4 Networks Conference

Cooperation in strengthening environmental enforcement

Rome, 28th of September 2023

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THE EMERITUS PROJECT

A tangible example of how EU-funds are addressing the illegal trafficking of waste

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The acronym

EnvironMEntal cRImes' inTelligence and investigation protocol based on mUltiple data Sources

Project overview

EMERITUS is an innovation project aimed at supporting **Law Enforcement Authorities** (LEA) and **Border Guards** (BG) in the investigation and evidence collection against waste-related environmental crimes. To this end, the project will offer a combined package of digital tools, including a single-entry point platform integrating advanced technologies, a training package, operative and train-the-trainers oriented, and an investigation protocol to guide LEAs and BGs in the integration of digital technologies in their daily operations.

EMERITUS by numbers

20
PARTNERS
(+3 affiliated entities)

9
COUNTRIES

5.9
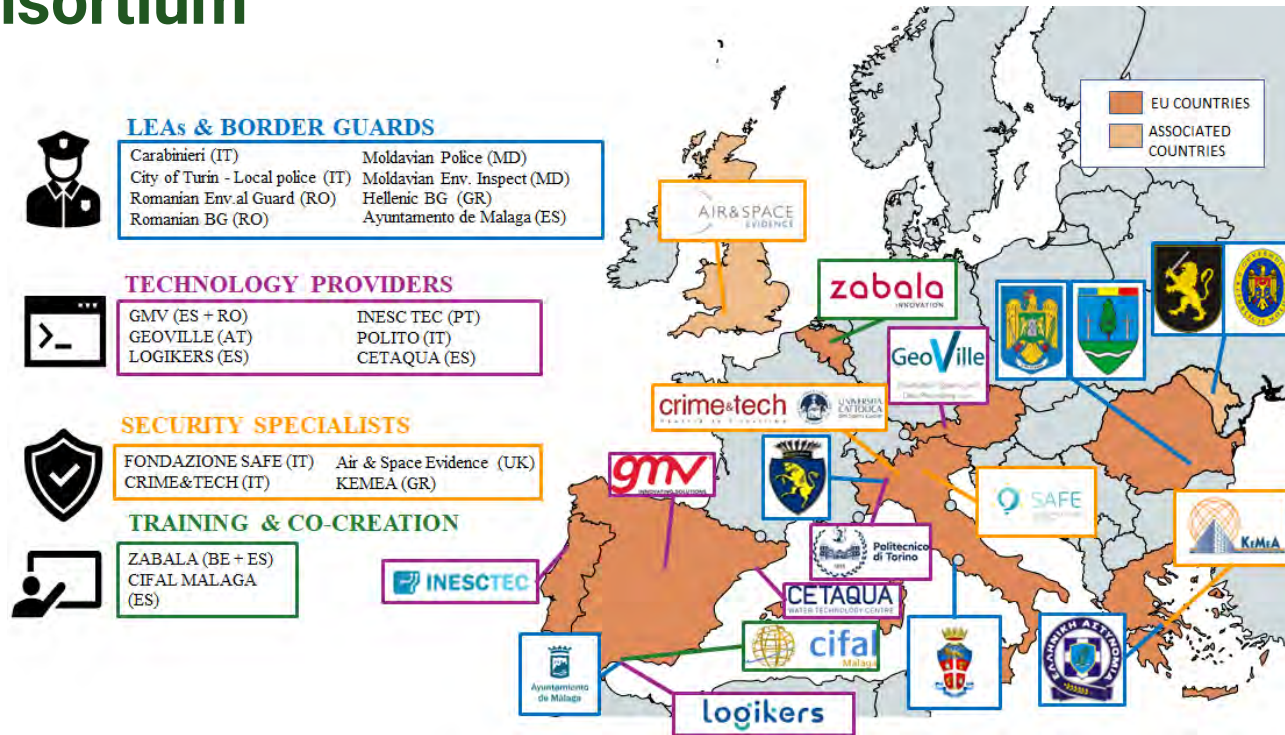M€ BUDGET
(78% EC grant)

3
YEARS

The consortium

The consortium executing EMERITUS consists of 20 partners, among which are top-level research institutions, industrial players, security-specialised SMEs, NGOs, LEAs and BGs from 9 countries – **Austria, Belgium, Greece, Italy, Portugal, Spain, United Kingdom, Romania, and Moldova**.

