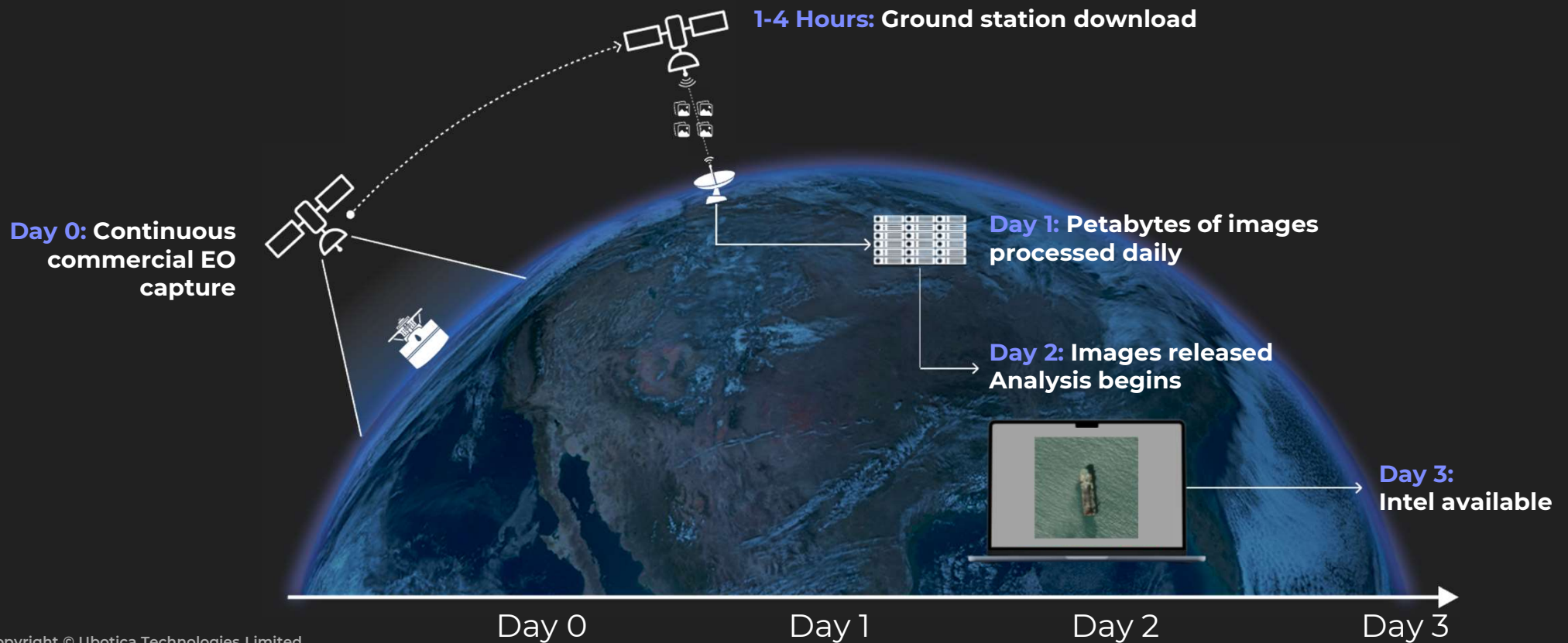
Enables satellites to think, see, and act autonomously

Edge-AI processing onboard the satellite coupled with Inter-Satellite Comms empowers satellites to:

- Process data onboard in real-time
- Get these insights to the end user
- Make autonomous smart decisions

