

OCIANA AI Platform

Maritime Risk and GEOINT Capability Overview

Rob Marshy
CTO
GSTS Inc.
rob.marshy@gsts.ca

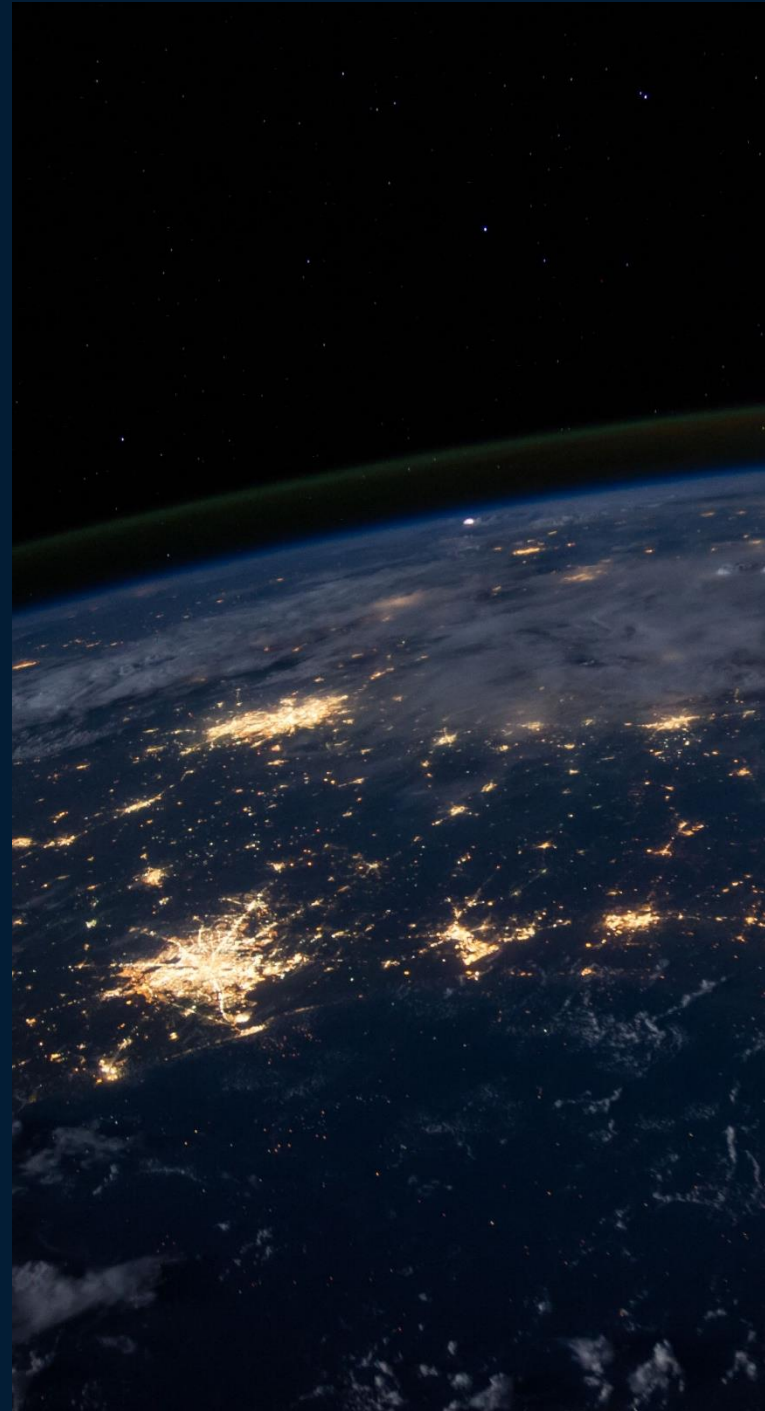
May 2022

GSTS

Introduction

- 100% Canadian owned
- Offices in Halifax and Ottawa
- An AI maritime company
- 35 AI data scientists, engineers





Overview

- What is OCIANA?
- Sample Capabilities
- Application Demo

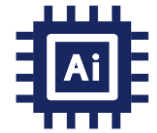
What is OCIANA?

- What is OCIANA?
- Capability Modules
- Sample Use Cases

OCIANA: Maritime AI Platform



- Integrates multiple streaming data sources



- Extracts patterns



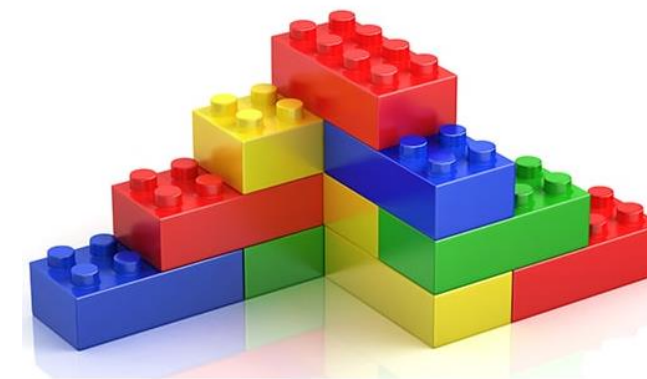
- Provides domain awareness and intelligence