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Aim and impact

EMERITUS' aim

EMERITUS aims to establish of a <u>new generation of technological tools</u> managed through a **single-entry point platform** for Law Enforcement Authorities (**LEA**) and Border Guards (**BG**) to improve **detection and proof collection capabilities** against waste-related environmental crimes.

To achieve this, EMERITUS will develop a **protocol for** effective **environmental crime investigation**. This will involve combining innovative monitoring and analysis technologies with a complementary training programme to foster LEAs and BGs' intelligence and investigation capabilities at both national and cross-border levels.

The ambition of EMERITUS is to explore and demonstrate how these **technologies** and **specialised training** can boost the efficiency of environmental crime detection and intelligent risk profiling to <u>optimise resources, reduce the risk for operators and provide a deterrent for offenders</u>.

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Main results

EMERITUS' main target results are:

EMERITUS PLATFORM FOR INTEGRATED INTELLIGENCE

Protocol for waste-crimes investigation

Training programme for environmental crimes investigation

UCs-bases simulation exercises

EMERITUS community of practice

Evidence-based recommendations

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Expected results

EMERITUS intends to generate technological and societal impacts with both a medium and long-term perspective.

Indeed, on the one side EMERITUS will foster the uptake of state-of-the-art technologies for the investigation of environmental crimes (**Platform**). On the other side, it will improve the expertise of LEAs/BGs in this domain (**training programme**) and facilitate the lawful court-proof collection of crime evidence (**Protocol**) and the cross-border and multidisciplinary collaboration (**CoP**).

As such, EMERITUS will ultimately contribute to **enhancing the prevention, detection and deterrence of environmental crimes** as well as **evidence-based policymaking** in this domain **at national, cross-border and international levels**.

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Impact

1. **Improved intelligence picture of organised environmental crime in Europe** and its modus operandi both offline and online;

2. **Improved tools and training for European Police Authorities and BGs** to tackle environmental crime, validated against their needs, supported by advanced digital technologies, ensuring lawful court-proof evidence collection and environmental crime statistics;

3. **Strengthen cooperation among European Police Forces**, BGs and other national Authorities as well as with **third countries and international actors** involved in tackling environmental crimes;

4. **Empower** security practitioners **to identify and prevent organised crime networks** implicated in environmental crime and **detect illegal waste storage sites**;

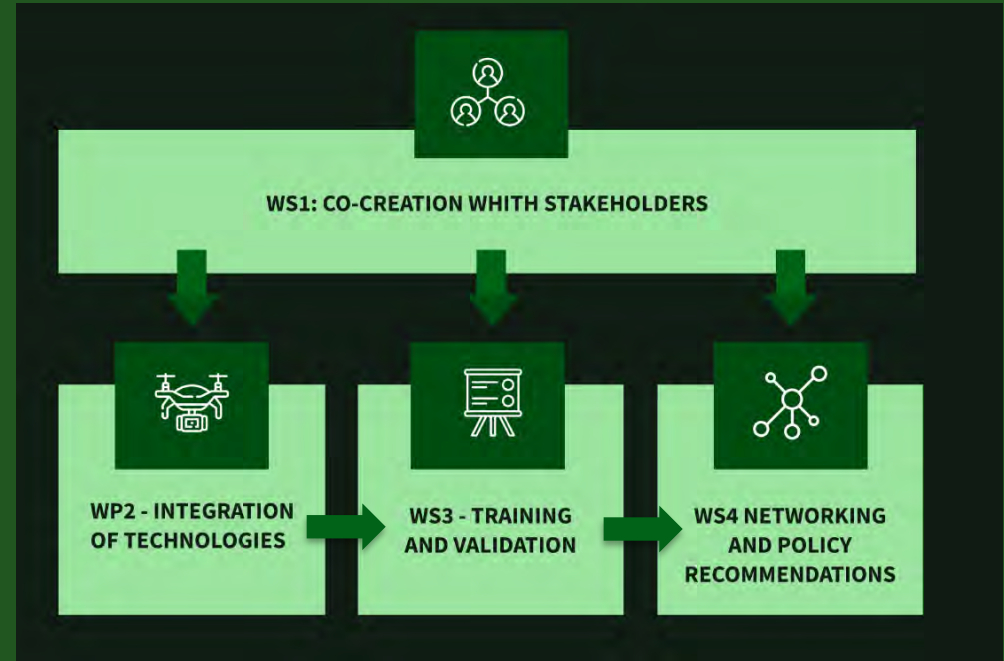5. Contribute to improving **security policy regulation** for combating environmental crimes.

