Workshop on sharing data & other resources for

emergency response robotics

at ERF

1. Motivation and Objective

European competence in robot-assisted emergency/disaster response (also referred to as search and rescue robotics) has been increasing in the last decade. A number of EU-funded projects, including CENTAURO, ICARUS, INACHUS, NIFTi, SHERPA, TRADR, WALK-MAN, as well as the Eurathlon and ERL Emergency competitions have pushed the state of the art by addressing various challenges in this area. Practically viable airborne and ground robot platforms have become more broadly available. Experiments in realistic scenarios are being carried out, increasingly with an active involvement of end users. Last but not least, robots have been deployed as part of the response efforts in actual disasters successfully on multiple occasions.

Valuable experience is being gathered in this way and the technology is getting more mature. Nevertheless, the peculiar features of disaster scenarios (in terms of, e.g., operative conditions, tasks to be accomplished, robustness standard, operability and many others) and often lacking exchange of the requirements and practical experience(s) in realistic environments and mission settings remain a hard challenge. And thus there still remains a gap between results obtained in development conditions (by both research and industry) and making the technology truly effective in real environments, addressing the real needs of responders in emergency situations. This gap slows down the uptake of robot technology for emergency response, and therefore inhibits a growth of this market and prevents the benefits for the society, in terms of increased responder safety and increased operational capability.

The goal of the workshop is to discuss measures that will help to bridge the gap, and how to implement them with the engagement of academia, industry and end users.

An example of one such measure is data sharing. Data sharing facilitates experience exchange, which facilitates knowledge transfer, which in turn facilitates a synergetic coordinated effort to build up a European robot-assisted disaster response capability. Some of the questions to address are: What data is in demand? What data is available to share? What type of data is most useful to the other researchers? How to share it? How to ensure accessibility and standardization? What will motivate the stakeholders to share? What would inhibit sharing? What would inhibit the use of the shared data? Are there concerns of other stakeholders that need to be taken into account, e.g. for privacy or ethical reasons? What next steps should be taken? How can they be implemented?

The workshop scope includes also sharing of other resources and any other relevant measures that can help improve robot-assisted emergency response capability in Europe.

The desired outcome of the workshop is to elicit interest in creating a broad platform for sharing, motivate the stakeholders to join in, identify the relevant factors from different perspectives and determine the next executable steps.

2. Approach

The workshop aims to be open and inclusive, maximize participant interaction and result in specific outcomes. To do this it will consist of these parts:

The introduction will consist of several short talks by selected representatives of academia, industry and end users, in which they will briefly introduce the current state of the art of robot-assisted

emergency response, the challenges at hand and what sharing data/resources and other measures can contribute to overcome them.

A discussion session addressing statements and questions posed by the speakers and others suggested by the participants, taking into account factors important for different stakeholders. This is meant to be a very interactive forum where we expect the participants to approach the topic from their own focus of interest and specific expertise and bring in a range of different perspectives to the table. The discussion will be guided by but not limited to the questions outlined above. The discussion will be split into groups or plenary depending on the number participants.

In the final plenary session we summarize, add potential additional comments and reflections and identify executable next steps and suggestions how to implement them.

3. Expected speakers and discussion contributors

Andreas Ciossek, Telerob, Germany
Fausto Ferreira, NATO Centre for Maritime Research and Experimentation, Italy
Gabriele Ferri, NATO Centre for Maritime Research and Experimentation, Italy
Martha Palau Franco, University of the West of England, Bristol, UK
Robert Grafe, Institute for Firebrigade and Rescue Technology, Dortmund, Germany
Konstantinos Loupos, Institute of Communication and Computer Systems, Greece
Dirk Schulz, Fraunhofer FKIE, Germany
Aksel Transeth, SINTEF, Trondheim, Norway
Alan Winfield, University of the West of England, Bristol, UK