



H2020-TWINN-2015. Grant Agreement no 691936	
Project full title:	Remote Sensing Science Center for Cultural Heritage
Project acronym:	ATHENA
Work Package	WP6
Deliverable	D6.9 ATHENA’s printed brochure



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	<p>H2020-TWINN-2015 Grant Agreement no 691936 This project is funded under the EUROPEAN COMMISSION in the Framework Programme for Research and Innovation (2014-2020).</p>	
Call:	Work programme H2020 under “ Spreading Excellence and Widening Participation ”, call: H2020-TWINN-2015: Twinning (Coordination and Support Action).	
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Work Package (WP):	WP6	
Deliverable (D):	D6.9 ATHENA’s printed brochure	
Due date of deliverable:	November 2018 (Month 36 of the project)	Version: 1
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Start date of project:	1/12/2015	Duration: 36 months

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

Document Sign-off				
Nature	Name	Role	Partner	Date
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APPROVED	Diofantos G. Hadjimitsis	Coordinator	CUT	29/11/2018

Work Package: 6 – Dissemination				
Deliverable: D6.9 – ATHENA’s printed brochure				
Sections to be protected	Description	Owner	Access Rights	
			Period	Type*
none				

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Summary

The specific deliverable displays the brochures of the ATHENA project which have been created, printed and distributed throughout the project, for dissemination purposes.

1. Introduction

Deliverable 6.9: ATHENA's printed brochures, makes part of WP6: Dissemination and exploitation. More specifically, D6.9 is linked with Task 6.5 of the proposal, which is referring to the outreach activities of the project intended for the non-academic audience / wider public.

For this reason, three brochures have been created and distributed to various occasions (i.e. schools; conferences; interested individuals; during local initiatives and events such as the Researchers' day/week organised by the Research Promotion Foundation; visitors to the premises of the Coordinator's institution, CUT).

The brochures display short descriptions of the project, with simplify for the non-expert explanations, as well as photographic material.

Apart from being printed, these brochures have been also uploaded to the project's website in an electronic format, for further visibility and dissemination.

2. Brochure 1

The first brochure was done at the early beginning of the project, acknowledging this new initiative in Cyprus, reproducing the basic information about ATHENA project (Figures 1 and 2).

