GUIDE FOR APPLICANTS

ECHORD++ PDTI activities

This guide, and all other information related to ECHORD++ Calls for Public end-user Driven Technological Innovation (PDTI) activities.
The call text and other documents needed to prepare the proposals can be downloaded from the following web-site: http://www.echord.eu

Open Call for Public end-user Driven Technological Innovation (PDTI) proposals within ECHORD++

The FP7 project ECHORD++ (European Clearing House for Open Robotics Development, Grant Agreement Number 601116, www.echord.eu) aims at strengthening the cooperation between scientific research and industry in robotics, as a follow-up to ECHORD (2009 – 2013).

ECHORD++ focuses on research and development with relevance to industrial applications and high market potential. For the technology development within the PDTI scheme, two application areas have been identified, Healthcare and Urban Robotics.

Different public bodies have submitted different challenges (technology needs) and out of this pool, a panel of experts has selected one challenge for each scenario: Robotics for Comprehensive Geriatric Assessment in the Healthcare scenario and Utilities Infrastructures and Condition Monitoring for Sewer Network. Robots for the Inspection and Clearance of the Sewer Network in Cities in the Urban Robotics Scenario.

Now, after the secelction of the challenges, R&D consortia have the opportunity to address these challenges by submitting proposals for both scenarios. Three proosals will be selected for each scenario to provide a system design within the first 6 months, then two of the three consortia will continue developing prototypes which are finally tested at the public bodies' sites in form of small-scale test series.

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Glossary of Terms

ECHORD++: European Clearing House for Open Robotics Development Plus Plus (E++ for short)

PDTI: Public end-user Driven Technological Innovation

SME: Small and Medium-sized enterprises form a specific target group for the experiments and the RIFs in E++. The term is used in exactly the same way as defined by the EC (http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm)

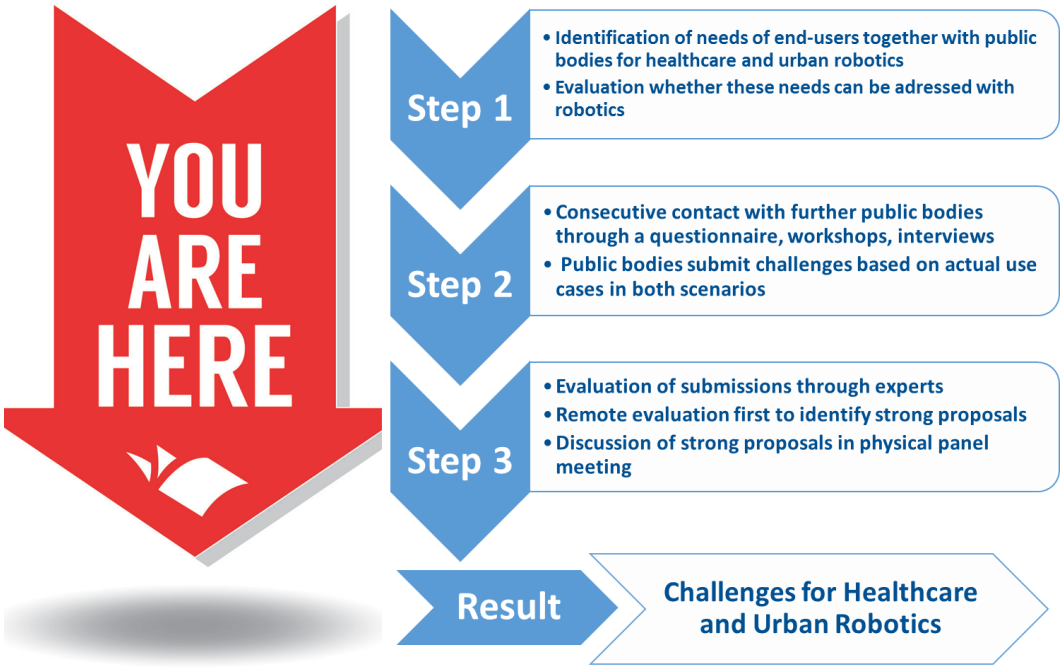
Scenarios: represent the expected use of state-of-the-art robot technologies in the near future, in case of PDTI Healthcare and Urban Robotics have been selected.

1 General Information

This guide is related to the FP7 project ECHORD++ (European Clearing House for Open Robotics Development, Grant Agreement Number 601116, www.echord.eu). ECHORD++ is a 5 year project, which aims at strengthening the cooperation between scientific research and industry in robotics, following the path developed by ECHORD (2009 – 2013, www.echord.info.

ECHORD++ focuses on research and development with relevance to industrial applications and high market potential. For the technology development within the PDTI scheme, two application areas have been identified, Healthcare and Urban Robotics.

Different public bodies have submitted different challenges (technology needs) and out of this pool, a panel of experts has selected one challenge for each scenario: Robotics for Comprehensive Geriatric Assessment in the Healthcare scenario and Utilities Infrastructures and Condition Monitoring for Sewer Network. Robots for the Inspection and Clearance of the Sewer Network in Cities in the Urban Robotics Scenario. The process for the challenge selection is shown below.



