

IARP

International Advanced Robotics Programme



Robotics & Automation Society



ANNOUNCEMENT and CALL FOR PAPERS

The Second IARP – IEEE/RAS
Joint Workshop on

**Technical Challenge for
Dependable
Robots in Human Environments**

LAAS-CNRS
Toulouse, France

October 7-8, 2002

Workshop Framework and Objectives

Considering the similarity of interest and objectives, the International Advanced Robotics Programme (IARP) and the IEEE-Robotics and Automation Society (IEEE-RAS) have signed a Memorandum of Understanding agreeing to technical cooperation to foster advances in the fields of Robotics and Automation.

Both organizations recognize the importance, within the broad domain of Human Centered Robotics, of current frontline technical issues and developments in Service, Assistive and Personal Robotics where machines have to closely interact with humans. The R&D directions emphasize in particular the human-machine interaction aspects where the person may be either a non-professional user or a by-stander, or both.

This clearly points out to the critical questions of physical safety and the multiple components of operating robustness. Both aspects can be captured by the concept of Dependability.

Unlike the industrial robotics domain where the work space of machines and humans can be segmented, service and personal robots cannot but have contact interaction. The safety aspect entailed is, of course, already an important challenge addressed to Robotics research.

Still we believe a more difficult and far reaching challenge concerns Operating Robustness. Here, the issues are central to the very concept of "Intelligent" robots.

Indeed Machine Intelligence is a necessity as soon as we consider applications not strictly related to a sole and very simple task. Task diversity in not completely engineered environments and in the presence of non-professional users, implies necessarily significant levels of Robot Autonomy and sophisticated,

efficient, robust, friendly machine-intelligence interface.

A first IARP-IEEE/RAS workshop was held in Seoul, Korea, on May 21-22, 2001. The final programme complied with the central technical and operational objectives of the workshop:

- to outline the concepts, methods and tools which define the Robot Dependability domain,
- to assess the state of the art and characterize the main research issues and directions.

A post-workshop report can be accessed on:
<http://www.laas.fr/rdhe/>

A follow-up second IARP-IEEE/RAS joint workshop on this broad theme will be hosted by LAAS-CNRS, Toulouse, France, on October 7-8, 2002.

Workshop Scope

The emphasis will be put on main technical issues, research directions and in relevant current work and application cases highlighting specific thematic aspects or bringing in state-of-the-art know-how and best practice experience in closely related domains.

The workshop will be organized along sessions on research directions and on specific case studies.

Main research directions:

- Architectures for decisional autonomy
- Specification and verification of robotics software
- Robust user-robot communication and interaction
- Robust sensing and control
- Fault detection, diagnosis and exception handling
- Evaluation of robot dependability
- Performance metrics
- Human factors
- Networked operation

Special case studies will be presented by designers and users in the following domains:

- Medical and surgical applications
- Automotive applications
- Aeronautics
- Service robotics
- Assistive robotics
- Wearable Computing
- ...

Workshop Organization and Format

The workshop is co-sponsored by:

- the IEEE Robotics and Automation Society,
- the International Advanced Robotics Programme.

The workshop organization will comply with the following features aiming to privilege interactions and providing ample room for discussion:

- attendees limited in number and by invitation,
- no registration fees,
- a simple track program structured with Position Papers, Regular Papers, Thematic Panel Sessions and a Concluding General Round Table,
- the workshop proceedings and a post-workshop report will be available (bound and electronic version),

Selection of Contributions

The workshop will feature regular unsolicited contributions as well as special invited presentations. All workshop participants, i.e. both direct intervenants (speakers, chairs, panelists, committee members) and observers, will be invited registration free.

IARP contact persons from the IARP co-sponsoring countries will assist, as needed, the Programme Committee to encourage the submission of interesting invited contributions. The Programme Committee will make the final selection for open and invited submissions.

Please submit extended electronic abstracts (no more than 3 pages) in PDF or Postscript format by email at: iarp-drhe@laas.fr

Invited participants will be required to provide complete papers for the full proceedings published for distribution at the workshop.

Sponsoring

IARP

Besides France, which hosts the workshop, nine other IARP countries co-sponsor the workshop with the respective country representatives engaged in its direct support:

Australia P. Corke
Canada J.-C. Piedboeuf,
E. Dupuis
France G. Giralt
Germany R. Dillmann
Italy C. Moriconi
Japan K. Tanie
Korea C.-W. Lee
Russia V. Gradetsky
Spain M. Armada
USA E. Marsh

IEEE RAS

The sponsorship comprises the direct support of:
- the Society Administrative Committee represented by its President, Paolo Dario,
- the RAS representatives engaged in the workshop organization.

Organization

Honorary Chairs:

Norman Caplan, IARP President
Paolo Dario, IEEE/RAS President

Organizing Committee:

Georges Giralt, Chair, (IARP Programme Secretary)
Peter Corke, IARP Robot Dependability Working Group Chair,
Steve Hsia, Past President of IEEE/RAS
Félix Ingrand, Secretary, (LAAS-CNRS)

International Program Committee:

Raja Chatila, Chair	Oussama Khatib
Manuel Armada	Munsang Kim
David Austin	Kazuhiro Kosuge
Antonio Bicchi	Dong-Soo Kwon
Giancarlo Caligiani	Jean-Claude Laprie
Henrik I. Christensen	Geoff Pegman
Ruediger Dillmann	Reid Simmons
Michel Doyon	Yoji Yamada

Local Organization:

Workshop inquiries to: iarp-drhe@laas.fr

Web site: <http://www.laas.fr/drhe02/>

TimeTable

Submission deadline: May 24, 2002
Notification of
Acceptation/Invitation: June 24, 2002
Full Paper deadline: September 2, 2002
Workshop: October 7-8, 2002