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EURON

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Network of Excellence

Information Society Technologies

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1 Introduction

The European Robotics Network is a network of excellence associated with the “Beyond Robotics” initiative setup by the Future and Emerging Technologies (FET) unit of the Commission of the European Community. In the past the robotics community in Europe has been fragmented with limited coordination across national boundaries. There had been collaborations across research laboratories and companies as part of EU projects but a coherent programme of integration was not in place. About 6 years ago the initial network was organised with the FET unit. The objective is to strengthen the European robotics community to make it the leading region for R&D and generation of associated industrial growth to secure continued leadership in the world.

The integration of the European community takes on a number of different mechanisms to ensure a broad consolidation of research and education within the region. An important component of the organisation of the research community is definition of a joint roadmap for research that provides a long-term and broad brush view of the problems to be addressed to secure that problems of major relevance to society are addressed. The roadmap should identify the main obstacles to progress, and the required efforts to allow advancement on these problems, but also the identification of mechanisms to transfer results to industry. An important problem to be addressed in relation to organisation of a research program and subsequent transfer of results to industry is the definition of research benchmarks that allow comparison of methods across actors and applications. Too much research is performed without use of established benchmarks which makes it difficult to have objective measures of progress and domains of application. In consequence to this the network also includes an effort to survey and define benchmarks to be used in future research efforts.

A problem in pursuit of research is often the lack of funds for initial assessment of new ideas. To address this problem a special programme has been organised to provide seed funds for early evaluation of new research ideas. The programme has in particular been directed at young researchers to allow them to implement their first international research projects. In addition ad-hoc support is also provided for research ateliers that can study problems of general interest to the community. Finally, a mechanism has been organised for the organisation of sub-communities that have a strong topical focus.

The organisation of a research community is not only dependent on direct support to research. There is also a need to consider the generation of human resources, our future researchers, to ensure that excellent people are available to attack the research agenda of the future. To this end there is a need to consider education at all levels from high schools to graduate studies. The educational programme within EURON involves organisation of high-quality focussed summer schools for graduate students, organisation of educational material and promotion of excellence in graduate research. This aspect of EURON has been considered particularly successful.

Over the last 5-6 years EURON has become *the* community of choice for academic research actors within Europe. There is a need to provide mechanisms for transfer of results from academic institutions to relevant industrial entities. To this end the industrial links effort studies problems of joint interest to universities and companies. In addition there are strong ties to the recently organised technology platform on robotics – EUROPE. To illustrate and promote transfer of results from academia to industry EURON organises each year a technology transfer competition with an award to the best example of such a transfer.

Robotics is an excellent example of how many different disciplines have to come together to construct artefacts of utility to humans. At the same time it is easy to illustrate the value of new technology with robotics. Science fiction and the movie industry has generated a significant interest in the topic. There is here a need for a wider dissemination of results from robotics to the community at large.

This is achieved using a number of different mechanisms. First of all a book series has been organised to collect excellent research into a single entity. In addition information about the EURON initiative is communicated to the robotics community through a regular column in the magazine of the IEEE Robotics and Automation Society. A number of general information flyers have also been prepared. In addition there is a press club to ensure that science journalists have access to the latest results from the community. Finally various promotional activities are organisation in relation to industrial fairs and general press events.

Overall a broad set of mechanisms have been established to integrate and promote research across the involved member nations. The EURON network is an open entity that integrates new members into its activities at a regular basis.

The 2nd year of the EURON network under Beyond Robotics has been used for consolidation of the activities and for building ties to the EUROP platform. In addition there has been an active involvement in the formulation of strategies for the 7th framework programme to be launched 2007–2013. The present report summaries the main efforts implemented during the second year of the programme. General summaries are provided in Section 2, per workpackage summaries are provided in Section 3, the overall management is discussed in Section 4. Some of the challenges and opportunities encountered during the year are discussed in Section 5. The plans for the next year are briefly outlined in Section 6.

2 Summary of Work

As already mentioned in the introduction the work within EURON is organised into four key-areas

- Research Coordination
- Education and Training
- Dissemination
- Industrial Links

The coordination of each area is delegated to key-area coordinators, as detailed below:

Area	Research Coordination	Education & Training	Dissemination	Industrial Links
Coordinators	R. Dillmann A. Pobil	A. Casals R. Siegart	B. Siciliano F. Groen	M. Hägele E. Prassler

An overview of the activities within each area is detailed in the following sections.

