

**SIXTH FRAMEWORK PROGRAMME
PRIORITY 2**



Specific Targeted Research Project
ROBOT@CWE

Advanced robotic systems in future collaborative working environments
Contract Number 034002

**Deliverable 5.4@M5:
Screening Phase Meeting – Lausanne, Switzerland
AGENDA AND MINUTES**

| | |
|---------|---------------|
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| Date | 2007-04-30 |

| Deliverable Administration & Summary | | | | | |
|--------------------------------------|-----------------------|---|--|---------------|------------|
| Deliverable | No. | Name | | | |
| | D5.4 | <i>Organization of the screening phase WP meeting: agenda and minutes</i> | | | |
| Workpackage | No. | Name | | | |
| | WP5 | <i>Management of the project</i> | | | |
| Task | No. | Name | Description from DOW | | |
| | T5.2 | <i>Review, dissemination, networking</i> | Preparation for review meetings and their organization. Interface with the CEC. Advertise and encourage dissemination through organized workshops. Networking establishment with other project, and NoE. | | |
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| Dissemination level | | |
|---------------------|---|----------|
| PU | Public | X |
| PP | Restricted to other programme participants (including the Commission Services) | |
| RE | Restricted to a group specified by the consortium (including the Commission Services) | |
| CO | Confidential, only for members of the consortium (including the Commission Services) | |

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This report summarizes the minutes of the screening phase meeting that held April 3, 2007 at Lausanne, Switzerland (kindly hosted by EPFL partner).

1. Participants

| | |
|----------|---|
| CNRS | Paul Evrard, Abderrahmane Kheddar |
| AIST | Eiichi Yoshida |
| UC3M | Carlos Balaguer, Paolo Pierro |
| ICT&S | Regina Bernhaupt, Astrid Weiss |
| HP-EIC | Lorenzo Blasi |
| SAS | Jérémi Gancet |
| EPFL | Aude Billard, Sylvain Calinon, Elena Gribovskaya |
| DRAGADOS | Carlos Bosch Cantalops |
| TUM | Andrea Bauer, Klaas Klasing, Andreas Schweinberger, Dirk Wollherr |

2. Agenda

| | |
|-------------|---|
| 8h30-9h00 | Arrival of participants |
| 9h00-10h00 | Welcome message by Aude Billard Introduction by Abderrahmane Kheddar Discussion about the website |
| 10h15-12h30 | Presentation of D1.1 by Carlos Balaguer Presentation of D1.3 by Regina Bernhaupt, comments Presentation of D1.2 by Elena Griboskaya Presentation of D1.4 by Carlos Balaguer |
| 12h30-14h00 | Lunch |
| 14h00-16h00 | Presentation by Jérémi Gancet (contribution to D1.4) Discussion about the following points: <ul style="list-style-type: none"> • Prototype scenarios • Industry needs • Markets • Remarks on the deliverables • Responsibilities for next deliverables at M18 • Next meeting |
| 16h00-17h00 | Visit of LASA |

3. Minutes

3.1. Reorganization and new Project Officer

The coordinator has been informed from the PO that ROBOT@CWE has been shifted to the robotic unit. Our new project officer is **Dr Michel Brochard**. This might imply changes in the spirit the project need to be conducted at the scientific level. Indeed, initially, the goal was to inform the Amiatwork and eWorking communities (computer science and multimedia) that IST-robots are potential collaborative agents that need to be considered in future Collaborative Working Environments architectures. It is likely that ROBOT@CWE reviewers will be from the robotics community and we need to clarify this issue with our PO. A state-of-the-art to show potentiality of robotic systems might not be needed. We will certainly have more freedom to tackle fundamental aspects of robotics.

3.2. Discussion about the website

The website is ready and waiting normal administrative procedures to be hosted by a private server. There are some administrative problems which cause delay for the hosting of the website. Professor Aude Billard kindly proposed to host the website and the mailing list temporarily. The website and mailing list are now hosted at EPFL.

3.3. Comments on Deliverable 1.3

Usability studies will be based on existing technologies, robust technology (like cell phones). We are not sure to provide fully secure robots, but rather prototypes. A possible solution is to perform wizarding studies: someone pretends experiencing something that works perfectly. Another aspect of evaluation is to try to know what to improve in prototypes.

Abderrahmane Kheddar recalled that some products are on the shelf, for example in EPFL. There is also the humanoid robot HRP-2 in Toulouse, which is an advanced prototype. Evaluations must not be started too late. Real scenarios will be ready only at M36 but some results should be seen in Japan next year.

It is interesting to see what prohibits use of robotics in Europe. What have we to overcome? What can robots bring? What must we take into account to design robots? How will robots change our society? Robots everywhere like computers. What is the impact on working style and culture? The timeline is too short for those questions. PLUS can provide insights about the scenarios and how evaluations can be provided.

3.4. Prototype scenarios

There will be three physical demonstrators, one in Lausanne, one in Madrid and one in AIST and CNRS. There won't be rescue scenarios as we have no partners from rescue and technically, robots are not ready to work outdoors. Construction sites and space scenarios are quite similar: space technology from ESA is applied to crisis management.