Methodology

Work streams

To achieve its goals, the consortium will implement 4 coordinated workstreams corresponding to one or more Work Packages

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WS1: Co-creation with stakeholders

WS1 is centred on actively engaging LEAs and BGs authorities in a structured co-creation process spanning across the entire project workflow to assess their needs and co-design the investigation protocol, hence increasing their awareness and ownership in the process.

This approach **ensures the project results reflect operators' needs** and are deployable in real environments.

The chosen *methodology* for this human-centred innovative design is the iterative process of *design thinking*, which will actively involve end-users in the progressive creation process of the final results while enhancing commitment and ownership.

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WS1: Co-creation with stakeholders

WS1 encompasses:

a) User needs assessment

Consultations with Police Authorities, BGs and other relevant authorities involved in the investigation of environmental crimes (both partners and CoP participants) aimed at gathering relevant input to tailor the project results over concrete needs.

→ *this will orient the activities of WS2, WS3 and WS4.*

b) Co-creation of the investigation protocol

Collaborative definition of operative guidelines on how to enhance to investigation operations thanks to the use of EMERITUS digital technologies, while fostering effectiveness, efficiency and cross-border cooperation.

→ *baseline input for WS2 and WS3.*

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WS2: Integration of selected technologies

WS2 takes the move from the integration of **results already developed in previous R&I projects** by core partners such as *eLENS Portal* (developed by GeoVille) and *MICRONETCLOUD* (from LOGIKERS).

One of the fundamental pillars of EMERITUS' **geospatial intelligence platform** will be the creation of a *scalable integration layer*, designed to seamlessly incorporate additional data sources and technologies over the long term.

This adaptable framework, with the ability to integrate new "building blocks", will make the platform a **transformative system, continuously open to embracing new integrations**.

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WS2: Integration of selected technologies

Throughout the implementation of the project, **the following functions will be included in the geospatial-intelligence platform**:

- Ad-hoc user interfaces,
- Storage components,
- AI elaboration algorithms,
- Drone missions' organisers,
- Satellite image analysers,
- GIS visualisation,
- Integration layer (API).

EMERITUS platform will be designed as a robust, scalable, portable and reliable processing and data dissemination system feeding a dedicated user interface.

→   *The platform will support WS3 and WS4.*

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WS3: End-users training and exercising

WS3 involves the **implementation of an ad-hoc designed training programme** focused on the implementation of the investigation protocol defined in WS1.

WS3 integrates **three main action-streams**:

1) organisation of the LEAs/BGs **dedicated training**;
2) organisation and management of the **demonstration activities**;
3) implementation of a coherent approach for **monitoring and evaluation (M&E)** of the validation activities.

→   *WS3 will directly contribute to the implementation of WS4*

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WS3: End-users training and exercising

1) LEAs/BGs training

The tailored *International Training Programme* will be defined, organised and delivered under SAFE's coordination and with the collaboration of CIFAL Malaga. It will encompass two main pillars: **Theoretical Knowledge** and **Practical Application**.

Trainees will be **involved in *on-field testing activities* at SAFE** testing and training area (**Calvarina military base**) and **applying EMERITUS' components in realistic situations** via ad hoc Table Top Exercises (TTX) based on selected UCs.

The training will provide attendees from LEA/BGs with UNITAR/CIFAL certification.

