

Connecting

THE RESEARCH PROMOTION FOUNDATION PROGRAMMES FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION “RESTART 2016 – 2020”	
PILLAR	I. SMART GROWTH
PROGRAMME	RESEARCH INFRASTRUCTURES/SMALL SCALE INFRASTRUCTURES
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PROJECT FULL TITLE	Research and Innovation Knowledge Centre for Engineering in Heritage
PROJECT ACRONYM	CONNECTING
Work Package	WP2 – Dissemination and Exploitation Activities
Deliverable	D8 – Public Lecture material



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Dissemination Level		
PU	Public	✓
CO	Confidential, only for members of the consortium (including the Agency Services)	

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OWNERSHIP AND USE				
Work Package: 2 – Dissemination and Exploitation Activities				
Deliverable D8: Public Lecture material				
Sections to be protected	Description	Owner	Access Rights	
			Period	Type
All	Confidential material	CONNECTING consortium	-	-
N/A	Public material	CONNECTING consortium	N/A	- Reuse - Acknowledgement

Summary

This document presents the materials and activities developed within Deliverable D8, focusing on public lectures and outreach actions aimed at engaging the wider public, students, and non-specialized audiences. The deliverable supports the dissemination and communication objectives of the CONNECTING project by promoting awareness of its goals, technologies, and impact on cultural heritage research.

Public lectures have been organized to present the project's mission, including the use of advanced technologies such as VTOL drones, RGB, multispectral, and hyperspectral imaging, and ground-based laser scanning for the detection, monitoring, and documentation of cultural heritage sites. These events aim to make scientific knowledge accessible and stimulate public interest in cultural heritage preservation.

The deliverable includes a collection of dissemination materials such as presentations, posters, and supporting content used during lectures and outreach events (e.g., Researchers' Night and similar initiatives). All materials acknowledge the CONNECTING project and help increase its visibility and societal impact.

Through these activities, the project strengthens its connection with the public, fosters knowledge exchange, and enhances the potential for exploitation of its results beyond the scientific community.

Keywords

Communication, Dissemination, Exploitation, Cultural Heritage

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1. Introduction

The CONNECTING project is an innovative research initiative that focuses on the use of advanced geospatial technologies for documentation, monitoring, and preservation of cultural heritage. By integrating tools such as drones, satellite imagery, 3D modeling, and remote sensing, the project contributes to the protection and sustainable management of cultural heritage sites.

A key priority of CONNECTING is to **bring science closer to society**. Through public lectures, demonstrations, and outreach activities, the project translates complex scientific knowledge into accessible and engaging content for a wide audience, including students, young researchers, professionals, and the public.

These public lecture activities are designed to:

- Raise awareness about cultural heritage preservation
- Demonstrate the role of technology in heritage protection
- Inspire students to engage with STEM and geospatial sciences
- Promote interaction between researchers and society

The present document compiles selected outreach activities from the CONNECTING project, presented as **public lecture material**, highlighting how research outputs are communicated openly and accessibly to diverse audiences.



Figure 1: Visual representation of the CONNECTING project ecosystem, bringing together cutting-edge sensing technologies, engineering applications, and cloud data infrastructure to advance the monitoring and preservation of cultural heritage.

2. Public Lecture & Outreach Activities

The CONNECTING project has actively engaged with society through a series of public lectures, demonstrations, and outreach activities. These actions aimed to promote the project, present its objectives, and highlight the use of innovative technologies in cultural heritage.

The following activities present how CONNECTING was communicated to students, professionals, and the wider public in a clear and accessible way.

1. Online International Seminar for Master's Degree Programs – 09 April 2024

The CONNECTING project was introduced during an online informational seminar organized by the Cyprus University of Technology for prospective Master's students. The presentation provided an overview of its objectives, main research areas, and the technologies used in cultural heritage applications. Emphasis was placed on promoting the project as an example of applied research that connects academic studies with real-world challenges.

Participants were also informed about opportunities to engage with similar research topics through postgraduate studies. The activity increased students' awareness and encouraged interest in geoinformatics and digital heritage.

Audience: Wider Society/ prospective students

Estimated Audience: ~10 participants



Figure 2: Presentation of the CONNECTING project to participants, introducing its objectives, technologies, and applications in cultural heritage.

2. 1st Summer School Academies – 28 June 2024

As part of the Summer Academies initiative, students were introduced to the project through simplified explanations and interactive presentations. The activity aimed to present how technology can be used in cultural heritage in a way that is easy to understand for younger audiences.

Through demonstrations and discussions, students were able to relate scientific concepts to everyday applications, making the learning experience more engaging. This approach helped stimulate curiosity and interest in science and technology fields at an early stage.

Audience: Students

Estimated Audience: ~10 participants

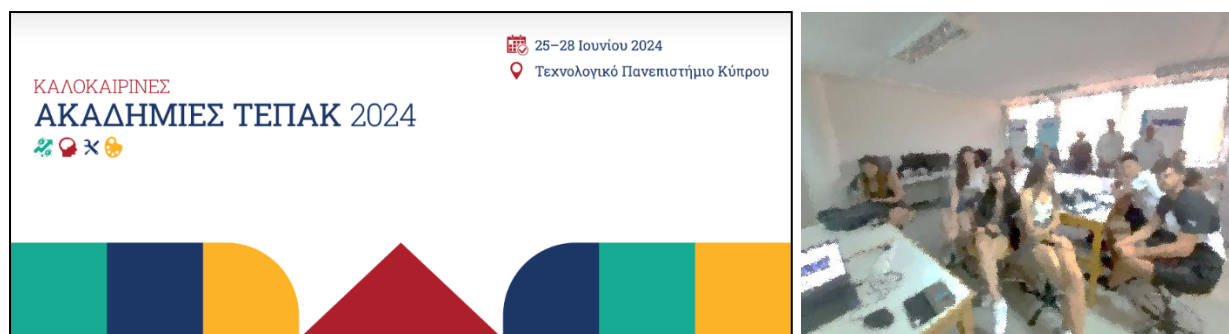


Figure 3: Engagement with students during the 1st Summer School Academies activity, demonstrating the use of geospatial technologies in cultural heritage.

3. Presentation to Mongolian students – 12 December 2024

A presentation was delivered to a group of visiting international students at the Cyprus University of Technology. The session introduced the project and explained how modern technologies are applied in cultural heritage research and preservation.

The discussion highlighted real examples and applications, helping students understand the broader relevance of such technologies. This activity also supported international knowledge exchange and increased the project's visibility beyond the national context.

Audience: Students

Estimated Audience: 8 participants



Figure 4: Engagement with Mongolian students during an outreach activity, demonstrating the use of geospatial technologies in cultural heritage.

4. Presentation of CONNECTING Project equipment to undergraduate students – 12 February 2025

A lecture combined with a hands-on demonstration was organized to present the project's equipment and technologies to undergraduate students. The session focused on showing how tools such as drones and sensors are used in practice for data collection and analysis.

Students were given the opportunity to observe real workflows and understand how these technologies contribute to cultural heritage documentation. This practical approach enhanced their learning experience and strengthened their understanding of applied research.

Audience: Undergraduate students

Estimated Audience: 10 participants



Figure 5: Demonstration of CONNECTING project equipment to undergraduate students, showcasing drone-based data acquisition and sensing technologies.

5. "CUT in Action" - Radio Presentation – 21 February 2025

Project activities were presented through a radio broadcast, allowing communication with a broad audience beyond academic environments. The discussion focused on explaining the project's purpose and its contribution to research and society in a simple, accessible way.

This format enabled the project to reach individuals who may not typically engage with scientific topics. As a result, it increased public awareness and improved the project's visibility at the national level.

