Synthetic Forager

Fact Sheet

Project Information

Funded under
FP7-ICT

SF

Grant agreement ID: 217148

Project website

Status
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.

Field of science

/engrering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/automation and control systems

Programme(s)

Topic(s)

Call for proposal

FP7-ICT-2007-1

Funding Scheme

CP - Collaborative project (generic)
Coordinator Contact

Anna MURA (Dr.)

Coordinator

UNIVERSIDAD POMPEU FABRA

Address
Placa De La Merce, 10-12
08002 Barcelona
Spain

Website
Contact the organisation

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 629 230

Administrative Contact
Eva Martin (Ms.)

Participants (6)

GUGER TECHNOLOGIES OEG

Address
Herbersteinstrasse 60
8020 Graz
Austria

Contact the organisation

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

Administrative Contact
Christoph Guger (Dr.)

UNIVERSITAET OSNABRUECK

Address
Neuer Graben/schloss 29
49074 Osnabrueck
Germany

Activity type
Higher or Secondary Education Establishments

Administrative Contact

EU contribution
€ 420 518

Participants (6)
CONSORCI INSTITUT D'INVESTIGACIONS BIOMEDIQUES AUGUST PI I SUNYER
Spain
EU contribution
€ 320 309
Address
Calle Rossello 149 Puerta Bjs 08036 Barcelona
Activity type
Other
Administrative Contact
JUAN RODÉS (PROF.)

ROBOSOFT Services Robots
France
EU contribution
€ 238 000
Address
45 Allée Théodore Monod - Technopole Izarbel 64210 Bidart
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Contact the organisation
Administrative Contact
Dominique TOUYA (Mr.)

TEL AVIV UNIVERSITY
Israel
EU contribution
€ 289 515
Address
Ramat Aviv 69978 Tel Aviv
Activity type
Higher or Secondary Education Establishments
Website
Contact the organisation
UNIVERSITEIT VAN AMSTERDAM

Netherlands
EU contribution
€ 561 573

Address
Spui 21
1012WX Amsterdam

Activity type
Higher or Secondary Education Establishments

Website
Contact the organisation

Administrative Contact
Casper Huijser (Dr.)

Last update: 13 April 2017
Record number: 85564

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

© European Union, 2021