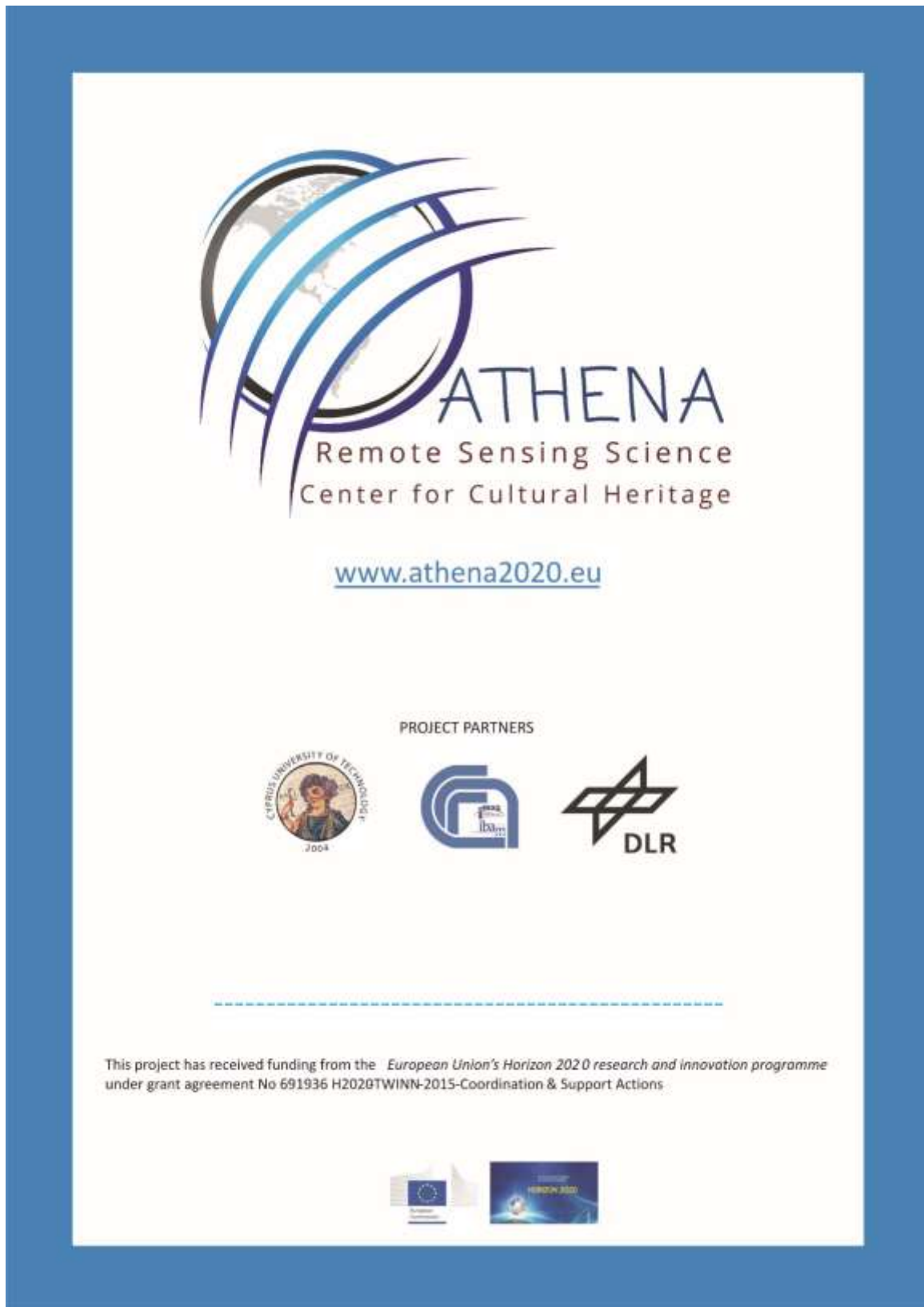


Figure 1. Brochure 1: front page