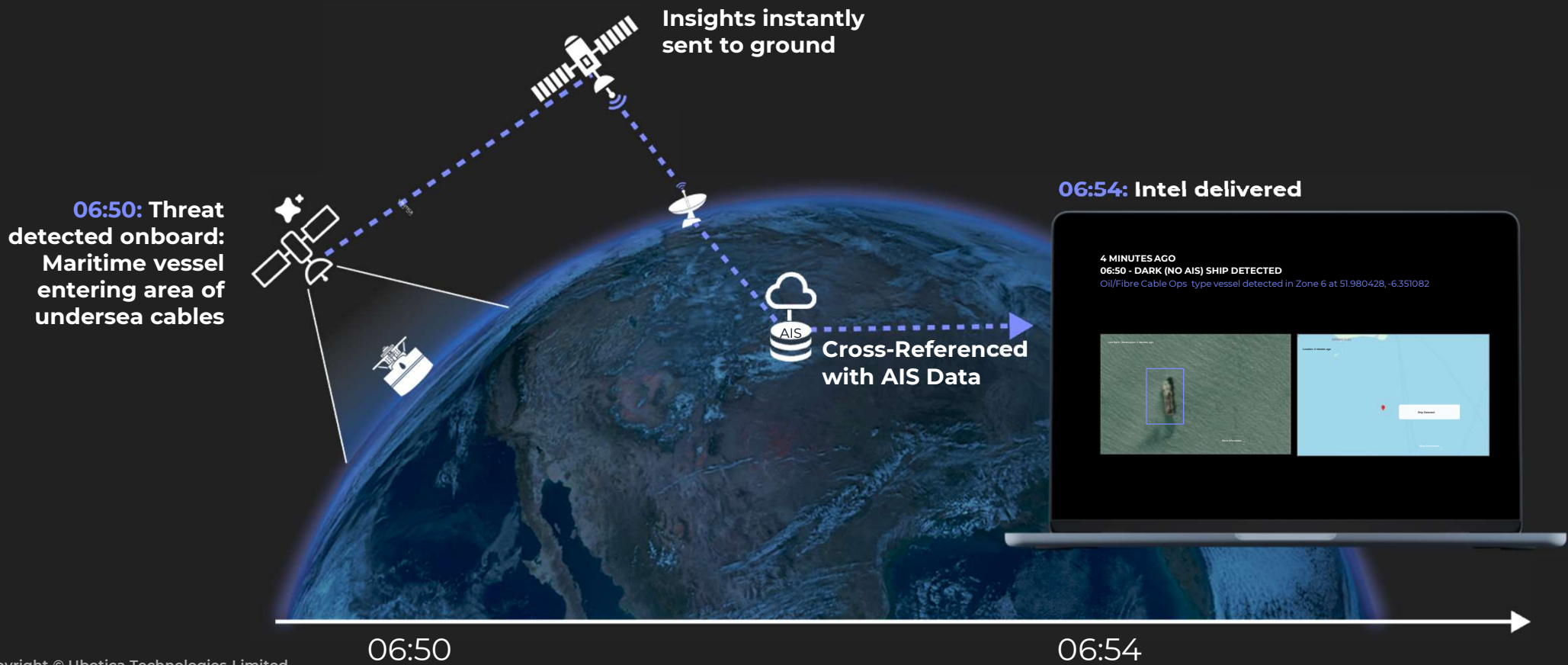
EARTH OBSERVATION 1.0

SLOW, EXPENSIVE, HIGHLY TECHNICAL PROCESS



EARTH OBSERVATION 2.0: LIVE EARTH INTELLIGENCE

REAL-TIME, AFFORDABLE, CONSUMABLE



SPACE:AI

FLIGHT PROVEN ACROSS MULTIPLE SPACE:AI MISSIONS

2024: CogniSAT-9 (Kanyini)

2024: CogniSAT-8 (PhiSat-2)

2024: CogniSAT-7 (Aries SN-1)

2024: CogniSAT-6 (HAMMER)

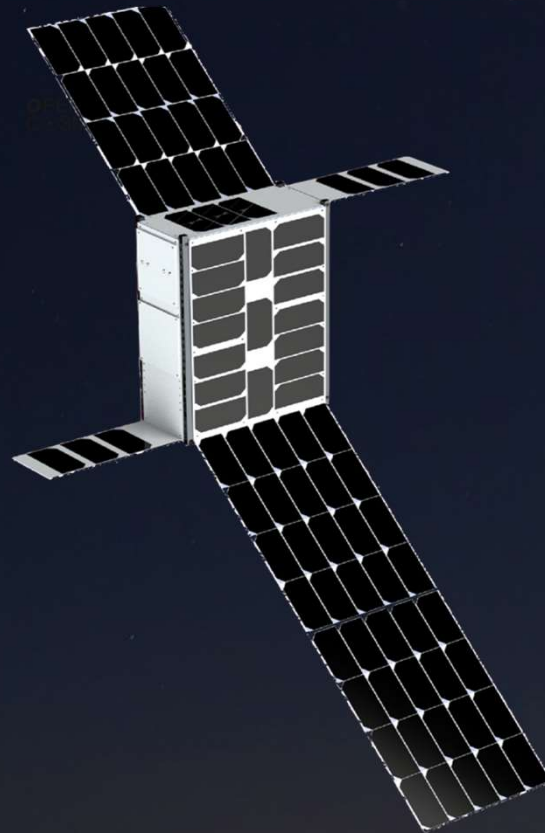
2023: CogniSAT-5 (PLATERO)