2.1 Research Planning

As already specified research planning contacts two components: roadmapping for robotics and studies of benchmarking. Already during the first year a draft roadmap was prepared largely based on the final roadmap from the EURON-1 network. During year 2 two roadmapping meetings have taken place and a web facility has been organised to solicit input from the wider community.

The initial workshop resulted in a focus of the roadmap on the topics of:

- Advanced Production Systems

- Adaptive Robotic Servant and Intelligent Homes
- Network Robotics
- Outdoor Robotics
- Health care and Quality of Life

These topics has been detailed by senior researchers within the EURON network and the results have been presented at the general assembly of EURON in March 2006. Finally the roadmap has also been discussed with the European Robotics Platform (EUROP). A draft of the present roadmap is enclosed a deliverable D.1.1.

For robotics to be a mature science there is a need to have benchmarks that can be used for comparative research and for assessment of progress beyond current state of the art. At the same time benchmarks enable comparison of research across different actors. During year 1 a survey of benchmarks in robotics was generated. Based on this information a repository of robotics benchmarks has been made available through the web. In addition a workshop on robotics benchmarks to collect comments to the survey and get a wider involvement of the community was organised at the EURON annual meeting. Based on input from the community a synthesis of benchmarks to establish “golden” standards has been planned for year 3.

2.2 Education and Training

Education is an essential component of the networking activity. To ensure continued economic growth within the region there is a need to provide human capital to be involved in the industry and the associated R&D activities. To this end EURON has organised a range of different efforts

- A database on robotics related courses
- A database on PhD theses in robotics
- The Giralt PhD Award
- EURON Summer schools

Teaching courses in robotics requires extensive preparation and often careful design of exercises. To allow other to capitalize on the work of others a joint database of courses has been established. The database also allow verification of the background when students transfer from one university to another. Requests for information have initially been sent to a select set of universities to collect a beyond critical mass of entries before the database is opened for wider contributions.

Another valuable source of information is access to theses that have been generated within member institutions in the area of robotics. Too often the theses are not generally accessible and a valuable source of information is overlooked. The repository of PhD theses allow access to such information through a centralized location. It is expected that the repository over time will become a standard reference on state of the art and details of research performed within the network. Initially it has been a challenge to get members to submit information to the repository. A more active effort might be required to make this a truly comprehensive reference.

From the start of EURON an important effort has been promotion of quality research. One mechanism to achieve this is the Giralt PhD Award which is given the best thesis in robotics two years back. The time-delay in rewarding the work is to allow early assessment of impact. This year 12 theses were

received for evaluation. An international panel performed and evaluation. One thesis stood out as a clear winner. The top three theses was announced at the EURON annual meeting and the final winner was also announced. The winner is offer publication of his thesis in the Springer STAR series. In addition a small cash prize is given to the winner. This year the winner was Martijn Wisse, TU Delft with the thesis entitled "Essentials of Dynamic Walking".

Finally EURON organises summer (and winter) PhD schools. The events are typically one week courses with a set of international experts. A call for proposals is advertised twice per year. A school can receive upto 10 K Euros in co-sponsoring, which implies that all schools have to be co-sponsored by other entities. This year 4 summer schools and 2 winter schools were organised. Overall the quality of the schools and the exercises has increased every year. The students in general appreciate the schools and they are one of the truly strong points of EURON. After each school the organisers and students have to fill in a standard questionnaire to allow for quality control of the effort.

2.3 Dissemination

Dissemination is an essential part of community building as has been recognized from the start. To achieve this EURON has undertaken a number of different efforts.

For the wider communication to the robotics community an agreement has been reached with IEEE Robotics and Automation Society. In each issue of the Robotics and Automation Magazine a special column is devoted to EURON. The column is edited by Bruno Siciliano and Kostas Kyriakopolus. This year the columns have covered the Integrated Projects, EUROS, Summer Schools and Awards. Overall the columns have received very positive feedback.

For documentation of the research performed within the community a special book series on robotics has been organised with Springer Verlag. The Springer Tracts in Advanced Robotics (STAR) series has been the most successful new series by Springer within engineering. The series contains both monographs and edited collections. The series has as an objective to be truly international with Siciliano (Naples), Groen (Amsterdam) and Khatib (Stanford) as the general editors. However, this far most of the volumes have have European authors/editors. The EUROS proceedings and the PhD award theses are published in the series.

