



Innovation and Open Data: sustainability for the marine sector

June 9th, 2021 h 11.00-13:00 (CET)

Struglia Maria Vittoria, ricercatrice, ENEA

EU GREEN WEEK 2021 PARTNER EVENT

ZERO #EUGreenWeek
POLLUTION
for healthier people and planet





Innovazione e Open Data: dialogo e sinergie tra progetti europei per la sostenibilità del settore marittimo

Fabio Grati – CNR IRBIM

DAMAS
Data driven Model for the Analysis of Sea-state



Marcello Maranesi – GMATICS

Giorgia Gioacchini – UNIVPM



Giorgio Scavino – ANCI LAZIO

Marco Gatti – K2B

Ernesto Napolitano – ENEA

Maria Vittoria Struglia – ENEA

Luca De Marchi – UNIBO

Cristina Frittelloni – ASSAM

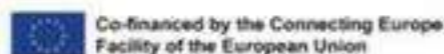
Francesca Perretta – ASSAM


Laura Gagliardini – Regione Marche



Valentina Tepedino - Eurofishmarket

Innovation and Open Data: dialogue and synergies between European projects for the sustainability of the maritime sector





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BLUE DEAL

BLUe Energy DEployment ALliance

12 partners
6 countries



BLUE DEAL



Co-financed by the Connecting Europe Facility of the European Union



BLUE DEAL: OBJECTIVES

Main challenge

Inclusion of Blue Energy in Mediterranean Maritime Planning and governance

4TH HELIX

- PUBLIC AUTHORITIES & LOCAL GOVERNANCE
- ACADEMY & RESEARCH
- INDUSTRY
- CIVIL SOCIETY

WHAT WE WANT TO ACHIEVE

- Performing open innovation actions in target regions to develop cooperation mechanisms between SMEs, Public Authorities (PAs), Knowledge institutions and civil society and promote new initiatives for Blue Energy deployment in the Mediterranean region.
- Mainstreaming BE planning practices to improve instruments of maritime governance and Regional/National energy strategies.
- Establishing a permanent transnational BLUE DEAL Alliance to maximize impacts and define general practices and tools through the production of:
 - a policy-oriented Joint Plan for portability, addressed to decision makers to introduce BE in regional and national strategies.
 - a market oriented Transfer Protocol, addressed to SMEs and investors to support business and entrepreneurship.

2

BLUE DEAL TESTING LABS

4

BLUE DEAL LABS

9

OPEN DAYS

2

BUSINESS FORUM

1

INTERNATIONAL BE SCHOOL CONTEST
BLUE DEAL for Future

BLUE DEAL: OBJECTIVES

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- **MULTIDISCIPLINARITY**
- **USE OF DATA**



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BLUE DEAL ENERGY PLANNING METHODOLOGY

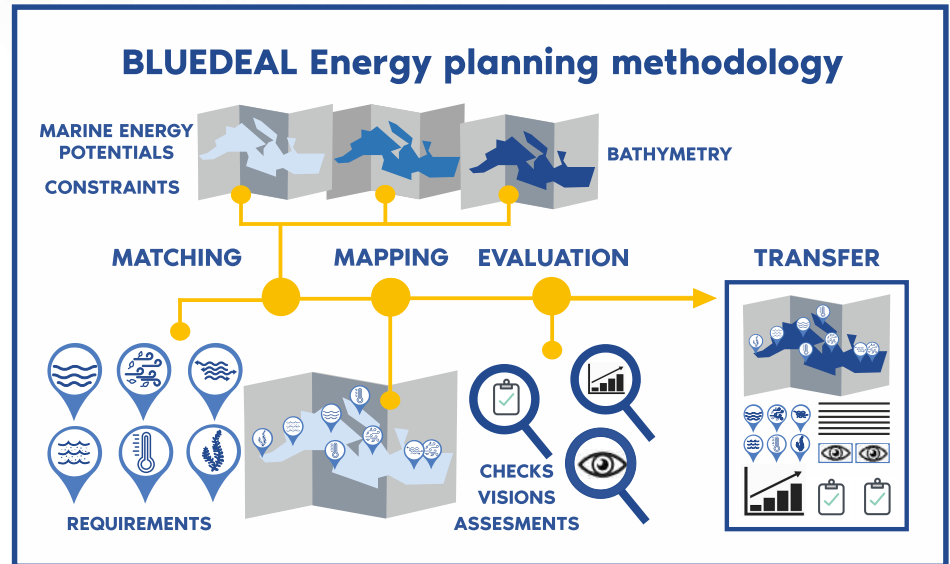
The Methodology

We started working on the development of a Blue Energy Planning Methodology to analyze the potential of a certain area and provide an integrated Blue Energy Plan to exploit marine resources with a combination of different technologies.

Later on, we transmitted and shared this information through participatory workshops involving:

-  **Sectoral Agencies**
-  **SMEs & Large Enterprises**
-  **Universities & Schools**
-  **Interest Groups**
-  **General Public**
-  **Public authorities: local, regional, national**

The methodology has been designed to integrate multiple competences and be applied in different Mediterranean areas taking into account marine energy potentials, environmental conditions, protected areas, navigation routes, ports, infrastructures, minimum requirements of technologies, criteria for environmental impact assessment, and licensing procedures.



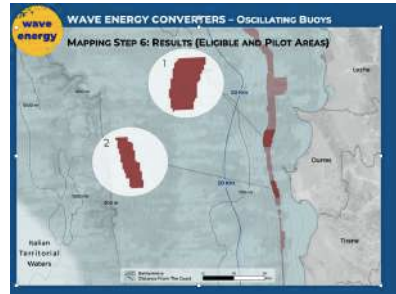
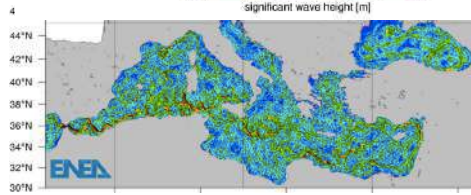
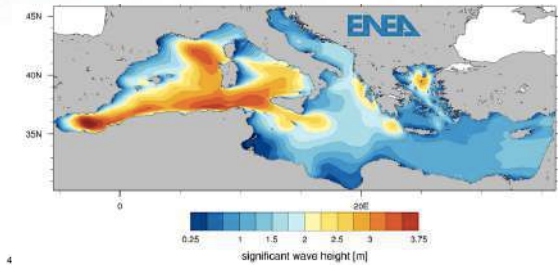
What are the most promising marine energy potentials in the area?

Where could the Blue Energy technology successfully be installed?

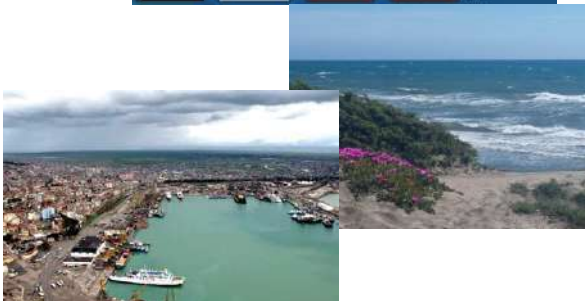
What does it look like?

Will all the environmental constraints be respected?