Audience: General public

Estimated Audience: /

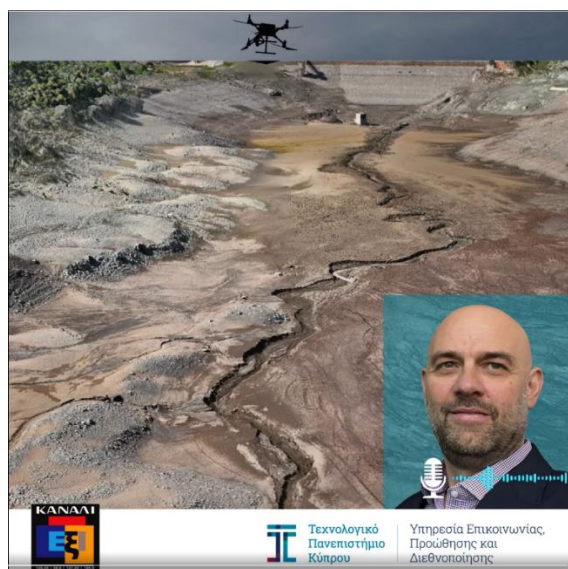


Figure 6: Communication of CONNECTING project activities through media outreach, increasing public awareness.

6. Research activities promoted at the Information Days 2025 of CUT – 09 March 2025

During the Information Days organised by the Cyprus University of Technology, the project was presented to prospective students and visitors. The session aimed to promote research activities and demonstrate how academic knowledge can be applied in real-world contexts.

Participants had the opportunity to interact with academic staff and learn more about the technologies used in the project. This direct engagement helped strengthen interest in relevant study programs and research areas.

Audience: Wider Society

Estimated Audience: 30 participants



Figure 7: Presentation of the CONNECTING project at the Information Days 2025 of CUT, introducing its objectives, technologies, and applications in cultural heritage.

7. Promoting the CONNECTING Project at ETEK Event: "Engineers and Their Role in Research and Innovation" – 22 May 2025

A presentation was delivered during a professional event organised by ETEK (Cyprus Scientific and Technical Chamber), focusing on the role of innovation and research in engineering and cultural heritage. The session promoted the project as an example of how advanced technologies can support practical applications.

The event provided an opportunity to communicate the project to professionals and stakeholders, encouraging dialogue and collaboration. It also strengthened the project's presence within the professional community.

Audience: Wider Society

Estimated Audience: 25 participants

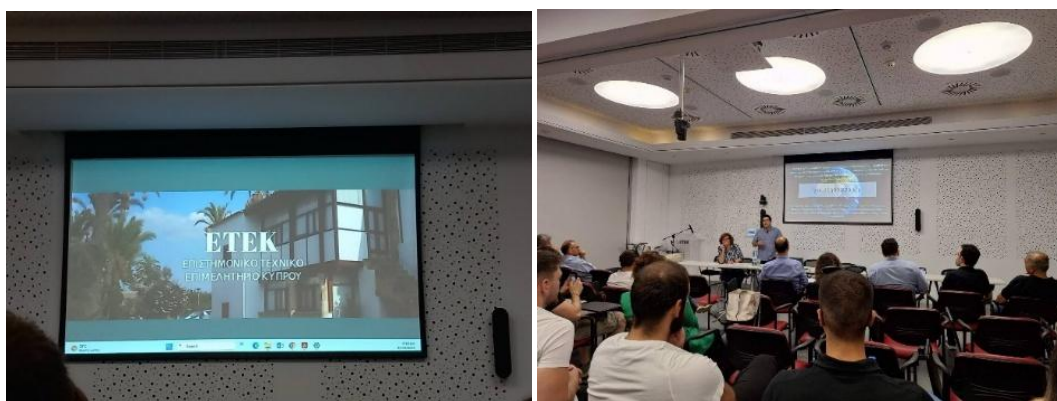


Figure 8: Presentation of geospatial technologies and their applications within the CONNECTING project at the ETEK Event.

8. Participation at the Cyprus University of Technology's Summer Academies – 27 June 2025

The project was presented again during the Summer Academies program through interactive and engaging lectures. Students were introduced to its technologies and applications in a simplified and accessible way.

By building on previous outreach activities, this session further reinforced interest in science and encouraged students to consider future studies in related fields. The interactive nature of the activity supported active participation and engagement.

Audience: Students

Estimated Audience: 10 participants

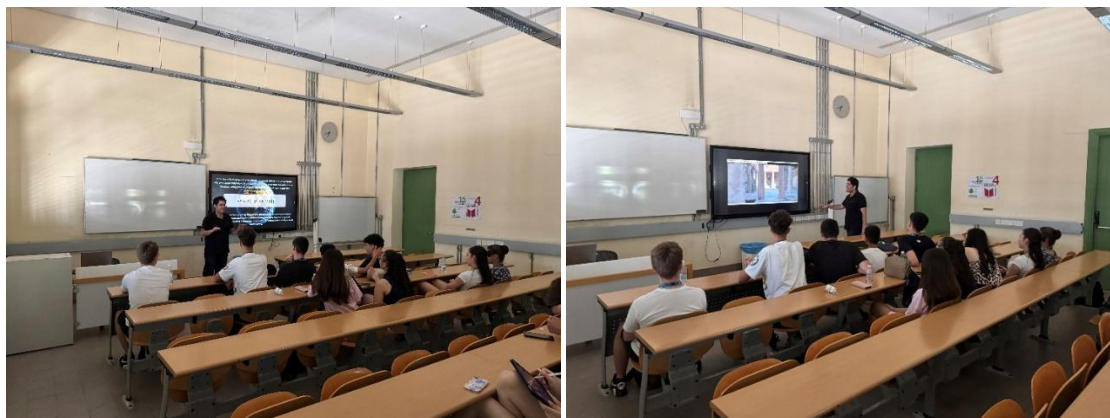


Figure 9: Engagement with students during the Summer Academies activities, demonstrating the use of geospatial technologies in cultural heritage.

9. ENGINEER Final Event – Connecting Project: Technical Equipment Demonstration – 11 September 2025

Participation in the ENGINEER Final Event included a demonstration of equipment and technologies to participants. The activity provided an opportunity to present the project's applications and promote its role in cultural heritage research.

Visitors could observe demonstrations and interact with the team, gaining a better understanding of the technologies involved. The event also supported networking and knowledge exchange among participants.

Audience: Wider society

Estimated Audience: 30 participants



Figure 10: Demonstration of the CONNECTING project equipment at the ENGINEER Final Event, showcasing drone-based data acquisition and sensing technologies.

10. Connecting Project at the European Researchers' Night 2025 – 26 September 2025

The project was showcased during the European Researchers' Night through interactive demonstrations and discussions. Visitors had the opportunity to explore the technologies and learn about the project in an engaging and accessible way.

This large-scale event attracted a diverse audience, including students, families, and professionals. It significantly enhanced the project's visibility and strengthened its connection with society.

Audience: Wider society

Estimated Audience: 3000 participants



Figure 11: CONNECTING project participation at the European Researchers' Night 2025 event, engaging visitors through interactive demonstrations and discussions.

11. CONNECTING Project Promotion during GIS Day 2025 – 20 November 2025

During GIS Day, the project was presented through discussions and short presentations focusing on geospatial technologies and their applications. The activity aimed to promote awareness and highlight the importance of GIS in research and innovation.

Participants were encouraged to engage in discussions, fostering interaction between researchers and the public. This contributed to strengthening the understanding of the project's role in the field.

Audience: Wider society

Estimated Audience: 70 participants



Figure 12: Presentation of geospatial technologies and their applications within the CONNECTING project at the GIS Day 2025.

12. Presentation to School Students – 22 April 2026

A presentation was delivered to primary school students in Nicosia at Kathari Primary School – Dimitris Lipertis, introducing basic concepts related to Earth observation and remote sensing. The session was designed to be engaging, interactive, and accessible for young learners.

Students were introduced to the importance of environmental protection and the role of technology in understanding changes on our planet. This activity contributed to raising awareness early and fostering curiosity towards science and innovation.

Audience: Students

Estimated Audience: 100 participants



Figure 13: Presentation delivered to school students, introducing remote sensing and environmental monitoring concepts in an interactive way.

13. Presentation to School Students – 24 April 2026

A presentation was delivered to secondary school students at the Archbishop Makarios III Lyceum in Nicosia, focusing on remote sensing and the interconnection between climate change and cultural heritage. The session encouraged critical thinking and active discussion among students.

Participants explored how modern technologies can be used to monitor environmental changes and protect cultural heritage sites. This activity helped strengthen students' understanding of real-world challenges and the importance of scientific approaches.