Last year the EURON web site received very strong criticism from the reviewers. To address the identified problems a complete re-design of the site has been undertaken, based on a careful analysis of user requirements. The site was brought online during March 2006. The site has been upgraded to use a content management system and all sections have been entirely revised. In addition it has been attempted to centralize information so that most of the material is available directly at the web site and not distributed over many different sites organised by the key-area chairs. The success of the site is still to be fully discovered. Early site statistics indicate a significant growth in popularity.

During the last year a number of information flyers with information to the wider community have been prepared in cooperation with a science journalist. Flyers targeted at general audience, educators and professionals have been prepared and printed in 1000+ copies. They were distributed at a number of events such as Automatica 2006, EUROS-06, ICRA-06, etc.

For the presentation of the network to a general audience an edited video collection was prepared. Initially a call for contributions was issued to the members. Videos describing their research were asked for. About 16 video contributions were received. From this material and general information about EURON a combined video was produced by Kai Arras, Nurobot. The DVD includes both a general introductory video and a click-able map of Europe with information about the member institutions. The DVD is being distributed to all members and was presented by researchers from Naples at the Automatica fair.

2.4 Industry Links

Interaction with the robots industry is an essential part of the EURON effort. This has become more pronounced during 2005/2006 as the plans for the European Robotics Platform has matured. In addition the industrial links committee pursues a number of other activities.

Already a year ago the effort to set up an European Robotics Platform (a so called technology platform) was relatively advanced. Since then the platform has officially be launched by commissioner Reding. After the launch the platform has been working hard to develop a strategic research agenda. Part of this effort has been performed in cooperation with EURON. Several people from EURON have participated actively in the preparation of the research agenda. In addition there has been a co-ordination meeting between EURON and EUROP to partly align the strategic research agenda with the EURON research roadmap. The EUROP platform is planned for a wider launch by end of June 2006. The EUROP effort studies research strategies for industrial robotics, service robotics and security/space. As such there is a significant overlap with the plans for industrial white-papers from EURON.

A key information source in research planning and strategic analysis is availability of a solid statistic analysis of market trends. To this end the industrial links committee participates in the preparation of the UN/IFR World Robotics volume that is issues annually. In particular Martin Hägele from IPA is responsible for the section on service robotics. The collaboration with UN/IFR has been very fruitful. Another activity within industrial robotics is promotion of technology transfer of research results from universities to companies or spin-offs. To this end there is an annual competition to receive the EURON/EUnited Technology Transfer award. As the name indicates this is a joint award between EUnited Robotics. The award is jointly sponsored by EURON and EUnited. The award has been given 3 times by now. This year a total of 12 applications were received. The applications were reviewed by a team of 6 judges (joint EURON / EUnited). A total of 5 applications were invited to present their work at the EURON annual meeting before a final decision was made. This year the first place was tied between two different applications. The winners receive special made trophies and a cash award. In addition the winners are widely publicized through press releases to relevant media.

2.5 Management and Community Efforts

2.5.1 Joint Research

An important part of EURON is the ability to sponsor small research projects. Already the first year of EURON two calls for proposals were issues to cover: i) prospective research projects, ii) research ateliers, and iii) topical research studies. The first year a study on robotics safety – Phridom and an atelier in Robo-Ethics were funded. In addition shortly after the review a research study on functional electrical stimulation and rehabilitation was selected, an atelier or hand-eye coordination and a topical study on networked robotics. The success-rate of the calls for proposals was low and considered a problem.

To address this problem the board of EURON did a careful analysis of mechanisms and potential ways to adjust the program. It was decided to target the prospective research projects at young researchers (within 5 years of graduation), and to change topical research studies to be targeted at special interest groups, a mechanism that was highly successful in EURON 1. Based on this a call was advertised January 15, 2006 with a deadline March 15. A total of 15 proposals were received and submitted for evaluation. Each proposal was assigned to 3 international reviewers. Subsequently the reviewed was consolidated by a small sub-group from the EURON board. Unfortunately all received proposals were considered to be of too poor quality to be funded. A long discussion took place after the final results

were available. The board is of course sorry to see that resources available are not put to good use, but with all grades being much too low for acceptance there was no way fund any of the proposals. It is hoped that the network can issue a new call by July 2006.

