

TERRA LABO

JADI-NDIA Defense Industry Dialogue

Oct. 24th, 2024

Terra Labo's Capabilities and Contributions to Dual-Use Applications

<https://terra-labo.jp/>

<https://www.youtube.com/watch?v=hdwCEnb7n9g>

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Visible / Objective Geospatial Information to COP for Disaster Mitigation



Terra Labo Inc.

CEO, Matsuura, Takahide

Name	Terra Labo Inc.
Estab.	March 24, 2015
CEO	Matsuura, Takahide
Location	HQ: Kasugai, Aichi, Japan Lab: Minamisouma, Fukushima, Japan



Visible / Objective Geospatial Information and Object Detection Contributes to Disaster Mitigation and other fields

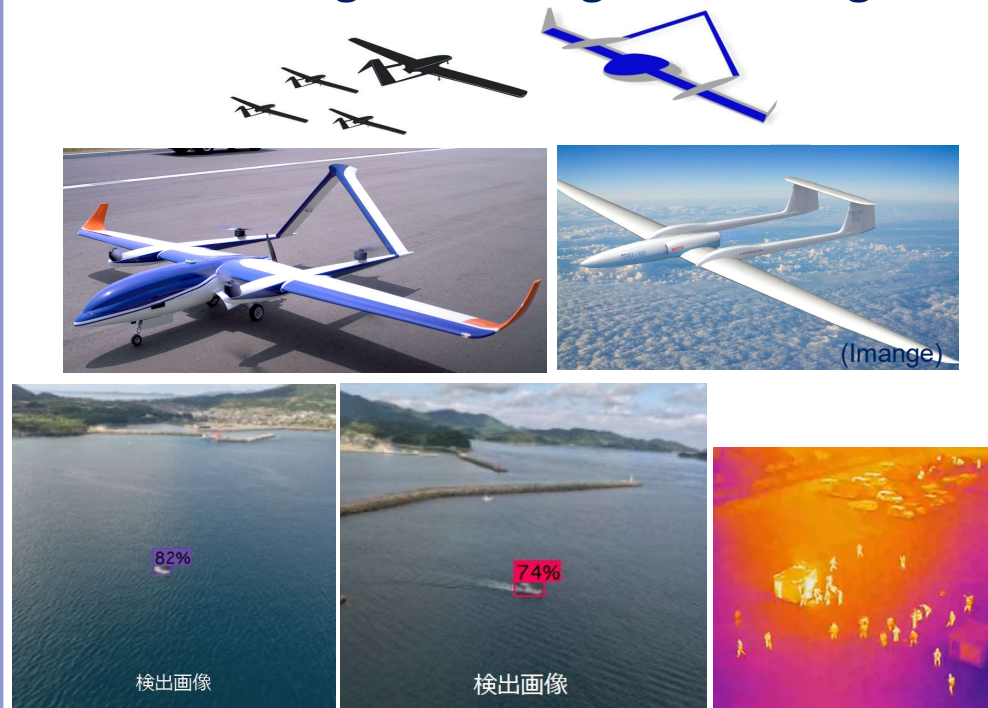
- Terra-Cloud -

Geospatial data sharing platform, with 2D ortho & 3D digital twin model, applying AI analysis to meta common operational picture.



- Terra-Dolphin -

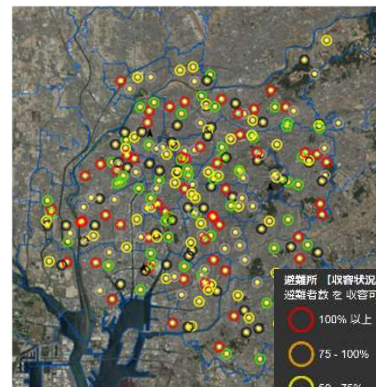
Hybrid UAV-VTOL with 1,000km cruise, increasing the frequency of wide-area & long-duration sensing, monitoring and tracking.