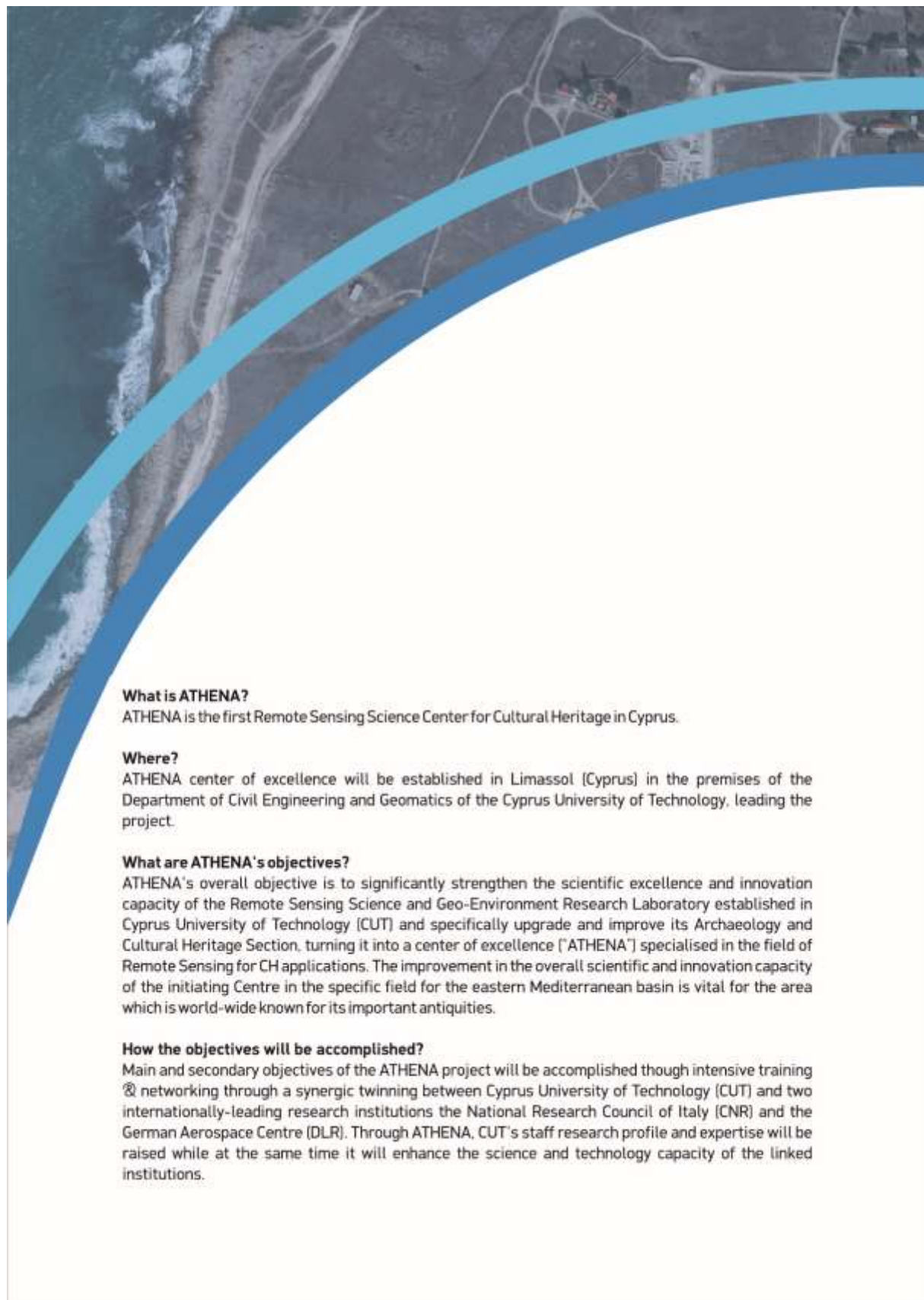
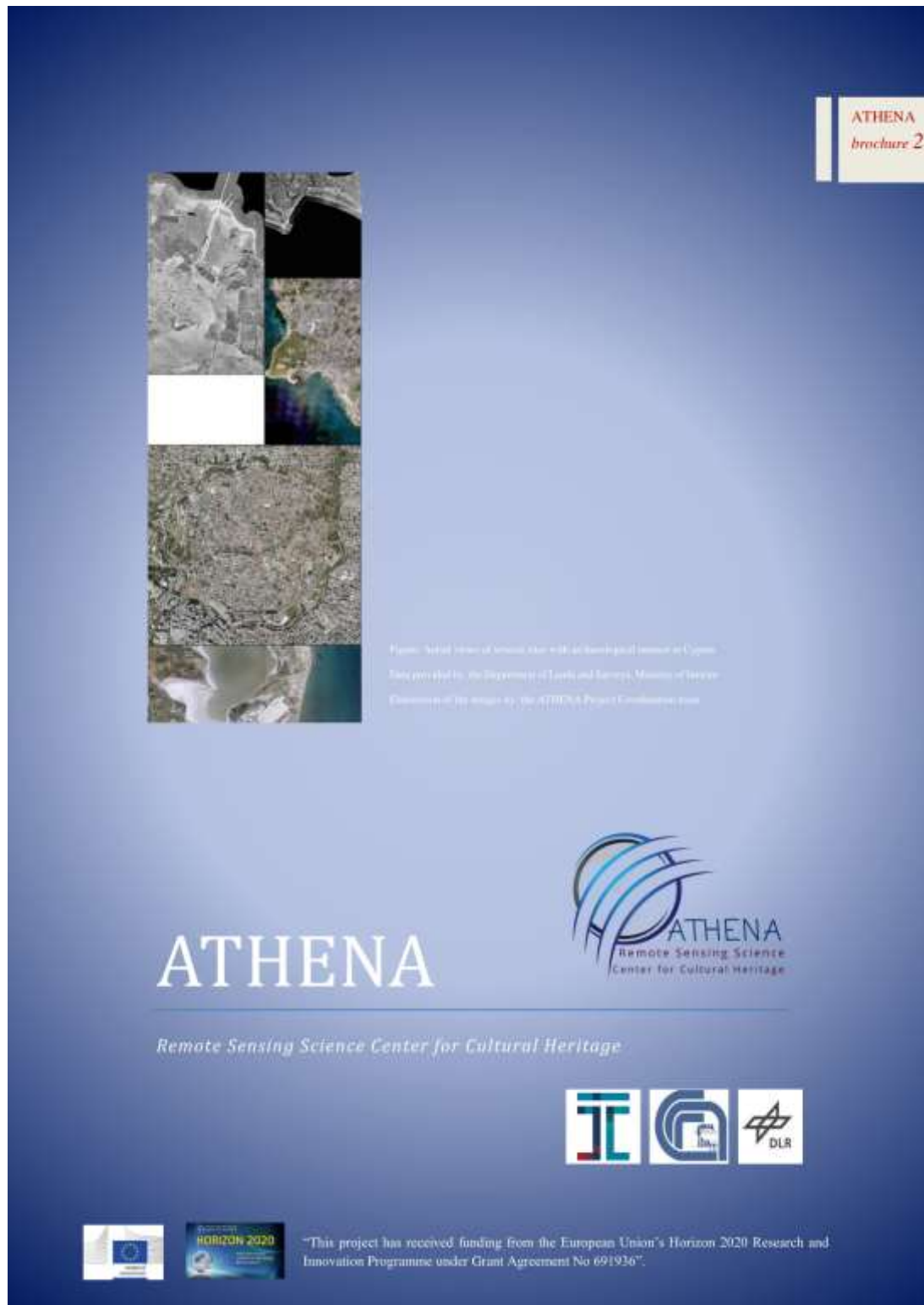