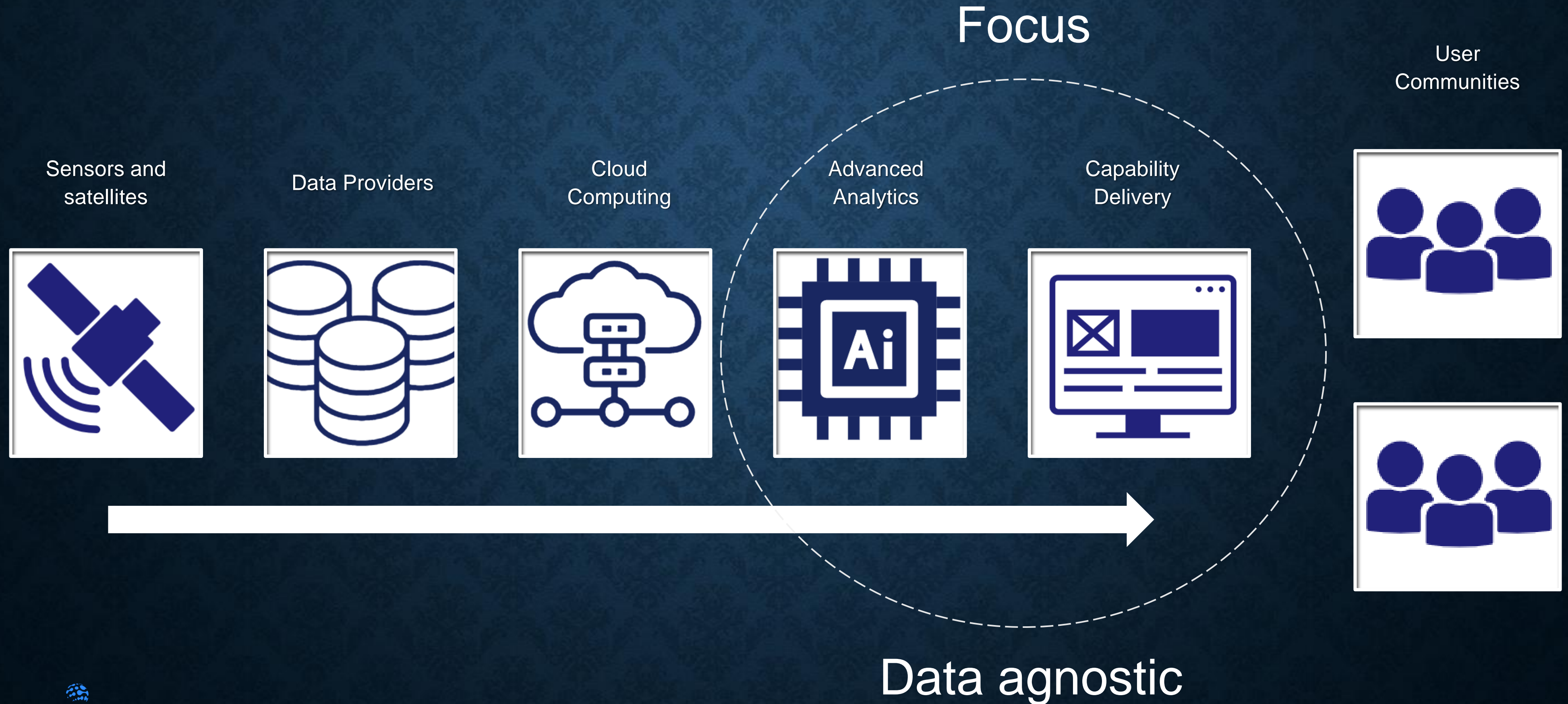
- Supports response and coordination



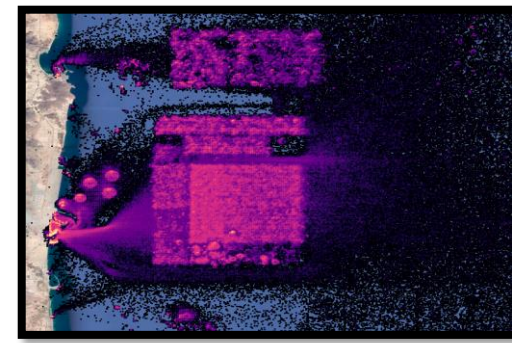
→ Modular



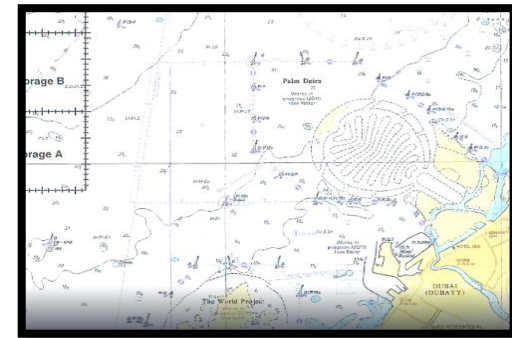
DATA value chain



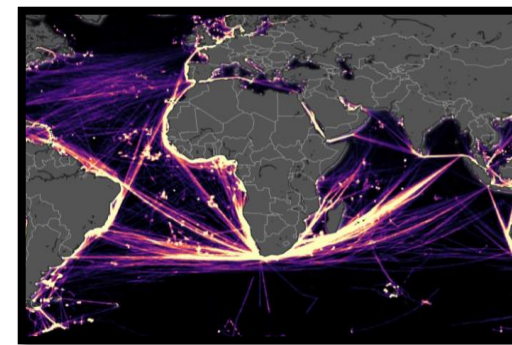
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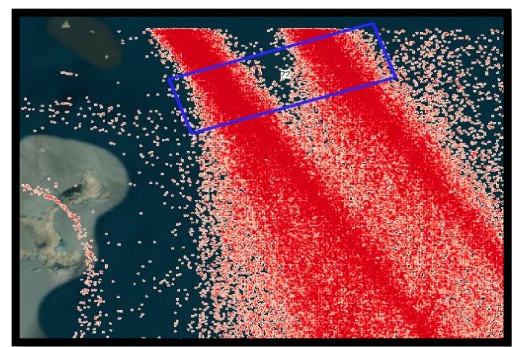
In-shore
and port
patterns



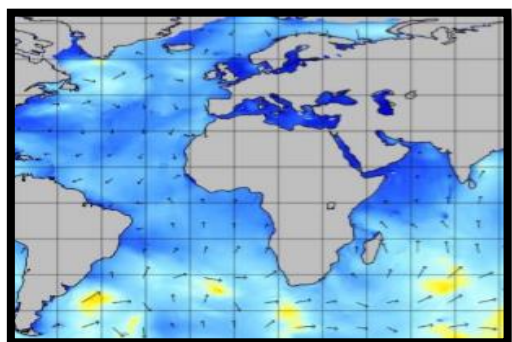
Regulatory
Environments



Real-Time
Global Data



Vessel Routes
and Speeds over
time



Meteorological
Data



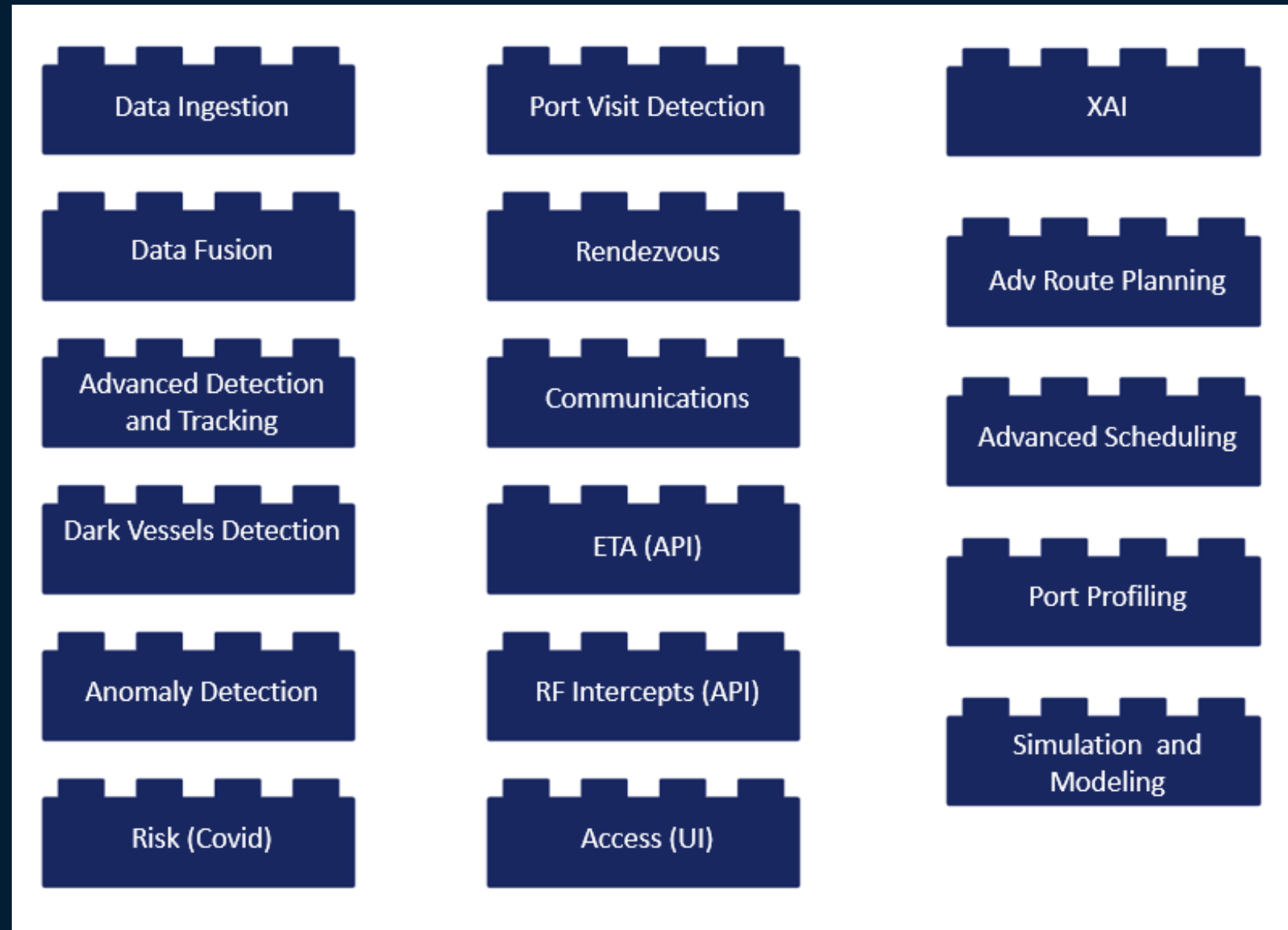
Algorithms
extract patterns
and actionable
intelligence