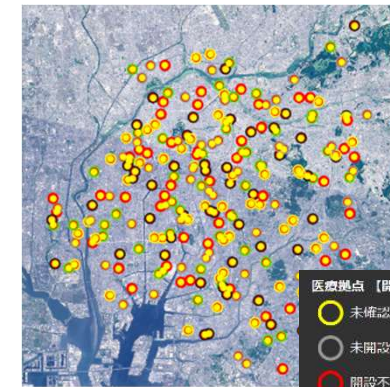
Disaster Management Dashboard System



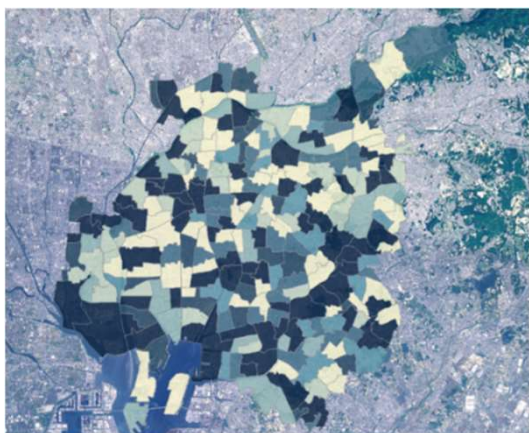
Deceased, Missing, and People Requiring Rescue



Shelters



Medical center and Hospital



Comprehensive Display of an Overview of Casualties, Missing Persons, Injuries, and Damage to Buildings and Infrastructure by School District



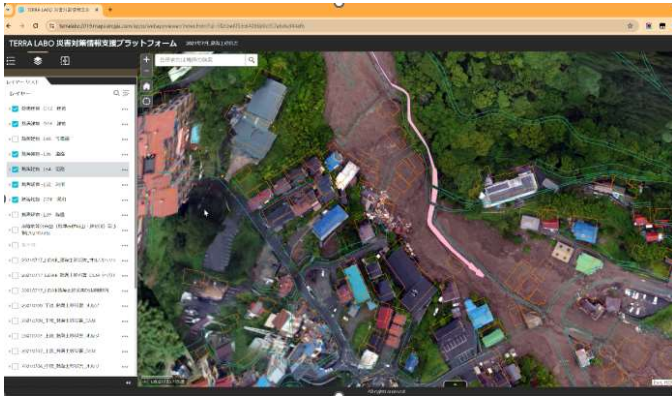
Status of Emergency Transport Routes



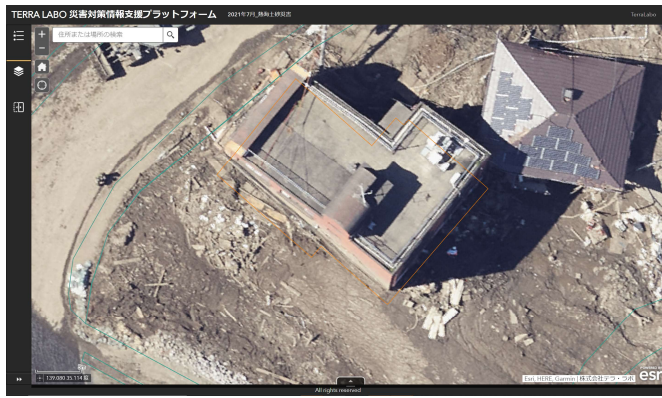
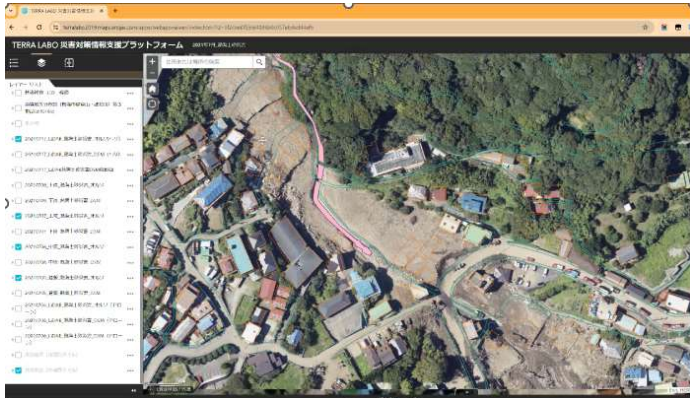
Railway Operation Status

Meta Common Operational Picture

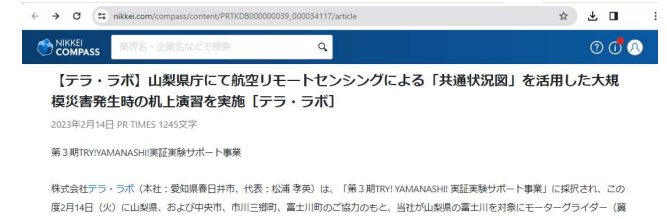
Terra-Cloud used while large landslide occurred.



