PROJECT PERIODIC REPORT

Grant Agreement number: 601116

Project acronym: ECHORD PLUS PLUS

Project title: European Clearing House for Open Robotics Development Plus Plus

Funding Scheme: ICT-2011.2.1

Date of latest version of Annex I against which the assessment will be made:

Periodic report: **1st** ☐ **2nd** ☐ **3rd** X **4th** ☐

Period covered: **from 01.07.2015 to 30.11.2016**

Name, title and organisation of the scientific

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[1] Usually the contact person of the coordinator as specified in Art. 8.1. of the Grant Agreement.

[2] The home page of the website should contain the generic European flag and the FP7 logo which are available in electronic format at the Europa website (logo of the European flag: http://europa.eu/abc/symbols/emblem/index_en.htm logo of the 7th FP: http://ec.europa.eu/research/fp7/index_en.cfm?pg=logos). The area of activity of the project should also be mentioned.

Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate) [3]:

  ☐ has fully achieved its objectives and technical goals for the period;

  X has achieved most of its objectives and technical goals for the period with relatively minor deviations.

  ☐ has failed to achieve critical objectives and/or is not at all on schedule.

- The public website, if applicable

  X is up to date

  ☐ is not up to date

- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 3.4) and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 3.2.3 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

[3] If either of these boxes below is ticked, the report should reflect these and any remedial actions taken.

Name of scientific representative of the Coordinator: Prof. Dr. habil. Alois Knoll

Date: January, 31rst 2017

Signature of scientific representative of the Coordinator

Contents

1. Publishable summary

With technical work pursued in all three ECHORD++ (E++) Instruments reaching cruise speed during the reporting period, the scope, diversity, and impact of the work undertaken in ECHORD++ is becoming self-evident.

Figure 1: Overview of significant activities during the reporting period.

In particular, each of the E++ Instruments has seen remarkable success stories. The first Call of Experiments has come to a close, and already, concrete commercial results are starting to materialize. The second Call of Experiments was wildly successful, with a strong selection of sixteen new projects, whose reviewing marks show an improvement over Call 1. The volume of technical activities pursued at RIFs has seen a steady growth over the period, with a special emphasis placed on engagement of, and direct collaboration with, Small and Medium Enterprises (SMEs). From this activity, a wide range of concrete results have emerged, with for instance the creation a spin-off, based on successful technical activities and collaborations pursued at the RIF in Paris-Saclay.

The E++ PDTI instruments has been successful in the endeavour of actively engaging the public sector in the technological development process, and in furthering their appreciation for what robotics technology entails, and what it can offer. Concerted efforts of the involved public bodies and of the E++ PDTI team led to the development of a very effective methodology to steer the design phase of the PDTI process in a productive direction.

The above technical achievements were provided a high level of visibility, in Europe and beyond, by the work performed on dissemination aspects. The consortium presented the project at several major trade fairs, among them AUTOMATICA 2016 in Munich and Hannover Messe, where European Commisssioners Carlos Moedas and Günther Oettinger took a look at the work performed in ECHORD++. Also, the project

had a notable presence in the media, especially in consumer press, which is extraordinary for a technical project. For example, the Süddeutsche Zeitung, Germany's most important quality newspaper, published a half-page article about ECHORD++ with statements from Günther Oettinger who praised the contribution of ECHORD in shaping the cascade funding scheme in Horizon 2020: "The ECHORD project, funded by the European Commission, enabled bringing robotics technology from the lab to the market in more than 50 cases. With the project we also successfully tested the funding of sub-projects via open calls," says Günther Oettinger, EU-Commissioner for Digital Economy and Society. This approach facilitated a non-bureaucratic access to EU-funding, which benefits many small and medium-sized enterprises. "Hence, this so-called cascading funding also plays an important role in our framework programme Horizon 2020."

Figure 2: Commissioner Günther Oettinger, visiting ECHORD++ at Hannover Messe 2016.