BE planning: Multidisciplinary

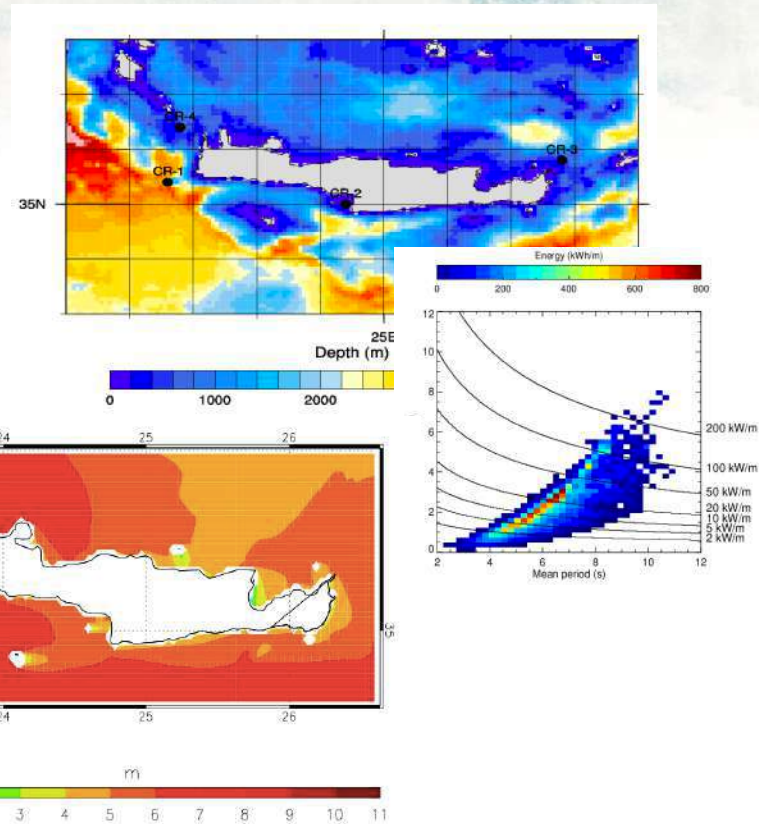
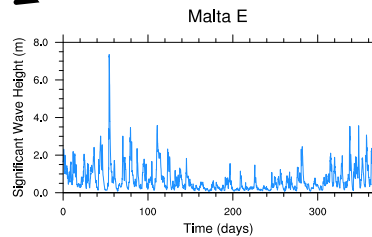
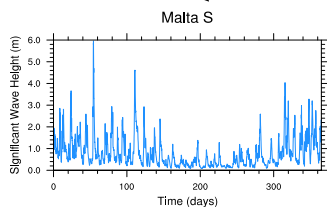
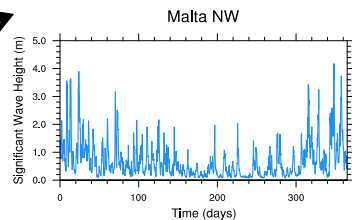
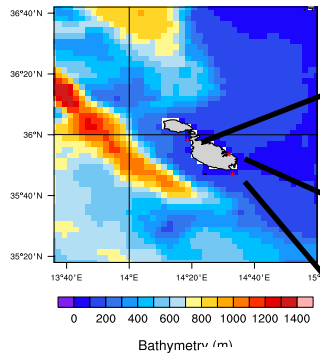


- Physical Oceanography
- Engineering
- Architecture
- Environmental Sciences



BE planning: Use of data

- Resource characterization
- Integrated BE plan



FOLLOW US!

Find us on:

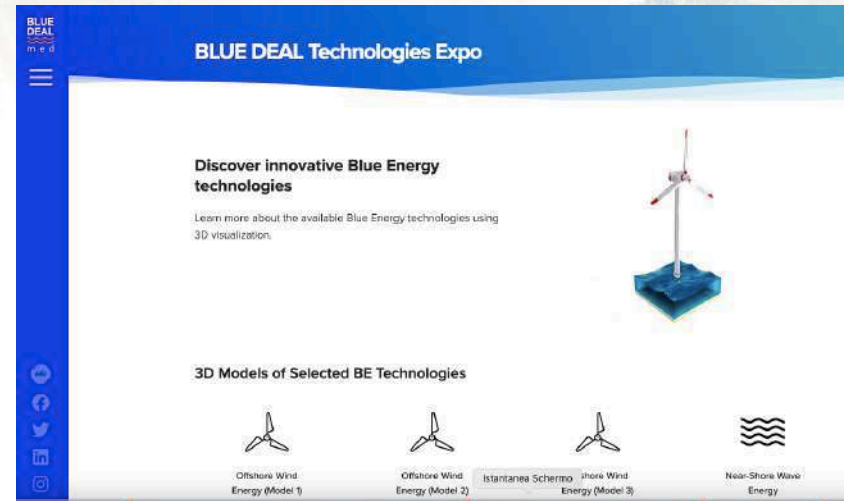
Website: blue-deal.interreg-med.eu

E-mail: bluedeal@unisi.it Tel: +39 0577 235739

Our Newsletters: 1st Newsletter, 2nd Newsletter



We are communicating and spreading our activities and achievements through these channels.



BLUEDEALMED.EU




Inspiring the Next Generation of Blue Energy Innovators

BLUE DEAL Med is a platform dedicated to promotion of Blue Energy through a series of online and physical events, as an additional instrument of the BLUE DEAL Interreg MED Project

UPCOMING EVENT: 14 Jun 2021
3rd BLUE DEAL Transferring LAB





Innovation and Open Data: sustainability for the marine sector

June 9th, 2021 h 11.00-13:00 (CET)

Luca De Marchi, SUSHI DROP P.I.
Università di Bologna

EU GREEN WEEK 2021 PARTNER EVENT

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ACKNOWLEDGMENT



**Interreg
Italy - Croatia**

European Regional Development Fund



EUROPEAN UNION



Among targeted actions: increase the marine environment knowledge through establishment of survey habitat-biodiversity mapping.



Sushi-drop project

Sustainable fiSHeries with DRONES data Processing



SPLITSKO
DALMATINSKA
ŽUPANIJA

sunce

SUSHI DROP Project



PROJECT DURATION
2019 - 2021



ERDF
1.45 mln€



TOTAL BUDGET
1.71 mln€

Main outputs

Unmanned Underwater Vehicle

Georeferenced
OA Database

Strategies for biodiversity
conservation

PROJECT OVERVIEW – The Consortium



Scientific
Institutions



INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO SPLIT



Fisheries Local Action Group

sunce

Fishermen and Environmental
Associations

**REGIONE
MARCHE**



SPLITSKO
DALMATINSKA
ŽUPANIJA

Local
Authorities

Interreg
Italy - Croatia
SUSHI DROP

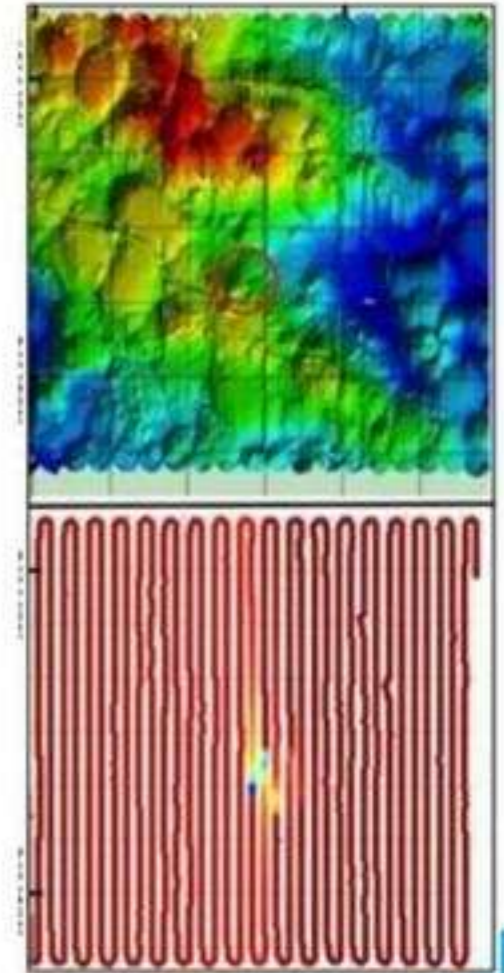


SPLITSKO
DALMATINSKA
ŽUPANIJA

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Why UUVs?

- Unmanned Underwater Vehicles (UUVs) have a wide range of applications in marine geoscience, and are increasingly being used in the scientific, military, commercial, and policy sectors
- UUV can carry out researches without interfering with the seabed and at reduced costs, if compared to the use of oceanographic vessels
- UUV can reach areas deeper than 200 m (unreachable by divers)



Territorial Challenge

A large part of Adriatic Sea bottoms extends on a flat shelf, covered with mud or sand but there are areas (depth 70/90 m) where bottom is rocky, with difficulties to trawl a net.