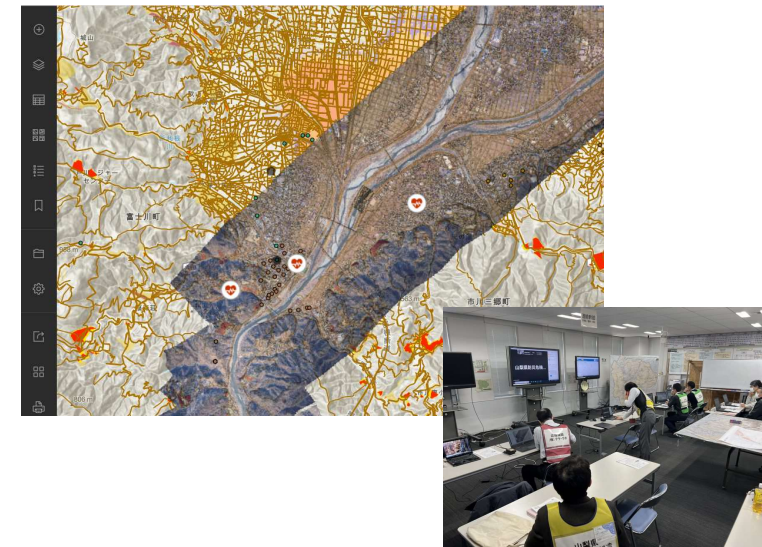
Continuous monitoring
of EMS activities



POC and contribution in the media



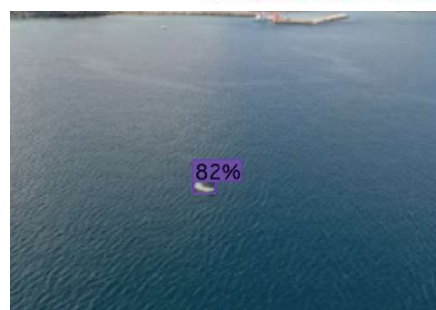
Terra-Cloud used for a Joint Training
among prefecture/city EMS officials
and fire departments