Risk
Management



Vessel
Management

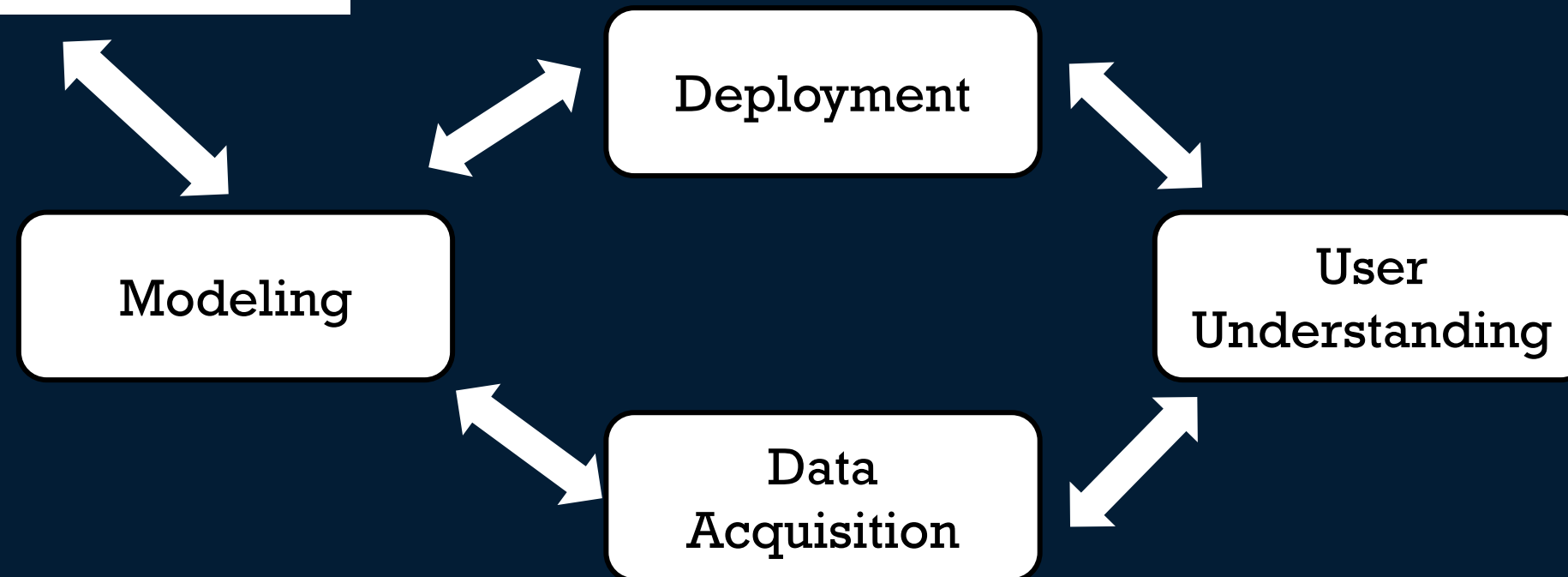


CONFIGURABLE MODULES

USER engagements



UI/UX Design



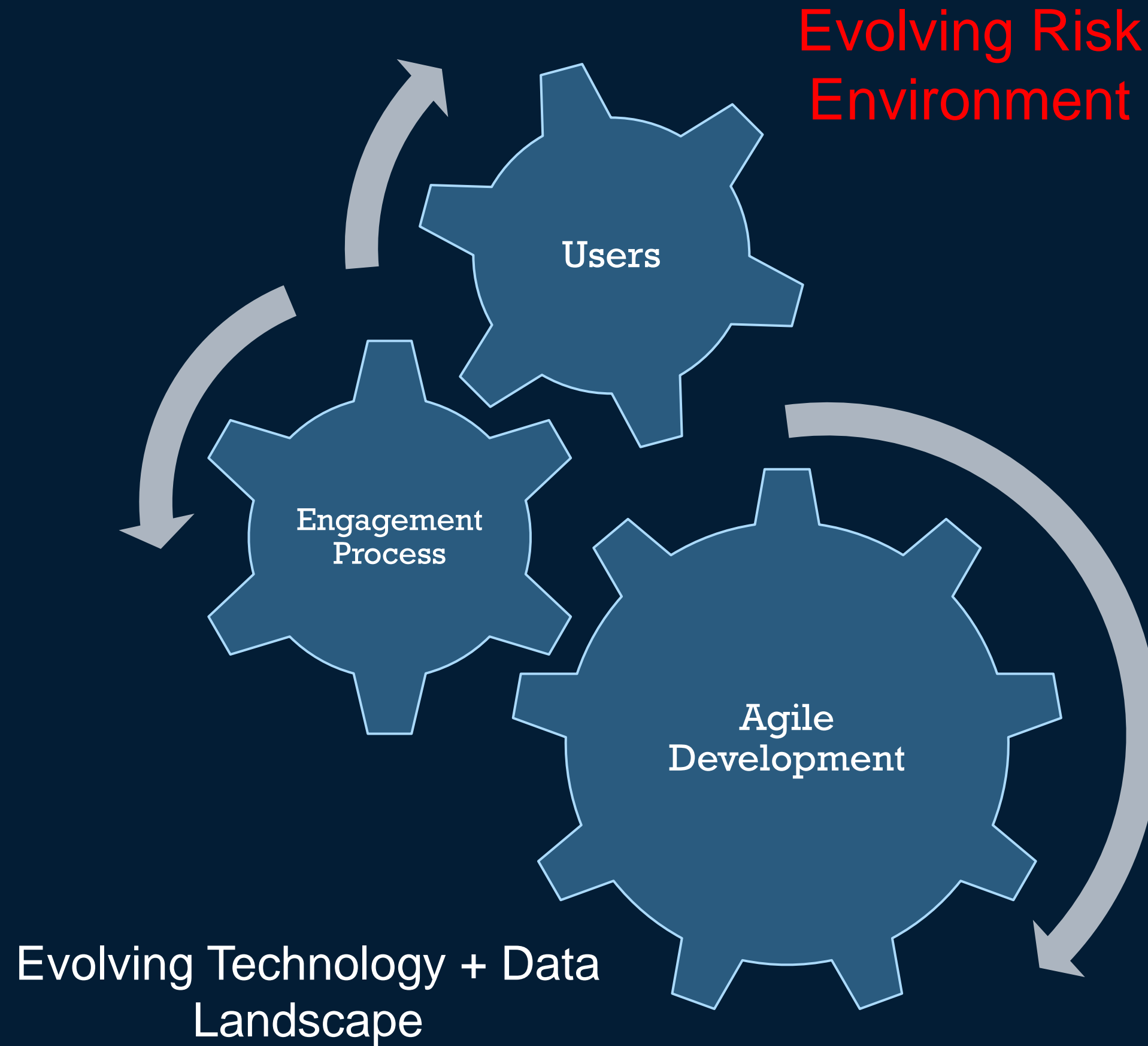
User Contributions to OCIANA

>40 User Sessions

>300 User Feedback Elements



COLLABORATIVE DEVELOPMENT

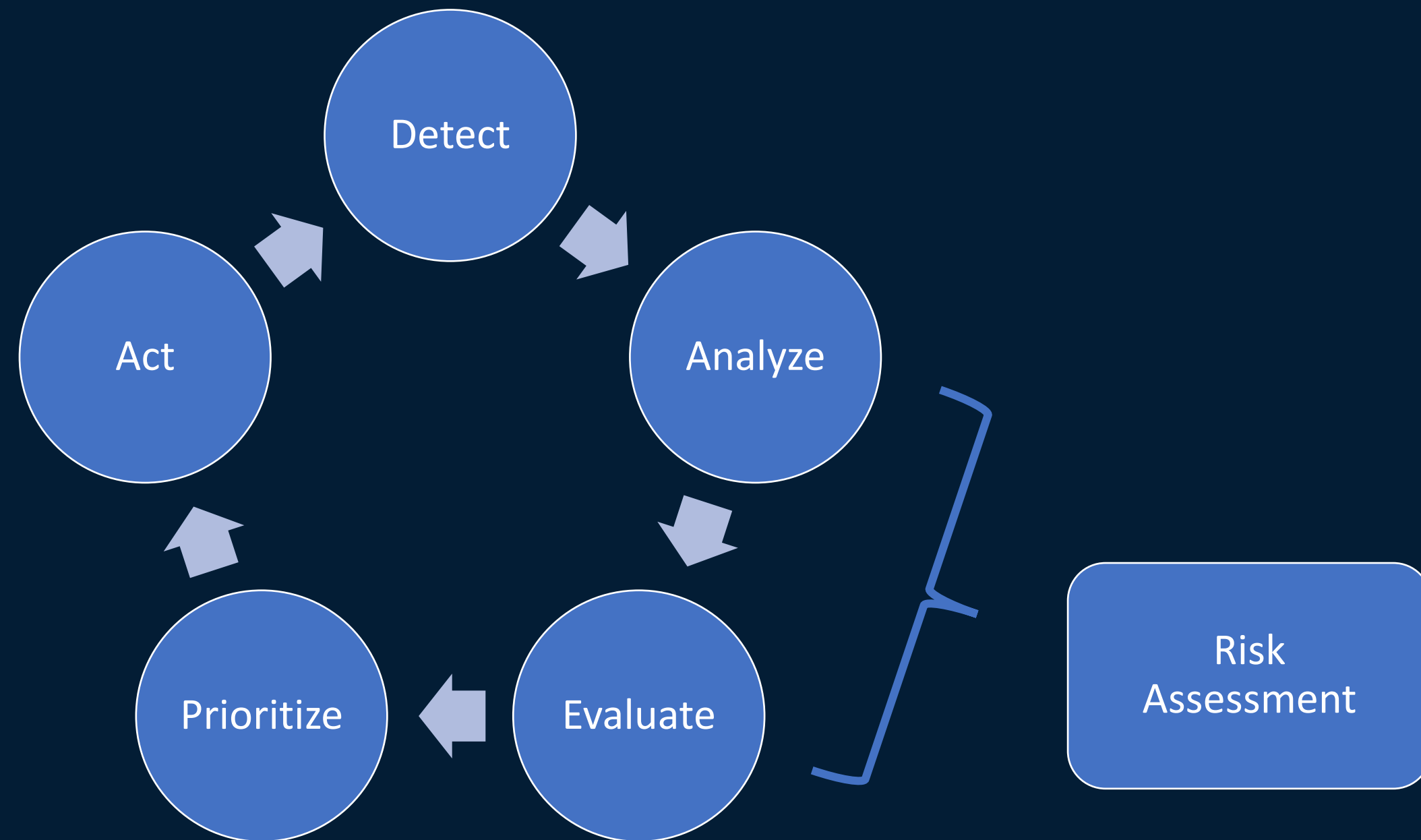


User-centric data engineering:

- Trustable data → actionable intelligence
- Modular + Scalable
- Match data to the changing needs
- User Engagement teams

RISK: How might we effectively handle risk?