The collaboration between humans and robots to assemble a shelter is more or less compatible with space scenarios. We need to define what will be shown in these scenarios and what kind of applications will be demonstrated.

The nature of the shelters provided by DRAGADOS has been discussed. It is possible to have light, composite beams of about 10kg, just for the needs of the demonstrators. The shelters in DRAGADOS are already assembled, so they don't have the plans and don't know in which order to assemble the pieces, nor the dimensions of the pieces. Some mechanisms for assembly can be designed according to the abilities of the robots used for the demonstrator. But future robots must be designed to handle any pieces.

A possible scenario would have been to bring the shelter and let the robots prepare everything inside the shelter, and then to send humans. But this is not compatible with a situation of crisis, where you don't have time. You must send a shelter which is operational. The shelter is inflated and settled collaboratively by humans inside the shelter and robots outside. The robots are provided with equipment to establish communication; some operations are supervised by human operators. Teleoperation from the shelter can be involved, with walking case and fixed position case.

Abderrahmane Kheddar underlined that prototype scenarios must not shift too far from those briefly presented in the third annex of the project. We have to balance between industrial needs and the promises to solve some fundamental aspects. In particular, we must tackle the case of shared workspaces. A possible case of shared workspace is the transportation of injured people. But this case is not relevant on the Moon. The assembly of the shelter itself is more likely to be a space application. SAS will be interested in teleoperation applications.

As for the studies on usability, user experience and impact of the introduction of IST-robots on site, we can not move a lot of people on disaster sites, so we will see if it is possible to bring HRP-2 to DRAGADOS.

A storyboard should be written as conclusion of deliverable D1.4 in order to clarify things.

3.5. Industry needs

Robots and applications must be designed to fit industrial needs. A robot lifting a bar in collaboration with a human operator is pointless regarding industrial needs. A scenario involving a polluted area or any area where a human can not go is more realistic. A suitable scenario could involve the use of a shelter, with humans inside. Robots go outside and help humans extend the shelter from the outside. The goal is to minimize the number of humans outside. Robots can explore the surroundings and make measurements. A human can go outside with a robot and send the robot to areas where there might be something to carry, in order to check whether the place is not too dangerous for humans. If it is not dangerous, the robot and the human can then carry the object collaboratively. The presence of humans outside the shelter is minimized with such a use of robots.

3.6. Markets

Abderrahmane Kheddar emphasized that applications of developed technologies must have a potential market. He mentioned the fact that for example, the Japanese government is now asking for applications of robotics technology developed in Japanese laboratories. According to Dr Carlos Bosch Cantallops, there is a market for applications such as the one described above: several Spanish organizations and the Government of Spain would be potential users of a technology capable of actions such as those described previously.

3.7. Remarks on the deliverables

We should emphasize on IST concepts, not just on robotic concepts and show that robots will be encapsulated in the progress made in ICT, that robots shall be able to use ambient intelligence and networking, be autonomous and versatile. The way we think robots is now different; we see them as IST components. Proper interfacing technologies exist and can be extended. Try to take projects about CWE where robots are not used and see how robots can be included into them. Show how a proposed architecture for CWE can be affected by including robots.

We have voted for the naming style of the authors in the final version of the deliverables: an alphabetical ordering of the names is adopted with eventually affiliation in brackets when it is not clear.

Our PO agrees on our request in merging deliverables 1.1 and 1.2 to reduce the number and also to avoid repetitive text; the name of the deliverable should however be D1.1/D1.2.

Quality review: reviewers for M6 deliverables are assigned as follows:

D1.1/D1.2 AIST and HP

D1.3 TUM and EPFL

D1.4 PLUS and CNRS

The reviews are needed by May, 15th. Deliverables must be sent to the reviewers on April, 30th. On the third week of May, modifications will be made. The last week is kept for last reviews and changes. Deliverables must be ready on time to be lastly reviewed by the coordinator.

D5.6@M13

A template for the progress report will be provided. The CNRS will send the template for the financial report.

3.8. Responsibilities for deliverables at M18

The abstracts of deliverables at M18 must be ready for the next meeting (at the end of September or at the beginning of October, to be determined by doodle).

Workpackage 2

D2.1: the responsible is PLUS; EPFL is the quality assessor; TUM are also involved.

D2.2: the leader is UC3M, involving CNRS as quality assessor.

D2.3: the leader is CNRS; TUM is involved for the quality assessment.

D2.4: the leader is SAS, PLUS is the quality assessor, CNRS and TUM are involved.

Workpackage 3

D3.1: EPFL is involved.

D3.2: CNRS is the leader, AIST is the quality assessor.

D3.3: HP is the leader, CNRS is the quality assessor, and AIST is involved. Specifications are to be given to HP. HP will help provide tools and assistance to program PDA. They will also give advices for architectures (robots are seen as other devices with embedded computers communicating through interfaces). Every partner who wants to use a PDA should specify their needs.

3.9. Next meeting

The next meeting will be held in Munich around October, 1st. We will use Doodle to define the date.