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WS3: End-users training and exercising

2) Demonstration activities

Once mature in its development, each component of the EMERITUS integrated system will be tested according to three main phases:

Phase & partner leading	Location	Description
Preliminary testing (SAFE)	Calvarina military base	Held in a scalable facility with installations reproducing realistic scenarios where main components (platforms, sensors, algorithm) are tested in relevant environment.
Advanced testing (SAFE)	Calvarina military base	To enhance already assessed technologies or their integration in the EMERITUS system. These tests will be more complete and elaborate and test components integration in its potential operational multiple use.
Demo in operational environments (GMV)	Pilot operational environment according to UC	Continuous deployment (M24-M34) of EMERITUS integrated system and investigation protocol in operational environment involving the operators trained in the International Training Programme to demonstrate its practical functionalities, from wide monitoring to the reporting, ensuring the lawful court-proof collection of crime evidence.

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WS3: End-users training and exercising

3) Monitoring and evaluation (M&E)

Set up by SAFE for the International Training Programme and the linked testing sessions.

It will rely on **three core principles**:

1) Forward-looking M&E;
2) Monitor effectiveness of peer-to-peer training;
3) Standard and innovative M&E tools.

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WS4: Networking and policy recommendations

WS4 is transversal to the entire project implementation and has a **double purpose**:

1) **Gather relevant inputs** to complement co-creation exercise carried with partner LEAs/BGs;

2) **Establish of the CoP and develop long-term evidence-based policy recommendations** and a **roadmap** for broader uptake of the investigation protocol and its standardisation.

These recommendations will help shape European regulations to combat environmental crime effectively, **strengthening the EU legal and regulatory framework**.

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WS4: Networking and policy recommendations

WS4 focus is twofold:

1) *Preventive level*: improving **procedures for identifying and monitoring potential risk areas** through the identification of specific KPIs;

2) *Investigative level*: define **guidelines to improve data interoperability** at local and international levels through the **harmonisation of data collection**. This will by strengthening the capacities of EU MSs to provide integrated and detailed intelligence picture concerning breaches of EU environmental laws.

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Use cases

Four relevant **use cases** have been identified to ensure that the project results can translate into technologies and operative support fitting in real-world scenarios and needs, as well as to test the EMERITUS results with actual data and operators.

Water contaminant source detection

Waste storage centres monitoring

Cross-border illegal waste trafficking monitoring

Identification of illegal waste discharge sites in broad areas

UC1 - Water contamination detection

Water contamination detection and prediction, discharge point location for crime analysis

Location: Guadalhorce river, natural protected area in Malaga, Spain

Technology sources: sensors, AI, multispectral cameras

Context: water quality

Involved partners:

UC2 - Industrial Storage Centres Monitoring

Waste storage centres monitoring, including hazardous materials (i.e., radiological and chemical)