2.5.2 EUROS-06

As mentioned at last years review the plans for the 2nd year has included organisation of a high quality single track conference - EUROS - European Robotics Symposium. The meeting is to take place every other year. The call for proposals was issue by August 2005, with a deadline October 2005. In total 50 papers were received. Final papers were selected by November 2005 after a round of international reviews. Of the received papers 16 were selected for oral presentation. The EUROS took place at Palermo during March 2006. The meeting was attended by 180 people, which is highly satisfactory for a conference with only 16 papers being presented. The EURON annual meeting was organised the day after EUROS to maximize overlap in attendance and to increase the number of participants. The papers from EUROS were published by Springer as part of the STAR series. Overall the meeting was considered highly successful.

A follow up meeting is being planned for April 2008 and the expected venue is Prague.

2.5.3 Overall management

Overall management is performed by the key-area chair in combination with the coordinator and the administrative office at KTH. In addition monthly emails are issued to the board to cover admission of new members and current issues.

Two board meeting have been organised: one in december in Ljubljana and another in association with the EUROS/EURON meeting.

Finally there has been an active dialogue with the EUROP platform and the administrative office at SAGEM organised by Patrick Curlier.

All board members have taken an active role in the organisation and management of the network.

An issues that has taken some consideration this year is change in management. The coordinator, Henrik I Christensen, has decided to accept a position at Georgia Institute of Technology, USA. This has required a careful consideration of how the network can be managed in the future. A group of four key-area chairs has been appointed with the search committee for appointment of a new coordinator. A number of different candidates have been considered.

The expected solution is that the formal coordination will continue to reside with KTH and the administrative office will also remain at KTH. A change of all contracts would be highly counter productive and disruptive for the overall operation. However, the day-to-day management in terms of network leadership will be delegated to a scientific coordinator. Unfortunately final candidate for the position has not yet been decided on. The search committee has been urged to push forward with the selection.

3 Work per workpackage

3.1 WP1 - Research Roadmap

The workpackage has continued the work to generate a roadmap for robotics. The work has included organisation of a workshop in Karlsruhe, solicitation of input from the online web facility, reporting on progress at the annual meeting. In addition a joint meeting with the EUROP technology platform has taken place.

A draft of the roadmap is made available as part of the deliverables for year 2.

3.2 WP2 - Research Benchmarks

During year 1 a survey of benchmarks in robotics was prepared. During year 2 the material has been made available on the web and in addition a number of datasets has been considered. In addition a workshop was organised at the EURON annual workshop to present the present status and solicit input from the wider community.

3.3 WP3 - Inter-project Coordination

Two meetings have been organised with the IP project coordinators: one at the 1st EURON annual meeting in Warsaw and a 2nd at the EURON/EUROS meeting in Palermo during March 2006. The meeting have discussed joint issues such as publishing, evaluation and community outreach. In addition general press from the projects have been organised in collaboration with WP 11.

3.4 WP4 - Joint Research

As already mentioned under Section 2.5 2 effort were initiated during Yr 1 and 3 more were initiated during Year 2. The projects on robotics safety and robo-ethics have been completed. The robotics safety project – Phridom studied safety guidelines for robotics and generated a number of interesting results. The results have been published and the project has been completed. The Robo-Ethics project has organised a workshop on ethics and issues a roadmap on robo-ethics, which will be made publicly available by July 1, 2006. A status report was provided at the EURON annual meeting. In addition the effort on hand-eye coordination had a workshop at the annual meeting. The initiated effort from year 2 have not yet been completed.

As mentioned earlier the 3rd call for proposals generated 18 proposals of which no were considered of adequate quality for sponsorship. A new call is expected by July 2006.

3.5 WP5 - Teaching Material

The increase of material in the different sections has forced us to organize and classify the material so as to be easily searched.

The current status is:

- Educational robotics platforms: 22 entries
- Robotics simulators: 30 entries
- Videos: 33 entries

In course is the change of server to UPC to host the whole material more safely.

Theseuron

The Theseuron web contains a repository of Thesis that is a useful source of education material, mainly for PhD students, as it contains the recent research in robotics carried out in Europe for young researchers.

