

Search for a Spanish Partner for a Bilateral R&D Project

Organization		
Date of Request:	20/03/2024	
Company name:	Faculty of Tourism and Hotels	
Contact person and title/ designation:	Dr. Islam Kamal El-Bestawi	
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SECTION 1: Entity launching the partner search. (<i>Please give brief / to the point explanations. For more explanation on any point below, you may add a short paragraph as an annexure, with this document.</i>)			
Sector	 Tourism and Antiquities sector Tourism industry and management of tourist places 		
Entity mission or core functions	The faculty's Vision is "Excellence and leadership in the tourism industry locally and regionally".		
	The faculty prioritizes training future tourism and hospitality professionals to meet industry demands. It accomplishes this by offering exceptional educational programs, conducting groundbreaking research, and fostering sustainable development in the surrounding community, all while upholding ethical practices.		
Date of establishment	1997		
Ownership (if public and traded, add stock exchange and ticker symbol)	Public Higher Education Institution		
Total number of employees	150-200		
Number of employees in R&D	90		





 services provided. Consultation Services. Travel & Hospitality Services.
 Travel & Hospitality Services.
 Entity core technical competences Educational Museum with Augmented Reality "AR" Facilities. International Journal of Tourism, Hospitality, and cultural Heritage
Amadeus Lab
Educational Restaurant.
 Information Technology Unit
Risk Management Unit
Languages Lab.
 Key R&D programs and activities Technology and Innovation in Heritage Tourism. Sustainable Tourism and Environmental Management. Tourism destination marketing using modern ICT Heritage Interpretation and Education.
Examples of VR Lab of Cultural Heritage and archaeological
accomplishments sites.
Augmented Reality "Wall of Knowledge Project" in cooperation with Center of Documentation of
cultural and natural Heritage "CULTNAT".
 Funded Projects such as the project of
"Comprehensive approach of risk management in
Technologies" which is funded by Academy of
Scientific Research and Technology (ASRT).
Company strategic The faculty's strategic goals are broken down into
orientation actionable programs, supported by well-defined
executive plans, to ensure their successful
 Introducing and developing educational program
at the undergraduate and postgraduate levels to
match the requirements of the labor market of
nenlage.
opportunities.
 Providing a suitable and attractive educational environment for students.
 Improving the level of services, activities and
support provided to students and graduates.
 Supporting and developing the capabilities of faculty members and supporting staff
Sustainable development of the college's own



	resources to meet the burdens of continuous development.
	• Linking the college's scientific research system to the requirements of the labor market and building effective partnerships with the private sector to support scientific research.
	 Supporting innovative research and scientific activities related to solving community problems.
	 Promoting community participation and serving and developing the environment.
	 Supporting technological development in the tourism industry.

SECTION 2: Spanish Company Pro (Please provide a brief summary of the prospectiv address some or all of the points below)	file re partner company or organization. This summary may
Core technological competencies and expertise.	Web GIS Development with more expertise on (Web Mapping APIs (Leaflet Open every Manhay Clures)
	 and Cloud Computing Platforms (AWS, Google Cloud Platform, Microsoft Azure. EO Data Processing and
	Analysis: Proven experience in handling large volumes of EO data (satellite imagery, LiDAR, radar) from various sensors and platforms. Expertise in data pre-processing, analysis techniques (e.g., object-based image analysis, spectral unmixing), and integration with Geographic Information Systems (GIS).
	• Machine Learning and Artificial Intelligence (AI): Experience in developing and applying machine learning algorithms for cultural heritage applications. This could include object detection and classification (e.g.,
	identifying archaeological sites, monitoring structural changes), anomaly detection (e.g., detecting looting activity), and predictive modeling (e.g., forecasting environmental threats to heritage





	 sites). Knowledge of the Machine learning (ML) techniques such as (CNN- R-CNN – SVM- Canny edge detectoretc) Cloud Computing: Experience working with cloud platforms (e.g., Google Earth Engine, Amazon Web Services) for large-scale EO data processing and analysis. This allows for scalability and accessibility for your research project. 		
Other essential qualifications (e.g.: ownership, track records etc.)	Experience in Cultural Heritage Management: A strong understanding of the challenges and needs of cultural heritage management professionals. This allows for developing solutions tailored to their specific requirements.		
If you have a list of companies with whom you are in contact or interested in contacting, please provide contact details.	N/A		
If you are interested in collaboration: please specify details and other important information you want to share with a potential company	1- Project Objectives The primary objective of this project is to develop a comprehensive framework for utilizing EO big data in cultural heritage management. This will be achieved through the following specific objectives:		
	 Develop methodologies for identifying and mapping cultural heritage sites using EO data: This includes techniques for extracting relevant features from low, medium and high-resolution satellite imagery, LiDAR data, and radar data to identify potential archaeological sites and monitor existing ones. Implement techniques for change detection and risk assessment: We will explore the use of time series analysis to detect subtle changes in cultural heritage sites over time, allowing for proactive risk assessment and 		



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mitigation strategies. This can include monitoring threats like erosion, subsidence, and illegal activities.

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- Integrate EO data with Geographic Information Systems (GIS) and deep learning: By integrating EO data with GIS platforms, we can create a comprehensive information system for managing cultural heritage sites. This will allow for data visualization, spatial analysis, and the development of targeted conservation plans.
- Develop a user-friendly platform for data access and analysis: We will create a user-friendly platform that allows researchers, heritage managers, and policymakers to access, analyze, and visualize EO data relevant to cultural heritage sites.

1- Expected Outcomes

This project is expected to deliver the following key outcomes:

	 Development of innovative methodologies for utilizing EO big data in cultural heritage management. Improved identification, mapping, and monitoring of cultural heritage sites. Enhanced capabilities for proactive risk assessment and mitigation strategies. A user-friendly platform empowering researchers, heritage managers, and policymakers to make data-driven decisions. Increased awareness and appreciation for the potential of EO technology in cultural heritage preservation.
Interested areas of collaboration	 Web GIS Development with more expertise on (Web Mapping APIs

	**	GOBIERNO DE ESPAÑA	MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES	UNNOVACIÓN
Specific R&D contribution you are seeking/offering	Mac Inte We	(Leaflet, C and Cloud Google C Azure. • EO Data Analysis handling (satellite i various se Expertise analysis t image an integratio Systems chine Learni elligence (Al b GIS and clo	DpenLayers, N d Computing F loud Platform Processing : Proven expe large volumes magery, LiDA ensors and pla in data pre-pl echniques (e. alysis, spectra n with Geogra (GIS). ing and Artifi): bud computing	Mapbox GL JS) Platforms (AWS, , Microsoft and erience in of EO data R, radar) from atforms. rocessing, g., object-based al unmixing), and phic Information cial
Specific R&D contribution you are seeking/offering	 Azure. EO Data Processing and Analysis: Proven experience in handling large volumes of EO data (satellite imagery, LiDAR, radar) fro various sensors and platforms. Expertise in data pre-processing, analysis techniques (e.g., object-ba image analysis, spectral unmixing), integration with Geographic Informa Systems (GIS). Machine Learning and Artificial Intelligence (AI): Web GIS and cloud computing 		and erience in of EO data R, radar) from atforms. rocessing, g., object-bas al unmixing), a phic Informat cial	

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Signature Name: Islam El-Bestawi Date: 20-03-2024