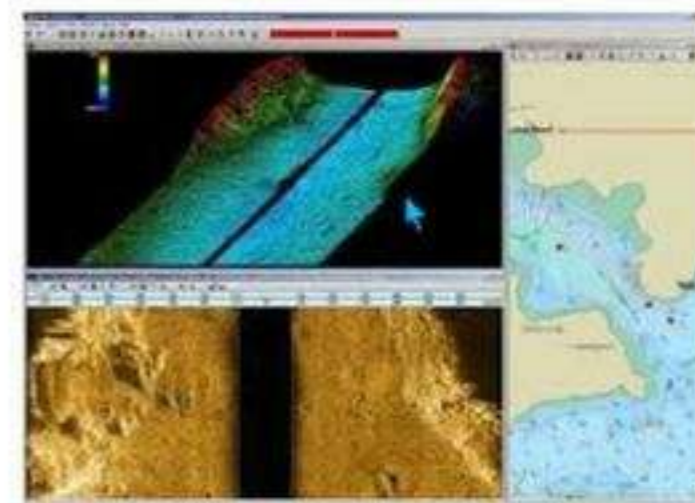
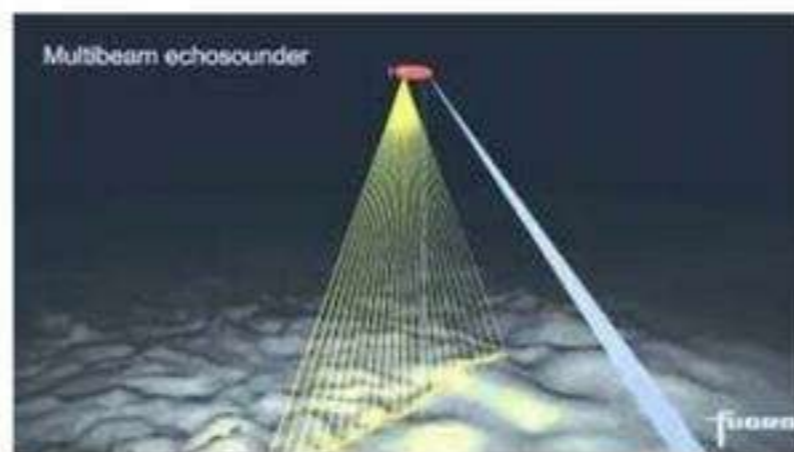
These areas most likely host sensitive benthic habitats and hotspots of biodiversity but cannot be studied by means of conventional vessels

UUVs could be employed in these contexts.