Figure 2. Brochure 1: retro page

3. Brochure 2

The second brochure was created after the project has matured, providing the necessary time to understand the questions of the wider public also. Therefore, brochure 2 displays information in simple wording, about remote sensing, its utility for cultural heritage, the fields of operation, the beneficial parameters of using satellite products for Cyprus specifically, etc. (see figures below).



ATHENA: Remote Sensing Science Center for Cultural Heritage

Brochure 2018

What is ATHENA?

ATHENA is a European Horizon 2020 Twinning project, which aims to establish a Center of Excellence in the field of Remote Sensing for Cultural Heritage in the areas of Archaeology and Cultural Heritage through the development of an enhanced knowledge base and innovative methods.

Where is it taking place?

ATHENA is established in Limassol (Cyprus) in the premises of the Department of Civil Engineering and Geomatics, Remote Sensing & Geo-Environment Lab of the Cyprus University of Technology (CUT).



Limassol city (left). The Senate building at the Cyprus University of Technology, Limassol-Cyprus (right)

Who are the actors?

ATHENA project is coordinated by the Cyprus University of Technology (CUT), through the Department of Civil Engineering and Geomatics, and specifically based on the capacities of the interdepartmental Remote Sensing Science and Geo-Environment Laboratory. The Lab is also a members of the Copernicus Academy.



Also, ATHENA consortium includes partners from internationally-leading institutions from other European Member States. More specifically, the National Research Council of Italy (CNR) and the German Aerospace Centre (DLR) are involved as consortium partners.