Audience: Students

Estimated Audience: 70 participants



Figure 14: Presentation delivered to secondary school students, introducing remote sensing and environmental monitoring concepts in an interactive way.

14. Digital Heritage Summit 2026 CONNECTING Final Workshop – 28 May 2026

The CONNECTING project was showcased during its Final Workshop session at the Digital Heritage Summit 2026, where its objectives, activities, infrastructure, and key outcomes were presented to researchers, heritage professionals, stakeholders, and members of the wider community. The workshop aimed to disseminate the project's results and highlight its contribution to research and innovation in cultural heritage.

During the session, the CONNECTING initiative was introduced through its vision of establishing a Research and Innovation Knowledge Centre for Engineering in Heritage, supporting the use of advanced technologies for heritage documentation, monitoring, and analysis. Examples of the project's infrastructure, methodologies, equipment, and heritage applications were presented to demonstrate their practical implementation and potential for future research and innovation activities.

The activity also provided an opportunity to engage with participants, encourage discussion, and exchange knowledge and experiences. Overall, the workshop enhanced the visibility of the CONNECTING project, strengthened collaboration opportunities, and promoted its outcomes to the wider scientific and professional community.

Audience: Researchers, professionals, wider society

Estimated Audience: 28 participants



Figure 15: CONNECTING Final Workshop at the Digital Heritage Summit 2026. Left: Presentation of the project objectives, infrastructure, and results. Right: Demonstration of selected CONNECTING equipment, including UAV, SLAM mobile mapping, and underwater documentation systems.

Table 1 summarises the public engagement, dissemination, and outreach activities implemented throughout the duration of the CONNECTING project, together with their target audiences and estimated participation.

Table 1: Overall impact of CONNECTING public engagement and dissemination activities.

#	Activity	Audience	Estimated Participants	Type
1.	MSc Seminar	Students	10	Lecture
2.	Summer Academies 2024	School students	10	Outreach
3.	International Students	Students	8	Lecture
4.	Equipment Demo	Undergraduate students	10	Demo
5.	Radio Broadcast	General public	-	Media

6.	Information Days	Public	30	Lecture
7.	ETEK Event	Professionals	25	Lecture
8.	Summer Academies 2025	Students	10	Outreach
9.	ENGINEER Event	Public	30	Demo
10.	Researchers' Night	Public	3000	Outreach
11.	GIS Day	Public	70	Lecture
12.	School Visit	Students	100	Outreach
13.	School Visit	Students	70	Lecture
14.	Digital Heritage Summit	General public	28	Workshop
Total Estimated Reach			~3401 Participants	

3. Conclusion

The CONNECTING project successfully promoted its objectives and activities through a range of public lectures, demonstrations, and outreach events targeting diverse audiences. These activities increased awareness of the project and its role in advancing cultural heritage research through innovative technologies.

By engaging students, professionals, and the public, CONNECTING strengthened its visibility and enhanced the communication of scientific knowledge in an accessible way. The high participation in major events, such as the European Researchers' Night, demonstrates the strong impact of the project's outreach efforts.

Overall, the activities confirm the project's commitment to bridging the gap between research and society and promoting the importance of cultural heritage preservation through technological innovation.



Figure 16: Overview of CONNECTING outreach activities promoting cultural heritage, technology, and public engagement.

Annex

Innovative Geospatial and Engineering Solutions for Cultural Heritage

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Cyprus University of Technology



CONSORTIUM



Acknowledgement: This project has received funding from the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation of Cyprus under contract SMALL SCALE INFRASTRUCTURES/1222/0062.



RESEARCH
& INNOVATION
FOUNDATION



THE RESEARCH PROMOTION FOUNDATION PROGRAMMES FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION “RESTART 2016 – 2020”

PROPOSAL DETAILS	
PILLAR	I. Smart Growth
PROGRAMME	RESEARCH INFRASTRUCTURES / SMALL SCALE INFRASTRUCTURES
RPF PROPOSAL NUMBER	SMALL SCALE INFRASTRUCTURES/1222/0062
PROPOSAL TITLE	Research and Innovation Knowledge Centre for Engineering in Heritage
PROPOSAL ACRONYM	CONNECTING



Acknowledgement: This project has received funding from the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation of Cyprus under contract SMALL SCALE INFRASTRUCTURES/1222/0062.

CONNECTING is built around the vision of the “**Strategic Infrastructures**” research call, towards the creation of a knowledge centre, equipped with **state-of-the-art sensors and platforms** that can promote research excellence about the detection, monitoring, documentation and analysis of cultural heritage sites and monuments, both in land as well as underwater.

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Connecting

The “Research and Innovation Knowledge Centre for Engineering in Heritage” proposal, in short **CONNECTING**, is built around the vision of the “Strategic Infrastructures” research call, towards the creation of a knowledge centre, equipped with state-of-the-art sensors and platforms, like vertical takeoff and landing (VTOL) drones, RGB, multi- and hyperspectral cameras, LiDAR system, terrestrial laser scanner, soil moisture, ultrasonic, inclinometers, wireless strain sensors and multibeam echosounder, that can promote research excellence about the detection, monitoring, documentation and analysis of cultural heritage sites and monuments, both in land as well as underwater.

The knowledge centre visions to become a reference research node for the four partners and six supporters (providing Letter of Support, LoS) of the project, bringing together geomatics, civil engineers, ICT experts, archaeologists, and heritage managers. This multidisciplinary approach is essential to group together the necessary expertise able to select the most appropriate methods, techniques, and tools for supporting heritage science, management, and preservation, interpret the outcomes from state-of the-art equipment and provide solutions to problems and needs of the cultural heritage sector. The project will deliver evidence for the use and re-use of its equipment, results, services and products, through the design and development of a cloud Data Centre.

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CYPRUS



GEOFEM



Evaluation - Excellence

CONNECTING aims at extending existing knowledge in the multidisciplinary domain of advanced documentation practices, structural monitoring and cloud ICT solutions for heritage sites and monuments. While academic institutions and experts can be found in the domain of documentation or structural stability worldwide, there is a significant gap in the interactions of these domains. CONNECTING will provide to the partners the necessary training and skills to allow them to be at the forefront of this thematic area, bringing under the same roof experts from different domains. In addition, sharing information related to cultural heritage is still challenging. CONNECTING aims at making this pool of data and products accessible by utilising the concept of data spaces, creating in the framework of the project a cloud Data Centre. The proposal has high potential for penetration into the international market. A convincing SWOT analysis is provided. The main envisioned result of the proposal is the multidisciplinary knowledge centre, where the latest equipment, technologies and innovative methods will be available for collection, processing and sharing spatial data for the field of cultural heritage for documentation and monitoring of sites and monuments.

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Connecting in numbers...

4
Consortium
members

Consortium

Number - Role - Legal name

- 1 - HO - TECHNOLOGIKO PANEPISTIMIO KYPROU (CUT)
- 2 - PA1 - INFRALABS LTD
- 3 - PA2 – UNIVERSITY OF CYPRUS (UCY)
- 4 - PA3 – DEPARTMENT OF ANTIQUITIES (DoA)

6
Supporters

Supporters

Number - Legal name

- 1 – POLITECNICO DI MILANO (POLIMI)
- 2 – UNIVERSIDADE DE AVEIRO (UA)
- 3 – UNIVERSITY COLLEGE LONDON (UCL)
- 4 – DEPARTMENT OF LAND AND SURVEYS (DLS)
- 5 – GEOFEM LTD
- 6 – UNESCO CHAIR ON DIGITAL CULTURAL HERITAGE

1
Vision

5
Work Packages

8
Objectives

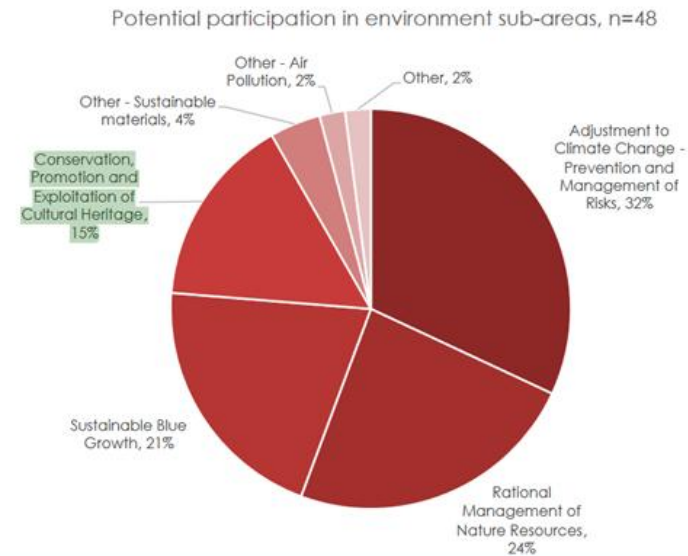
4
S&T Challenges

... to become a reference research node bringing together geomatics, civil engineers, ICT experts, archaeologists, and heritage managers.