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Sample module capability



- What is OCIANA?
- **Capability Modules**
- Sample Use Cases

Maritime Domain Awareness with Intelligent Risk Detection

National Security Risks

- Illegal cargo
- Criminal crew or passengers
- Espionage or illegal acts



Regulatory Risks

- Vessel Flag State, ownership, port visits
- History of non-compliance
- Dangerous cargo

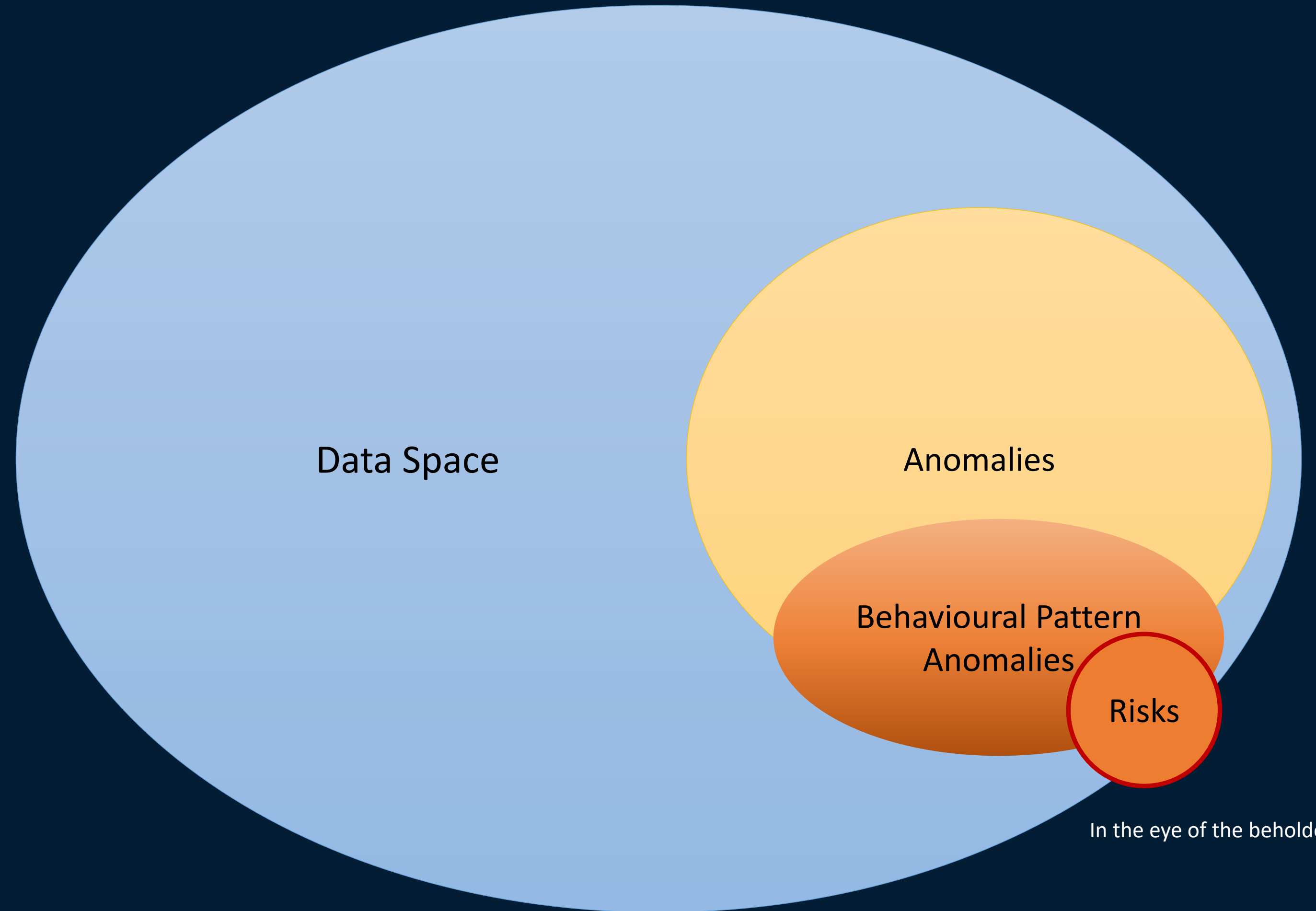


Legal and Commercial Risks

- Prohibited imports
- Organized criminal activity
- Illegal fishing or mining



RISK: How can we effectively assess risk?