Cyprus University of Technology



National Research Council



German Aerospace Centre

Consortium:

- Cyprus University of Technology – CUT (Cyprus)
- National Research Council – CNR (Italy)
- German Aerospace Centre –DLR (Germany)



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Brochure 2018

ATHENA supporters:

- ✓ Department of Antiquities of Cyprus
- ✓ Association of Cypriot Archaeologists
- ✓ Department of Electronic Communications
- ✓ Remote Sensing Society
- ✓ HIST-Unesco

**What are the objectives?**

ATHENA's overall objective is to significantly strengthen, improve and upgrade the scientific excellence and innovation capacity of the Remote Sensing Science and Geo-Environment Research Lab (www.cyprusremotesensing.com), established in CUT. This type of improvement operating in the Cultural Heritage field, is vital and an emerging need for the eastern Mediterranean area, which is world-wide known for its important antiquities.

How the objectives will be accomplished?

Main and secondary objectives of the ATHENA project will be accomplished through intensive training activities, knowledge transfer and networking through the synergic twinning, between the consortium partners. More precisely, the technical and scientific knowledge of the experts will be transferred to the Cypriot counterparts. Therefore, through ATHENA, CUT's staff research profile and expertise will be raised, while at the same time it will enhance the science and technology capacity of the linked institutions.

Why Earth Observation?**Advantages of Earth Observation**

- **Synoptic view:** It facilitates the study of various features of earth surface in their spatial relation to each other & helps to delineate the required features & phenomenon.
- **Cost effective:** than traditional ground techniques
- **Accessibility:** It makes it possible to gather information about inaccessible areas where it is not possible to gather information through ground surveys.
- **Time:** These techniques save time & efforts as information about large area can be gathered quickly.
- **Multidisciplinary applications:** Remote sensing data are useful to different disciplines of RS



ATHENA: Remote Sensing Science Center for Cultural Heritage

Brochure 2018

Why Remote Sensing (RS) for Cultural Heritage (CH)?

Remote Sensing (RS) science is increasingly being used to support archaeological and cultural heritage research in various ways. Remote Sensing is of extreme importance specifically for the sensitive Cultural Heritage field, since it operates remotely, it is a distant, non-destructive and non-invasive tool.

Satellite sensors either passive or active are currently used in a systematic basis to detect buried archaeological remains and to monitor tangible heritage. In addition, airborne and low altitude systems are used for documentation purposes. Ground surveys using remote sensing tools, such as spectroradiometers and ground penetrating radars, can detect variations of vegetation and soil respectively, which are linked to the presence of underground archaeological features.

Some of the areas of Cultural Heritage scientific domain, to which RS can positively contribute, are the following:

- ⇒ Detection of buried archaeological features
- ⇒ Monitoring archaeological sites
- ⇒ Architectural documentation of monuments and archaeolandscapes
- ⇒ Monitoring of looting/illegal excavation activity
- ⇒ Detecting micro-movements of sites
- ⇒ Exploit archive information to unlock unknown sites with archaeological interest
- ⇒ Risk assessment and risk preparedness for Cultural Heritage



European level density map showing clusters, based on citations for remote sensing archaeology. Red colour indicates areas with high density of institutions received a high number of citations.