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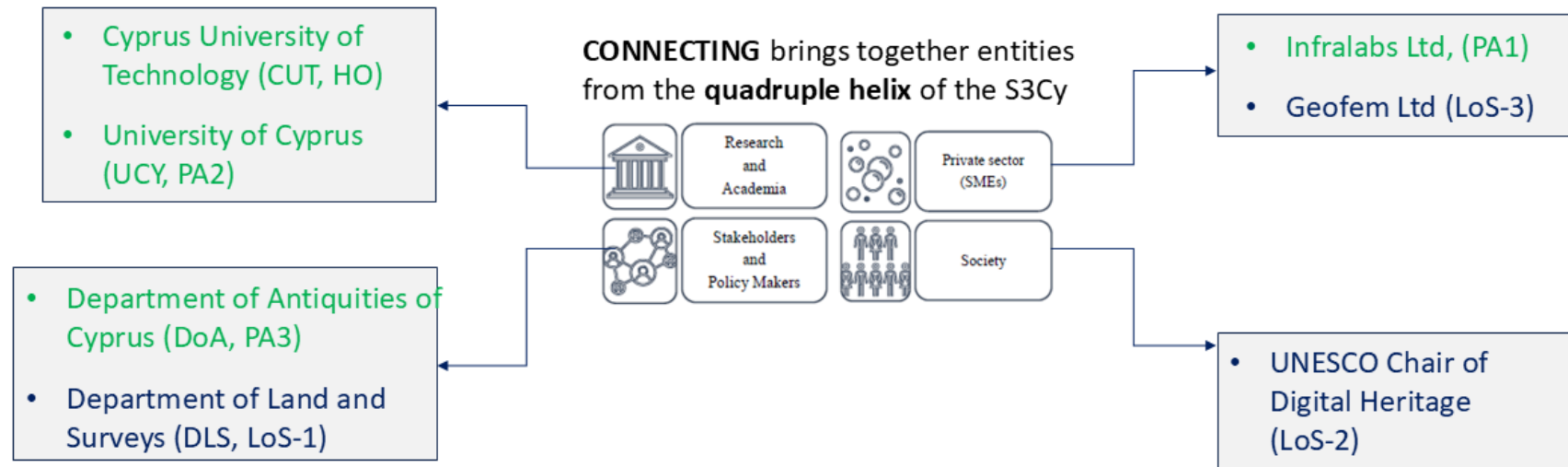
Smart Specialisation Strategy of Cyprus S3Cy was designed to pave the way for future sustainable development. S3Cy puts **cultural heritage at the heart of the country's future development (horizontal pillar).**



CONNECTING is also ideally aligned with the current vision of the European Commission to create, until 2025, a **European collaborative cloud for cultural heritage**.