2023: CogniSAT-4 (MANTIS)

2021: CogniSAT-3 (Wild Ride)

2021: CogniSAT-2 (ISS SBC-2)

2020: CogniSAT-1 (PhiSat-1)



COGNISAT-6

**LIVE EARTH INTELLIGENCE
SATELLITE LAUNCHED Q2, 2024**

- 1. Hyperspectral Imager**
- 2. CogniSAT Edge AI Processing**
- 3. Persistent comms to ground**



Flood Assessment



Aquaculture Monitoring



Autonomous Docking



Dark Ship Detection



Wildfire Detection



Real-Time Defence Intel



Crop Monitoring



Cloud Removal



Threat Detection



Smuggling Detection



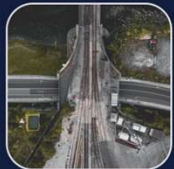
FDIR



Infrastructure Monitoring



Ship Detection



Change Detection



HAB Bloom Detection



Oil Spill Detection

PROGRAMMABLE APPLICATIONS CAPABILITY

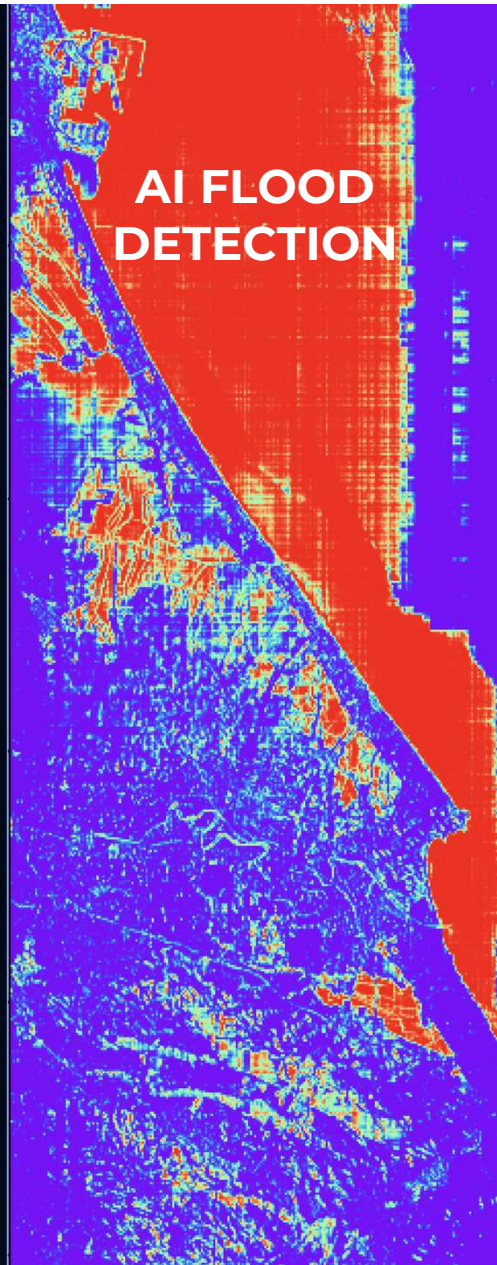
APPLY TO CIVILIAN, ENVIRONMENTAL AND SECURITY USE CASES

BUILD AND DEPLOY CUSTOM MISSIONS

DIFFERENT APPLICATIONS RUN ON DIFFERENT AREAS OF INTEREST



**SATELLITE
VIEW**



**AI FLOOD
DETECTION**

COGNISAT-6

VALENCIA FLOODING 11/02/2024

SEE

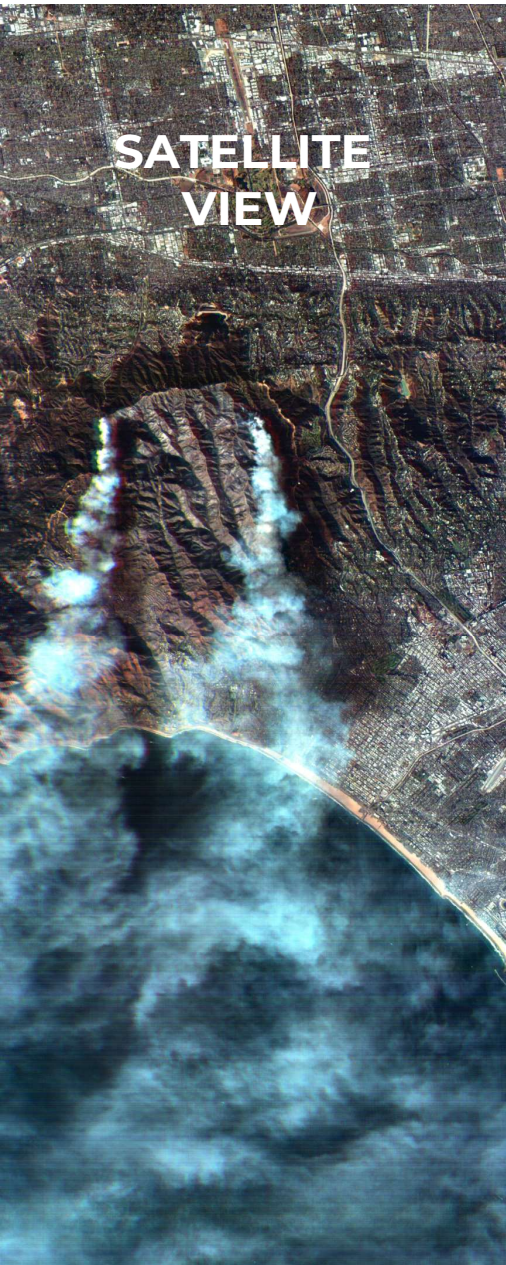
**NASA AI-powered water
detection model onboard
CogniSAT-6**

REASON

**Instant flood detection and
analysis**

ACT

**Immediate ground alerts with
flood assessment**



**SATELLITE
VIEW**



**AI SMOKE
DETECTION**

COGNISAT-6

LA WILDFIRES 01/18/2025

SEE Early detection of fires; real-time assessments

REASON NASA/JPL models maps visible and invisible fire spread

ACT Instant intel for disaster assessment

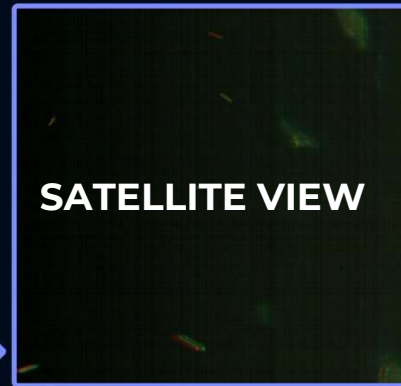
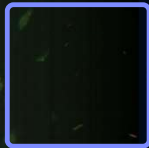
The first raw image from
CogniSAT-6 over Jeddah,
Saudi Arabia.

2024 Jun 10 - 11:26:53 UTC



COGNISAT-6

VESSEL DETECTION, JEDDAH



SATELLITE VIEW

SEE

**AI-powered vessel tracking
onboard CogniSAT-6**

REASON

**Detected every vessel size,
position and location across
800km² in under 5 minutes**



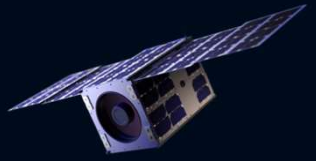
**AI VESSEL
DETECTION**

ACT

Real-time maritime intelligence



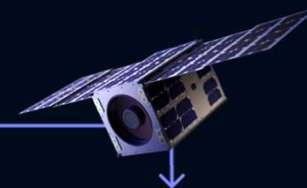
WHAT DO YOU SEE IN THIS EARTH OBSERVATION IMAGE?