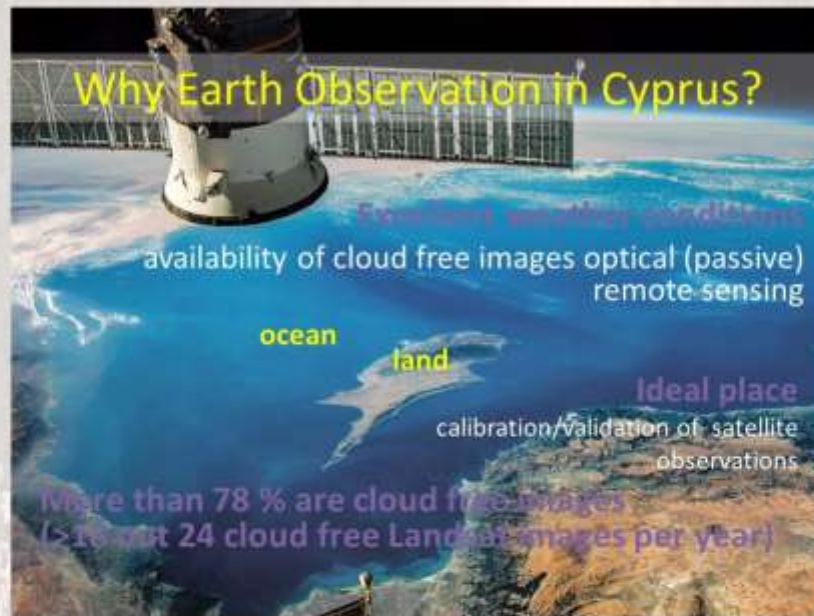


Visualization of institutions exchange and transfer of knowledge in regards to remote sensing for cultural heritage, in a global level.

Agapiou A, and Lysandrou V. (2015). "Remote sensing archaeology: Tracking and mapping evolution in European scientific literature from 1999 to 2015". *Journal of Archaeological Science: Reports*, Volume 4, 2015, 192–200

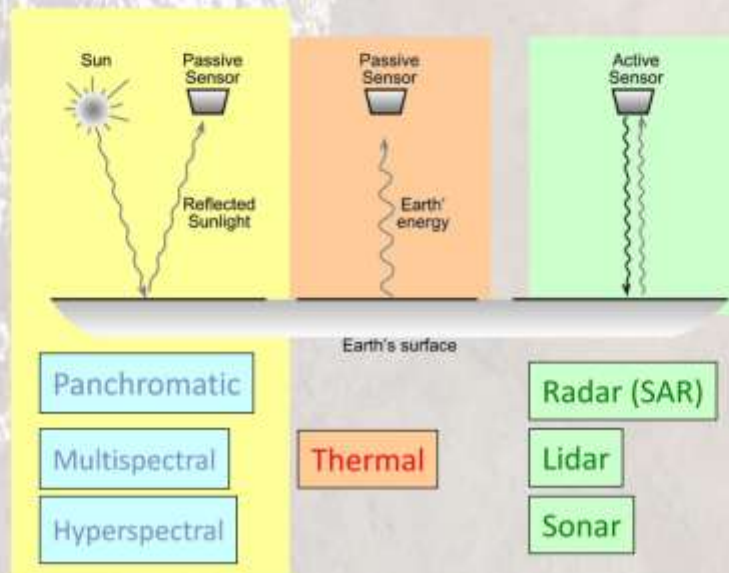
Why Remote Sensing for Cyprus?

Ideal place for passive remote sensing



What is active and passive sensors?

Active sensors have its own source of light or illumination. In particular, they actively send a wave and are measuring the reflected backscatter. **Passive sensors** measure reflected energy, emitted from a natural resource.

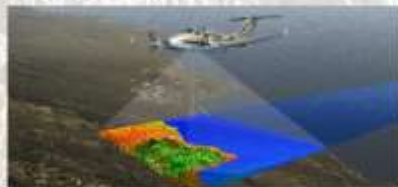
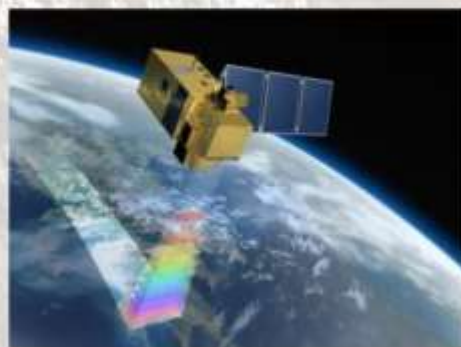