3D Digital Twin Modeling



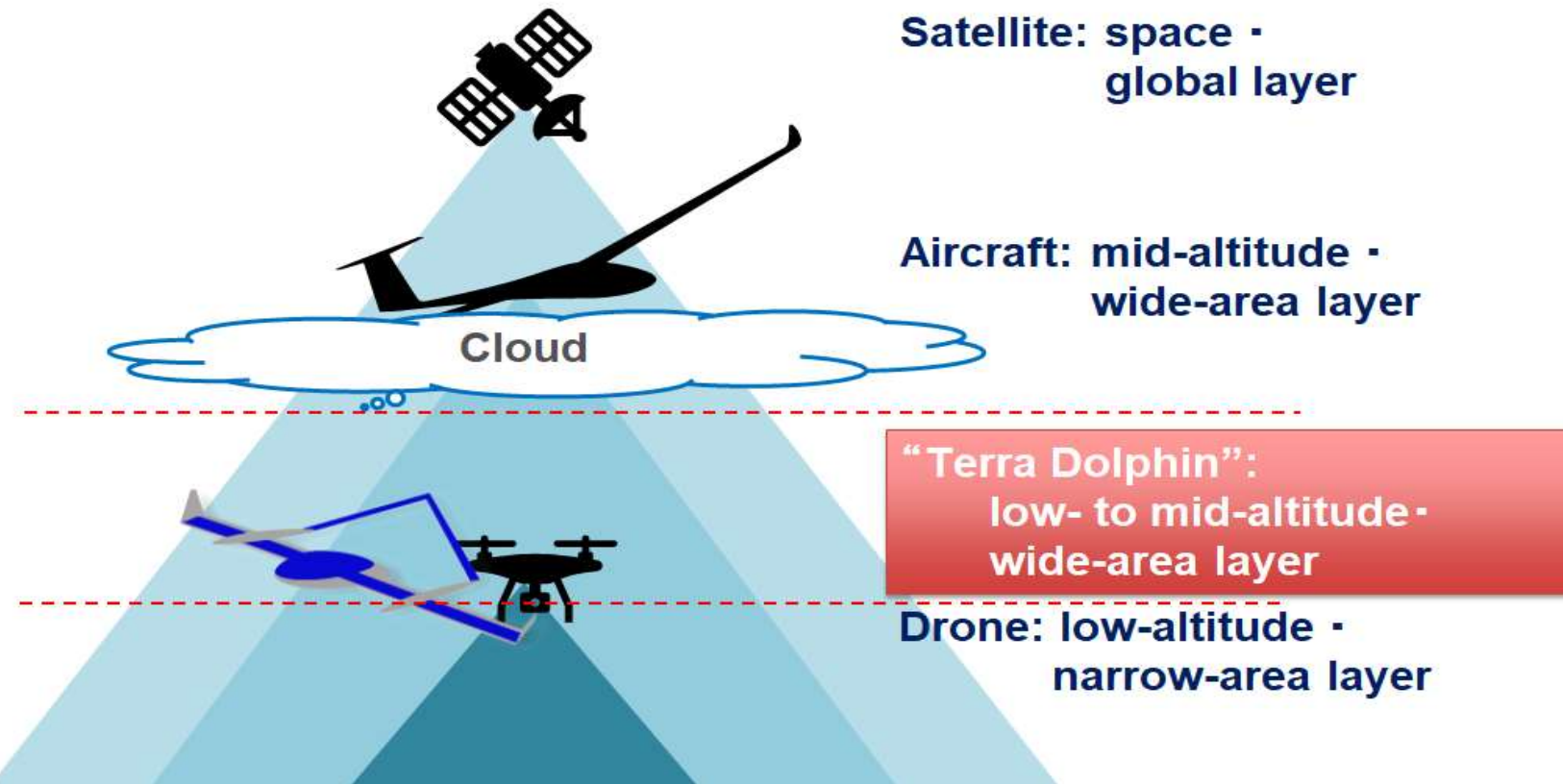
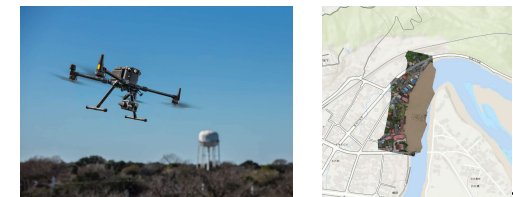
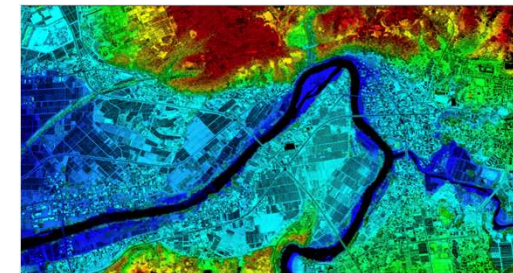
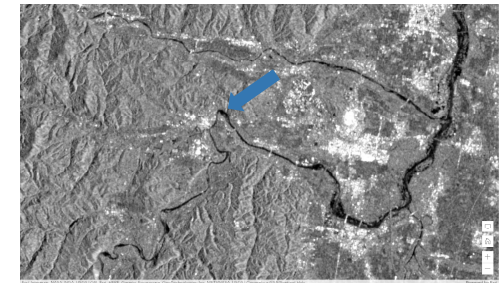
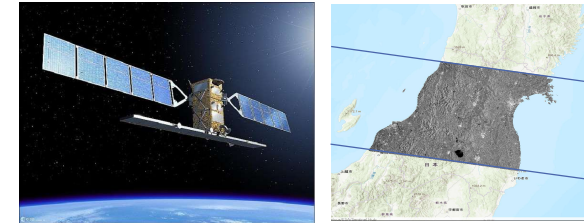
AI Analysis