**OBSERVATION SATELLITES
TODAY CAPTURE IMAGES
BUT LACK INTELLIGENCE**

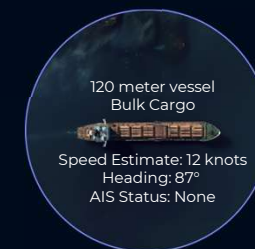
THEY COLLECT DATA BUT
CANNOT ANALYSE IT IN REAL-
TIME

LIVE EARTH INTELLIGENCE



SPACE:AI

**Real-time onboard detection
from raw observation data**



AGENTS TAKE ACTION

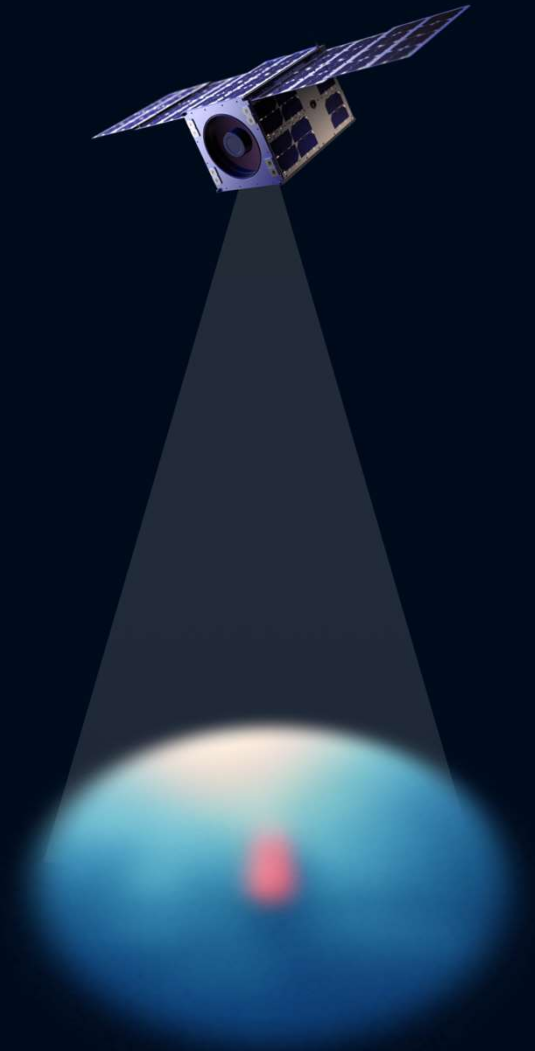
AIS Status Check:

Yes/No

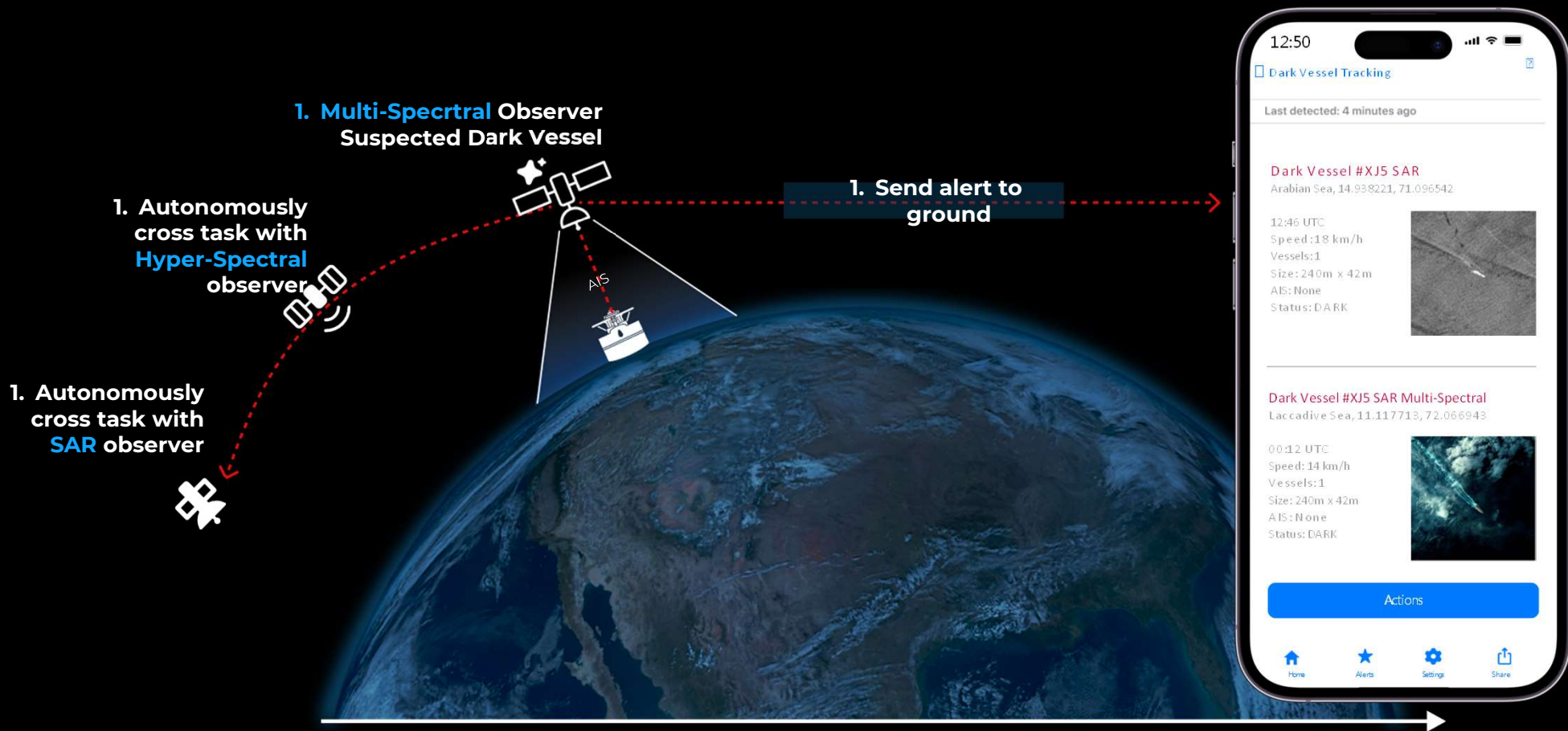
ESCALATE

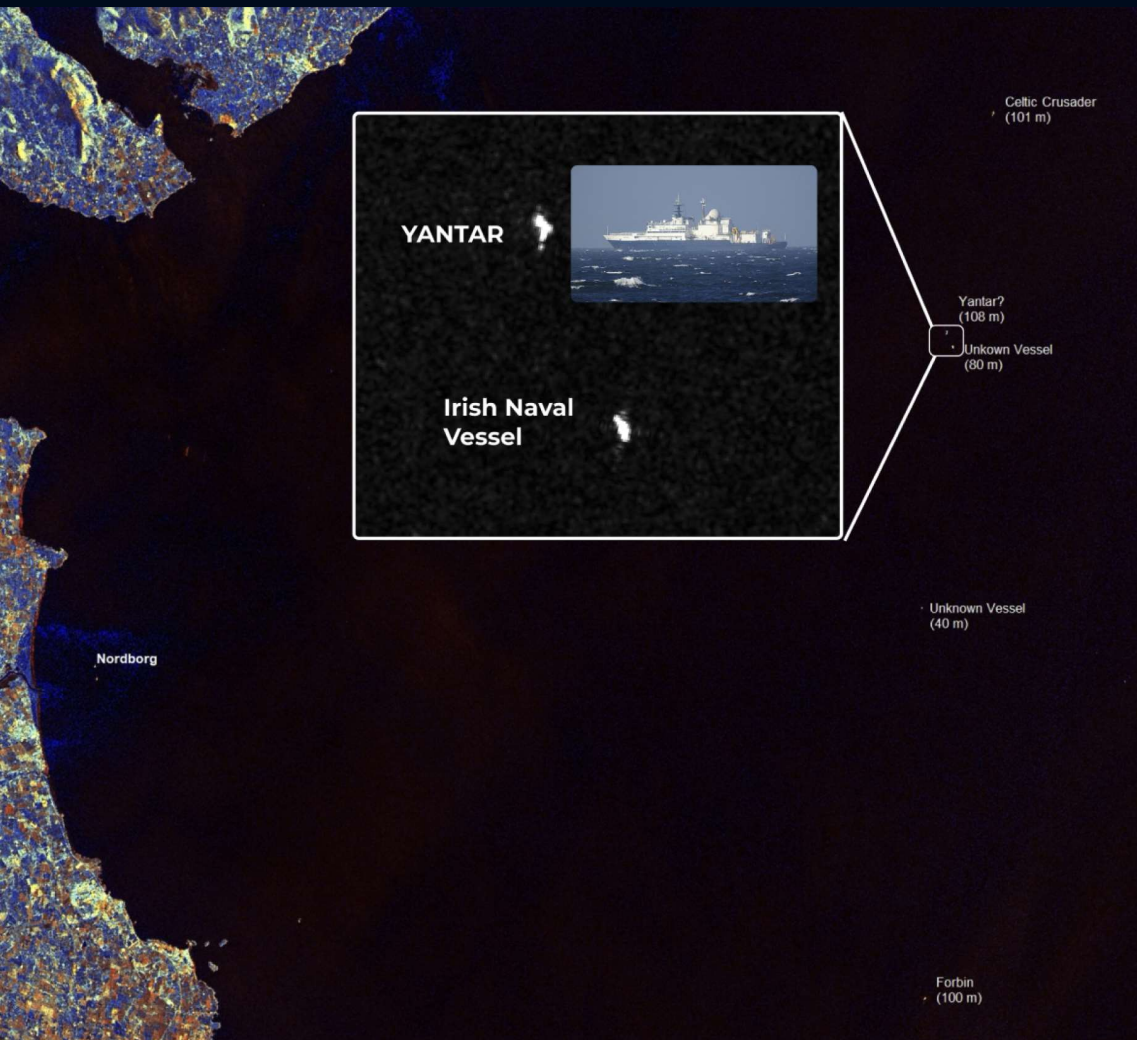
**SPACE:AI TRANSFORMS SATELLITES INTO
AUTONOMOUS AGENTS THAT
SEE • REASON • ACT**

