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www.fp7-icarus.eu
ICARUS is a research project co-funded by the European Commission (total budget: 17.5M€) aiming to develop robotic tools which can assist “human” Search and Rescue (SAR) teams in the field. 24 partners will collaborate over 4 years (starting from 2012) to develop state-of-the-art European solutions for saving human lives and speeding up the SAR process. ICARUS concentrates on the development of unmanned SAR technologies for detecting, locating and rescuing humans in disaster situations both in urban and maritime environments. These unmanned platforms are able to traverse land, sea and air in order to locate survivors and participate to the rescue operations.

There is an abundant literature on research efforts towards the development of unmanned Search and Rescue tools. However this research effort stands in contrast to the practical reality in the field, where unmanned search and rescue tools have great difficulty finding their way to the end-users. The ICARUS project addresses these issues, aiming to bridge the gap between the Research community and end-users, by developing a toolbox of integrated components for unmanned Search and Rescue.

The ICARUS developments are planned to be validated and demonstrated in the year 2015, using two major demonstration events: a simulated earthquake exercise in Belgium and a maritime accident exercise in Portugal.

**WORK PLAN**

The ICARUS project will develop new tools for **Urban and Maritime Search and Rescue Operations** such as:

- **Ultra light IR-sensors** capable of detecting human beings
- **Unmanned Aerial Systems (UAS)**
- **Unmanned Ground Vehicles (UGV)**
- **Unmanned Maritime Systems (UMS)**
- **Heterogeneous robot collaboration** between Search and Rescue devices
- Development of a **self-organising cognitive wireless communication network**
- **Integration with the C2I systems** of the human Search and Rescue teams
- **Training and support** for the SAR tools developed

**CONSORTIUM**

The ICARUS project is led by the Royal Military Academy of Belgium. Two main end users are part of the consortium (the Portuguese Maritime Rescue Command Centre via the Escola Naval and B-FAST (Belgian First Aid and Support Team)). In total, the consortium includes 24 partners:

Calzoni (Italy), ATOS (Spain), ESRI (Portugal), Integrasys (Spain), Metalliance (France), Space Application Services (Belgium), JMDTheque (France), Skybotix (Switzerland), Quobis Networks (Spain), Estudios GIS (Spain), SpaceTec Partners (Belgium), Royal Military Academy of Belgium, NATO Centre for Maritime Research and Experimentation (Italy), Technische Universität Wien (Austria), INESC (Portugal), Eidgenössische Technische Hochschule Zürich (Switzerland), Université de Neuchatel (Switzerland), Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung (Germany), Technische Universität Kaiserslautern (Germany), Instytut Maszyn Matematycznych (Poland), Centro de Tecnologia Aeroespacial (Spain), Maritime Rescue Command Centre (Portugal), Belgian First Aid and Support Team (Belgium)

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