

Press release

EU funded project worth 3,7 million euros

Consortium of seven European partners has gathered in a new FP7 ICT STREP project CADDY „Cognitive Autonomous Diving buddy” and received European commission’s funding in amount of 3.7 million Euros.

Project CADDY is starting on 1st of January 2014 and will last for three years. Partners involved are University of Zagreb – Faculty of Electrical Engineering from Croatia as the project coordinator, Consiglio Nazionale delle Ricerche from Italy, Instituto Superior Technico from Portugal, Jacobs University from Germany, Universtaet Wien from Austria, University Of Newcastle Upon Tyne from UK and Divers Alert Network Europe Foundation – DAN Europe based in Malta.

Divers (SCUBA, scientific, and technical) operate in harsh and weakly monitored environments in which the slightest unexpected disturbances, technical malfunctions, or lack of attention of a diver can result in catastrophic consequences. These issues are usually dealt by pairing up divers and adopting well defined rules for diving operations to reduce the chance of accidents. However, during more challenging dives these procedures may not be sufficient to ensure almost accident-free operations, for the divers must manoeuvre in complex 3D environments, carry cumbersome equipment, and focus attention on operational details. It is against this backdrop of ideas that CADDY sets forth the key goal of contributing to the development of a new breed of technological systems to monitor the behaviour of human divers and assist them during the execution of demanding missions at sea.

Project effort will focus on research and development of setting up symbiotic links between a human diver and a set of companion autonomous robots by developing a multicomponent, highly cognitive underwater robotic system capable of learning, interpreting, and adapting to the diver’s behaviour and physical state.

The core of the proposed envisioned concept consists of a **diver, autonomous underwater robot and autonomous surface robot**, picture in attachment. A diver will interact with the companion autonomous underwater robot that will manoeuvre underwater in the vicinity of the diver and exhibit cognitive behavior with regard to the diver actions. The autonomous surface vehicle that communicates with the diver and the autonomous underwater robot is a communication relay link to the command centre but at the same time it also plays the key role of a navigation aid to the underwater vehicles. It must adapt its motion so as to optimize the conditions for increased communications efficiency and navigational accuracy of the three components of the formation.

CADDY project will go beyond the state-of-the-art by introducing an underwater vehicle to assist the diver. The research regarding human-robot interaction will be enhanced though diver behaviour interpretation which has not yet been addressed.

If you have any questions regarding the project please contact:

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Kind regards,

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