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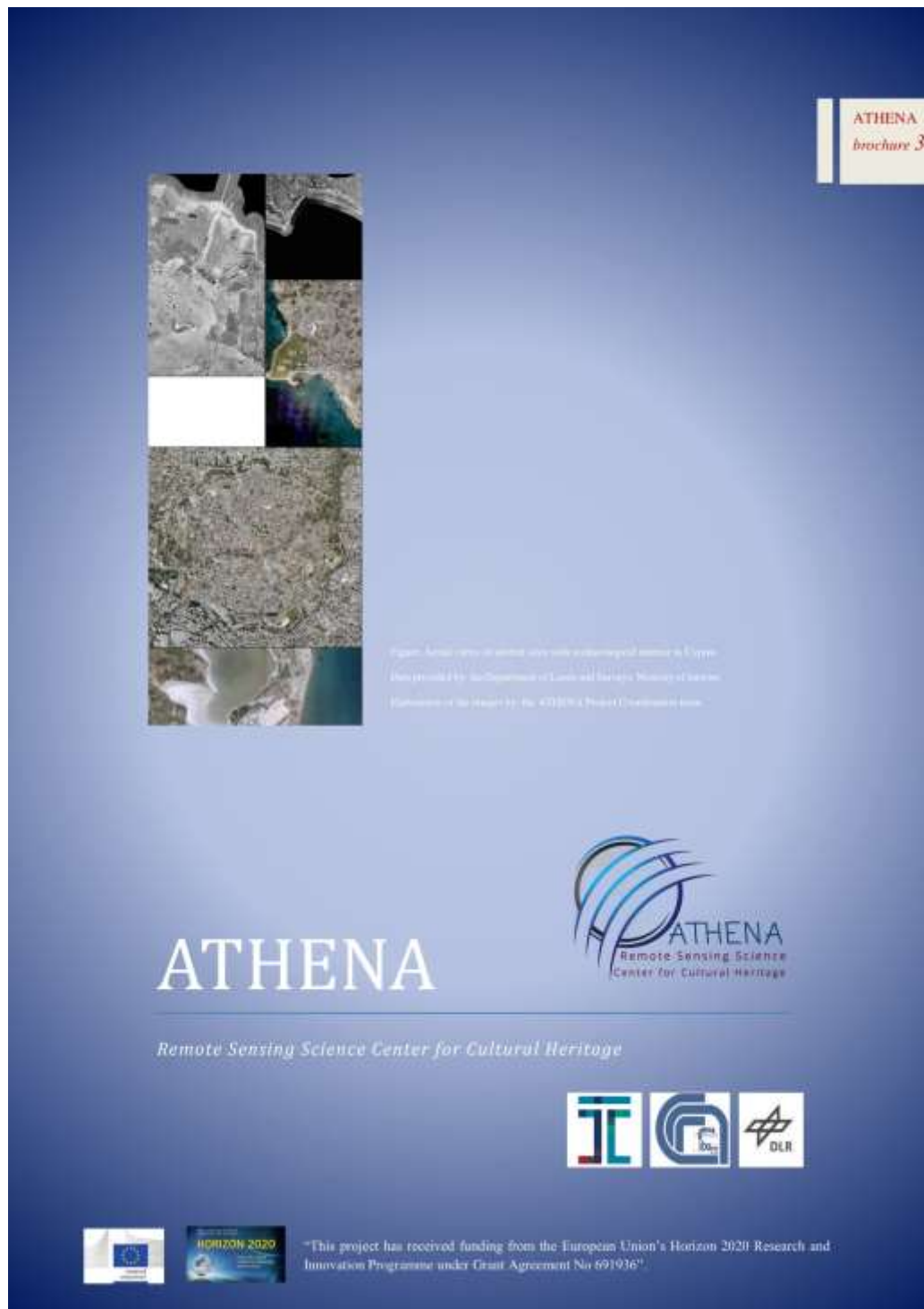
Which are the acquisition systems?

- Ground Remote Sensing (field spectroscopy, ground penetrating radars, etc.)
- Aerial (balloon, UAVs, etc.)
- Satellites

**GROUND REMOTE SENSING****AERIAL****SATELLITES**www.athena2020.eu

4. Brochure 3

The third brochure has been created as an outcome of another Coordination and Support Action of the ATHENA project. More specifically, the ATHENA project has been invited from the Research Promotion Foundation of Cyprus, to participated to an event dedicated to the view of cultural heritage sites, by employing old and new technological media. For this event, the ATHENA project presented archival aerial views of specific site in Cyprus with archaeological interest, contrasting them with new satellite images of the same area.