2. Project objectives, work progress and achievement, project management

The text below outlines first the general objectives for each WP of ECHORD++, then the specific objectives for the reporting period. The next section identifies the actions taken to address the recommendations of the last review meeting. The last part of section 2 is dedicated to the activities and in particular the achievements during this reporting period, also outlining deviations and their implications.

2.1.1 Project objectives for the period

Overall Objectives WP1:

WP1 covers the project management, the financial management, as well as the quality management of E++ and, importantly, the management of Amendments. More precisely this means:

- Efficient coordination of the integration of relevant work packages using an up-to-date communication infrastructure in a collaborative environment,
- Establishment of the management infrastructure for the efficient operation of a complex project comprising a variety of different instruments,
- Efficient collaboration within the consortium, especially between the project committees;
- Timely communication with the European Commission,
- Quality assurance of the technologies employed and the services offered, and a proper implementation of the work packages, including the timely delivery of deliverables
- Efficient control of the budget.

Third reporting period:

The third reporting period is the most active period of the project with all instruments active: Call I experiments just started at the beginning of the reporting period and ended towards its end. Call II experiments were selected, integrated in the consortium. PDTI healthcare and urban robotics passed through Phase I of the technology development cycle. And all three RIFs entered their operational phase after the infrastructure was put in place. The major objective and challenge of this reporting period was to coordinate and track the performance of all these activities, while at the same time manage one Cost Claim, two Amendments (adding about 60 partners to the consortium) and the pre-funding the PDI RTD consortia and the Call II experimenting partners. The major achievements of WP2-WP6 are outlined in the introduction of each WP.

Overall Objectives WP2:

WP2 encompasses the external and internal communication of E++ as a whole and provides service and material for the “scientific” work packages (WP3, WP4 and WP5). It supports the preparation of high-quality information material (e.g. templates, pictures, graphs, and statistics) for WP6. The objectives of WP2 can be described in further detail as follows:

- To ensure effective support of all stakeholders involved (or even just interested) in the project,
- To realise effective external communication with representatives of the media (professional press, daily press, TV channels, etc.),

- To communicate with the general public, comprising policy makers as well as the stakeholder groups represented within the project (RoM[4], ReIO[5], public bodies, students, decision-makers in politics, trade associations, etc.).

Third reporting period:
The objectives of the second reporting period include in detail:

- Ensure a high-quality internal and external communication,
- Update the communication plan for the project,
- Relaunch the IT services and add new functionalities,
- Strengthen the RIF marketing,
- Advise the selected experiments on their outreach efforts,
- Promote the selected experiments and their results,
- Support the PR activities of the PDTI consortia,
- Support the presentation of the project at conferences, trade fairs and other events.

Overall Objectives WP3:

This work package covers the management of the experiments; starting with their inception (management of the Open Calls, selection of the experiments), continuing throughout the experiments' life-time (monitoring of activities based on Performance Indicators), and extending beyond their conclusion (measurement of impact directly after the runtime and for a certain time after their official end, for the sake of sustainability). The DOW describes the corresponding objectives as follows,

- To evolve the regulatory framework governing the experiments,
- To implement and continuously improve the processes for the experiments, in close cooperation with the Quality Management, based on the experiences of ECHORD.

Third reporting period:
Activities concerning both the first and second call have happened in parallel in the reporting period. Monitoring duties have constituted an important share of the activity performed, both for the bulk of the duration of experiments from Call 1, and also for the first few months of those in Call 2. Adjustments to monitoring procedures were performed to promote accountability of both experimenters and monitoring team. Efforts were expanded to ensure successful completion of Call 1 experiments, and provide a fair, thorough final assessment of experimenters' performance. Then, following conclusion of these Call 1 experiments, work on result extraction and exploitation has begun and will carry on into the next reporting period. In complement to the above monitoring and extraction activities, selection of experiments for Call 2 was performed. Negotiations with selected experimenters included budget considerations, discussion of expected outreach activities, but also the development of a consensual Key Performance Indicator (KPI) document for each Call 2 experiment. This document provides a self-contained description of the scope of the experiment and of all relevant performance indicators, serving as a clear, agreed-upon foundation

[4] Robot Manufacturer(s)
[5] Research Institution(s) and/or Organisation(s)

for monitoring. As was the case with Call 1, a kick-off meeting was organised for Call 2, to help familiarise experimenters with ECHORD++ procedures.