3.6 WP6 - Robotics Curricula

Initially it was expected that a recommended curricula for robotics could be prepared and presented. The issue of a single curricula might be too optimistic as there are significant variations across fields and countries to make this possible. To gain further insight into the various curricula available an inventory of existing educational programmes have been undertaken.

3.7 WP7 - Summer Schools

EURON has provided a model for how one can organise summer schools to provide high quality education across all institutions. This has been a strong point of EURON. Two calls are issued each year: one for summer schools and another for winter schools. This year 4 summer schools and 2 winter schools took place. In total 209 European students were educated at these events. After each summer school an evaluation is performed and synthesized as reported in the deliverable DR.7.3.

3.8 WP8 - PhD Award

Each year EURON has a call for the Giralt PhD Award to promote excellence in research. The call for applications was issued in August 2005. By the deadline 12 proposals had been received. Each application was reviewed by 3 members of the PhD Award Committee. An early ranking is then used to select a set of 6 theses for further consideration before a final ranking of applications is performed. The top three candidates are advertised at the EURON annual meeting in addition to the announcement of the winner. The final winner of the Giralt PhD Award 2006 is Martijn Wisse, TU Delft with a thesis on dynamic walking.

3.9 WP9 - Book Series

A crucial component of any scientific discipline is dissemination of research results and generation of a coherent body of knowledge for the greater benefit of society. One mechanism to achieve this is through book series dedicated to a particular topic. In a joint effort with Springer Verlag, the series Springer Tracts in Advanced Robotics (STAR) has been launched. The series is edited by Bruno Siciliano, Frans Groen and Oussama Khatib. During the reporting period 5 monographs and 6 edited collections have been published. In addition 4 more monographs and 2 collections have been accepted for publication.

Overall the series has been quite successful and it one of the highlights in terms of new book series with the Springer Verlag Engineering department.

3.10 WP10 - WWW Site

At the year 1 review the EURON web site was heavily criticized but no concrete suggestions were provided. In an attempt to address the dissatisfaction with the web facility a complete redesign was initiated. A site designer was brought in to address the general user requirements and in addition organise the material in a more intuitive fashion. The revised site was launched by April 1, 2006. It is too early to have an impression of how the site has been received by the users.

The number of visitors to the site has been preliminarily analyzed. The distribution of origins of visitors is shown in figure 1

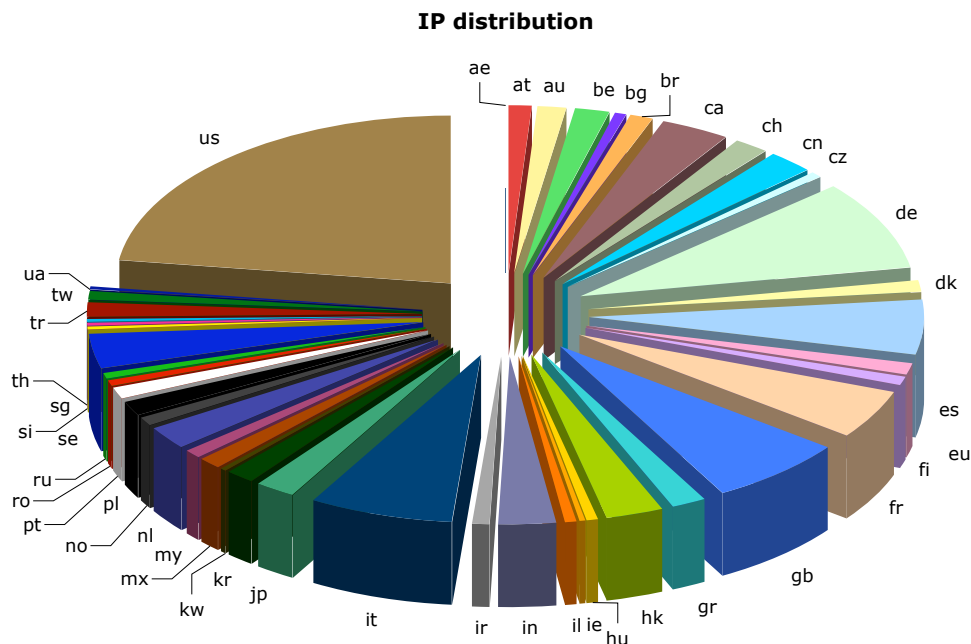


Figure 1: The IP country for visitors to the EURON web site.