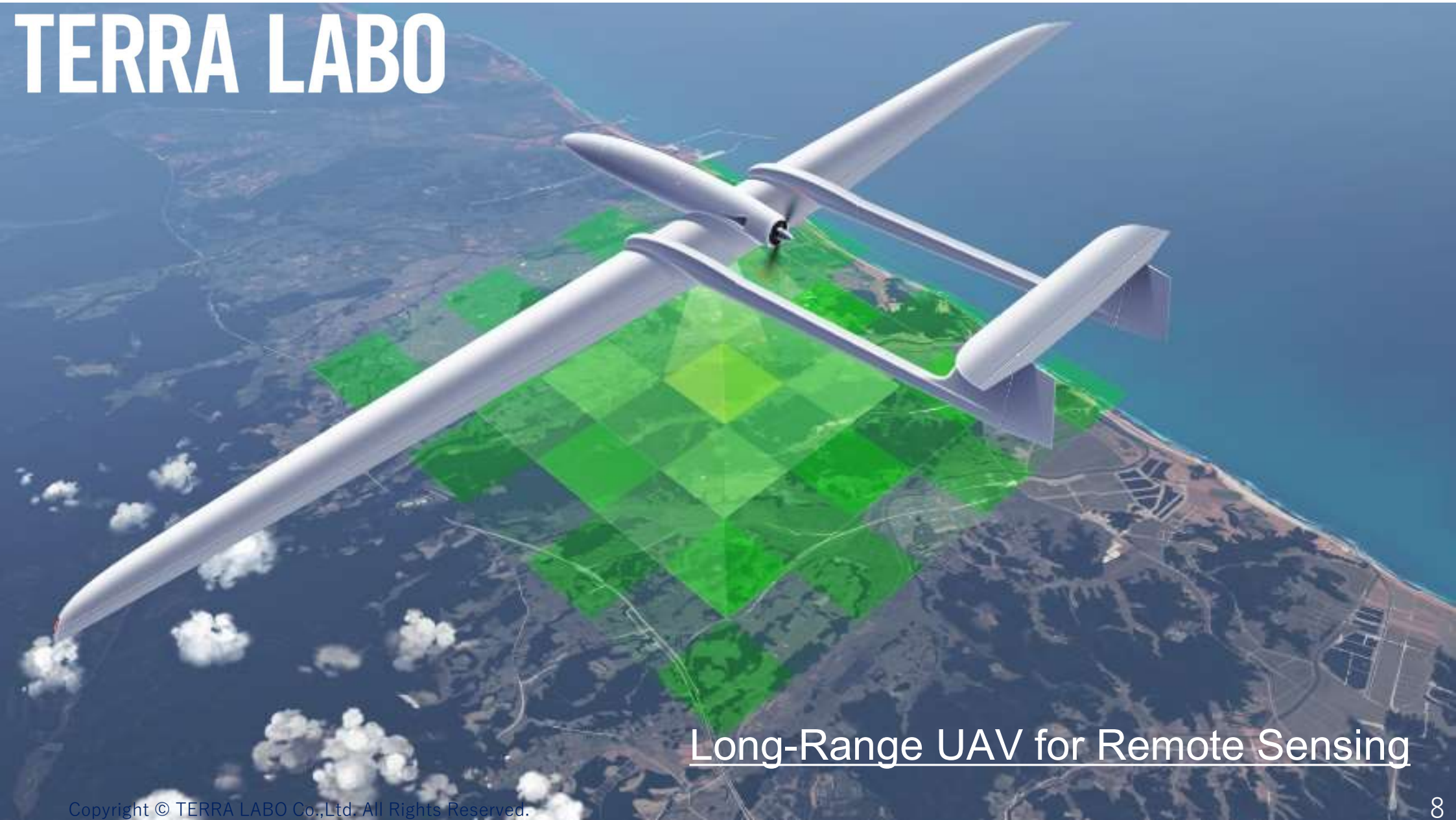
Multi-Purpose Hybrid UAV VTOL to Monitor from the Air

Terra Dolphin increases **frequency of data collection**, with wide area and high resolution.

More frequent is better!