2 Scenarios and challenges for PDTI activities

2.1 The challenge in Healthcare: Robotized Comprehensive Geriatric Assessment

The Comprehensive Geriatric Assessment (CGA) is a diagnostic instrument designed to collect data on the resources and problems of elderly patients. CGA is performed by many medical professionals. The goal of utilizing a robot to control and to conduct the geriatric tests is to reduce the amount of time medical professionals spend on taking tests and thereby enable them to invest this time on care planning decisions

2.2 The challenge in Urban Robotics: Robots for the inspection and the clearance of the sewer network in cities

Sewer inspections require many humans to work in risky and unhealthy conditions. Introducing a robotic solution in this process aims at reducing the labour risks, improving the precision of sewer inspections and optimizing sewer cleaning resources of the city. The robot should determine the quantity of sediments in the sewer by detecting abnormal levels of water or obstructions in pipes.

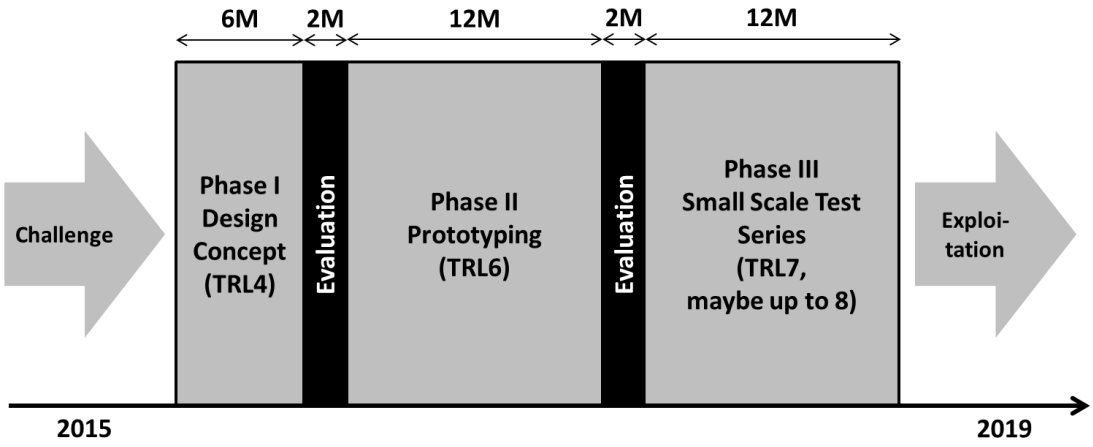
The individual challenge descriptions can be downloaded from www.echord.eu/???

3 Phases of the R&D development within PDTI

The technology development will take place in three phases:

1. System design (duration 6 months, 3 R&D consortia per screnario)
2. Prototyping (12 months, 2 R&D consortia per scenario)
3. Small-scale test series (12 months, 2 R&D consortia per scenario)

For the first phase, three consortia per scenario are selected, and two out of them will be selected for the remaining phases based on the outcome of the system design after the first 6 months of development work.The timeline is illustrated below.



In both scenarios, ECHORD++ expects an increase in the Technological readiness level (TRL)[1] as shown.

4 Activities and reimbursement

The activities to be carried out in the context of PDTI activities may only cover Research and Technological Development activities (RTD), aimed at a significant advance beyond the established state of the art. Thus, RTD is the only activity type which is eligible for experiments within ECHORD++. Other types of expenses are not eligible for funding. The costs of the certificates for the financial statements (audits), if needed, are the only costs eligible under Management (subcontracting).

[1]For a definition of TRLs in contect of robotics, see Multi-annual roadmap of euRobotics http://www.eu-robotics.net/cms/upload/PDF/Multi-Annual_Roadmap_2020_Call_1_Initial_Release.pdf, p. 117 ff.

For the three phases, the following indicative budget is foreseen:

Phase 1: The total indicative funding for all 6 (3 per scenario) envisaged R&D consortia is 303 480 €, this means 50 580 € per R&D consortium for the first 6 months.

Phases 2+3: For the 4 R&D consortia (2 per scenario) selected after phase 1, the total indicative budget is 697 440 € for phase 2 (164 360 € per consortium) and 1 400 400 € for phase 3 (350 100 € per consortium).

Reimbursements will be based on eligible costs as defined in Article II.14 of the FP7 model grant agreement. Direct and indirect costs are to be identified in accordance with Article II.15 of the FP7 model grant agreement. Maximum reimbursement rates of eligible costs for Research and Technological Development (RTD), in accordance with Article II.16(1) of the FP7 model grant agreement, are either 50% or 75% (the 75% rate applies to participants that are non-profit, public bodies, secondary and higher education establishments, research organisations and small and medium-sized enterprises (SMEs).

