Altus LSA

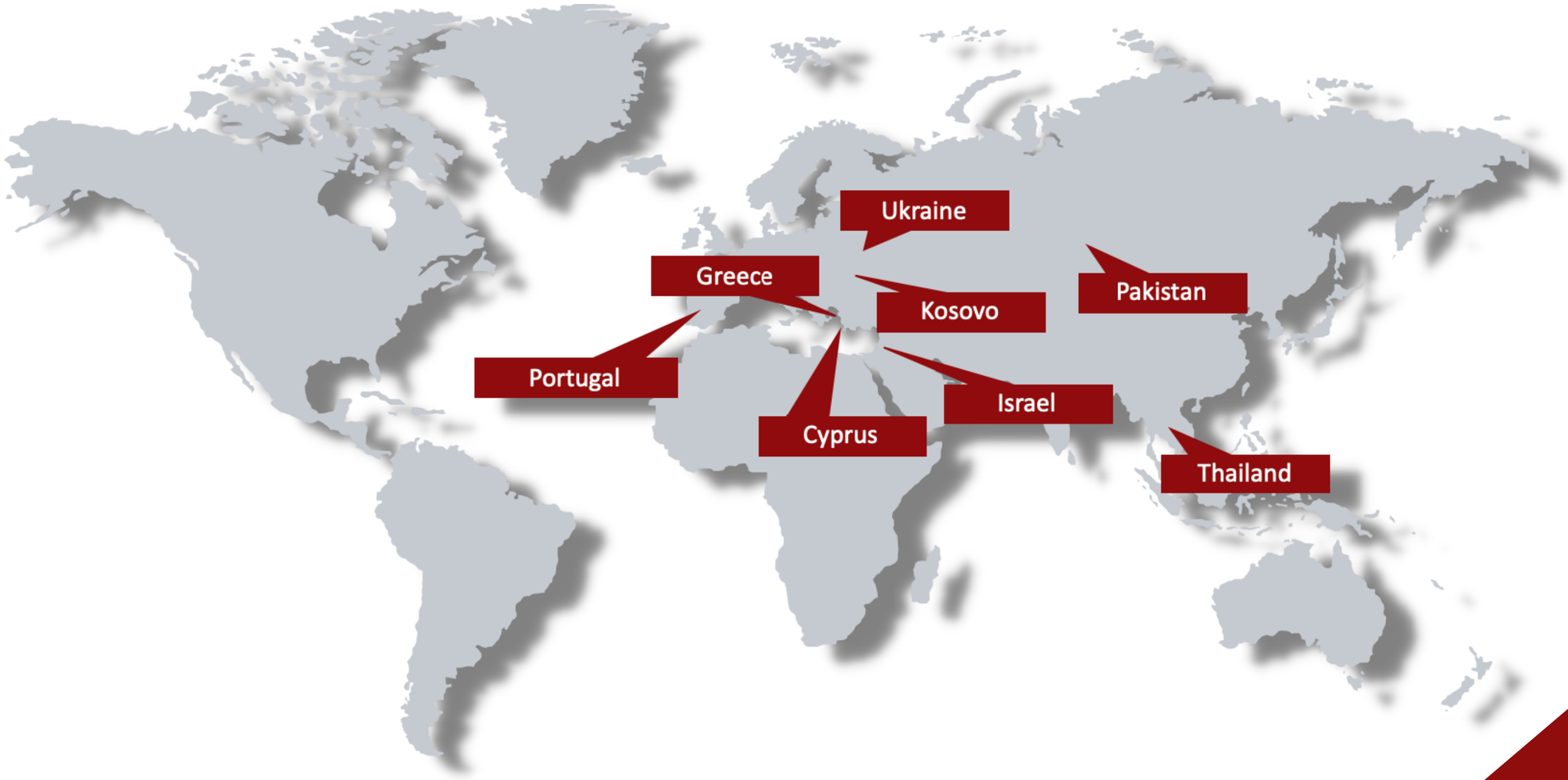
Innovative Defence Technology

Altus LSA

ALTUS LSA is a pioneering and innovative Greek defense technology company which since 2010 provides turnkey solutions and **- state of the art -** services in the field of **Unmanned Systems.**

Our company manages its own **UAS fleet** and the company's experience and know-how extend to various areas such as **land and sea border surveillance**, intelligence gathering, **airborne ISR**, natural disaster management, GIS applications, control and protection of critical infrastructure, RGB / thermal / multispectral **mapping**, target drone applications training / shooting / evaluation of anti-aircraft systems etc.

