ATHENA PROJECT
Ancient Theatres Enhancement for New Actualities

THE HASHEMITE KINGDOM OF JORDAN
MINISTRY OF TOURISM & ANTIQUITIES
DEPARTMENT OF ANTIQUITIES

Nizar Al Adarbeh, Project Manager
ATHENA PROJECT

• Funded by the European Commission (EC)

• Under the Euromed Heritage IV

• Timeline: 2009-2013

• Coordinator: Department of Antiquities

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Project Consortium

COORDINATOR
• The Hashemite Kingdom of Jordan, Ministry of Tourism & Antiquities, Department of Antiquities

PARTNERS
• Institut Préparatoire aux Etudes Littéraires et de Sciences Humaines de Tunis. Tunisia
• Built Environment Research Laboratory– University of Science and Technology Houari Boumediene. Algeria
• Universidad Politécnica de Valencia - Instituto Universitario de Restauración del Patrimonio. Spain
• Dipartimento di Rilievo, Analisi, disegno dell'Ambiente e dell'Architettura (RADAAR) - La Sapienza Universita di Roma

ASSOCIATE Partners
• CyArk High Definition Heritage Network
• Centro Progettazione e Restauro, Regione Siciliana
• Arab Towns Organization (ATO)
• Instituto de Arqueología-Mérida Spain

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Genesis and Needs

• Ancient theatres represent one of the most significant cultural heritage remains of Mediterranean civilizations.

• A number of these ancient theatres are still being used for various activities.

• Such current uses of theatres create a continuous impact on theatre structures originally designed for needs very different from contemporary ones.

• Thus, the need for a common strategy seems to arise, involving the design, testing and implementation of a management plan.

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ATHENA project objectives

• To minimize the progressive decay of ancient theatres in terms of physical, cultural and socio-economic aspects

• To support the revival of theatres as a part of a wider archaeological site or urban context

• To establish an overall strategy for dealing with tangible and intangible heritage aspects

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Prototype sites (Theatres)

Each partner decided a theatre to be studied during the Athena project:

Jordan: Theatres of **Petra** and **Jerash**
Tunisia: The theatre of **Carthage**
Algeria: The ancient theatre of **Cherchell**
Spain: the theatre of **Merida**
Italy: The theatre of **Syracuse**

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Project Work Packages

The project designed into six work packages (WP):

WP1: Leader (Tunis)
Setting up the common scientific and cultural frame

WP2: Leader (Italy)
Knowledge

WP3: Leader (Jordan)
Outlining a sustainability strategy: intervention priorities and overall compatibility

WP4: Leader (Spain)
Setting up the Management Plan

WP5: Leader (Italy)
Dissemination and Capacity Building

WP6: Leader (Jordan)
Project Management and Quality control

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Activities & Results

WP 1:
- **Thesaurus** of most relevant terms affecting project activities in all languages of the project.
Activities & Results

WP 2:

- **3D digital** documentation of geometrical and quantity aspects

- **Collection and catalogue** of documental sources (documents, drawings, pictures, etc.).

  - Set up of a **reference bibliography**.

  - Set up of a **Multi-Dimensional Database** for each site under study.

  - Publication of data complying with CyArk web protocols. **CyArk High Definition Heritage Network**: [www.cyark.org](http://www.cyark.org)

[www.athenaproject.eu](http://www.athenaproject.eu)
Activities & Results

WP3:
- Guidelines for analyzing risks and compatible utilization of Ancient theatre.

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Activities & Results

WP4:

- Set up of a **prototype of Management Plan** for each site under study.

- Ancient Theatre **Usage Manual**.

- Guidelines for compatible utilization.

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Activities & Results

WP5:

- Hands-on training on using 3D Scanner
- Project Website
- Conventional scientific publication of results

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Activities & Results

WP6:

- **Coordination** with all partners to implement the management plan

- **Synchronize project results** and publications internationally with all related entities

- **Capacity building on project management** for DoA staff and the staff of the other partners

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3D Digital Documentation

• Survey of the Roman Theatre and Amphitheatre was carried out obtaining a 3D model (pointcloud) acquired through an accurate sampling of the ancient structure using a Laser 3D scanner.
• In the week 9th -15th November 2009 the first survey campaign has been developed on the ancient site of Merida. 3D acquisition for the area of the theatre and of the Amphitheatre.
• First studies have started for scientific and archaeological assessments.
• A general prototype procedure has been outlined.
3D Digital Documentation

In this framework a number of deliverables have been produced:

• **3D digital documentation** of geometrical and quantity aspects:
  • General oriented 3D point cloud (about 100 Mln points)
  • Topographic control network
  • Basic 2D cartography: (plans, vertical sections both geometric and architectural 1:100/1:50)
  • Hi res. photographic documentation
  • Collection and catalogue of documental sources (documents, drawings, pictures, etc.).
  • Set up of a reference bibliography.
  • Construction of 3D Model
  • Numeric 3D model
  • Partial geometric 3D model
  • Interactive 3D model (online/offline) in 3D browsing environment (Leica Truview)
  • Set up of a Multi-Dimensional Database for each site under study (work in progress)

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Complex 3D Surveying

Topographic Stations 47
Number of point 250

Athena 3rd General Meeting – Amman 3 – 4 November 2010
Mario Doci Carlo Bianchini Alfonso Ippolito
WP2 Knowledge: State of the Art
ATHENA 3rd General Meeting – Amman 3 – 4 November 2010
Mario Docci Carlo Bianchini Alfonso Ippolito
WP2 Knowledge: State of the Art
Training

• Second Athena Week in Petra and Jerash in March 2011

• Hands-on training on using 3D Scanner

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Petra
The Royal Tombs

First Athena Week in Petra - 19 to 24 - March 2011

The DoA staff
Tawfiq Hunaiti, Jamal Safi, Mawfīq Al Fayyaz,
Asem Asfour, Qutaiba Dasouqi, Nedal Mānaseer.
Instrument

Total Station

Laser Saner C10

Camera
Leica Scan Station C10
Versatility, Productivity, Value

**Instrument type:** very high speed laser scanner, with survey-grade accuracy.

**User interface:** Onboard control, notebook or tablet PC.

**Data storage:** Integrated hard drive 80 GB (onboard hard disk) or external PC.

**Camera:** Auto-adjusting, integrated high-resolution digital camera with zoom video.
Range: 300 m.
Field-of View:
Horizontal: 360˚ (Maximum
Vertical : 270˚ (Maximum)
Onboard display: Touchscreen control with stylus, full colour graphic display.
Data transfer: Ethernet or USB 2.0 device.
Lighting: Fully operational between bright sunlight and complete darkness.
The aims of the projects

Survey
Surveying
Drawings
Details
Documentations
Sketching  
Photography  
Topography  
Scanning
Registration in Cyclone

Import topography file
Registration in Cyclone
Registration in Cyclone

Find the center of target
THANK YOU

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