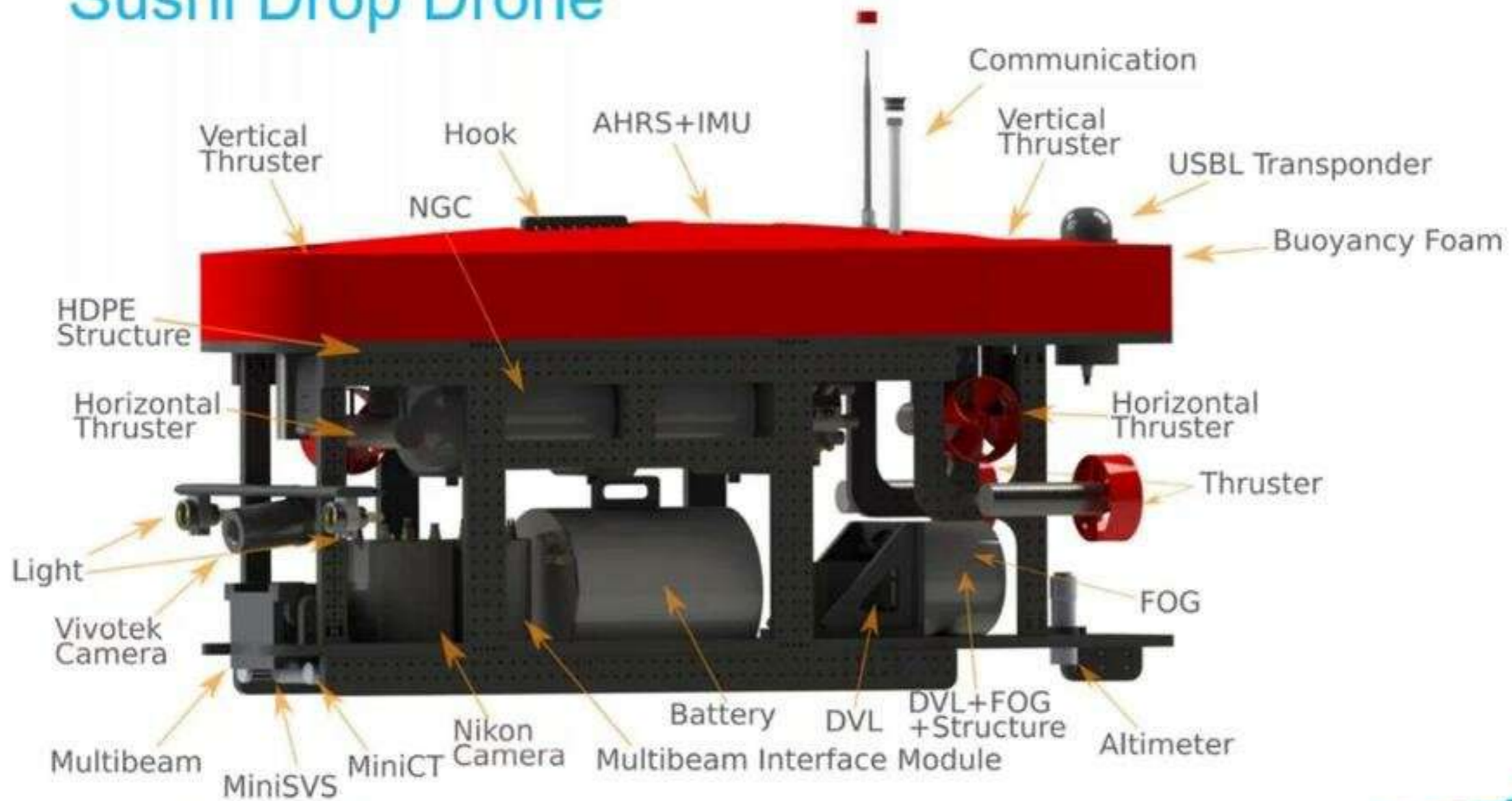
PROJECT Workflow



issia^{cnr}



Sushi Drop Drone



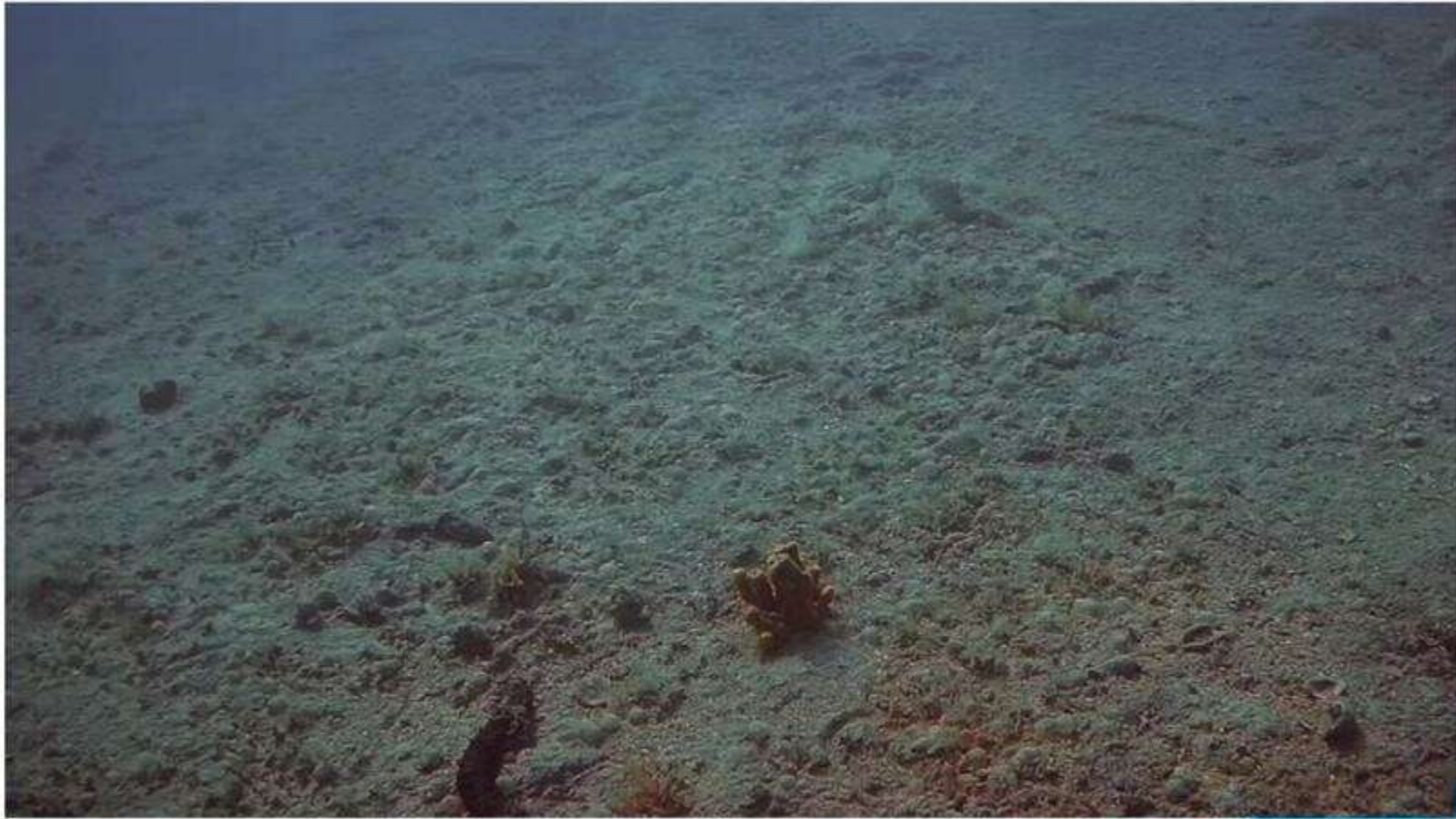
Sushi Drop Drone - Blucy



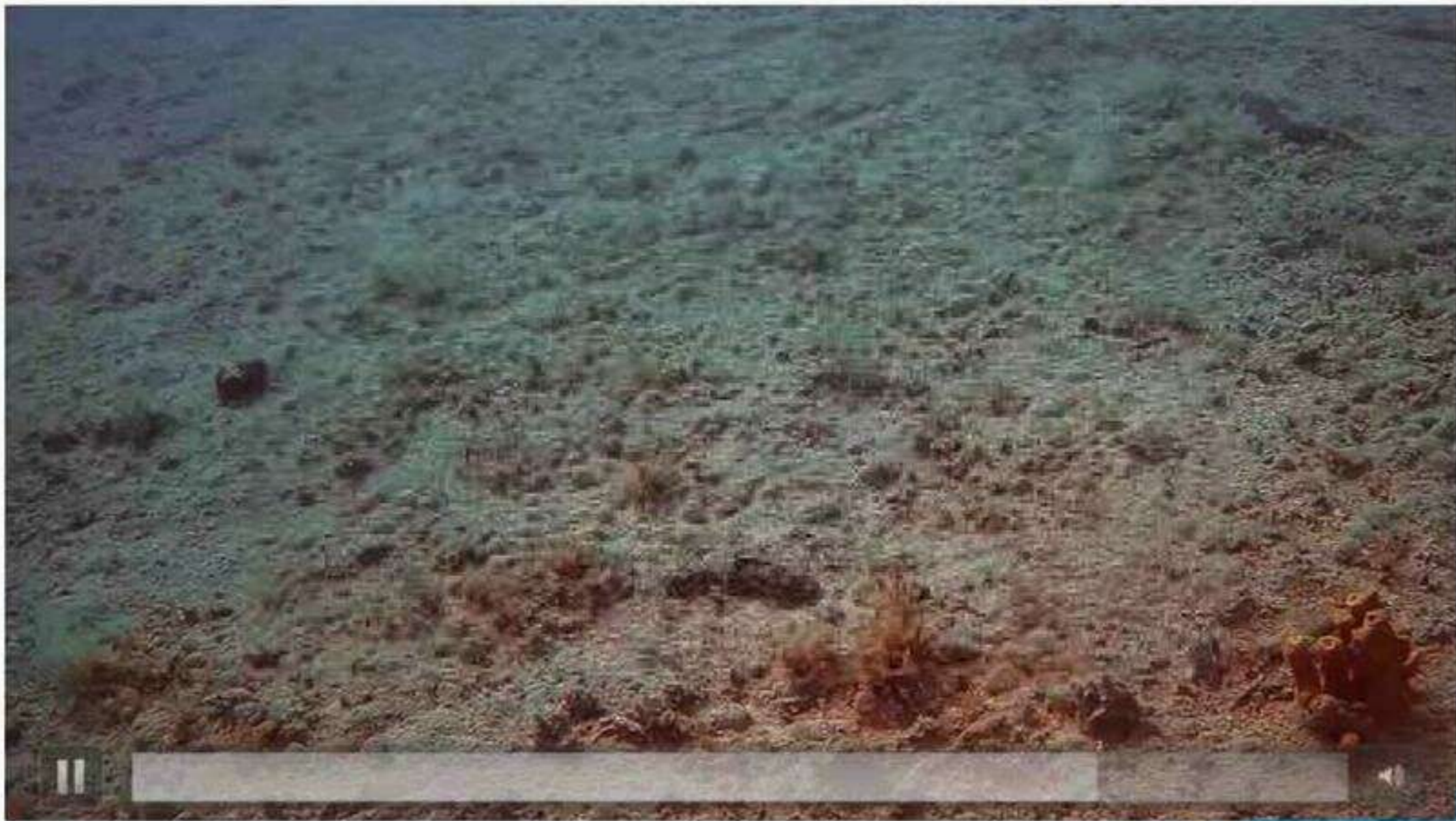
First Missions – Split 10/05/21 – 17/05/21