Worldwide Presence



Participation in European Programs

- Partner in the EU FP 7 collaborative project **''SUNY - Smart UNmanned aerial vehicle sensor Network for detection of border crossing and illegal entry''**.
- Consortium leader in the Hellenic-Israeli research and development program **“FERMIS’’ UAV based solution - Fire Event Remote Management Information System**.
- Consortium leader in the National Project **''InSpect - Integrated Aerial Platform for Inspection & Maintenance of Critical Infrastructures''**
- Partner in the National Project **''GREENWATERDRONE - Development and Implementation of an Innovative and Cost-effective System for the Precise & Dynamic Irrigation Scheduling and Crop Monitoring''**
- Partner in the National Project **''DROMEAS - Unmanned Aerial Vehicle - Cooperative Intelligent Transport System''**
- Partner in the EU PADR Project (Preparatory Action on Defence Research): **''OCEAN 2020 - Open Cooperation for European mAritime awareNess''**
- Partner in the EU ISFP Project **''PRINCE - Preparedness Response for CBRNE INCidEnts''**
- Consortium leader in the EU Horizon 2020 Project **''ENDURUNS - Development and demonstration of a long-endurance sea surveying autonomous unmanned vehicle with gliding capability powered by hydrogen fuel cell''**
- Partner in the EU Horizon 2020 Project **''ADACORSA - Airborne data collection on resilient system architectures''**
- Partner in the EDIDP (European Defence Industrial Development Programme) Project **''LOTUS - Low Observable Tactical Unmanned air System''**

PRINCE
Preparedness Response for CBRNE INCidEnts
Webpage: https://www.isfp-prince.eu/

SUNNY
Smart UNattended airborne sensor Network for detection of vessels used for cross border crime and irregular entrY
Webpage: http://www.sunnyproject.eu/

FERMIS
Fire Event Remote Management Information System
Webpage: http://www.fermis-project.eu/fermis/

ENDURUNS
Development and demonstration of a long-endurance sea surveying autonomous unmanned vehicle with gliding capability powered by hydrogen fuel cell
Webpage: https://enduruns.eu/

OCEAN 2020
Open Cooperation for European mAritime awareNess
Webpage: https://ocean2020.eu/

ENDURUNS EU Project (H2020)

- Goal: Develop a hybrid AUV and USV system combination, capable of providing underwater services in deep ocean conditions:
  - Seabed mapping and profiling, geological and geophysical surveys, mineral and seabed mining and exploration, search and find missions (e.g. aircraft wreckage) and inspection of infrastructure and assets.
- The AUV will be accompanied by an USV (Unmanned Surface Vehicle), which will follow the AUV from the surface and transmit data from the AUV to RMCC onshore.
  - Highlights: satellite data transmission to and from the RMCC, high-resolution geotagging data, retrieving the AUV data from data bubbles (capsules), hybrid power source of hydrogen fuel cell, battery pack and photovoltaic panels.
  - In case of adverse weather conditions the USV will be capable of submerging up to 20m underwater and resurface.

- The AUV and USV combination are expected to outperform all existing AUV vehicles, in terms of endurance, positioning, survey capability, resolution, sensitivity.

https://enduruns.eu

ENDURUNS

Product Lineup

EDOMON UAS

EDOMON is a Hybrid VTOL UAV based on Supervolo Hybrid Project Aerial Platform, designed to deliver reliable and **efficient ISR Operations** for the Law enforcement, Civil Protection and Defence Market.

The **EDOMON SYSTEM** is designed to operate with **minimum man-power** and operational footprint (crew of 2 operators & no runway required) and is able to operate under **harsh environmental & electromagnetic conditions.**
The System is able to deliver **enhanced ISR capabilities** with the use of **EO/IR, AIS & IMSI Catcher Payloads.**

EDOMON UAS – Technical Specifications

1.	Wing span	**3.000mm (118in)**
2.	Overall length	**1.895mm (74.5in)**
3.	Weight without load	**11.7 kg**
4.	Useful load	**2.3 kg**
5.	Maximum take-off weight	**18 kg**
6.	Flight autonomy	**Six hours (6 hrs)**
7.	Telemetry and video range	**54 Nautical Miles (100km) LOS**
8.	Maximum flight altitude	**3,000m (10,000ft)**
9.	Maximum wind resistance	**60km / h**
10.	Maximum flight speed	**120km / h**
11.	Temperature operating range	**-20 [° C] to + 60 [° C]**
12.	Number of people required	**Crew Composition: 1 operator/1 technician**
13.	Propulsion System	**Hybrid: Electric / Thermal engine**
14.	Fuel type	**95 RON 40: 1 Mix**
15.	Payloads	**EO/IR/LRF, IMSI catcher, payload release, AIS, Voice Relay, up to 2kg of custom payload**
16.	Additional capabilities	**Deploy from a moving vessel, GPS jamming resistance (triple GPS band, extra INS option)**

EDOMON UAS

ATLAS 204

Atlas 204 Drone System is designed to deliver high reliability & mission oriented **multi-rotor capabilities** in the fields of **defence, security & industrial** surveillance applications.

