

Announcement & Call for Papers  
The Seventh IARP Workshop  
on  
Technical Challenges for Dependable Robots in Human Environments  
Technically co-sponsored by IEEE/RAS  
Toulouse, France June 16-17, 2010

Modern robotics is addressing many new areas of application that require safe and effective physical and cognitive interaction with humans. The 7th workshop on "Technical Challenges for Dependable Robots in Human Environments" continues the successful story of this track of scientific events that brings together a small group of top experts in Robotics and other disciplines to discuss the latest major advances in this field and to identify roadmaps for future development of dependable robotic technologies. The workshop is scheduled in conjunction with a number of scientific workshops to be held at LAAS/CNRS, in Toulouse, France.

The main topic of the 7th workshop will focus on the difficult challenges related to Autonomous Robot Dependability.

We consider three main areas for Dependable Robots:

- The first area is more concerned with mechanical design, compliant systems, safe design, but also sensing control and monitoring while interacting with humans. This area is fairly well covered at this point, and many research groups and projects are actively working in it.
- The second area deals with the software and system integration and encompasses error detection, diagnosis and recovery, V&V (verification and validation) techniques, testing, and controller synthesis. This area is also very active and can greatly learn from other domains dealing with integrated complex systems.
- The third area relates to more advanced robotic concepts, related to decisional autonomy, network of robots and their high level interactions with human beings. This area is the least explored so far it yet offers paramount machine intelligence challenges.

We think that the first area is now fairly well covered, and the second one has raised some interests in the robotics community as well as the software engineering one. The last one, probably the most ambitious, has led to interesting (but too few) presentations in the past workshop edition. Consequently, it remains the least addressed of these three areas and, henceforth, we will encourage propositions of presentation in this direction.

More generally we welcome contributions in the following topics:

- Theoretical foundations of robot dependability and resilience
- Actuators and sensors for dependable robots
- Algorithms for fault detection, identification, and recovery
- Human factors for robotics & human-centered robot design
- User friendly interfaces for robotic systems
- Human-robot safe physical interaction
- Dependable, autonomous and mixed-initiative, decision making
- Case-studies on robot dependability in emerging application domains: industrial, service, space, biomedical, and personal robotics.

- Robot acceptability, ethical and social implications of the introduction of Robotics in Human Environments

Important dates:

Extended abstract due:	April 1, 2010,
Notification of Acceptance:	April 21, 2010
Full paper submission:	May 15, 2010

Organizing Committee:

- Félix Ingrand, Chair, LAAS-CNRS, France
- David Powell, Co-chair, LAAS-CNRS, France
- Rachid Alami, LAAS-CNRS, France
- Jérémie Guiochet, LAAS-CNRS, France

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- Alan Winfield
- Ning Xi

Supported by IARP countries : Australia, Belgium, China, France, Germany, Italy, Japan, Korea, Spain, UK, USA and the Robot Dependability Working Group ([rd-wg@laas.fr](mailto:rd-wg@laas.fr))

For updates and details visit the workshop website <http://www.laas.fr/DRHE2010>