For hardware purchases (durable equipment and consumables) in the experiments, the maximum reimbursement is capped at 100% of the net acquisition cost. Depreciation rules may apply; proposers are encouraged to check this issue early with their organisation before finalizing their budget for the proposal.

The R&D consortia will receive a payment from the coordinator TUM at the beginning of their PDTI activities. This pre-financing will cover equipment costs (see above) and also part of the personnel costs. All other costs will be paid after the reporting period has ended, based on cost claims, and in accordance with the provisions of the Grant Agreement.

5 Ethical issues

Research activities in FP7 should respect fundamental ethical principles, including those reflected in the Charter of Fundamental Rights of the European Union. Therefore, questions about ethical issues are to be addressed in the proposal text. If ethical issues apply to an experiment, proposers must take appropriate measures before and during the run time of the experiment, including approval by the relevant commitees in cooperation with the public bodies which defined the challenge.

6 Submission of proposals

Proposal submission is web-based. The proposal must be submitted electronically via http://www.echord.eu before the given deadline. Call deadlines are absolute and strictly enforced. It is the proposers' responsibility to ensure the timely submission of proposals. The complete proposal consists of (i) completed and uploaded proposal template, (ii) completed web forms.

Shortly after the effective submission of the proposal, an acknowledgement of receipt thereof will be sent to the e-mail address of the proposal coordinator named in the submitted proposal. The sending of an acknowledgement of receipt does not imply that a proposal has been accepted as eligible for evaluation. For any given proposal, the R&D consortium coordinator acts as the main point of contact between the experiment partners and ECHORD++.

Upon receipt by ECHORD++, proposals will be registered and their contents entered into a database to support the evaluation process. Eligibility criteria for each proposal will also be checked by ECHORD++ before the evaluation begins. Proposals that do not fulfill these criteria will not be included in the evaluation. A proposal will only be considered eligible if it meets all of the following conditions: (i) it is received before the deadline given in the call text, (ii) template

and web forms (all sections!) have been completed. The proposal must be submitted by legal entities which have been established in one of the member states of the EU or in an associated country. For a list of associated countries, see

ftp://ftp.cordis.europa.eu/pub/fp7/docs/third_country_agreements_en.pdf

Each proposal will be evaluated by at least two external experts (evaluators) who are independent of ECHORD++ and of the proposers, and where no conflict of interest exists. They will maintain strict confidentiality with respect to the entire evaluation process. Experts perform evaluations in their private capacity, not as representatives of their employer, their country or any other entity. Experts are to maintain strict confidentiality with respect to the whole evaluation process. Under no circumstance may an expert attempt to contact an applicant directly, either during the evaluation or afterwards.

7 Evaluation criteria

The evaluation of RTD PDTI proposals will be based on marks given according to three basic criteria:

1. **Scientific and/or technological excellence**

- How well the proposed technology addresses the challenge as detailed in the respective challenge description.
- How well does the proposed technology integrate the required functionalities? How intuitive is the technology for the end users? How easy can the technology be integrated in the environment? How robust is the technology? Does it solve specific technological challenges (Mobility, Communication, etc.)?
- To what extent shows the proposal a clear plan for the development of a working solution.

2. **Quality and efficiency of the implementation and the management**

- How effectively will the project be managed?
- To what extent appears the consortium to have dedicated the resources (e.g. Human capital, equipment, man hours, etc.) necessary to perform the scope of the proposal
- To what extent the crucial risks (technical, commercial and other) to project success appear to have been identified and how effectively will these be managed

3. **Potential Impact through the development, dissemination and use of project**

- Does the project clearly identify a partner (as part of the consortium) who will bring the technology to the market?
- Does the project include a commitment to the commercialization of the technology?
- To what extent has the proposal the potential to address future / wider challenges in the area
- Return on Investment: Time span required to have the break even with the purchase of the device
- Time to commercialization
- Marketablity
- The price of the solution (including installation, training, maintenance,…) for totel cost - independent of the business model (sale or leasing).

For each criterion, (excellence, implementation and impact), a 0-to-5 mark will be given; the experiment proposal will be above threshold, if each mark is equal to or above 3 and the sum of the three marks is not less than 10. Half points can be used.

8 Selection of proposals

The selection will be based on the evaluation reports written by the external experts (evaluators). The final selection of R&D consortia to be funded will be made based on the outcome of a ranking of the proposals and the indicative budget planned for the call. Based on this information, the European Commission will approve the final list of selected R&D consortia. The funding decisions and the evaluation summary reports will be sent to the proposers. The reports and evaluation panel minutes will be forwarded to the European Commission by ECHORD++. After the R&D consortium has been selected for funding, the partners involved in the consortium join the E++ Grant Agreement via an official amendment. They will also accede to ECHORD++'s consortium agreement.

During its run time, each R&D consortium selected for funding will be subject to a bi-monthy scientific monitoring (remote via the ECHORD++ website), as well as to a final review, in certain cases also to a mid-term review by independent experts.