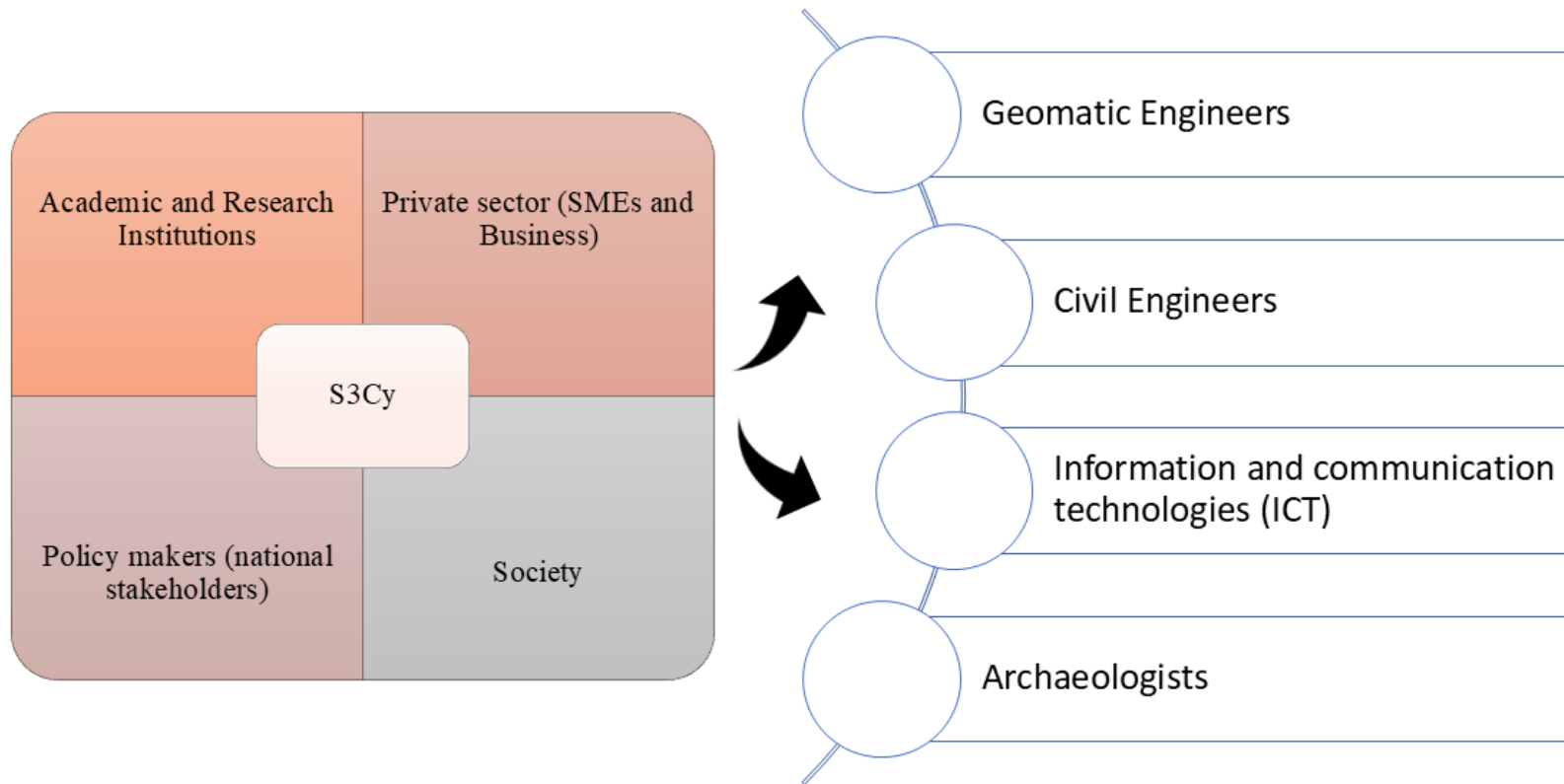
WITH THE SUPPORT OF





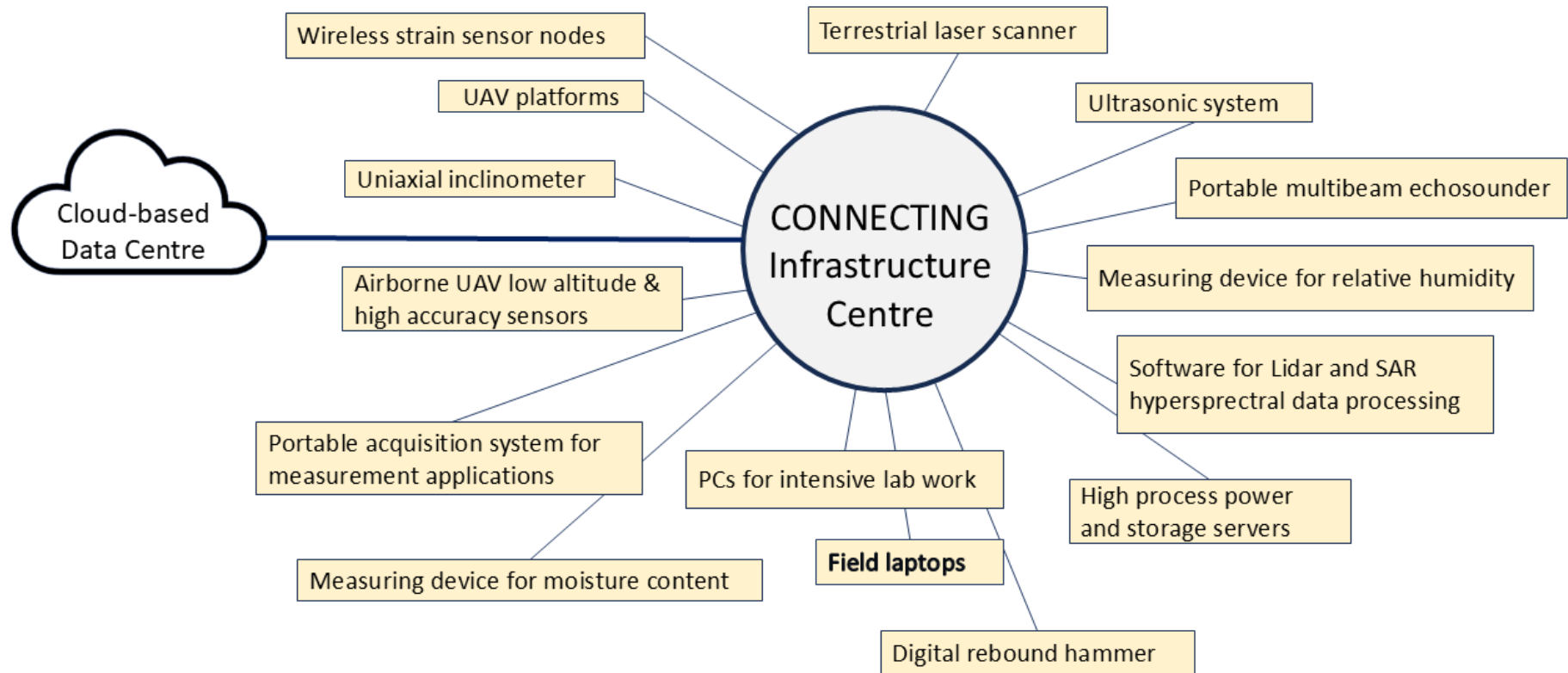
The centre aims to **boost research excellence** and **support future R&I synergies** via **creating strong links** with relevant European advance institutions such as the [University College of London](#) (UCL, [LoS-4](#)), the [Politecnico di Milano](#) (POLIMI, [LoS-5](#)) and the [University of Aveiro](#) (UAVEIRO, [LoS-6](#))





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Benefits

Impact on Multidisciplinary Needs:

- Support monitoring, documentation, analysis, and preservation of cultural heritage sites on land and underwater.
- Implement security measures, establishes standards, and provides training for researchers.

Communication, Dissemination, and Outreach:

- Promote innovative technologies and research for cultural heritage.
- Open infrastructure to external users and collaborators

Technological Advancements and Applications:

- Enhance computer vision, machine learning, robotics, and other technology fields.
- Support new applications in urban planning, architecture, and geospatial analysis.
- Develop tools, software, and services like virtual tours and online education.

Economic Impact:

- Innovation and economic growth in tourism, conservation, and cultural heritage management.
- Attract more visitors and stimulates investments in restoration and conservation.

Public Awareness and Cultural Exchange:

- Increase public appreciation of cultural heritage.
- Facilitates knowledge sharing and cultural exchange

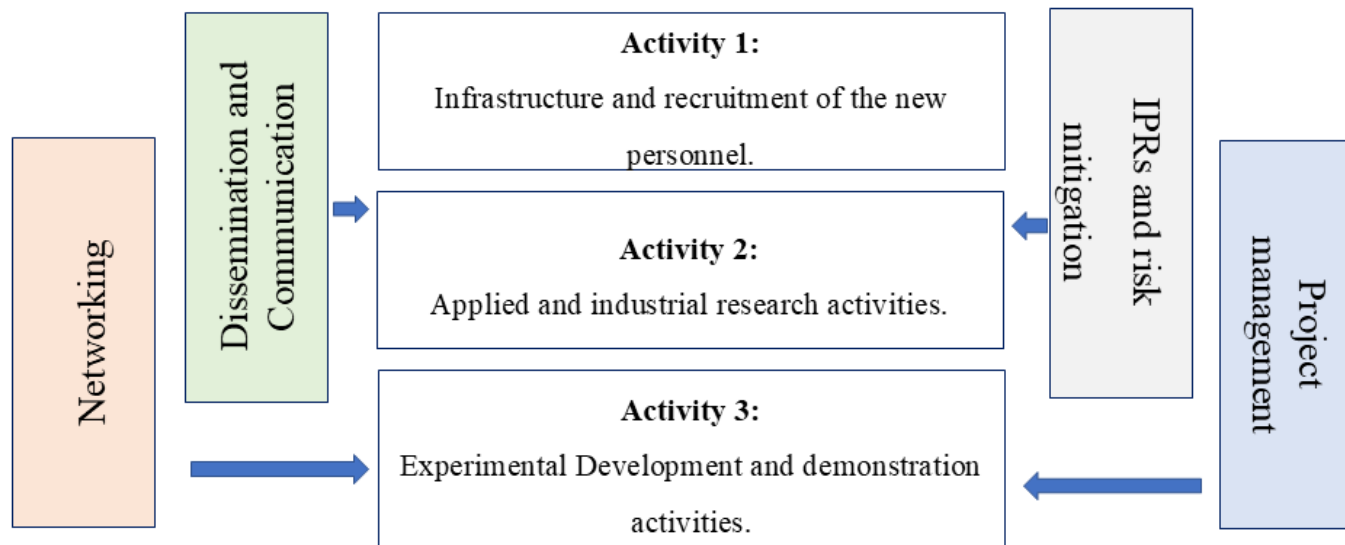
Environmental Benefits:

- Reduce on-site visits and traditional surveying, cutting carbon emissions.
- Promote remote data collection and minimize travel through innovative technologies.
- Support sustainable conservation and research efforts.

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Overall Methodology of the Project



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Advanced Surveying & Geoinformatics Equipment

WITH THE SUPPORT OF



CHCNAV SLAM-SET RS10



High-Precision GNSS

- **Dual-frequency**
- Support:** GPS, GLONASS, Galileo, Beidou, QZSS
- **GNSS RTK + SLAM**
- **Absolute accuracy:** < 5 cm (H) / < 5 cm (V)



Specs & Performance

- **Range:** 0.05 to 120m
- **Point cloud thickness:** 2cm
- **Measurement Rate:** Single Return: 320 000 pts/sec



Durable Design

- **IP64 Rating:** Splash-resistant & Dustproof
- **Operating Temp:** -20°C to +50°C



Battery Life

- **Up to 60 minutes per battery**
- **Hotswap Battery:** Continuous operation



User-Friendly Interface

- **4.3" Touchscreen** Display
- **Real-Time Mapping**
- **Customizable Functions**
- **Data Output:** RTCM 3.2, CMR, CMR+, NMEA



WITH THE SUPPORT OF



DJI M350 RTK



High-Precision RTK

- RTK Support:** Real-time positioning accuracy
- GNSS Systems:** GPS, GLONASS, Galileo, Beidou



Durability & Safety

- IP55 Rating:** Waterproof & dustproof
- Temperature Range:** -20°C to +50°C
- Obstacle Avoidance:** 360° vision sensors



Flight Performance

- Max Flight Time:** 55 minutes
- Max Wind Speed:** 12 m/s (43 km/h)
- Max Altitude:** 7,000 meters