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Long-Range UAV for Remote Sensing

Terra-Dolphin, Hybrid VTOL



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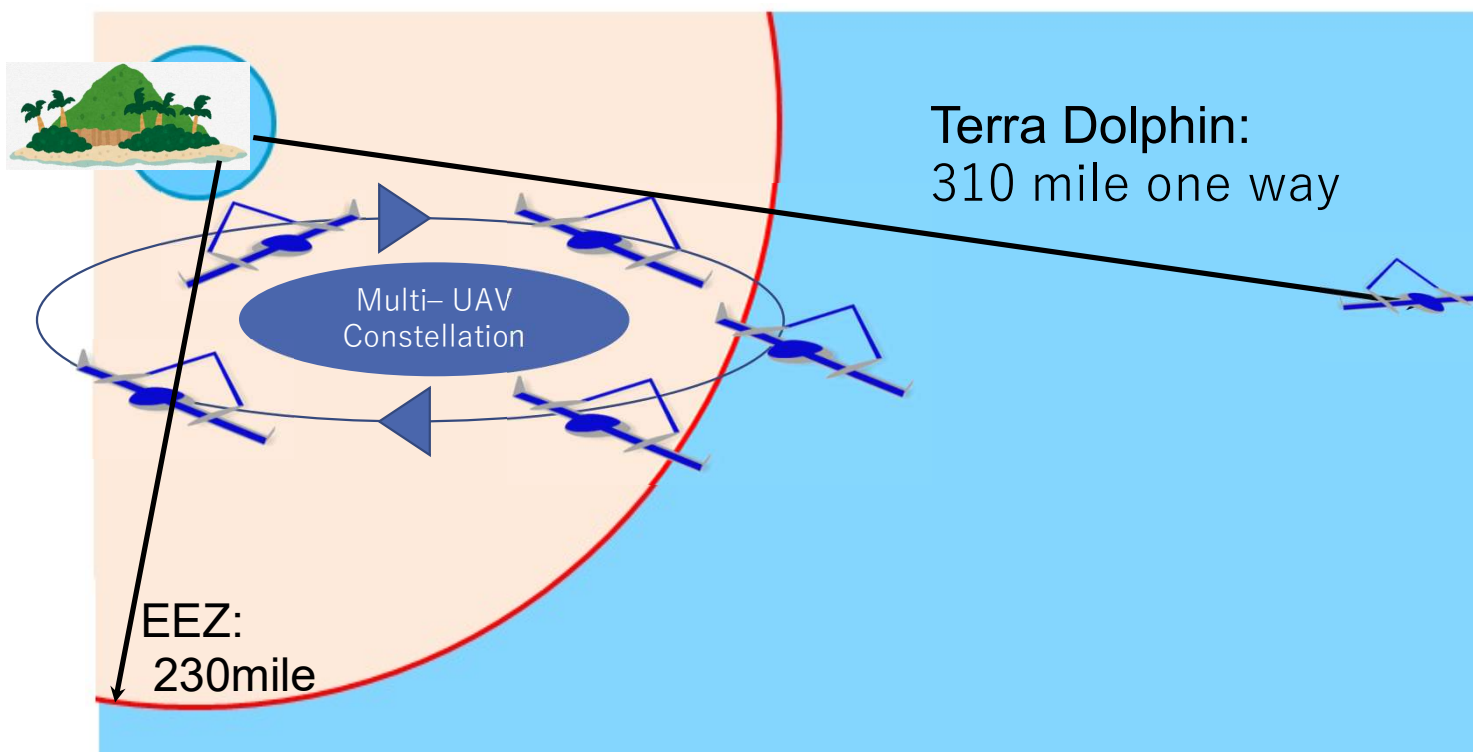
1000km (620mile) range,
Various sensors,
4.3m (14 ft) wingspan,
easy to carry.

Multi-Purpose Hybrid UAV VTOL to Monitor from the Air

Coverage & Capabilities:

Fly 500km (310 mile) one way, over the edge of EEZ (370km; 230mile)

Monitor/Track any targets or Sensing



Japan's EEZ

Applx 4.47 mil km², that is 12 times the size of the land.

