Robots for Exploration, Digital Preservation and Visualization of Archeological Sites

Fact Sheet

Project information

ROVINA

Grant agreement ID: 600890
Status
Closed project

Start date
1 February 2013
End date
31 July 2016

Funded under:
FP7-ICT
Overall budget:
€ 3 657 328

EU contribution
€ 2 800 000

Coordinated by:
RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITAT BONN
Germany

Project description

ICT for access to cultural resources

Objective

Mapping and digitizing archeological sites is an important task to preserve cultural heritage and to make it accessible to the public. Current systems for digitizing sites typically build upon static 3D laser scanning technology that is brought into archeological sites by humans. This is acceptable in general, but prevents the digitization of sites that are inaccessible by humans. In the field of robotics, however, there has recently been a tremendous progress in the development of autonomous robots that can access hazardous areas. ROVINA aims at extending this line of research with respect to reliability, accuracy and autonomy to enable the novel application scenario of autonomously mapping of areas of high archeological value that are hardly accessible.

ROVINA will develop methods for building accurate, textured 3D models of large sites including annotations and semantic information. To construct the detailed model, it will combine innovative techniques to interpret vision and depth data. ROVINA will furthermore develop advanced techniques for
the safe navigation in the cultural heritage site. To actively control the robot, ROVINA will provide interfaces with different levels of robot autonomy. Already during the exploration mission, we will visualize relevant environmental aspects to the end-users so that they can appropriately interact and provide direct feedback. Our system will allow experts, virtual tourists and potentially construction companies to carefully inspect otherwise inaccessible historic sites. The International Council on Monuments and Sites will exploit the 3D models and technology. The ROVINA consortium is targeted at developing novel methods that will, besides the indicated goal, also open new perspectives for applications where autonomy and perception matters, such as robotics. To simplify the exploitation, all components developed in this project will be released as open source software as well as under a commercial license.

**Field of Science**

/field_of_science/engineering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/robotics/autonomous robots

/field_of_science/engineering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/robotics

**Programme(s)**

**FP7-ICT - Specific Programme "Cooperation": Information and communication technologies**

**Topic(s)**

**ICT-2011.8.2 - ICT for access to cultural resources**

**Call for proposal**

**FP7-ICT-2011-9**

**See other projects for this call**

**Funding Scheme**

**CP - Collaborative project (generic)**

**Coordinator**
<table>
<thead>
<tr>
<th>Institution</th>
<th>Country</th>
<th>EU Contribution</th>
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<tr>
<td>Rheinische Friedrich-Wilhelms-Universität Bonn</td>
<td>Germany</td>
<td>€ 540,138</td>
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<tr>
<td>Katholieke Universiteit Leuven</td>
<td>Belgium</td>
<td>€ 454,980</td>
</tr>
<tr>
<td>Rheinisch-Westfälische Technische Hochschule Aachen</td>
<td>Germany</td>
<td>€ 483,780</td>
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**Participants** (6)

**Administrative Contact**

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**Administrative Contact**

Karolien Mariën (Ms.)

**Administrative Contact**

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<tr>
<th>Organisation</th>
<th>EU Contribution</th>
<th>Address</th>
<th>Activity type</th>
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<tbody>
<tr>
<td>ALBERT-LUDWIGS-UNIVERSITAET FREIBURG</td>
<td>€ 128 422</td>
<td>Fahnenbergplatz 79098 Freiburg</td>
<td>Higher or Secondary Education Establishments</td>
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<td>ICOMOS - CONSIGLIO ITALIANO DEI MONUMENTI E DEI SITI - ICOMOS ITALIANA</td>
<td>€ 303 240</td>
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<tr>
<td>ALGORITHMINCA SRL</td>
<td>€ 450 660</td>
<td>Via Vitellia 89 00152 Rome</td>
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</table>
UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA

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EU Contribution
€ 438 780

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Activity type
Higher or Secondary Education Establishments

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Administrative Contact
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Permalink: https://cordis.europa.eu/project/id/600890/en

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