Advanced Imaging

- Multi-Payload Support**
- Max Payload:** 2.7kg
- Camera Gimbals:** 3-axis stabilization



Long Battery Life

- Battery Life:** 55+ minutes
- Hotswap Battery:** Quick replacement for extended flight times



Easy Control & Interface

- DJI Pilot App:** Intuitive control and monitoring
- Dual Control:** Supports dual-operator mode



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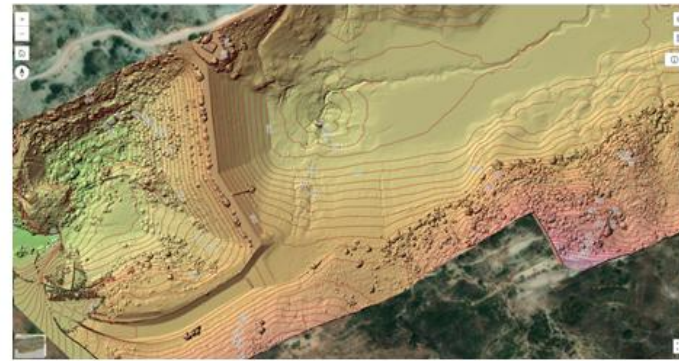


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1.74 million cubic
meters



(against 2.2 million)

WITH THE SUPPORT OF



Cameras

DJI Zenmuse P1

Full-Frame Sensor

- 45 MP high-resolution imaging
- Interchangeable lenses (24/35/50mm)

High-Precision Mapping

- RTK module for centimeter-level accuracy
- Global Mechanical Shutter (1/2000s)

Efficient Data Capture

- 3 fps continuous shooting
- Covers 3 km² in one flight

Smart Workflow

- TimeSync 2.0 for real-time alignment



DJI Zenmuse L2

High-Precision LiDAR

- 240,000 points per second
- 70° field of view

Survey-Grade Accuracy

- RTK-supported centimeter-level precision
- 450m detection range (50% reflectivity)

Integrated RGB Camera

- 20 MP CMOS sensor
- Mechanical shutter for precise imaging

Efficient Data Capture

- Up to 3 returns per pulse for dense vegetation
- Covers 2.5 km² in a single flight

Seamless DJI Integration

- Works with DJI Terra for real-time point cloud processing



HAIP BlackBird V2

DJI Integration

- Works with Matrice 300 & 350 RTK
- DJI Skyport V2 for quick attachment

Hyperspectral Imaging

- 500–1000 nm (VNIR) range
- 100 spectral bands

High Precision & Efficiency

- Push-broom linescanner technology
- Optimized for aerial mapping & analysis



WITH THE SUPPORT OF



Strategic Research Infrastructure

Location: Limassol, Cyprus, Dorothea Building
- Kitiou Kyprianou 45 - 2nd floor

HP Z2 Tower G9 Workstation (i7) – 6units

Processor: Intel Core i7

Memory: Up to 128GB RAM

Storage: NVMe SSD | HDD options

Graphics: RTX / A-series GPUs

Optimized for CAD, GIS & AI applications



Location: Limassol, Cyprus, Achilleos Building
1 - Saripolou 16 - 2nd floor

HP Z2 Tower G9 Workstation (i9)– 2 units

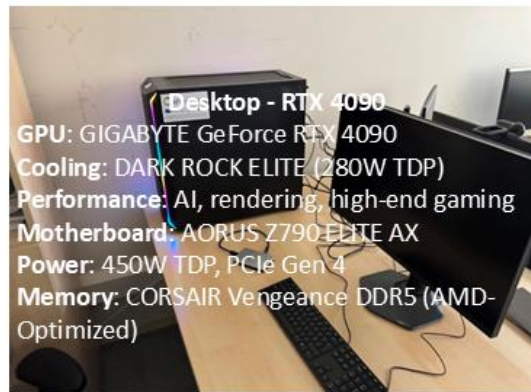
Processor: Intel Core i9 (2 units)

Memory: Up to 128GB RAM

Storage: NVMe SSD | HDD options

Graphics: RTX / A-series GPUs

Designed for AI, 3D modeling & engineering



Location: Limassol, Cyprus, CEI Building, Central Server
"Former Ttofi Building" - Saripolou - Basement

HPE Apollo 4200 Gen10 Plus (Server)

Enterprise-Grade Data Processing

24 LFF Bays | Scalable Storage

Optimized for Data Centers & HPC Workloads

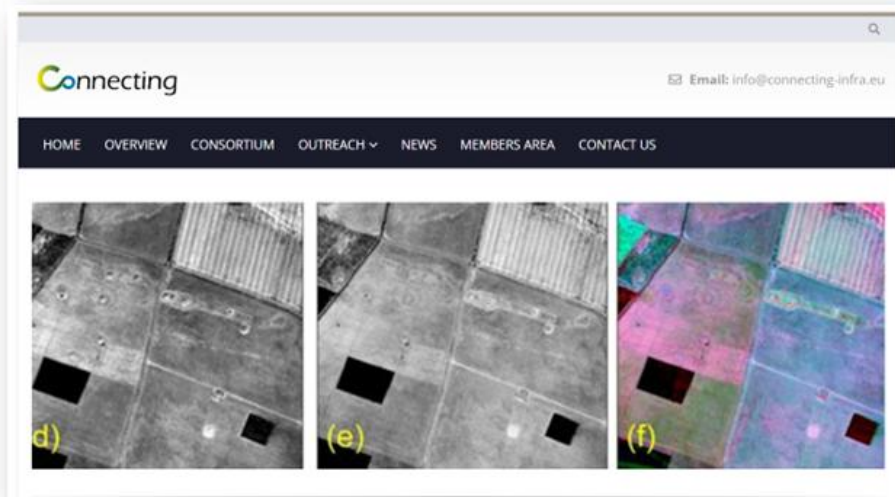
TAA-compliant, built for AI & cloud computing



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Thank you for your attention

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Assistant Professor, “Geoinformatics and Earth Observation”
Department of Civil Engineering & Geomatics, Cyprus University of Technology

Earth Observation Cultural Heritage Research Lab, <https://web.cut.ac.cy/eocult>
Email: athos.agapiou@cut.ac.cy



Acknowledgement: This project has received funding from the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation of Cyprus under contract SMALL SCALE INFRASTRUCTURES/1222/0062.

CONSORTIUM



Innovative Geospatial and Engineering Solutions for Cultural Heritage

Athos Agapiou, Argyro Argyrou, Elias Gravanis, Stylianos Hadjipetrou, Giorgos Kafataris, Nicholas Kyriakides, Phaedon Kyriakidis, Vasiliki Lysandrou, Kyriacos Michaelides, Apostolos Papakonstantinou, Dimitrios Skarlatos, Marinos Vlachos, Renos Votsis

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infralabs
getting you to safe waters



University
of Cyprus



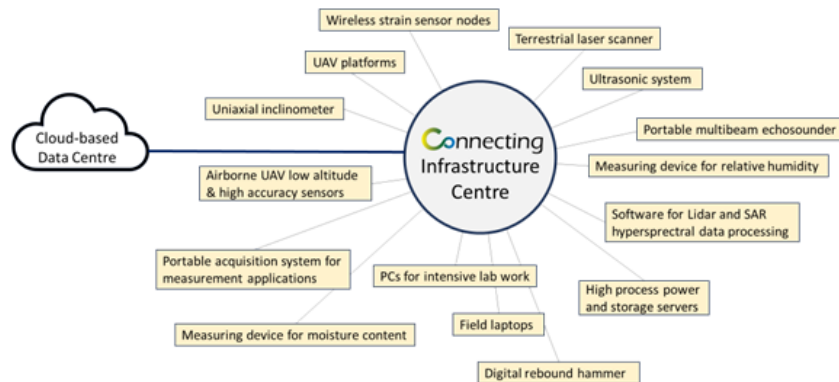
DEPARTMENT
OF ANTIQUITIES
CYPRUS

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Ερευνητικό Έργο CONNECTING - Υποδομές



Το έργο CONNECTING βασίζεται στο όραμα της ερευνητικής πρόσκλησης «Στρατηγικές Υποδομές», για τη δημιουργία ενός κέντρου γνώσης, εξοπλισμένου με υπερσύγχρονους αισθητήρες και πλατφόρμες που μπορούν να προωθήσουν την ερευνητική αριστεία σχετικά με τον εντοπισμό, την παρακολούθηση, την τεκμηρίωση και την ανάλυση χώρων και μνημείων πολιτιστικής κληρονομιάς, τόσο στην ξηρά όσο και στη θάλασσα.