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Data Darkness - the “unknown unknowns”

When it looks like you can see everything..

but you're not seeing 7336 Dark Vessels

The screenshot displays the OCIANA Risk Management System interface. The main map shows a large area of the Pacific Ocean with numerous vessel icons. A red overlay indicates areas of risk. The interface includes a top navigation bar with the OCIANA logo and 'Build: 75'. A sidebar on the left contains a 'Vessel Favourites (10)' list and a 'Dark Vessels (-)' section. The bottom of the interface features a table of vessel data and a 'System Log (6)' section.

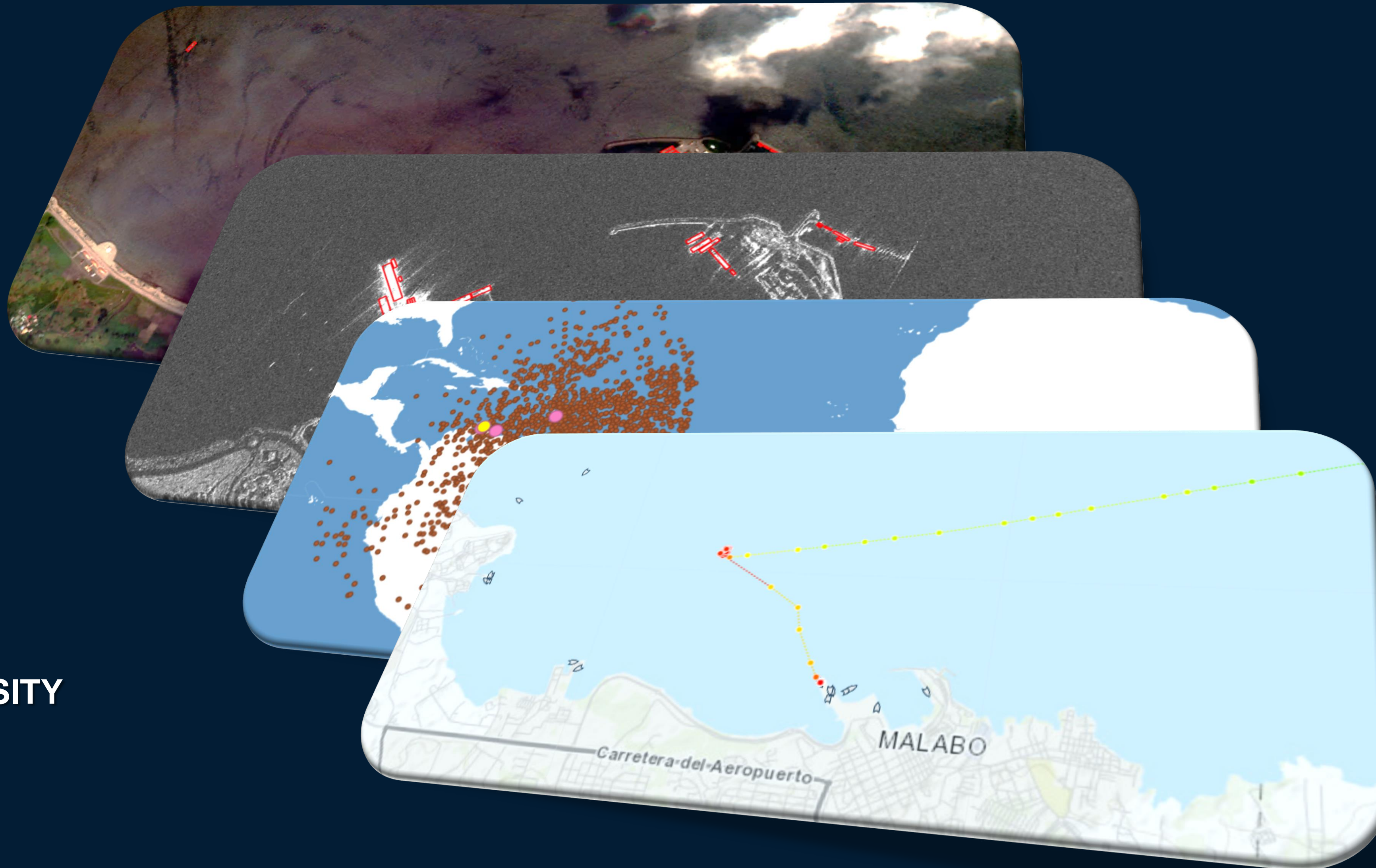
Vessel Name	MMSI	IMO
VATO WARSHIP M1083	211211180	0
VATO WARSHIP 337 (Not in ROI)	318143000	0
VATO WARSHIP M883	245844000	0
VATO WARSHIP (Not in ROI)	211210170	0

Vessel Name	MMSI	IMO	Vessel Type	Time of Vessel Going Dark	Duration of Vessel Being Dark (hours)
XLSIG 05	201000082	8557762	Fishing	25 Nov 2021 08:07:01 Z	133.8
IOZAF410	201000115	0	Fishing	28 Nov 2021 03:08:44 Z	114.6
VAMPAS	201000131	0	Fishing	21 Nov 2021 19:02:19 Z	218.7
IOZAF411	201000388	0	Fishing	28 Nov 2021 07:06:48 Z	62.6

Time	Risk	Item
30 Nov 2021 21:42:48 Z	Low	7336 dark vessels detected for at least 48 hours.
30 Nov 2021 21:42:26 Z	Low	No update to be made at this time
30 Nov 2021 21:42:23 Z	Low	9995 dark vessels detected for at least 24 hours.
30 Nov 2021	Low	7 vessels found containing "tropical" in



USE CASE:
Dark ship

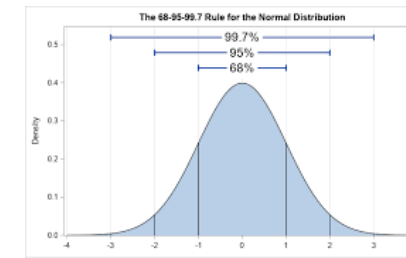
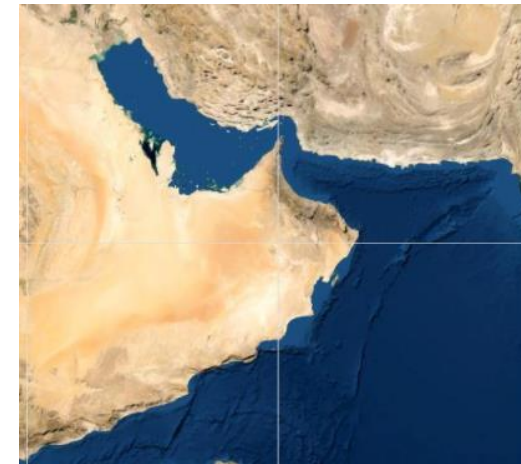