UNLOCKS LOW-COST, LIVE EARTH
INTELLIGENCE



SPACE:AI UNLOCKS EARTH OBSERVATION 2.0 FOR SATELLITE COLLABORATION EXTRACT INSIGHTS & CROSS-TASK OTHER ASSETS





SPACE:AI SAR VESSEL DETECTION

RUSSIAN YANTAR INTELLIGENCE CASE STUDY OFF IRELAND

SEE

AI-powered radar detection, day or night, all weather

REASON

Identifies vessels in zero visibility

ACT

Cross-reference with AIS vessel tracking and share



MARITIME ASSET PROTECTION

24/7 SURVEILLANCE OF CRITICAL INFRASTRUCTURE

SUBSEA FIBRE OPTIC CABLE-1

An aerial satellite-style image of a coastal region. The land on the left shows a mix of urban and agricultural areas, with some fields highlighted in red and green. The ocean is dark blue. A white dotted line runs vertically down the right side of the image. A blue arrow-shaped box points to the right, containing the text 'SUBSEA FIBRE OPTIC CABLE-1'. A white circle with a crosshair is positioned on the dotted line. To the right of this circle is a white box containing the text '12.05UTC 05/02/25', 'AI DETECTION: DARK VESSEL NEAR CABLE-1', and '120 METERS, 5 KNOTS'.