Connecting in numbers...

4
Consortium members

Number	Role	Legal name
1	HO	TECHNOLOGIKO PANEPISTIMIO KYPROU (CUT)
2	PA1	INFRALABS LTD
3	PA2	UNIVERSITY OF CYPRUS (UCY)
4	PA3	DEPARTMENT OF ANTIQUITIES (DoA)

6
Supporters

Number	Legal name
1	POLITECNICO DI MILANO (POLIMI)
2	UNIVERSIDADE DE AVEIRO (UA)
3	UNIVERSITY COLLEGE LONDON (UCL)
4	DEPARTMENT OF LAND AND SURVEYS (DLS)
5	GEOFEM LTD
6	UNESCO CHAIR ON DIGITAL CULTURAL HERITAGE

1

5
Work Packages

8
Objectives

4
S&T Challenges

...to become a reference research node bringing together geomatics, civil engineers, ICT experts, archaeologists, and heritage managers.



Acknowledgement: This project has received funding from the European Regional Development Fund and the Republic of Cyprus through the Research and Innovation Foundation of Cyprus under contract SMALL SCALE INFRASTRUCTURES/1222/0062.

CONSORTIUM



Ερευνητικό Έργο CONNECTING - Υποδομές

CHCNAV SLAM-SET RS10



High-Precision GNSS
 •Dual-frequency
 •Support: GPS, GLONASS, Galileo, Beidou, QZSS
 •GNSS RTK + SLAM
 •Absolute accuracy: < 5 cm (H) / < 5 cm (V)



Specs & Performance
 •Range: 0.05 to 120m
 •Point cloud thickness: 2cm
 •Measurement Rate: Single Return: 320 000 pts/sec



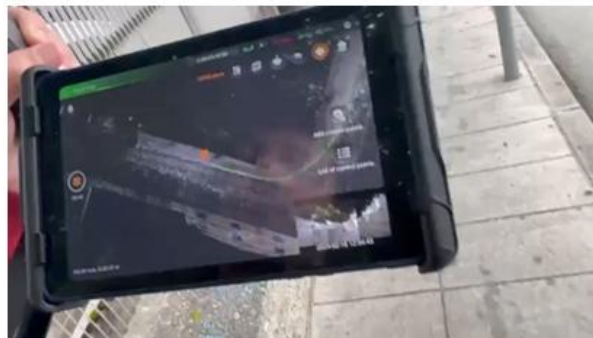
Durable Design
 •IP64 Rating: Splash-resistant & Dustproof
 •Operating Temp: -20°C to +50°C



Battery Life
 •Up to 60 minutes per battery
 •Hotswap Battery: Continuous operation



User-Friendly Interface
 •4.3" Touchscreen Display
 •Real-Time Mapping
 •Customizable Functions
 •Data Output: RTCM 3.2, CMR, CMR+, NMEA



DJI M350 RTK



High-Precision RTK
 •RTK Support: Real-time positioning accuracy
 •GNSS Systems: GPS, GLONASS, Galileo, Beidou



Durability & Safety
 •IP55 Rating: Waterproof & dustproof
 •Temperature Range: -20°C to +50°C
 •Obstacle Avoidance: 360° vision sensors



Flight Performance
 •Max Flight Time: 55 minutes
 •Max Wind Speed: 12 m/s (43 km/h)
 •Max Altitude: 7,000 meters



Advanced Imaging
 •Multi-Payload Support
 •Max Payload: 2.7kg
 •Camera Gimbals: 3-axis stabilization



Long Battery Life
 •Battery Life: 55+ minutes
 •Hotswap Battery: Quick replacement for extended flight times



Easy Control & Interface
 •DJI Pilot App: Intuitive control and monitoring
 •Dual Control: Supports dual-operator mode



Ερευνητικό Έργο CONNECTING - Υποδομές

Cameras

DJI Zenmuse P1

- Full-Frame Sensor**
 - 45 MP high-resolution imaging
 - Interchangeable lenses (24/35/50mm)
- High-Precision Mapping**
 - RTK module for centimeter-level accuracy
- Efficient Data Capture**
 - 3 fps continuous shooting
 - Covers 3 km² in one flight
- Smart Workflow**
 - TimeSync 2.0 for real-time alignment



DJI Zenmuse L2

- High-Precision LiDAR**
 - 240,000 points per second
 - 70° field of view
- Survey-Grade Accuracy**
 - RTK-supported centimeter-level precision
 - 450m detection range (50% reflectivity)
- Integrated RGB Camera**
 - 20 MP CMOS sensor
 - Mechanical shutter for precise imaging
- Efficient Data Capture**
 - Up to 3 returns per pulse for dense vegetation
 - Covers 2.5 km² in a single flight
- Seamless DJI Integration**
 - Works with DJI Terra for real-time point cloud processing



HAIP BlackBird V2

- DJI Integration**
 - Works with Matrice 300 & 350 RTK
 - DJI Skyport V2 for quick attachment
- Hyperspectral Imaging**
 - 500–1000 nm (VNIR) range
 - 100 spectral bands
- High Precision & Efficiency**
 - Push-broom linescanner technology
 - Optimized for aerial mapping & analysis



Strategic Research Infrastructure

Location: Limassol, Cyprus, Dorothea Building - Kitou Kyprianou 45 - 2nd floor

HP Z2 Tower G9 Workstation (i7) – 6 units
Processor: Intel Core i7
Memory: Up to 128GB RAM
Storage: NVMe SSD | HDD options
Graphics: RTX / A-series GPUs
Optimized for: CAD, GIS & AI applications



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HPE Apollo 4200 Gen10 Plus (Server)
 Enterprise-Grade Data Processing
 24 LFF Bays | Scalable Storage
 Optimized for Data Centers & HPC Workloads
 TAA-compliant, built for AI & cloud computing



CHASING M2 PRO MAX – Overview & Key Specifications

Overview:

- Professional **Underwater ROV** designed for advanced inspection, mapping, and sampling operations.
- Fully portable and deployable by one person.

Key Specs:

- Depth Rating: 200 meters
- Max Speed: 3 knots
- Battery Life: Up to 5 hours (with dual 700Wh batteries)
- Thrusters: 8 vectored thrusters (omnidirectional movement)
- Payload Capacity: Up to 7 kg
- Stabilization: Built-in IMU and depth hold
- Camera: 4K UHD / 12 MP with low-light sensor and laser scaler support
- Lighting: Dual 4000-lumen LED lights (adjustable)



Ερευνητικό Έργο CONNECTING – Πρώτες Εφαρμογές

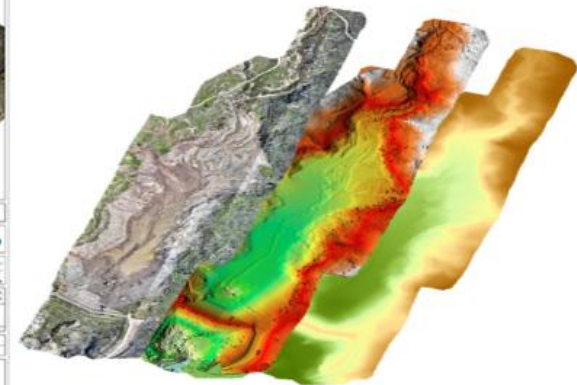
Case Study of Mavrokolympos Reservoir – Land



Orthomap of Mavrokolympos Dam



Interactive Web Application Showcasing Mavrokolympos Reservoir Aerial Survey Results in 2D and 3D