ATLAS 204 system is designed to the highest industrial standards, with state of the art mission command systems, **encrypted RF links**, redundant safety systems and **reconfigurable payload hub.**

ATLAS 204 System is able to operate under **harsh environmental & electromagnetic** conditions and with minimum man-power & operational footprint by employing **advanced mission-oriented Algorithms.**

ATLAS 204 – Technical Specifications

1. Dimensions (length - width - height) - folded	**35 x 35 x 38 cm**
2. Dimensions (length - width - height) - developed	**65 x 65 x 38 cm**
3. Rated weight with dual camera load	**5.5 kg**
4. Maximum take-off weight	**8 kg**
5. Flight autonomy	**Forty minutes (40 min)**
6. Telemetry and video range	**5 [km] - 10 [km] LOS**
7. Maximum flight altitude	**9,000 ft AMSL (3,000 m)**
8. Maximum wind resistance	**Up to 10 [m / s] (Up to 5 Beaufort)**
9. Maximum flight speed	**18 [m / s]**
10. Positioning system	**GNSS (GPS & GLONASS)**
11. Frequency of communications	**2.4 [GHz] (AES 128 Encryption)**
12. Temperature operating range	**-10 [° C] to + 50 [° C]**
13. Possibility of automatic take-off / landing	**Yes / Using autopilot**
14. Number of people required	**One (1) person**
15. Battery features	**One (1) Lithium, 22.2V, 16.000mAh Yes**
16. Navigation lights	**(green, red and white)**
17. Payloads	**EO/IR/LRF, IMSI catcher, payload release, AIS, Voice Relay, up to 2kg of custom payload**

ATLAS 204

ATLAS 4

The **Atlas 4 Drone System** is designed to deliver **“out of the normal” multi-rotor capabilities** in the fields of surveillance, industrial monitoring and small **cargo delivery applications**.

ATLAS system is designed to the highest industrial standards, with state of the art mission command systems, **encrypted RF links**, redundant safety systems and **reconfigurable payload hub.**

The ATLAS 4 System is able to operate under **harsh environmental & electromagnetic** conditions and with minimum man-power & operational footprint by employing **advanced mission-oriented Algorithms.**

ATLAS 4 – Technical Specifications

1.	Dimensions (length - width - height) - folded	**64.5 X 64.5 X 48 [cm]**
2.	Dimensions (length - width - height) - developed	**130 X 130 X 48 [cm]**
3.	Rated weight with dual camera load	**7 - 9.1 [kg]**
4.	Maximum take-off weight	**11 [kg]**
5.	Flight autonomy	**Sixty minutes (60 min)**
6.	Telemetry and video range	**5 [km] - 15 [km] LOS**
7.	Degree of protection - tightness	**IP43 - upgradeable to IP55**
8.	Maximum flight altitude	**16,400 [ft] AMSL (5,000 [m])**
9.	Maximum wind resistance	**Up to 10 [m / s] (Up to 5 Beaufort)**
10.	Maximum flight speed	**18 [m / s] (65 [km / h])**
11.	Positioning system	**GNSS (GPS & GLONASS)**
12.	Frequency of communications	**2.4 [GHz] (AES 128 Encryption)**
13.	Temperature operating range	**-20 [° C] to + 60 [° C]**
14.	Possibility of automatic take-off / landing	**Yes / Using autopilot**
15.	Number of people required	**One (1) person**
16.	Battery features	**Two (2) Lithium, 22.2V, 22.000mAh**
17.	Navigation lights	**Yes (green, red and white)**
18.	Payloads	**EO/IR/LRF, IMSI catcher, payload release, AIS, Voice Relay, up to 4kg of custom payload**

ATLAS 4

Adaptable - customization to End User needs

Encrypted dual-redundant MIMO data/video-link

Field-proven flight controller with encrypted data link

Multi payload configuration:
1. Payload delivery system
2. IMSI Catcher
3. Voice relay system (Siren)
4. Tethered power supply system

Dual-redundant GPS & RTK- GPS

OPTIONAL

Drone Hangar system for autonomous/unattended drone operation

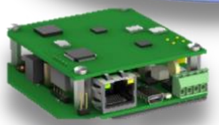
OPTIONAL

Dual-redundant IMU & INS

Custom (handheld or ragged case) GCS with weatherproof touch display

Dual gimbal EO/IR with mechanical & digital stabilization

Onboard Processor for Machine Learning /AI functions



Parachute Flight Termination System

OPTIONAL

Maritime ISR

ALTUS LSA

MARITIME ISR DAY

Network-Centric Architecture

Strategic

Tactical

MTIS i-Platform

DISSEMINATE

- Deliver Information to multiple “clients”
- Storage of information and data

PROCESS

- Fuse information from multiple sensors
- Convert sensor data to meaningful information

- Library, OSINT, AI Other….