Location: industrial site on river in Piedmont, Italy

Technology sources: drones, satellites, sensors, AI, blockchain
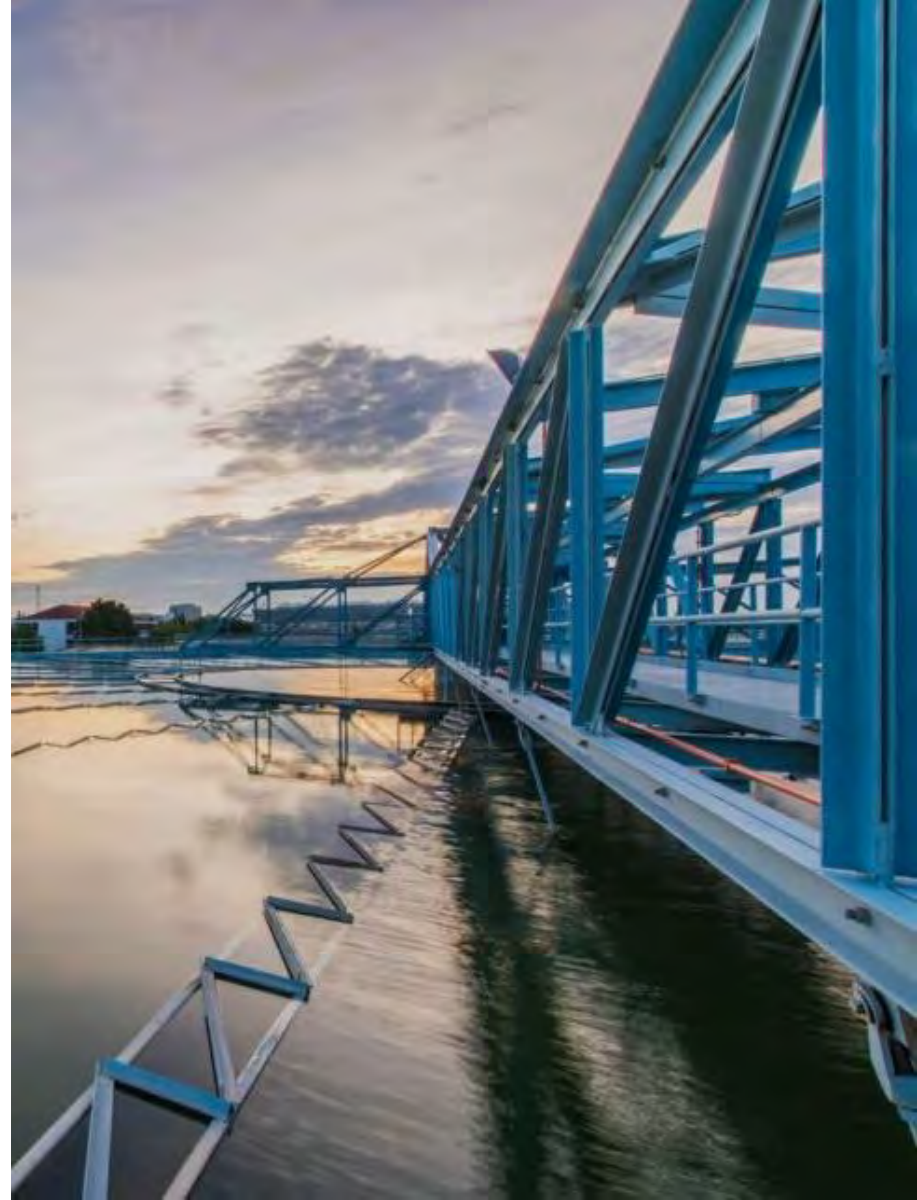
Context: land, air, water

Involved partners:

UC3 - Cross-border illegal trafficking via land

Cross-border illegal waste trafficking, illegal waste storage and dumping detection

Location: cross border monitoring across Romania and Moldova

Technology sources: satellites, AI/ML

Context: land, air

Involved partners:

Romanian Border Police

GARDA NAȚIONALĂ DE MEDIU

Romanian National Environmental Guard

Moldovian Police

Moldovian Inspectorate for Environmental Protection

gmv
INNOVATING SOLUTIONS

GMV Romania

UC4 - Identification of illegal waste sites and link with trafficking

Identification of illegal waste sites + thermal sites (fires), and intelligence tool to identify/monitor exports

Location: Greece

Technology sources: satellites, AI

Context: land, exports

Involved partners:

Hellenic police

How to get
involved

EMERITUS website and social media

The best way to be informed about the project and its results and to get involved is to follow its **social media** and check the **website** for regular updates and news
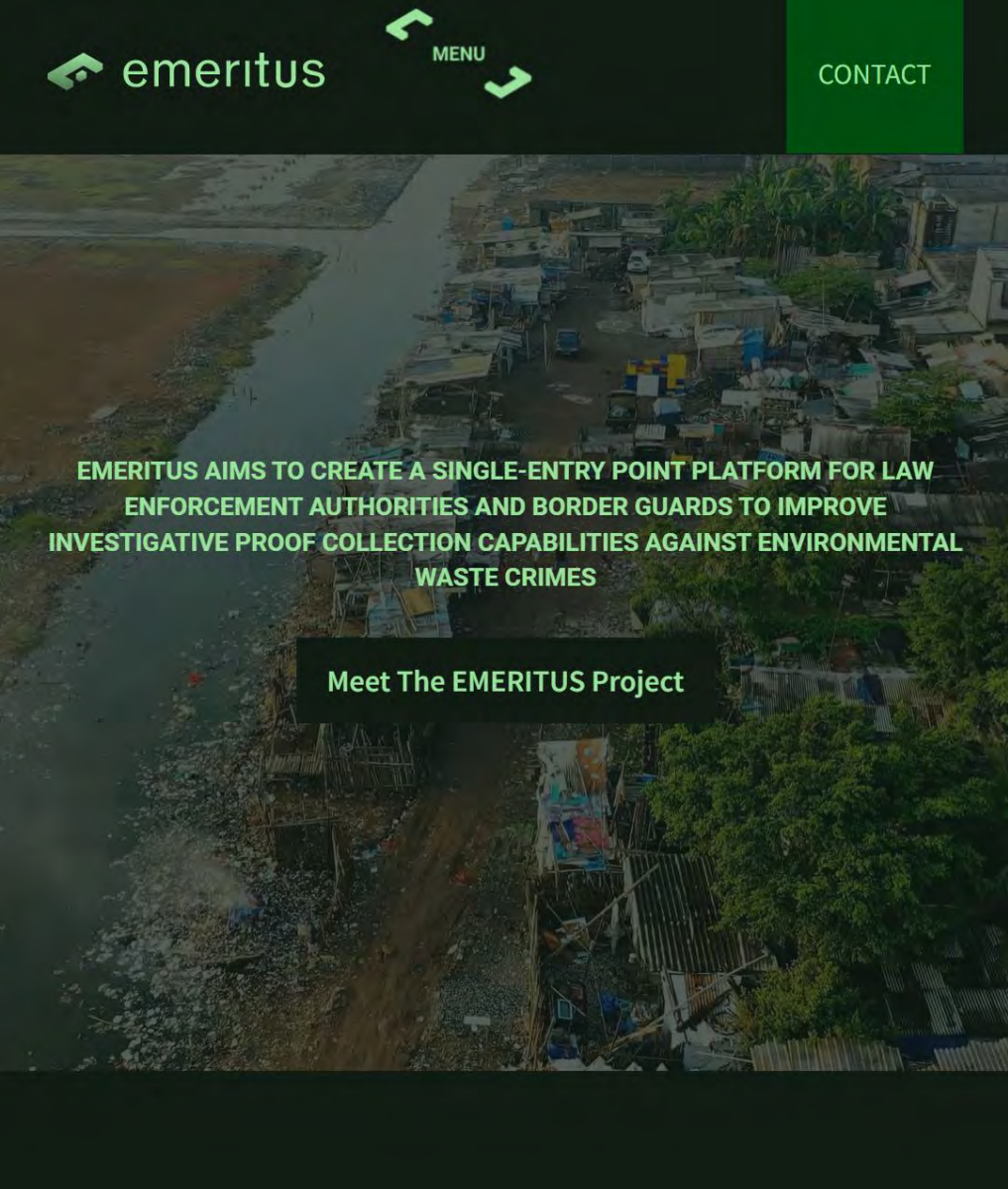

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MENU

CONTACT

EMERITUS AIMS TO CREATE A SINGLE-ENTRY POINT PLATFORM FOR LAW ENFORCEMENT AUTHORITIES AND BORDER GUARDS TO IMPROVE INVESTIGATIVE PROOF COLLECTION CAPABILITIES AGAINST ENVIRONMENTAL WASTE CRIMES

Meet The EMERITUS Project

EMERITUS newsletter

But also by subscribing to its newsletter through the contact form at the bottom of each page of its website

https://emeritusproject.eu

Community of Practice (CoP)

Are you interested in learning how to exploit technologies to tackle environmental crimes effectively?

Would you like to participate in showcase and networking events dedicated to EMERITUS and the fight against environmental crimes?

Do you have similar or related projects?

Are you available to collaborate with the EMERITUS team to better tailor the project results to actual and concrete needs?

If so, we invite you to candidate yourself for taking part in the **EMERITUS Community of Practice** through the form available on the website.

Once your candidature is received and reviewed, the EMERITUS team will contact you back to formalise your participation (via a free-of-charge dedicated agreement) and start involving you in the foreseen activities.

EMERITUS 1st Showcase Event, Verona, March 2023

Thank you!

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