Ερευνητικό Έργο CONNECTING – Πρώτες Εφαρμογές



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European Researchers' Night 2025
ΑΠΟΣΤΟΛΗ: ΠΡΟΣΑΡΜΟΓΗ ΣΤΗΝ ΚΛΙΜΑΤΙΚΗ ΑΛΛΑΓΗ
26 Σεπτεμβρίου 2025, Λευκωσία, Κύπρος

Καινοτόμες Ψηφιακές Τεχνολογίες Γεωπληροφορικής για την Προστασία και Ανάδειξη της Πολιτιστικής Κληρονομιάς

Κυριάκος Μιχαηλίδης
Υπ. Διδάκτωρ
Km.michaelides@edu.cut.ac.cy



Τεχνολογικό
Πανεπιστήμιο
Κύπρου

Τμήμα Πολιτικών
Μηχανικών και Μηχανικών
Γεωπληροφορικής



ΙΔΡΥΜΑ
ΕΡΕΥΝΑΣ ΚΑΙ
ΚΑΙΝΟΤΟΜΙΑΣ



Με τη χρηματοδότηση
της Ευρωπαϊκής Ένωσης

Τι είναι η Γεωπληροφορική;

Συστήματα συλλογής Γεωγραφικών Δεδομένων



Παραδείγματα



Κινητές έξυπνες
συσκευές



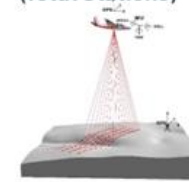
Ολοκληρωμένοι
Γεωδαιτικοί Σταθμοί
(Total Stations)



Παγκόσμια Δορυφορικά
Συστήματα Πλοήγησης
(GNSS)



Σαρωτές Laser
(TLS)



Αερομεταφερόμενοι
Σαρωτές LiDAR



Μη επανδρωμένα
αεροσκάφη



Πολυφασματικούς
αισθητήρες



Υπερφασματικούς
αισθητήρες



Δορυφορική
τηλεπισκόπηση

Τι είναι η Πολιτιστική Κληρονομιά;



Τι κάνουμε εμείς



Ερευνητική Υποδομή Connecting



CHCN AV SLAM-SET RS10



High-Precision GNSS
 •Dual-frequency Support: GPS, GLONASS, Galileo, Beidou, QZSS
 •GNSS RTK + SLAM
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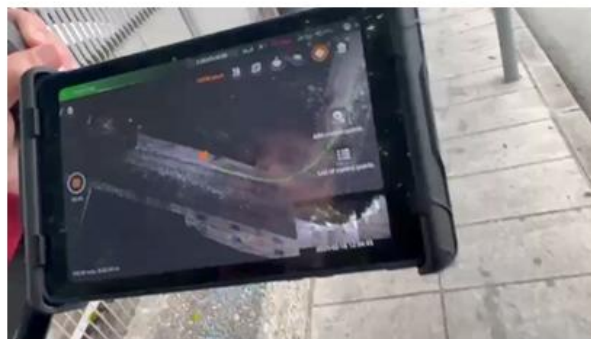
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- Survey-Grade Accuracy**
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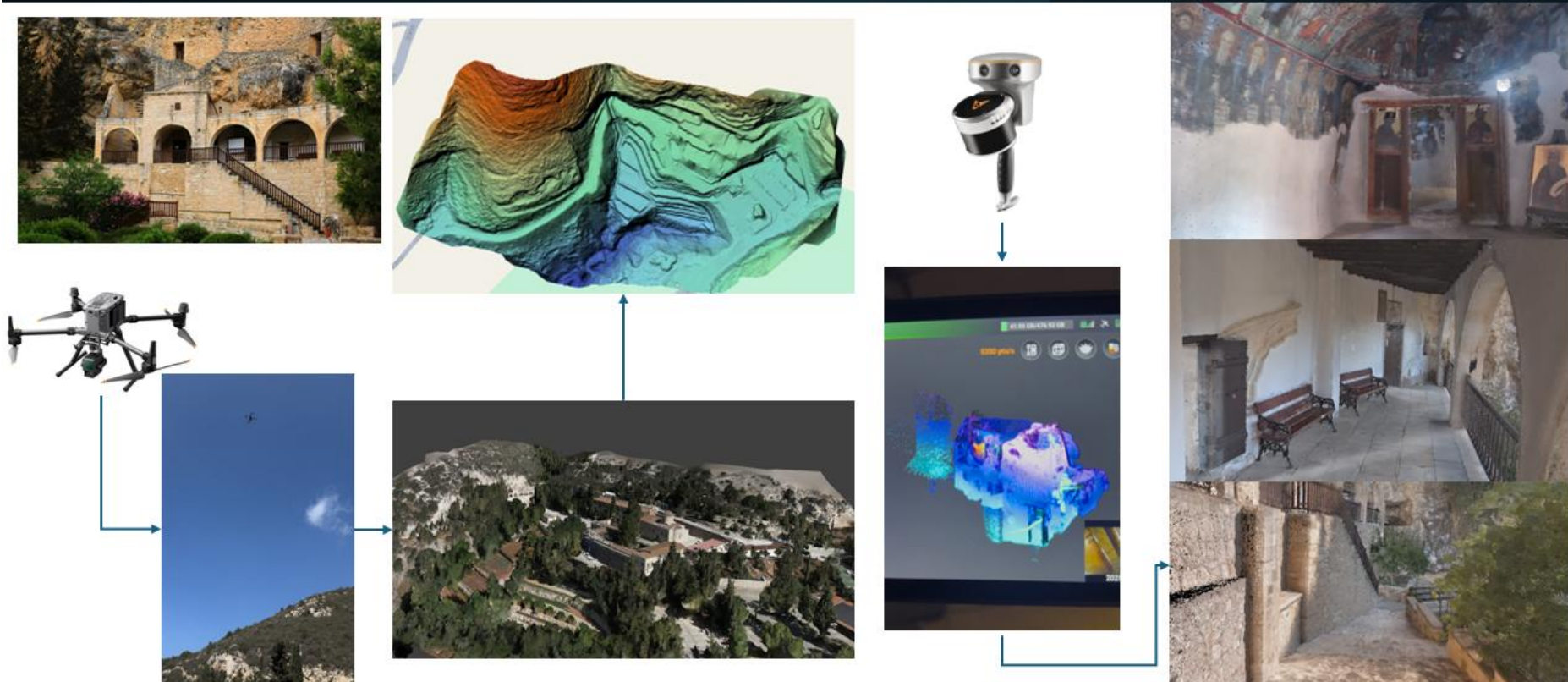


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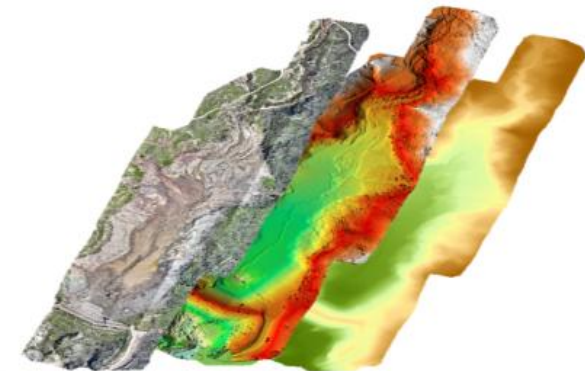
Ιερά Μονή Αγίου Νεοφύτου - Πάφο



Φράγμα Μαυροκόλυμπου - Πάφο



Orthomap of Mavrokolympo Dam



Σας ευχαριστώ για την προσοχή σας!

ΠΕΡΙΠΤΕΡΟ

37

ΑΠΟΣΤΟΛΗ: ΠΡΟΣΑΡΜΟΓΗ ΣΤΗΝ ΚΛΙΜΑΤΙΚΗ ΑΛΛΑΓΗ



Τεχνολογικό
Πανεπιστήμιο
Κύπρου

Τμήμα Πολιτικών
Μηχανικών και Μηχανικών
Γεωπληροφορικής

Κυριάκος Μιχαηλίδης
Υπ. Διδάκτωρ
Km.michaelides@edu.cut.ac.cy



ΙΔΡΥΜΑ
ΕΡΕΥΝΑΣ ΚΑΙ
ΚΑΙΝΟΤΟΜΙΑΣ



Με τη χρηματοδότηση
της Ευρωπαϊκής Ένωσης