ATHENA: Remote Sensing Science Center for Cultural Heritage

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ATHENA PROJECT

The ATHENA project aims to establish a conceptual **Center of Excellence in the field of Remote Sensing for Cultural Heritage**. The ATHENA Center is devoted to the development, introduction and systematic use of advanced **Remote Sensing Science and Technologies** in the field of **Cultural Heritage**.

Towards this direction, the Remote Sensing and Geo-Environment Research Laboratory at the Cyprus University of Technology (CUT) has been closely working together since 2015 with the internationally-leading counterparts from other Member States of the EU, specifically, with the National Research Council of Italy (CNR) and the German Aerospace Agency (DLR).

ATHENA project exploits the current capabilities of the Cyprus University of Technology (CUT), both in terms of personnel capacity and equipment, performing **Coordination and Support Actions**, as well as **advance research** regarding the Cultural Heritage scientific domain.

The **EU H2020-Twinning project** offers the possibility for a close collaboration between CUT and other experts in the field of Remote Sensing for Cultural Heritage in the EU, creating a synergistic network that will permit further networking, transfer of knowledge and training of the existing personnel of Cyprus University of Technology.

Consortium:

- Cyprus University of Technology – CUT (Cyprus)
- National Research Council – CNR (Italy)
- German Aerospace Centre –DLR (Germany)



ATHENA: Remote Sensing Science Center for Cultural Heritage

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**ATHENA project and the "Enjoyment of Cultural Heritage
by means of new and old media" initiative**

This activity is developed within the frame of the Action Programme of the Joint Programming Initiative on Cultural Heritage and Global Change. The workshop "Enjoyment of Cultural Heritage by means of New and Old Media" has been organized with the support of Research Promotion Foundation of Cyprus.



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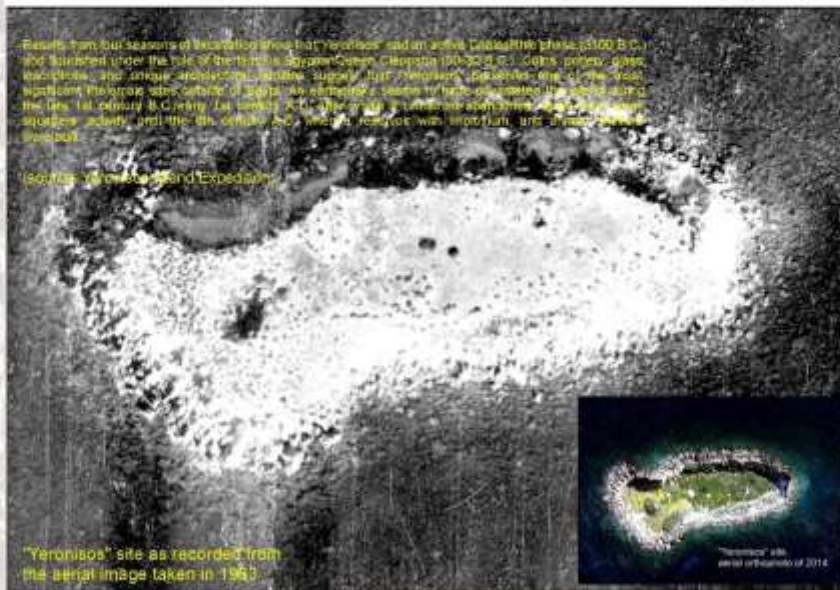


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Tombs of the Kings
UNESCO World Heritage Monument
Aerial Orthophoto 2014

The Tombs of the Kings is a large necropolis located in the eastern part of the Paphos District in Cyprus. It is a UNESCO World Heritage Site.

The underground tombs, many of which date back to the 4th century BC, are carved out of local rock and are the largest in the Mediterranean region of the island. The site is also known for its well-preserved frescoes and the many tombs that have been discovered.



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