Scientific Payload – Pilot Camera



Scientific Payload – Pilot Camera



Scientific Payload – Pilot Camera



Scientific Payload – Pilot Camera



Scientific Payload – Pilot Camera



Scientific Payload – Bottom Camera

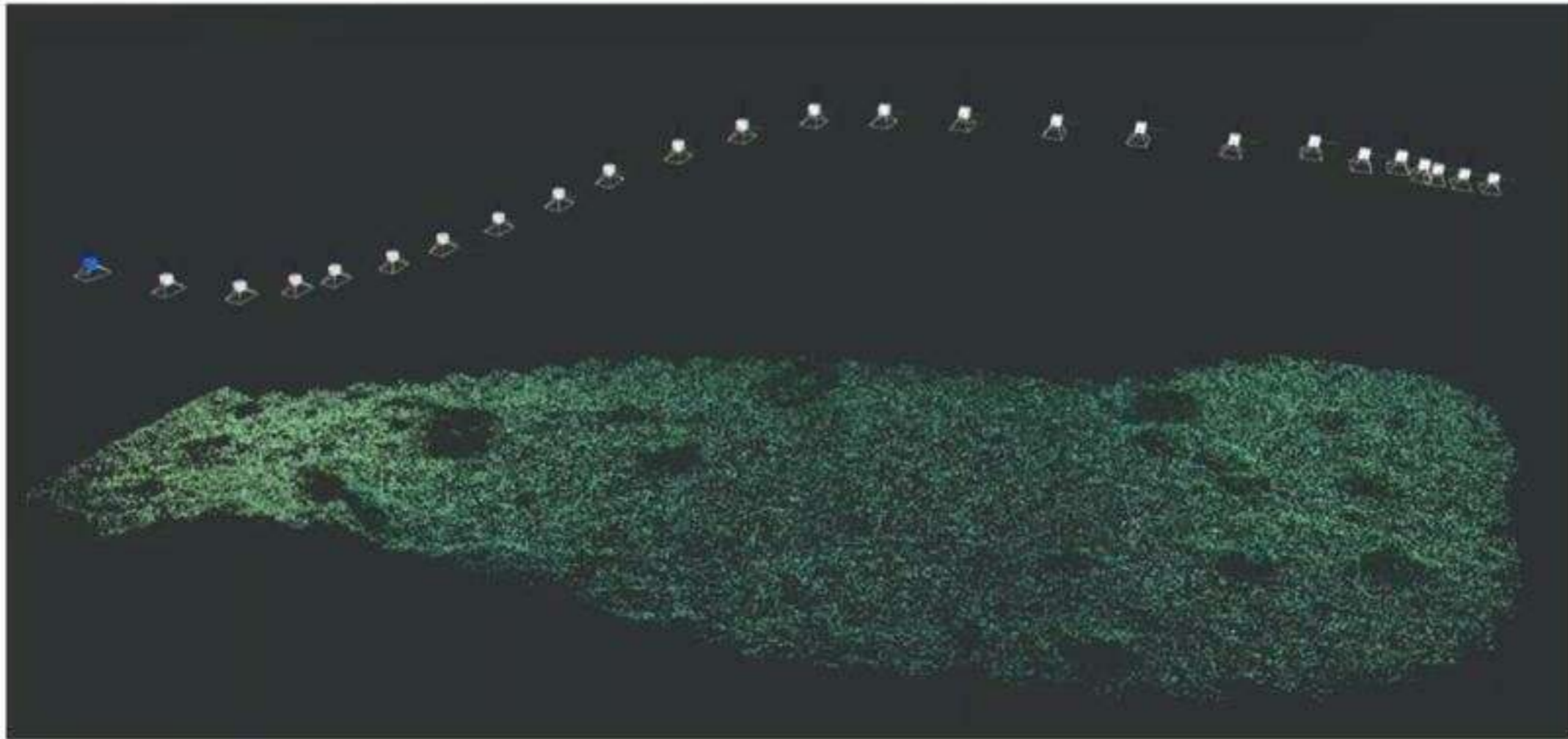


Nikon Full frame camera 24MP, 24mm focal length

- According to the turbidity of the Water the minimum altitude should be less then 5 mt
- The optimal navigation altitude should be chosen between the overlap of the photos, speed of Blucy and turbidity of the water

➔ Photo taken at 1.5 mt of altitude

Scientific Payload – Bottom Camera

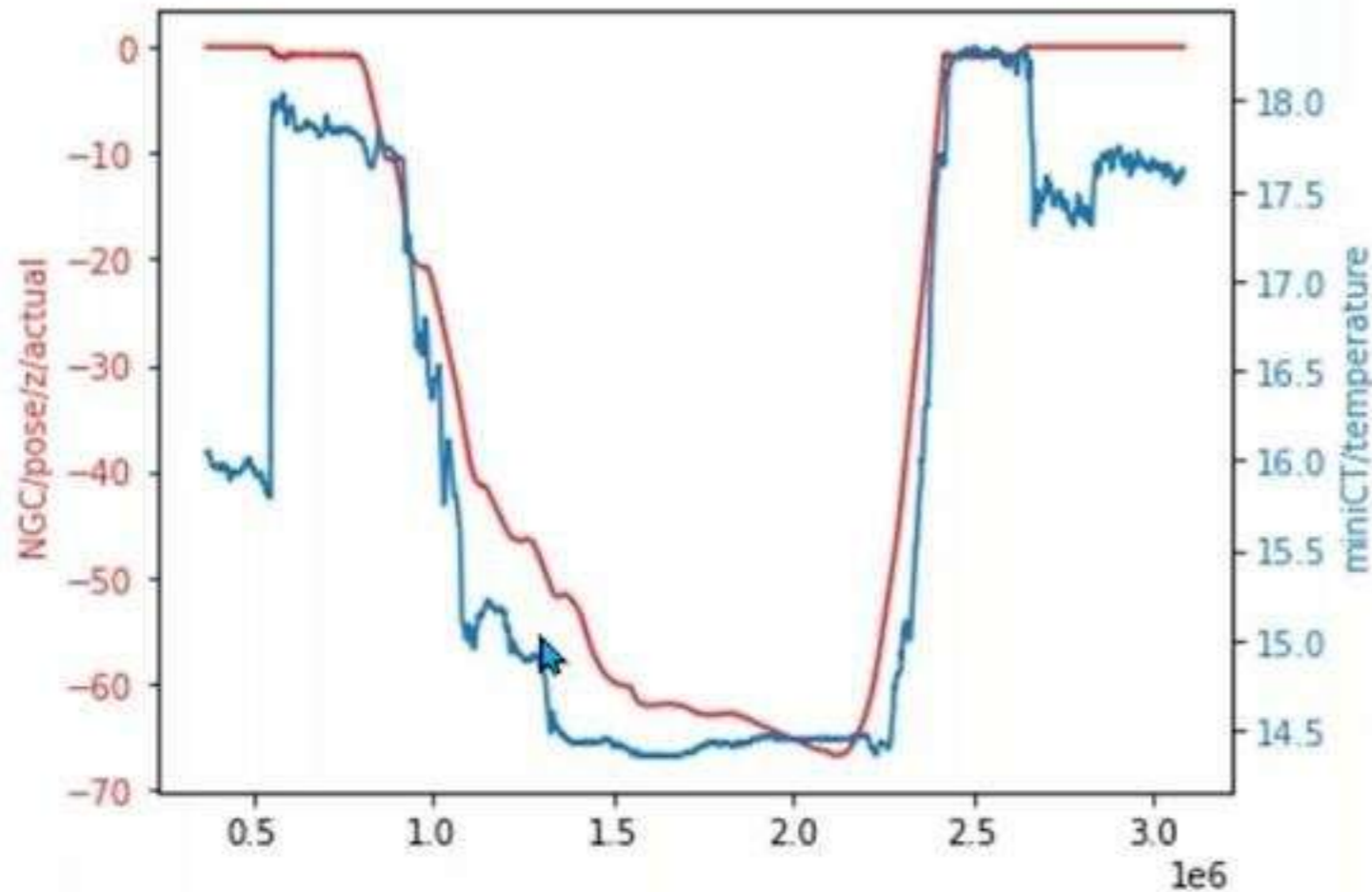


Photogrammetric processing of 25 consecutive images taken at 42 mt of depth
The photogrammetric process allows to reconstruct the position of the camera

Scientific Payload – Bottom Camera



Scientific Payload – Telemetry and Mini Ct and SVS



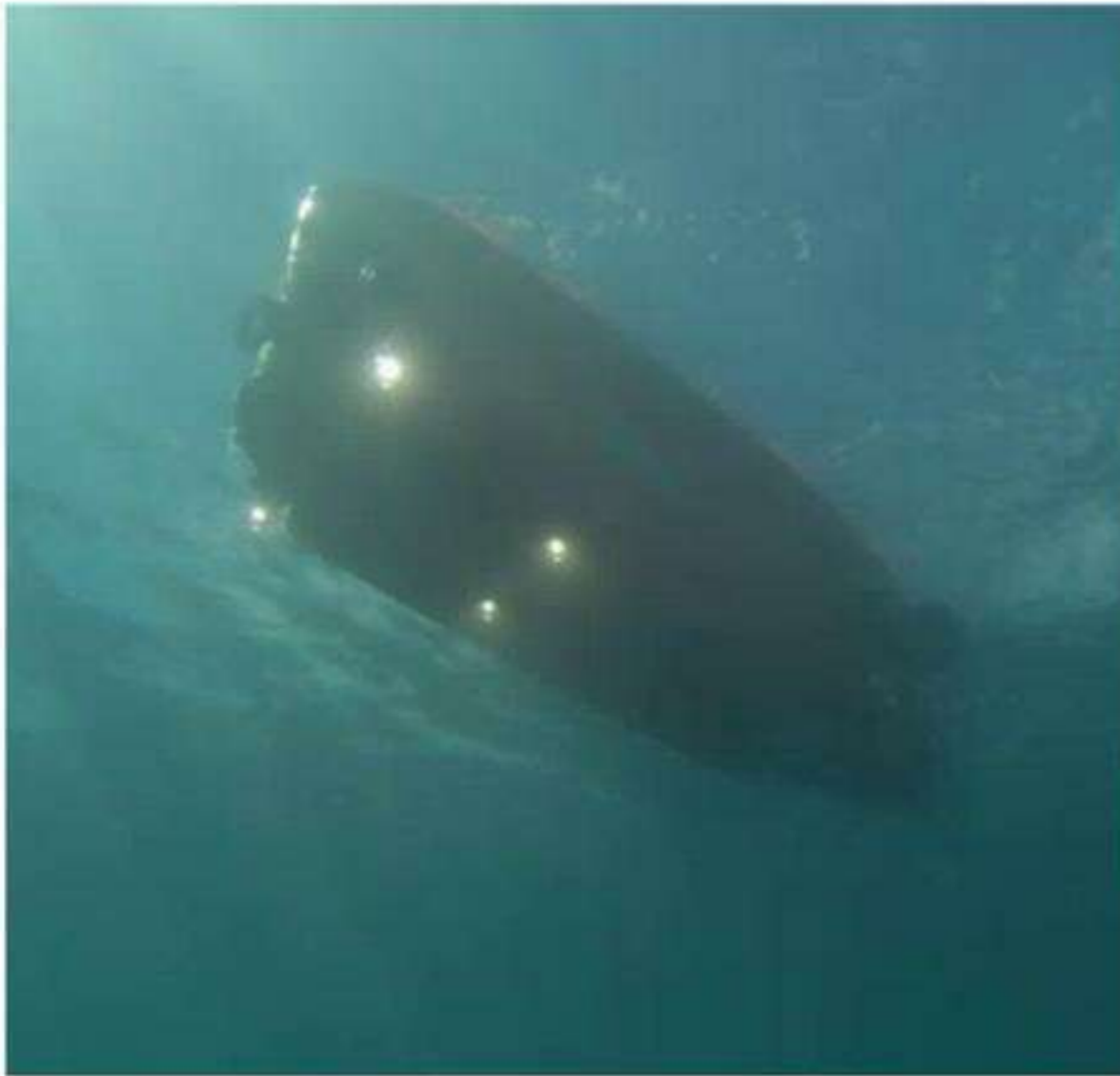
During the mission we deployed a logger to record the scientific data:

- The Data can be analyzed in post processing to reconstruct the biophysical quantities characterizing the underwater environment

In this plot there is the temperature vs. the depth

Stratification of sea water temperature

Next Steps



Further development before Pedaso Mission:

- USBL Setting for Precision Navigation
- Multibeam Setting for Bathymetry and Watercolumn Data
- Better Logger and Telemetry output for the synchronization and alignment of geographic information (Database Open Access)


CONTACTS


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 www.italy-croatia.eu/sushidrop



Innovazione e Open Data: dialogo e sinergie tra progetti europei per la sostenibilità del settore marittimo

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EU GREEN WEEK 2021 PARTNER EVENT

Temi



Varianti



Personalizza Designer

Dimensioni diapositiva Formato sfondo Idee per progetti

6

7

8

9

10



Attività 5.2 – Sviluppo di comportamenti virtuosi dei pescatori

ATTIVITÀ PREVISTE

DS.2.6 Protocollo per la gestione sostenibile e la protezione di uno stock ittico condiviso nell'alto Adriatico

AZIONE PILOTA: Sviluppo e realizzazione di un sistema innovativo di schiusa e crescita delle seppie, contribuendo così al ripopolamento e al mantenimento delle popolazioni selvatiche



Toccare per aggiungere note

Attività 5.2 – Sviluppo di comportamenti virtuosi dei pescatori

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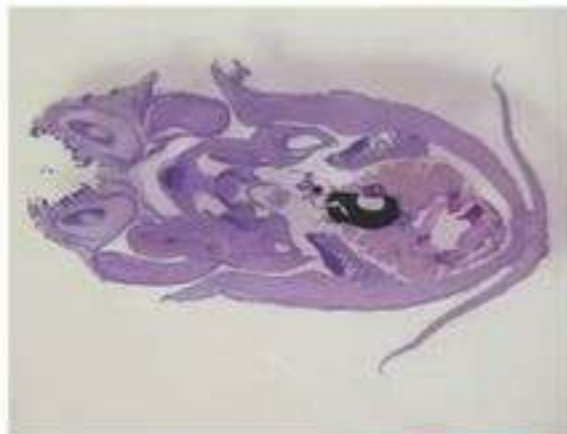
- La fase di allevamento vera e propria sarà preceduta da una fase di studio preliminare per la valutazione di possibili differenze tra embrioni raccolti in diversi siti della regione Marche (Nord, Centro, Sud).

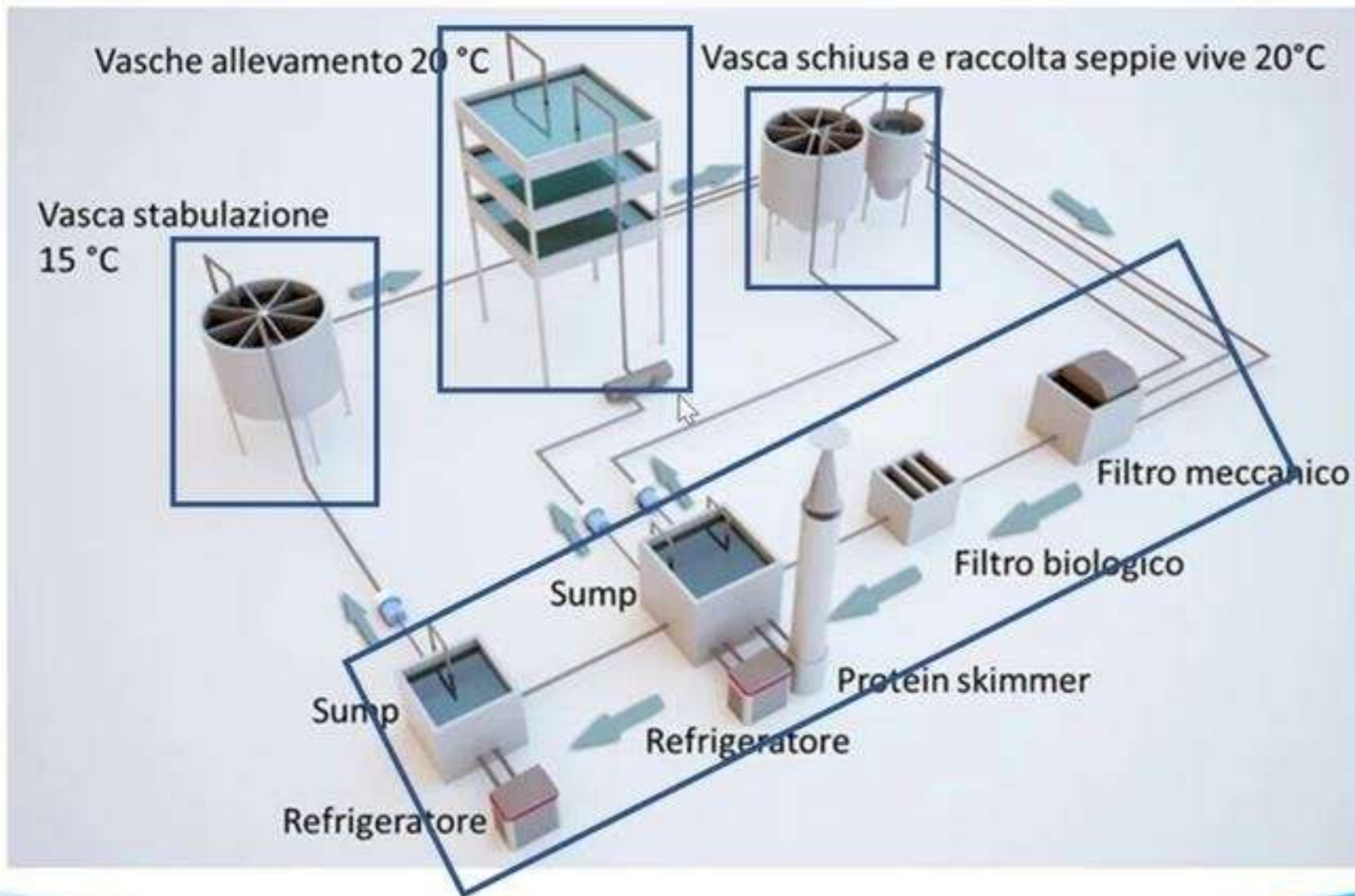


Hatching rate

Biochemical composition

Morphological features





- Raccogliere embrioni durante la stagione riproduttiva
- Farli schiudere su scala temporale allungata
- Raggiungere tassi di schiusa più elevati che in natura
- Sviluppare protocolli ad hoc per ogni sito di raccolta
- Rimettere in mare dopo che le seppie hanno superato le fasi critiche di sviluppo embrionale, schiusa e primo sviluppo larvale

- Una volta terminata questa valutazione comparativa della qualità degli embrioni tra i diversi siti, si procederà con la fase di allevamento che prevede
 - la raccolta degli embrioni di seppia con la collaborazione dei pescatori
 - il trasporto in un impianto pilota sviluppato ad hoc per la stabulazione, la schiusa e l'accrescimento presso Università Politecnica delle Marche
 - il loro rilascio in mare





Innovazione e Open Data: sostenibilità per il settore marittimo

9 GIUGNO 2021 11-13 (CET) | Webinar

EU GREEN WEEK 2021 PARTNER EVENT





The DYDAS is the greatest Parallel Processing platform within Europe able to handle large volumes of dynamic data, enabling the public sector and industry to benefit from large-scale data analysis.