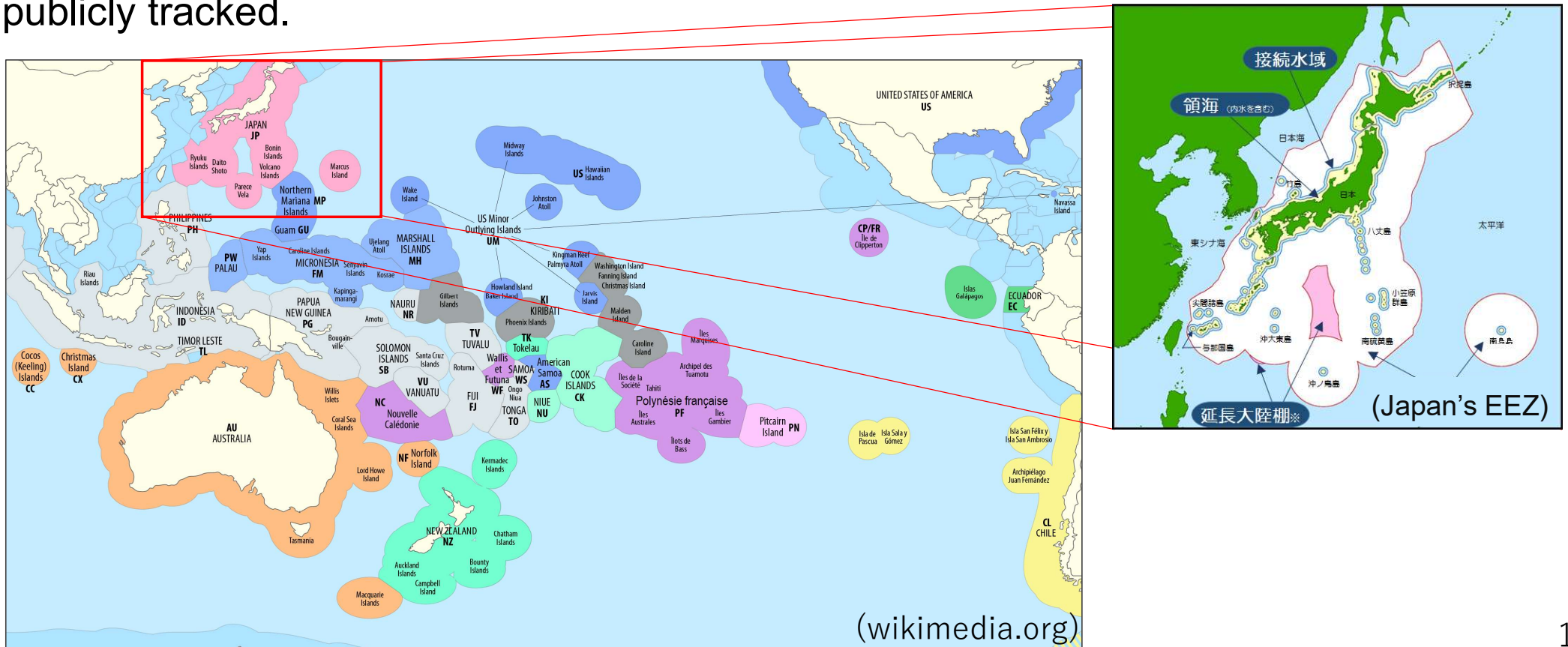


Multi-Purpose Hybrid UAV VTOL to Monitor from the Air

EEZ in Pacific Ocean:

Today, the EEZs of 23 Pacific Island countries span over 26 mil. km² (10 mil. mi²), making up to 10% of the world's total ocean surface area.

The researchers have found that 3/4 of the world's industrial fishing vessels are not publicly tracked.