DATA DIVERSITY

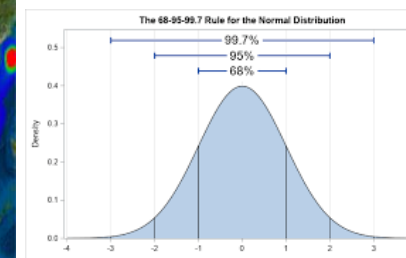
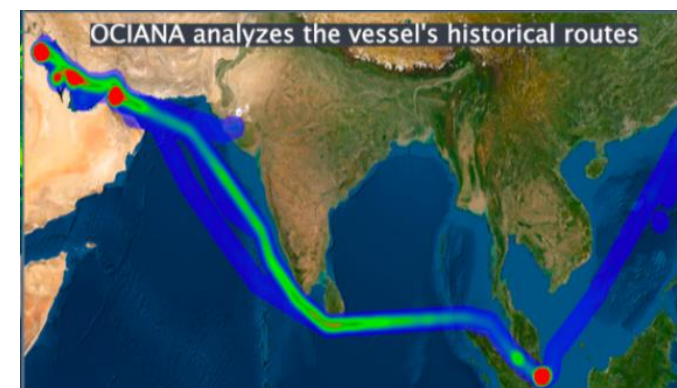


Use Case: Analyzes “Patterns of Life” to reveal risk probabilities

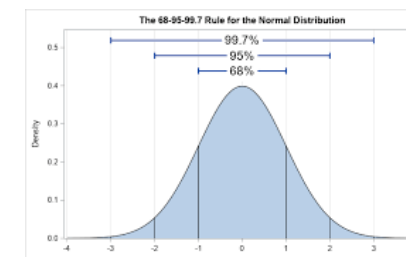
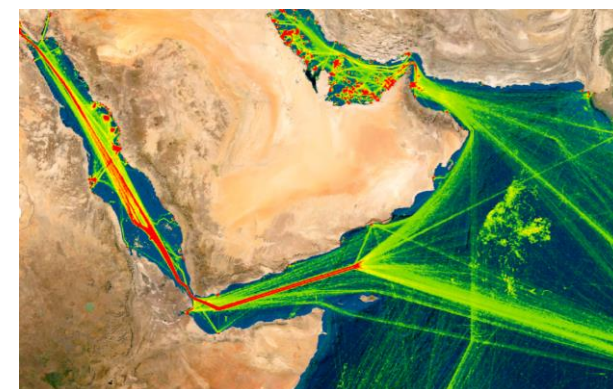
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Analyzes all vessels in the region of interest



Analyzes each vessel historically in every region



Analyzes the vessel of interest in the region

Intelligence and RISK Alerts

Parameter or attribute	target vessel (tail)	vessel ID data	AS TX state	ASD status ID	ASD profile	SDG variation	COG variation	Rate of Turn Co-efficient	relative to sea lanes	coastal proximity	central area	depth of area	depth of proximity	time of day	Sea State	season	sea current	wind dir	water depth m
1	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0.5	no data	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

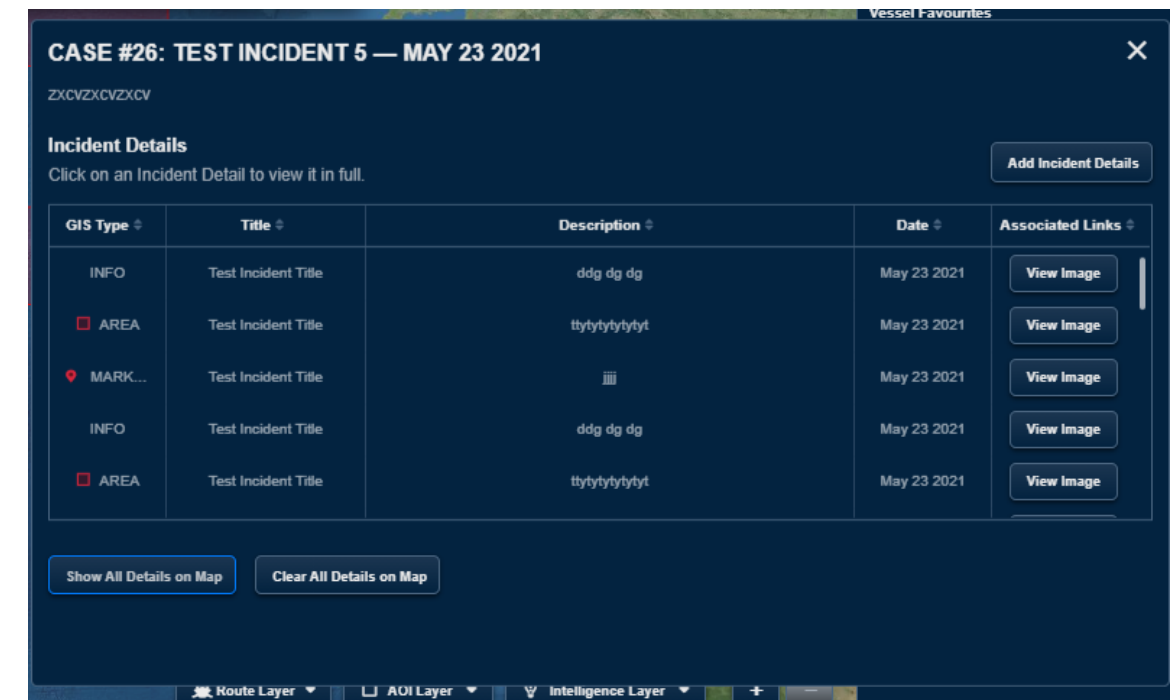
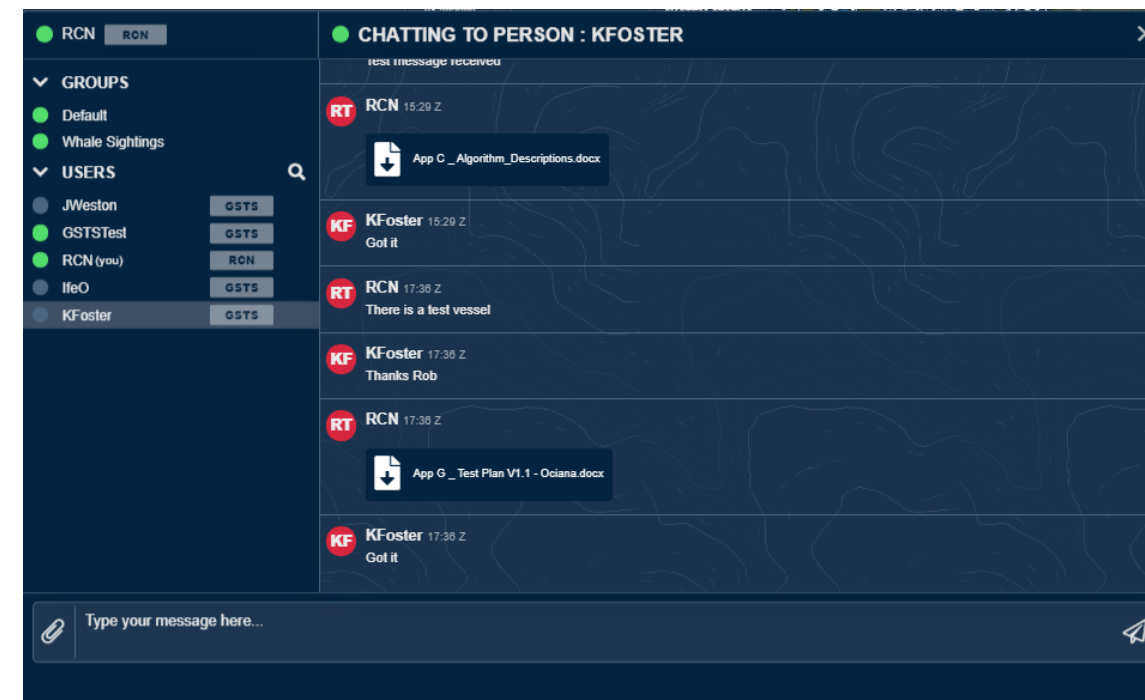
Sample module capability