3.11 WP11 - Information about EURON and the Beyond Robotics Initiative

Information about EURON and the Beyond Robotics initiative has been intensified during the period. A British journalist Graham Dawson-Howe have been affiliated with the network to generate popular descriptions of the activities. Three different flyers have been prepared. One for the general public, one on education and finally one directed at researchers. The flyers have been printed and widely distributed. The flyers have been sent to all members and distributed at the EURON annual meeting and the Automatica fair.

As mentioned earlier a DVD presenting EURON has been prepared and presented at the Automatica fair. Copies of the DVD have been sent to all members of EURON.

3.12 WP12 - Liaison with Organisations

EURON is not alone in the universe of community building. Consequently it is important to form links to related entities. During year 2 a memorandum of understanding has been signed with EU-United Robotics. In addition there has been extensive discussions with the European Technology Platform in Robotics - EUROP. A joint agreement has been reached according to which EURON has 20% of the seats at the board of EUROP.

In addition EURON participated in the preparation of the UN/IFR World Robotics report. Martin Hägele is responsible for the section on service robotics. The annual report is included in deliverable DR.12.3.

3.13 WP13 - Industry Workshops

Originally a number of industry workshop had been planned for EURON. In parallel a new IP on manufacturing and enterprises has been initiated under the NMP programme – named SMERobot

and EUROP has also pursued workshop on the strategic research agenda. Consequently the need for separate workshops is less pronounced. Representatives from EURON have thus participated in workshops in collaborations with SMERobot and EUROP.

3.14 WP14 - Industry White Paper

Originally a white paper on industrial robotics and service robotics had been planned. Based on other developments it was decided to combine these white paper efforts with the topical studied in EUROP. Consequently the white paper activity has been aligned with the work within EUROP.

3.15 WP15 - Technology Transfer Award

As mentioned earlier EURON has a collaboration with EU-United Robotics on the Technology Transfer Award. This year a call was also advertised and 12 applications for the award were received. The applications were evaluated on novelty, impact and maturity. From the initial set of applications 6 were selected for presentation at the EURON annual meeting. Based on the applications and presentations two joint winners were selected, one on underwater vehicle - Taipan and the other on a new robot sensor interfaces from University of Karlsruhe. The winners were advertised at the EURON annual meeting and a press release was prepared as described in DR.15.1.

3.16 WP16 - Yellow Pages

The effort was discontinued after the recommendations from the reviewers at the year 1 review.

3.17 WP17 - Management

During the year the board of EURON has had two meetings, one in Ljubljana and another in Palermo in association with the annual meeting. In addition the board is updated monthly with information about new applications for membership and on-going activities. All members of the board have played an active role.

The key-area chairs have been active organising their respective activities, which in most cases have made good progress to achieve the objectives for the network.

Day-to-day management including interaction with key-area chairs, handling of membership issues, organisation of ad-hoc activities, handling of research applications, and general network promotion has been handled by the EURON administrative office at KTH and the network coordinator.

As mentioned earlier the coordinator has decided to accept a new position with Georgia Institute of Technology which challenges the overall management. A search committee has been established to identify candidates to fill the position as coordinator. So far the committee has not completed its work. A meeting with the scientific advisory board was organised in association with the annual meeting. Coincident with departure of the network coordinator Prof. Inoue, JSPS has decided to leave his position as scientific advisor. The nomination of a new advisor from Asia has not yet been completed.

3.18 WP18 - Annual Meeting

The annual meeting took place this year March 18 in the city of Palermo. The meeting was organised immediately after the EUROS conference. The meeting had a general overview session with summaries from the key-area chairs and a general annual report. In addition there were topical workshops related

to benchmarking, education, tech transfer award, hand-eye coordination and robo ethics. The meeting was attended by 180 people from most of the EURON member institutions.

3.19 WP19 - European Robotics Symposium

As advertised at the review last year EURON has decided to organise a European Robotics Symposium (EUROS) to take place every other year. This year the event took place in Palermo 16-17 March. A call was advertised by August 2005. By the deadline 50 submissions had been received. The papers were reviewed by 3 members of the international program committee. A total of 16 papers was selected for presentation. The papers have been published in a volume of the STAR series. Close to 180 people attended the symposium.