DYDAS make ease the **sharing and re-use of public and private data in a secure environment** and through innovative monetization mechanisms.



The platform acts as an e-marketplace for data access, and is equipped with HPC-enabled services based on Big Data technologies, machine learning, AI and advanced services.

What are we talking about?

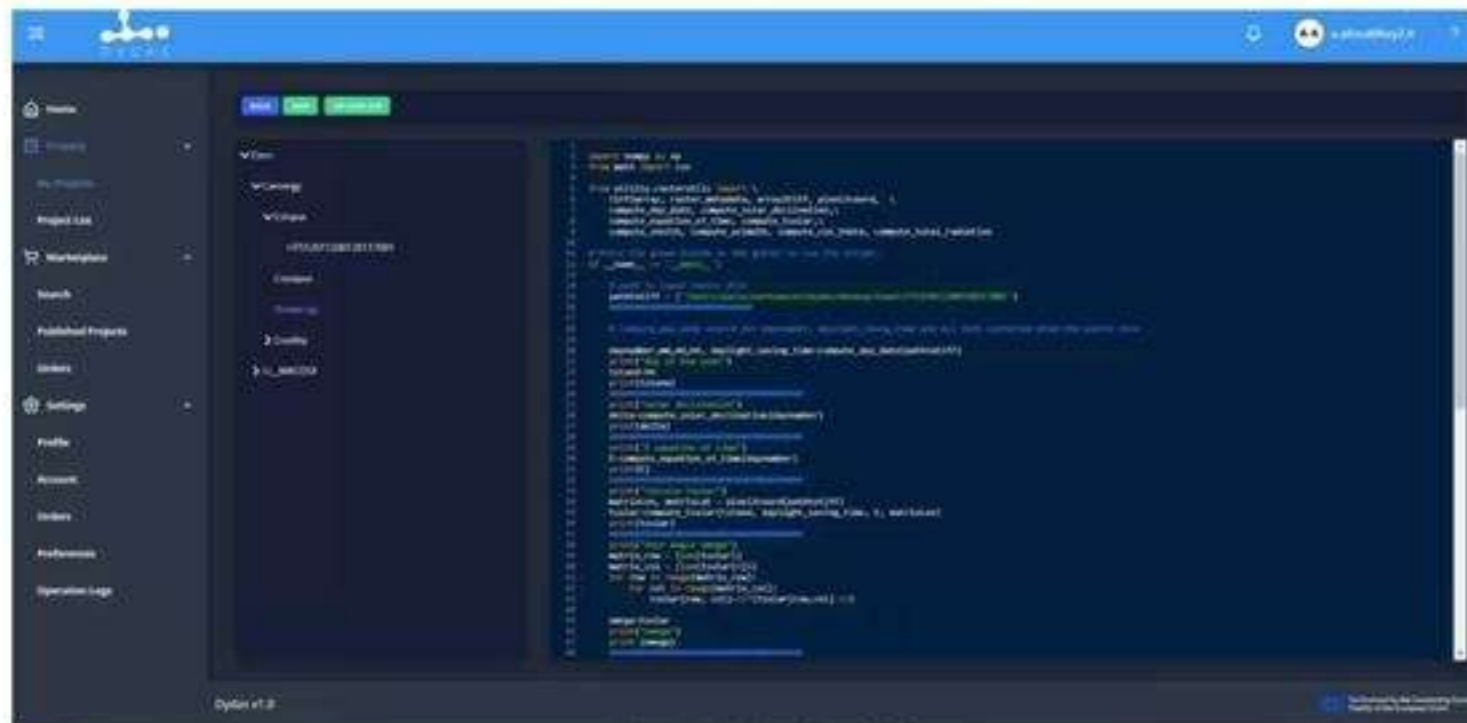


DYnamic Data Analytics Services



Co-financed by the European Union
Connecting Europe Facility

How does it work



Every users within european territory will be able to create his own private space where manage:

- Datasets
- **Machine Learning model for training and inference**
- Dashboard

How does it work

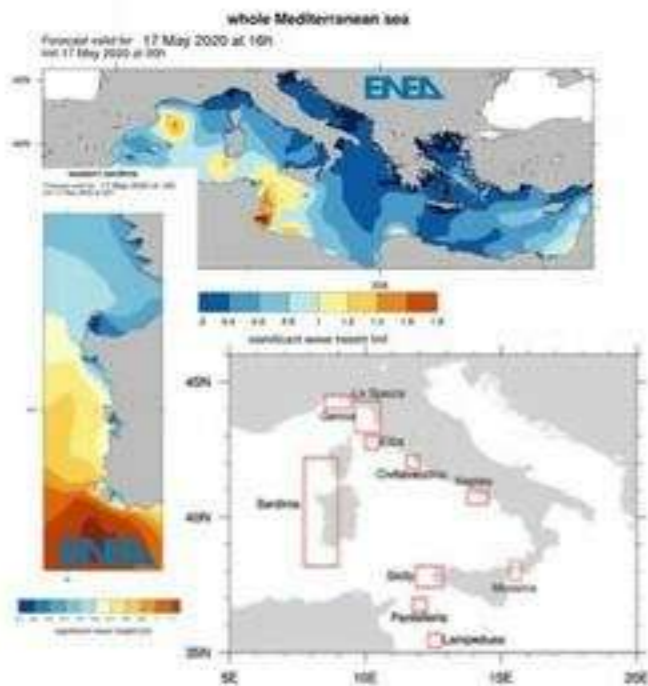


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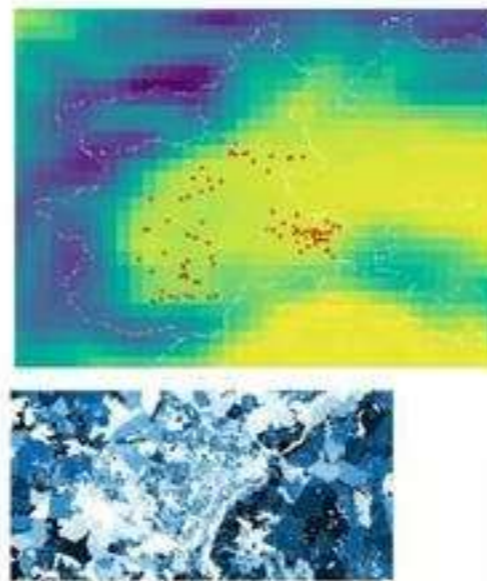
- Datasets
- Machine Learning model for training and inference
- **Dashboard**