Communication and Collaboration

CHAT:
Communicate with own or other organization; send and receive files

CASE FILES:
Create Cases or “Incidents” ; contribute to common picture

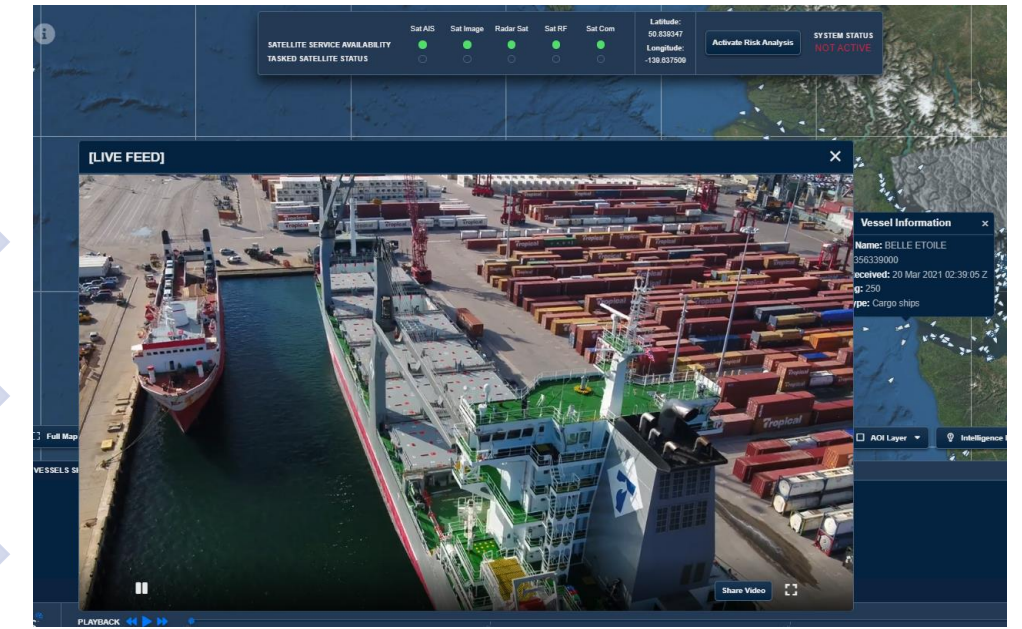
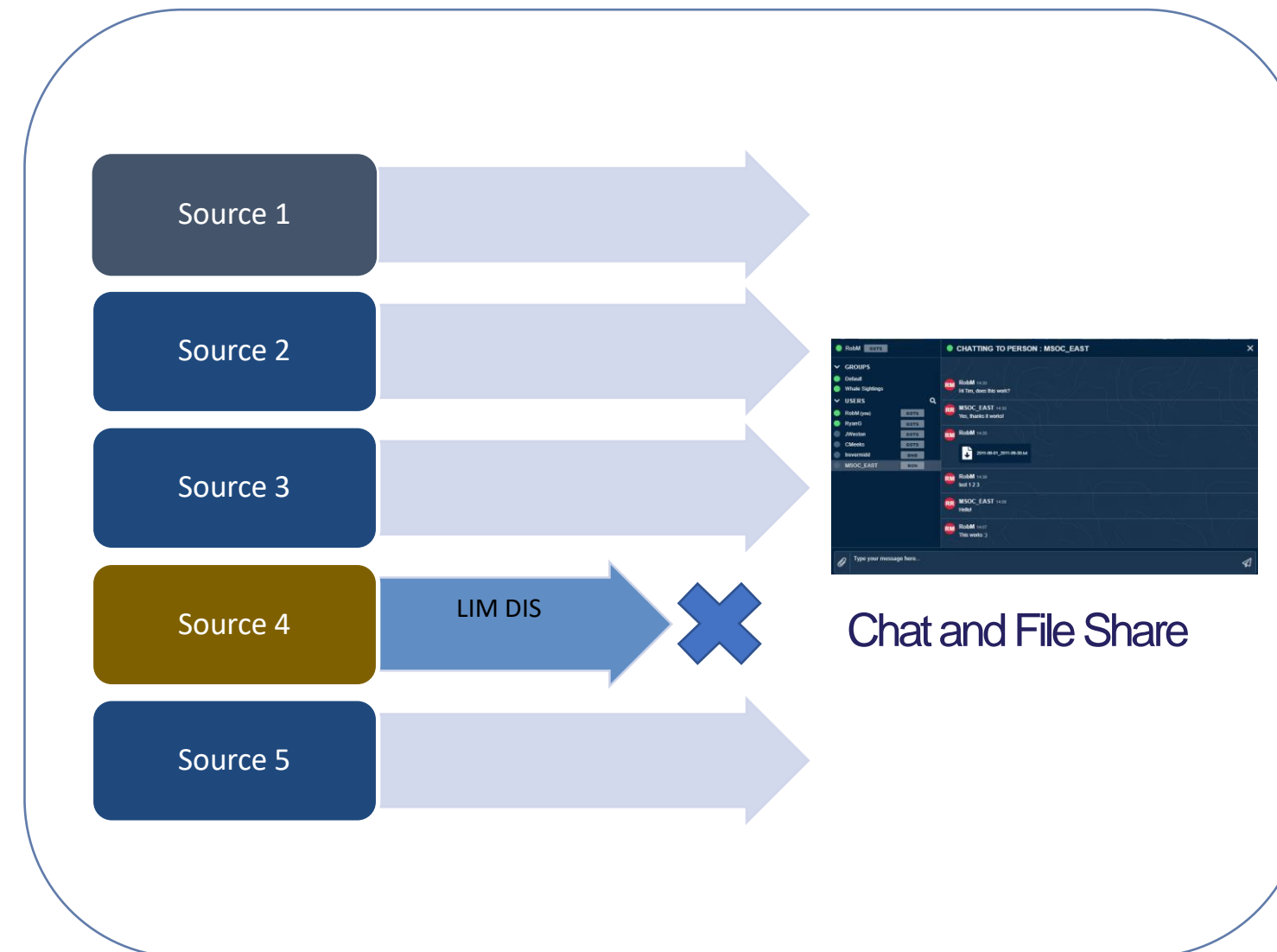


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Coordinate Responses With National Partners

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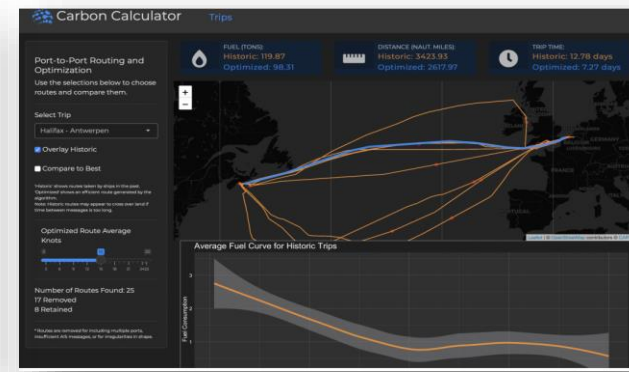
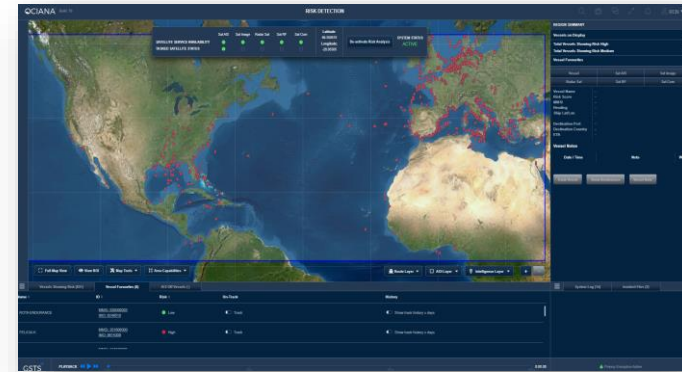
Built-in communication and data sharing, including video



