Participating in

ECHORD Experiments

Deutsches Museum München

September 4, 2009

European Clearing House
for Open Robotics Development
www.echord.info

ECHORD

Experiments

- New dimension of funding opportunities
  - Target-oriented research and technology transfer
  - Three *types* of experiments
  - Defined *scenario* and *research focus*
  - Lower the entrance barriers (specifically for manufacturers and integrators of SME size)
  - Reduce the “fear of contact” with fund[illegible] organisations

Experiments

- ECHORD subdivides into many small experiments
  - Much smaller than usual EC funded research projects, easily and rapidly negotiated
  - Academia and industry collaborate on a concrete challenge
  - Concept based on experiences with successful cooperation
  - Create and/or emulate the conditions of previous success stories

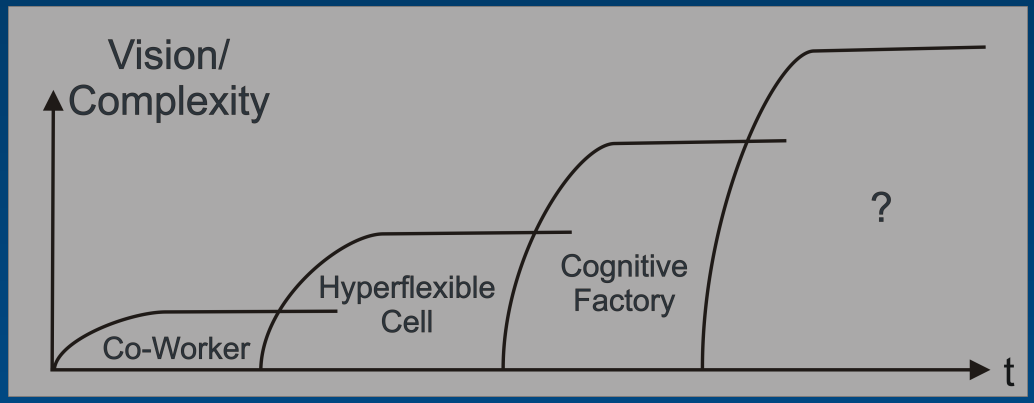
Three types of experiments

- Joint enabling technology development
  - Experiment partners work together to develop new robots, components, and networks, etc.
- Application development
  - Robot equipment from the manufacturers are combined to perform tasks in new applications
- Feasibility demonstration
  - For demonstrating in principle that robots can be used in complex industrial settings where they have not been used before

Scenarios

- Scientifically challenging and commercially relevant
  - Encourage manufacturers and academia to identify and work together on emerging technologies
  - Take advantage of results of previous EU projects
  - Help to assess the actual progress in the experiments

- Three scenarios:
  - Human-robot co-worker
  - Hyper-flexible cell
  - Cognitive factory



Scenarios (cont'd)

- First scenario: *human-robot co-worker*
  - Development of new sensors and devices, control methods, (safety) standards and programming paradigms. Ground-breaking work is still needed to achieve the postulated goals

- Follow-up scenarios
  - Even more ambitious and future-oriented
  - Based on one another, using directly the technologies developed in the preceding one
  - Increase in complexity and require incorporation of completely new ideas

Research foci

- Defined together with the scenarios
- Four foci:
  - Human-robot interfacing and safety
  - Robot hands and complex manipulation
  - Mobile manipulators and cooperation
  - Networked Robots

Research foci (cont'd)

- Human-robot interfacing and safety
  - Main goal: show that safe human-robot cooperation is possible
  - Challenges: all kinds of sensor failures and inconsistencies.

- Robot hands and complex manipulation
  - Main goal: show the improvement of laboratory setups towards practical usability
  - Challenges: promising breakthroughs in the areas of sensors and sensor-guided manipulation.

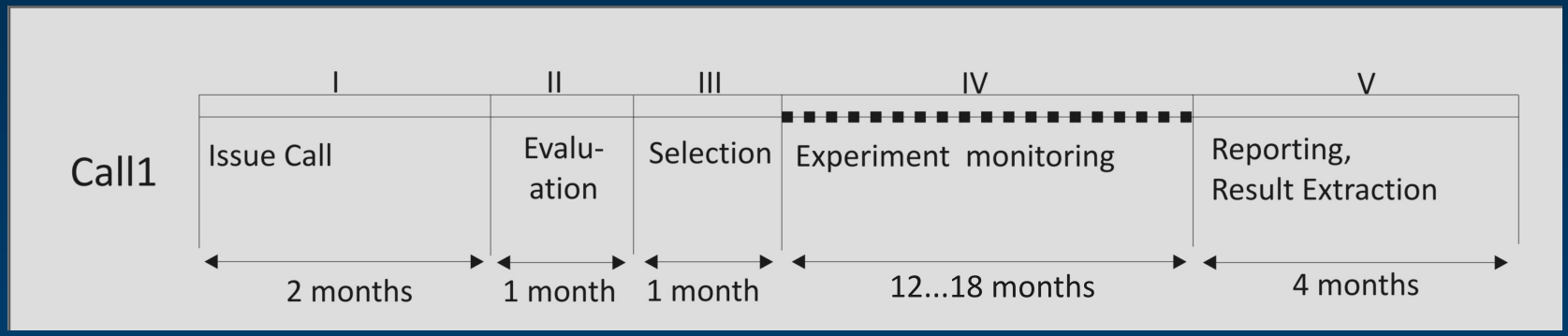
Research foci (cont'd)

- Mobile manipulators and cooperation
  - Main goal: solve concrete problems in dynamically changing environments
  - Challenges: moving obstacles and interaction with humans.
- Networked robots
  - Networked industrial robots: demonstrators built in collaboration between industry and academia
  - More loosely coupled systems leading to new showcases, e.g. in the area of search and rescue, new applications in urban areas, and robot systems for monitoring tasks.

Backup, maybe to explain verbally

- Networked robots: 2 areas
- Networked industrial robots: demonstrators built in collaboration between industry and academia with industry providing controller architecture and academia contributing knowledge in advanced real-time networking technologies as well as service-oriented architectures.
- More loosely coupled systems, where experiments with mobile robots are expected that establish new showcases, e.g. in the area of search and rescue with robots, new applications of robots in urban areas, and robot systems for monitoring tasks

Experiments - timeline



- The same scheme will apply for calls 2 & 3
- Call 2 will be issued soon after start of the experiments of call 1

Evaluation procedure

- Evaluation by independent experts
- Evaluation criteria same as with FP7 projects
- 3 criteria, each one rated with 0-5 points:
  - Scientific and/or technological excellence
  - Efficiency of implementation
  - Expected impact
    - Bi-directioanl knowledge transfer
    - European dimension of the experiment
    - …

After selection

- Successful proposal partners become consortium members of ECHORD by accession
- Experiments start as soon as possible
- Experiments will be monitored with a small set of deliverables

Conclusion

Further information is in the brochure
and on the web site www.echord.info

Thank you!

What else needs to be explained?

- Who can apply
- Which documents are necessary
- Which documents are needed for a proposal
- How much work is the proposal writing

- Check headlines from approved info document