Use cases

1. MARITIME



2. Energy

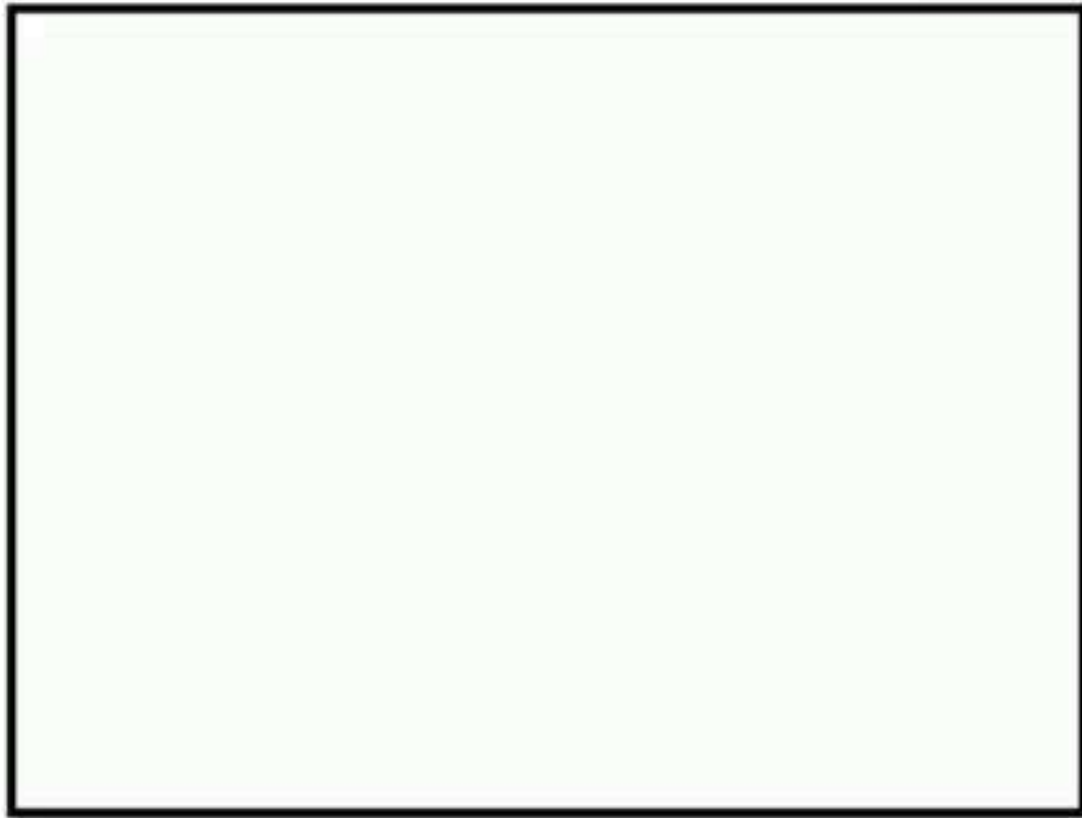


3. Mobility



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Mobility



CAMERA

DATA CONNECTION (4G / LAN)

ARM BASED LINUX SYSTEM

TPU

ADDITIONAL SENSORS



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Mobility



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Mobility



CAMERA

DATA CONNECTION (4G / LAN)

ARM BASED LINUX SYSTEM

TPU

ADDITIONAL SENSORS



Co-financed by the European Union
Connecting Europe Facility

Mobility

- It is a very small device
- It is a very low power device
- It is able to capture and process the images locally
- It could be 100% GDPR compliant
- It is very cheap
- Can support multiple sensors
- Can be remotely configured



Smart City



Transport



City decorum



Air quality



Detection of traffic offenses

Security



Large people groups recognition



Weapon recognition



Threat recognition

Marketing



Advertising



Target identification



Location Value Analysis



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Connecting Europe Facility



Grazie per l'attenzione!

Marco Gatti
Innovation Strategy Manager
KEY2BUSINESS
m.gatti@key2.it

Official Website: www.dydas.eu

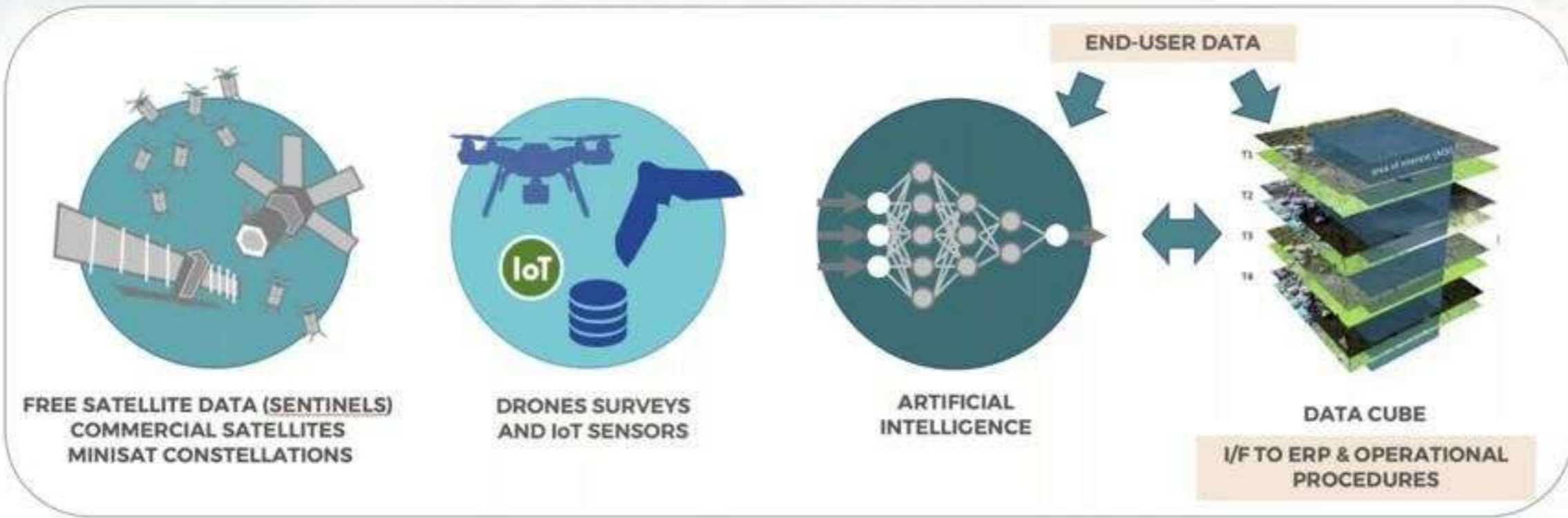
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Twitter: @DYDASEU <https://twitter.com/DYDASEU>



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TECHNOLOGY INNOVATION



Systematic Monitoring Geo-Information Services



Co-financed by the Connecting Europe Facility of the European Union



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CASE STUDY:
WRAS E RICCIOLA OCEANICA: INNOVAZIONE SOSTENIBILE

Innovazione e Open Data: dialogo e sinergie tra progetti europei per la sostenibilità nel settore marittimo

IL CASE STUDY SULLA RICCIOLA OCEANICA PRODOTTA IN UN SISTEMA DI ACQUACOLTURA A RICIRCOLO (RAS) SFRUTTANDO IL 100% DI ENERGIE RINNOVABILI E IL CONTROLLO DELL'INTERA FILIERA DALL'AVANNOTTO AL PRODOTTO FINITO.



CASE STUDY
Campi innovazione sostenibile

OG
TINA
NO
de Sifferelli
retrice del
market
r"

IL BLOG

InforMare PER #NONABBOCCARE

inforMare. Qui trovi i nostri articoli dedicati al mondo della pesca e al mare protagonista, dalla pesca alla sostenibilità, ai fatti salmattici e alla vita al largo. Leggi e condividi i tuoi commenti.

MANGIMI A ZERO EMISSIONI: UN PRIMATO ITALIANO PER UNA ACQUACOLTURA PIÙ SOSTENIBILE
18 marzo 2020 | 14:32 | 1000

Considerato che circa un quarto delle emissioni mondiali di gas serra sono generate dalla filiera alimentare, la **riduzione dell'impronta carbonica** è uno dei modi più efficaci con cui le aziende del settore possono affrontare la sfida del cambiamento climatico. A tale scopo, riconoscendo la notevole opportunità di ridurre al minimo le emissioni di anidride carbonica (CO2) generate dal processo di produzione dei mangimi e da quello di allevamento, Skretting Italia ha lanciato il nuovo concetto di mangime a emissioni **zero Feed4Future**.

In sostanza per questi mangimi vengono utilizzati **ingredienti innovativi** come anche alghe, insetti, **farine e olio di pesce certificate Marin Trust, valorizzati i sottoprodotti dell'industria alimentare, preferita soia selezionata di origine europea** anche per combattere la deforestazione in Brasile, **ridotte le emissioni di CO2 e compensate quelle residue da crediti di carbonio**. Questi ultimi vengono investiti da Skretting in Brasile per contribuire alla lotta alla deforestazione spesso proprio causata dalla necessità di aumentare gli spazi per coltivare la soia. E questo pur non acquistando Skretting soia dal sud America.



CASE STUDY:

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Co-funded by the Connecting Europe Facility of the European Union
Agreement number: 101017448-1/2021-1-LEADER-01-01-001-001

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TINA
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InforMare

PER #NONABBOCCARE

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GoToMeeting interface showing a video conference with participants: Valentina Tepe, Giorgio Scavi, Maria Vittoria, and eleonora badii. The screen displays the InforMare blog content.



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Interreg Italy - Croatia ANOPE
Interreg Mediterranean
DYDAS
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