TERRA Dolphin Long Range Model

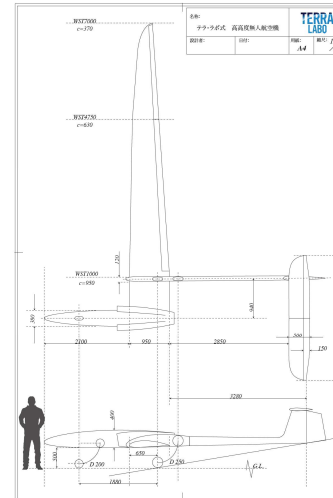
Cruise distance : 1000-2000km

Service ceiling : 6000m

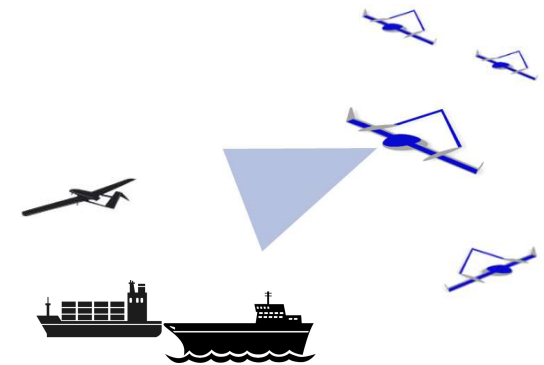
Payload : 60kg

Wingspan : approx.14m

Can be carried by land freight with split up by segments



Dynamic AI detection, tracking & monitoring, and communication with GCS

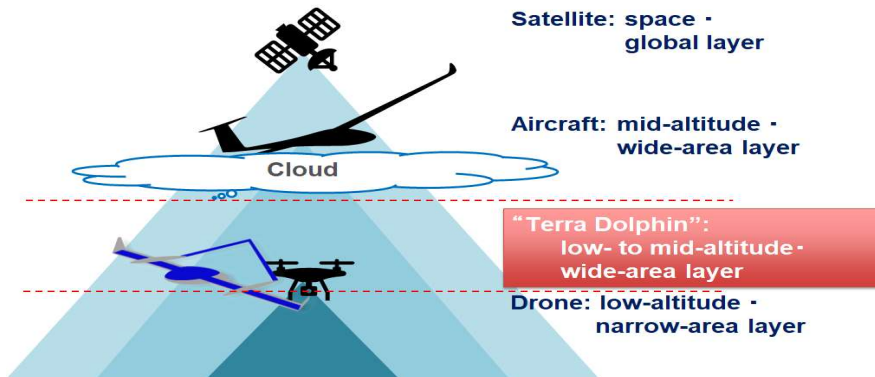


ConOps was development.

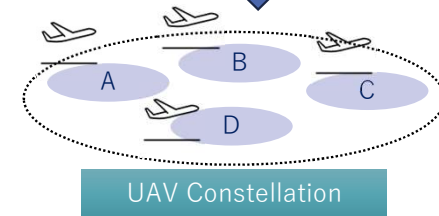
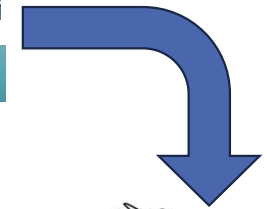
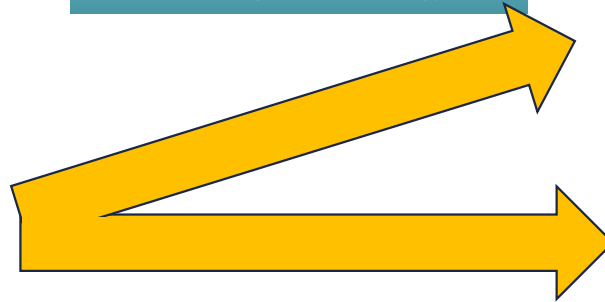
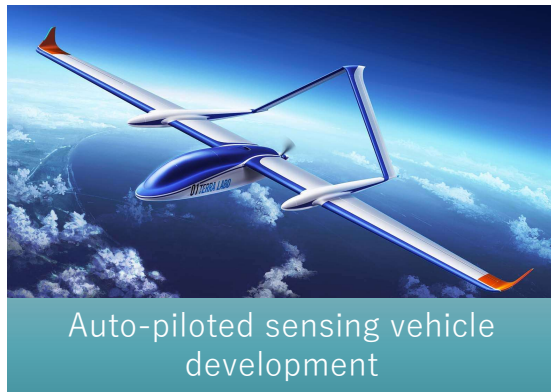
This is light-weight, easy to handle, and affordable UA providing long-time flight originally for geospatial information, target detection, port operation, etc, but

Possible for Dual Use

For Frequent/High Resolution Remote Sensing and Detection



Remote sensing from Low- to Mid-altitude by Multi UAV Operation, contributing continuous getting geospatial information and detection with enough quality (time, ground resolution/GSD)





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