MARITIME ASSET PROTECTION

AUTOMATED THREAT DETECTION

SUBSEA FIBRE OPTIC CABLE-1

12.05UTC 05/02/25

**AI DETECTION: DARK
VESSEL NEAR CABLE-1**

120 METERS, 5 KNOTS

MARITIME ASSET PROTECTION

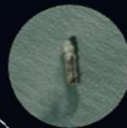
RETROACTIVE VESSEL TRACKING

10:02

10:39

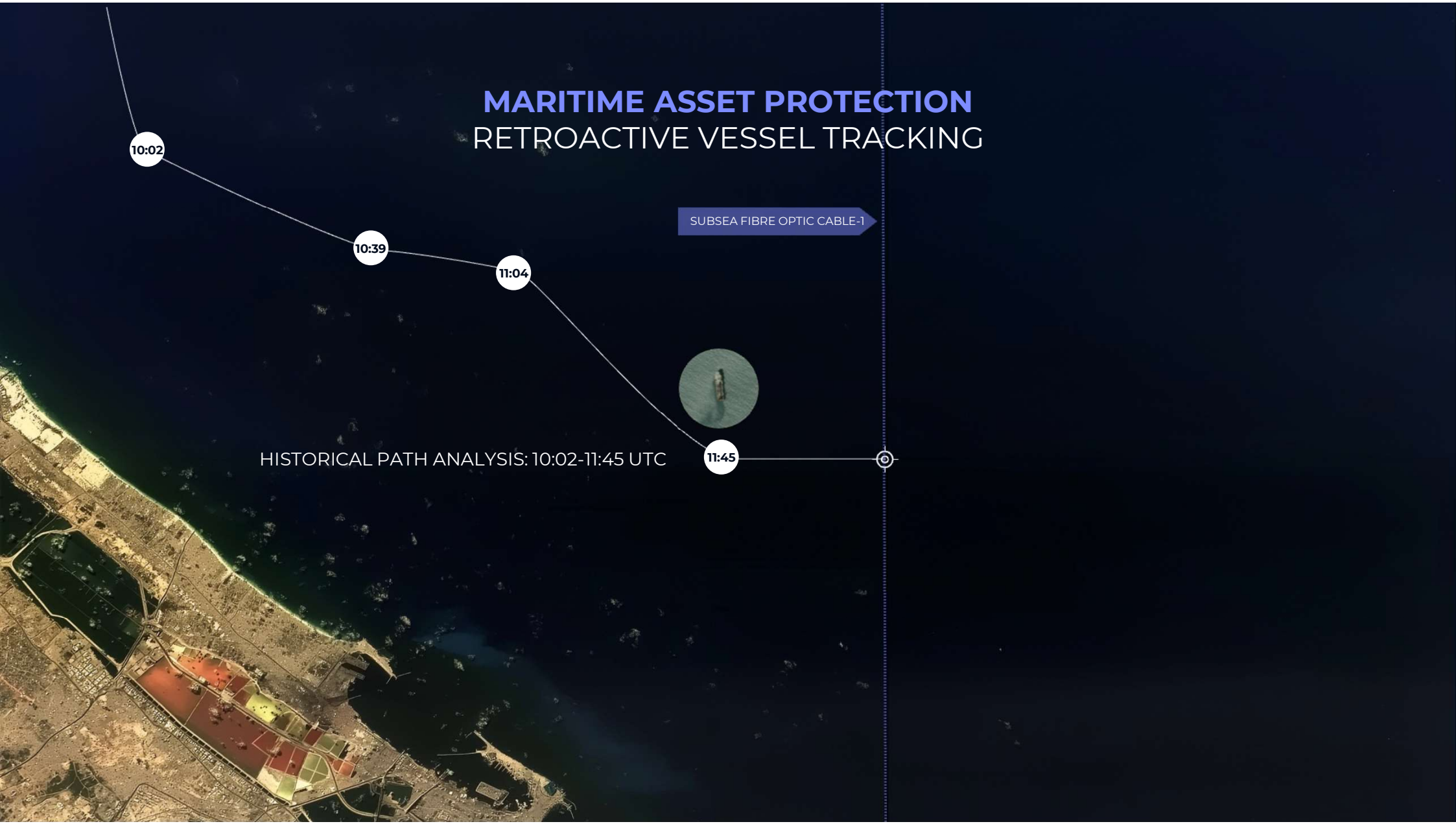
11:04

SUBSEA FIBRE OPTIC CABLE-1



11:45

HISTORICAL PATH ANALYSIS: 10:02-11:45 UTC



MARITIME ASSET PROTECTION

REAL-TIME THREAT MONITORING

SUBSEA FIBRE OPTIC CABLE-1

13:15

12:55

12:31

12:15

13:48

AIS ON

8 minutes ago
Speed: 15 knots
Heading: 330°
Status: AIS Active as
'LENIN'



[More Information](#)

LIVE EARTH INTELLIGENCE

SEE THE WORLD WITH INTELLIGENT EYES

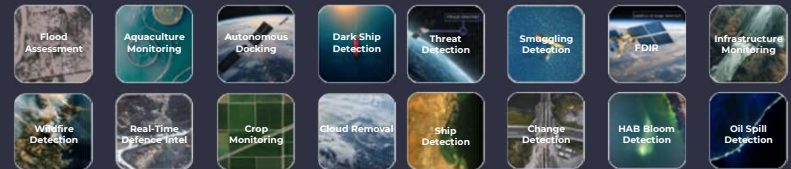
Targeted Intelligence: Focuses on critical AOIs, not bulk collection, to unlock intelligence in orbit in real-time.



Multi-Modal & Autonomous: Combine multi-modal sensing data. Autonomously cross-task multiple assets.



Programmable: Train and deploy multiple custom AI models.



A satellite with solar panels is shown orbiting Earth from space. The Earth's blue and white surface is visible in the background. The satellite is white with two large black solar panel arrays extending outwards.

UBOTICATM
SPACE:AI

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