Synthetic Forager

Fact Sheet

Project Information

Funded under
FP7-ICT

SF

Grant agreement ID: 217148

Closed project

Overall budget
€ 3 643 762

EU contribution
€ 2 750 000

Coordinated by
UNIVERSIDAD POMPEU FABRA
Spain

Start date 15 January 2008
End date 31 December 2010

Project description

Cognitive Systems, Interaction, Robotics

Novel biologically based technology for autonomous exploration and foraging in real-world man-made indoor and outdoor environments

The single overarching goal of the SF consortium is to identify the neuronal, cognitive and behavioral principles underlying optimal foraging in rodents and to implement these principles in a real-world foraging artefact or the Synthetic Forager (SF.01). SF.01 constitutes a novel biologically based cognitive technology for autonomous exploration and foraging in real-world man-made indoor and outdoor environments. SF exploits our growing understanding of exploration and foraging behavior in
rodents, advances current theories of the neuronal and behavioral organization of foraging and transfers this understanding towards the construction of novel real-world synthetic cognitive technologies. The behavior and neurophysiology of foraging will be studied in rodents behaving in automatically controlled multi-modal environments, fully controlled using an advanced experimental technology developed by the consortium. The overall integration of the perceptual, cognitive and behavioral control systems will be accomplished using a Distributed Adaptive Control (DAC). The perceptual, cognitive and behavioral control systems of SF will be based on statistical analysis and detailed game theoretic models. The SF control systems are validated against the behavioral and physiological data. The SF phenotype comprises a high-mobility robotic platform equipped with visual, auditory, olfactory and tactile sensors. The SF will be evaluated in a number of stringent benchmarks ranging from robot equivalents of rodent foraging tasks to simulated de-mining.

The approach and technologies developed in SF will have long-term implications to areas including: cleaning robots, search and rescue systems, terrestrial and planetary exploration, delivery systems, autonomous transportation systems, military intelligence and battle field information control systems, environmental monitoring, internet information analysis and retrieval, information and communication networks and humanitarian de-mining.

**Fields of science**

> > >

**Programme(s)**

**Topic(s)**

**Call for proposal**

FP7-ICT-2007-1

**Funding Scheme**

**Coordinator Contact**

Anna MURA (Dr)
## Coordinator

**UNIVERSIDAD POMPEU FABRA**

<table>
<thead>
<tr>
<th>Address</th>
<th>Activity type</th>
<th>EU contribution</th>
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<tbody>
<tr>
<td>Placa De La Merce, 10-12</td>
<td>Higher or Secondary Education Establishments</td>
<td>€ 629 230</td>
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<tr>
<td>08002 Barcelona</td>
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<td>Spain</td>
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**Website**

**Contact the organisation**

**Administrative Contact**

Eva Martin (Ms.)

## Participants (6)

### GUGER TECHNOLOGIES OEG

**Austria**

<table>
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<th>EU contribution</th>
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<tr>
<td>€ 290 855</td>
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**Address**

Herbersteinstrasse 60

8020 Graz

**Activity type**

Private for-profit entities (excluding Higher or Secondary Education Establishments)

**Contact the organisation**

**Administrative Contact**

Christoph Guger (Dr.)

### UNIVERSITAET OSNABRUECK

**Germany**

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<tr>
<td>€ 420 518</td>
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Casper Huijser (Dr.)

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Record number: 85564

Permalink: https://cordis.europa.eu/project/id/217148

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