The next instantiation of the symposium will likely take place in Prague during 2008.

3.20 WP20 - International Cooperation

Region based networking is not only taking place in Europe. There are already good networks in place in Korea and Japan. In addition US is planning an American Robotics network - AMRON to include USA, Canada and Mexico. An application has been submitted to NSF and other agencies for financial support.

To discuss international networking a workshop was organised at the International Conference on Robotics and Automation, ICRA in Orlando during May 2006. The workshop was sponsored by EURON and organised by Raja Chatila and Henrik I Christensen. The workshop had broad participation from IEEE-Robotics and Automation Society, Korea, Japan, and USA. Plans are underway to organise regular meetings across the continents.

3.21 WP21 - Gender Action

To address the problem of gender balance a number of activities was undertaken. An open forum with many of the senior women in robotics was organised by the coordinator to address the issue of women in robotics. In general the representatives had a hard time seeing this as a problem specific to robotics. It is difficult to see that the problem can be adequately addressed by EURON. Various mechanisms were proposed but few of them were judged to have an impact.

To partly address the problem a service has been organized for child-care at EURON events. Parents can bring along their children to EURON events and a nanny service will be provided to take of the children while the parents are attending the event. In addition the parents will be eligible for double travel support from EURON to allow them to bring children to such events. The possibility was advertised in association with the EURON/EUROS event. However, no one wanted to take advantage of the new mechanism.

The same is available for summer schools and other major EURON events. So far the interest has unfortunately been limited.

In terms of involvement of women it is of interest to note that close to 20 % of the participants at the summer schools are women, so there is in practice good participation. The summer school on human robot interaction that was organised had more than 50% female participants. There is above average participation in robotics events and the published mechanisms have so far had a limited impact.

3.22 WP22 - Special Interest Groups

After the first year of operation it was decided to have a new activity on Special Interest Groups – SIG. A SIG is a sub-community that come together to address a particular problem and to provide integration across actors within the region. Herman Bruyninckx volunteered to coordinate SIGs. SIGs were highly effective within EURON-1. A single proposal for SIG support was received as part of the 3rd call for projects. The proposal was for a SIG on Robo-Ethics. Unfortunately the proposal was not considered of adequate quality for support.

4 Management

See Section 3.17 and Section 2.5.

5 Challenges and Opportunities

During the second year of EURON the technology platform related to robotics was formally launched by the commissioner. In addition robotics has been named as a topical area of integration in the 7th framework programme. The momentum for R&D in robotics is thus growing within the region and it can be anticipated that the growth will continue over a 5 year period. This is highly satisfactory.

One of the challenges is now to bring together the different actors to provide a coherent strategy. Early meetings have taken place between EUROP and EURON. EUROP is naturally focussed on the shorter-term problems of direct economic relevance to industry. EUROP has decided to organise its activities around i) manufacturing, ii) service robotics and iii) security/space. EURON has prepared a longer-term roadmap that has some overlap with EUROP. However, there is a continued need to align the two roadmaps to have a maximum overlap. It must also here be recognized that robotics is moving away for primary products to be being a component provider for other industries. This requires some changes in the way the industry moves forward and integrates with system integrators and OEM providers. The recognition of this new business context is an on-going process.

It has been difficult during the first two years to get an adequate volume of ad-hoc defined projects underway which is a major disappointment. A new call will be advertised shortly and the review procedure will be changed to allow for a higher degree of risk. It is necessary to have a significant number of projects funded for EURON to be successful.

A major challenge that EURON is facing is the change in leadership, that will be required as the present coordinator moves to the US. It is expected that administrative support will remain with KTH, but the overall leadership will have to change. The lack of progress on identifying a new coordinator is a major problem. It is hoped that a new person can be in place during the summer of 2006 to allow for adequate time of a transfer of responsibilities.

6 Sketch of Plans for Year 3

In general the board of EURON is pleased with the present model of operation. Good progress is taking place on the definition of a roadmap and educational activities are gaining momentum. Links to industry are maturing in a cooperation with EUROP. The dissemination activities are also making good progress. The main problem is the lack of ad-hoc funded research projects, which is a significant challenge for year 3. A new call will be advertised shortly and the review procedure will be modified

to promote a higher degree of risk. Other than this the network is proceed as it has started during the first two years.