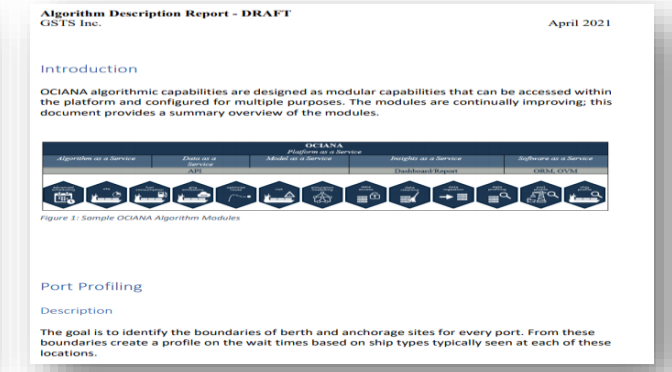
Drone Video Share

Access (UI)

Sample module capability



IMO	Vessel Name	IMO Class	Vessel Type	Year	IF ID	Accuracy	IF Lat/Long (M)	IF Longitude (M)	IF Time (M)	Port	Distance (M)	IF ID	IF Longitude (M)	IF Time (M)	IF ID
970012	MSC OSCAR	A	Container Ship	2012	970012	High	41.882	121.516	08:00	Yokohama	10000	970012	121.516	08:00	970012
970013	MSC OSCAR	A	Container Ship	2012	970013	High	41.882	121.516	08:00	Yokohama	10000	970013	121.516	08:00	970013
970014	MSC OSCAR	A	Container Ship	2012	970014	High	41.882	121.516	08:00	Yokohama	10000	970014	121.516	08:00	970014



Application

Maritime situational awareness tool that provides analytical, communication, scenario, and visualization capabilities

Dashboard

Interactive visual information tool that provides insights to assist with informed decision making

Intel

Intel Data for the use in DBs, analytical modelling and situational analysis (via API)

Report

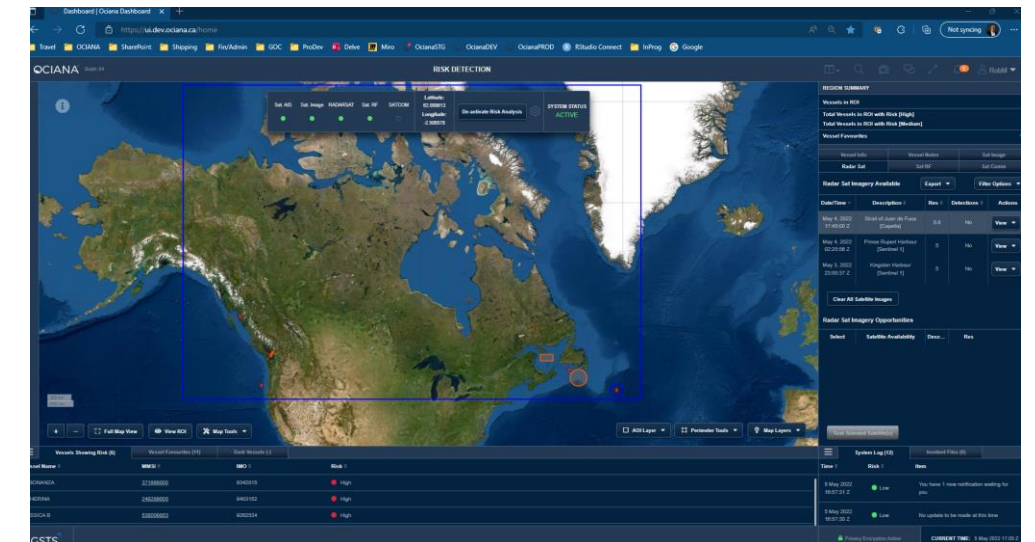
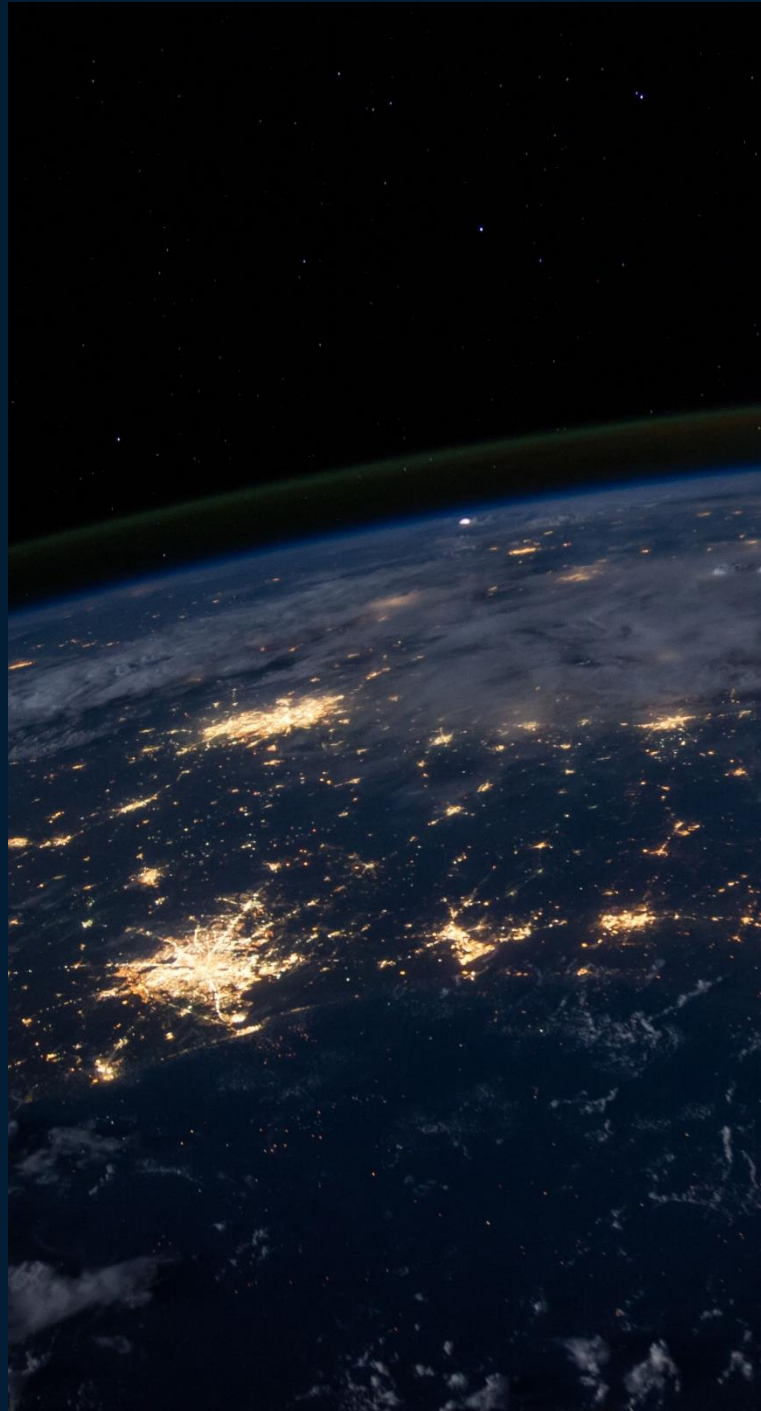
Static visual information artifact that provides insights to assist with informed decision making

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