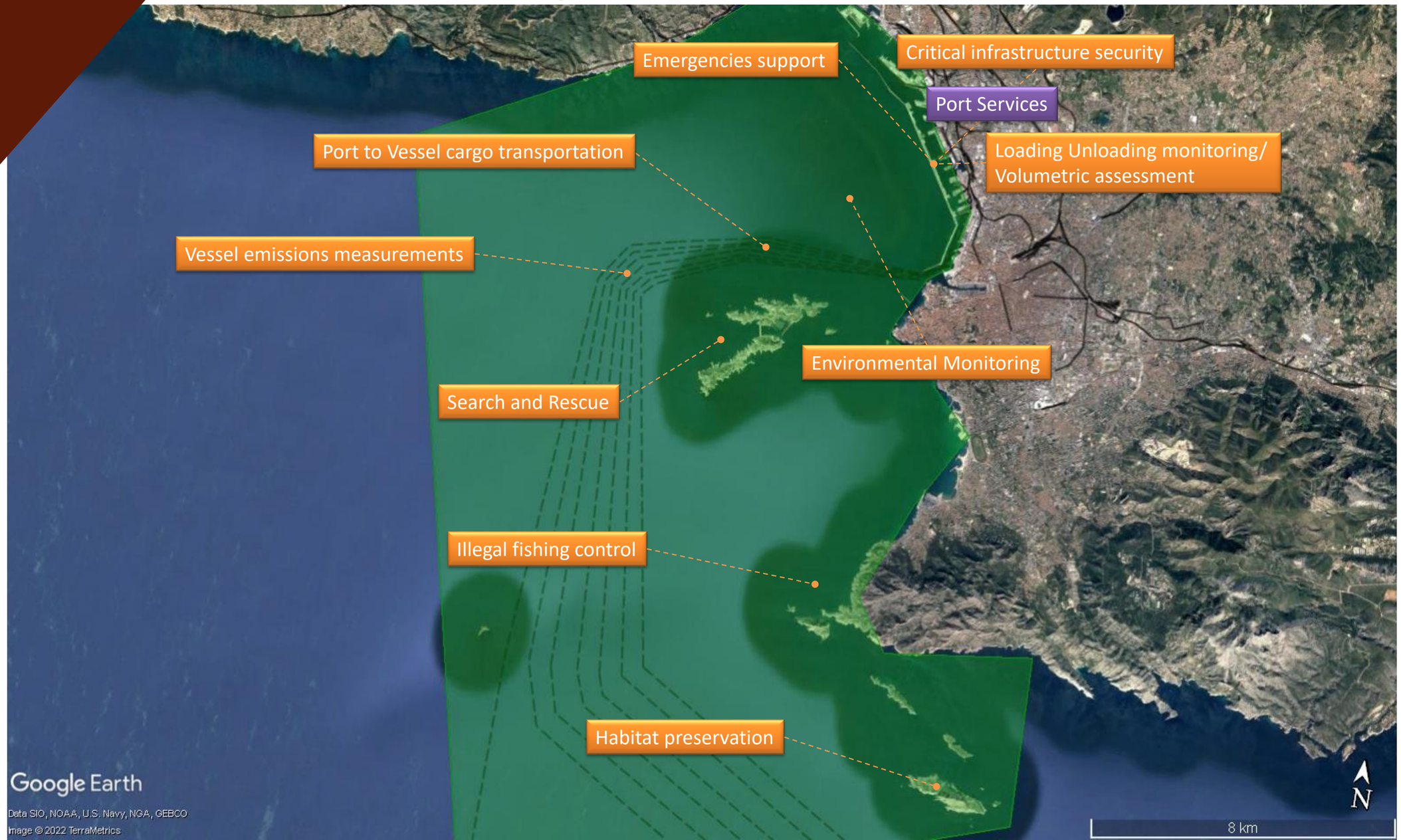
COLLECT

- Deploy
- Operate
- Redeploy

TASK

- RPAS system Identification
- Sensor & mission equipment Integration
- Preparation for Operations

Maritime Capabilities from Land



Drone in a box concept

- Drone Hangar integrated on vessel
  - Auto Take Off and Landing
  - Automatic charging base & weather station.
  - No human interaction to charge the batteries
  - Built-in meteorological station for pre-flight meteorological data
  - Waterproof

- Fully automatic operation schedule with on-demand flight option.
- Fully automatic flights capability with no operator required on vessel.
- Real time data transmission through i-Platform.

Maritime Capabilities from Vessel

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