Overall Objectives WP4:

The activities in WP4 pertain to the establishment and development of the management process for the RIFs. This process includes the purchase of equipment (to complement the in-kind hardware contribution provided by all three RIF owners), the application and selection process for potential RIF users, the definition of Performance Indicators to track success during and after the stay, the remuneration procedures, and other relevant aspects. Specific objectives are the following,

- To define the processes needed for RIF set-up, operation and evaluation,
- To provide networking opportunities to partners undertaking E++ Experiments,
- To provide opportunities to educate and support a new generation of entrepreneurs in robotics,
- To make available the physical and human resources to support commercial exploitation, in particular for SMEs and start-ups.

Third reporting period:

During the previous reporting period, efforts to establish the three RIFs in E++ were undertaken, including the development of operational infrastructures, the recruitment of dedicated staff, the procurement of necessary resources (hardware and software), the establishment of a range of support services, and the creation of viable communication methods to reach the targeted audience. In that period, the RIFs were successfully launched, and began operation as innovation facilities.

The main objectives of the third reporting period consisted of building upon previous achievements, raising awareness and visibility of the RIFs (through e.g. outreach activities), attracting and selecting RIF customers, managing their attendance and providing support during their stay, and continuously refining RIF operation procedures in light of experience gained.

Overall Objectives WP5:

WP5 is dedicated to the development of robotics technology for the public service in two pre-defined application domains: *Urban robotics* and *Healthcare*. Subsequent to the definition of the overall scenarios, the concrete challenges (one per scenario) were identified via an Open Call addressed to public authorities (hospitals, municipalities etc.). These two challenges build the basis for an Open Call to which RTD consortia can apply in order to develop the technologies in a competitive approach (three teams per scenario in Phase I, two out of these three teams competing with each other in Phase II and Phase III). This technology development is guided by the public authorities which have submitted the successful PDTI challenges. This process can be illustrated as follows:

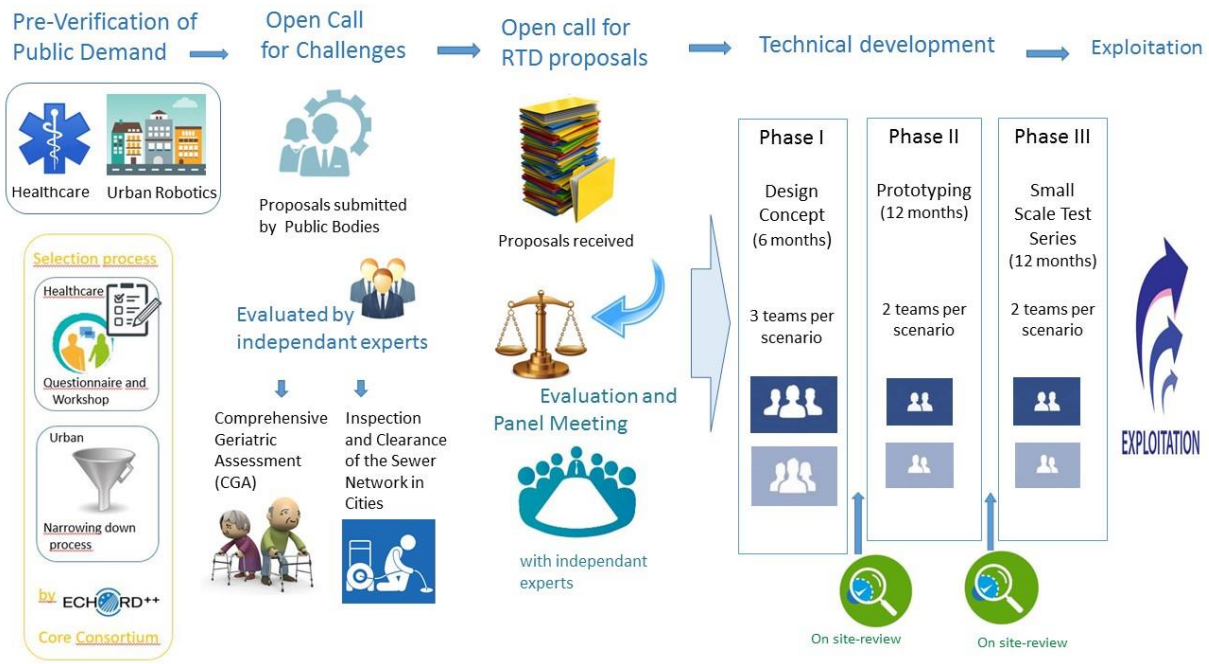


Figure 3: PDTI selection process & technical development.

The overall objectives of WP5 can thus be described as follows:

- To define concrete potential application areas for pre-commercial procurement (PCP) in robotics in the public sector, geared to the societal challenges identified for HORIZON 2020,
- To establish, prototype (PCP pilots), evaluate and document a process to identify innovation gaps for the public sector based on an active search for public bodies to join the project,
- To push the development of specific products for the public sector in a competitive way and to cooperate with the Quality Management,
- To showcase the benefit of robot technology in selected applications with real installations in target environments,
- To develop robotic solutions that meet the end-user requirements.

Third reporting period:

Recap of the past: At a very early stage of E++, PDTI had to undergo profound changes of the planned technology development process. Going from two phases and four competing teams to three phases and six teams competing with each other. This change had an impact on the timeline, the budget and the interaction with other activity lines of ECHORD++ (further details in WP1, task 1.4.). In particular the necessary amendments had to be adjusted, with a direct impact on the critical path of the project, as illustrated by *Figure 4*.

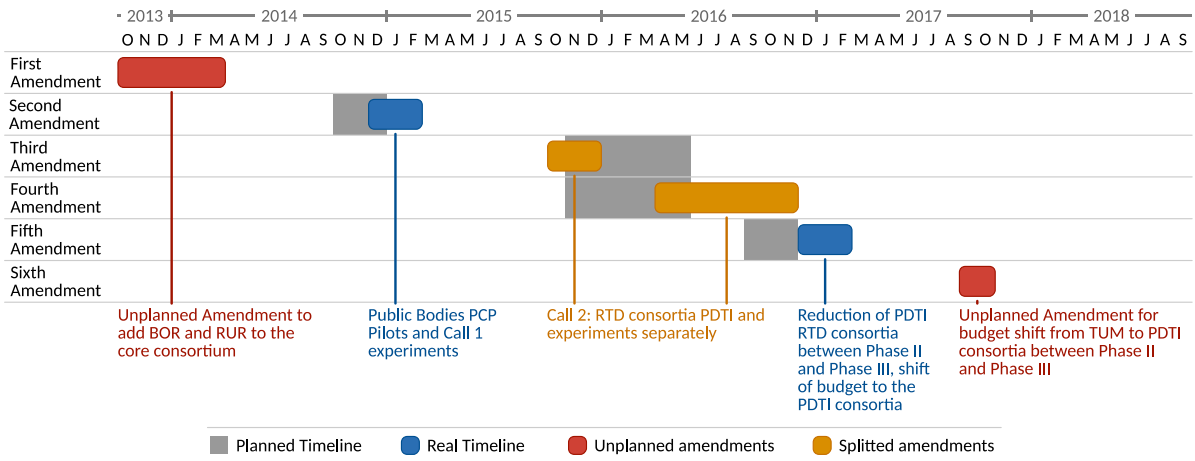
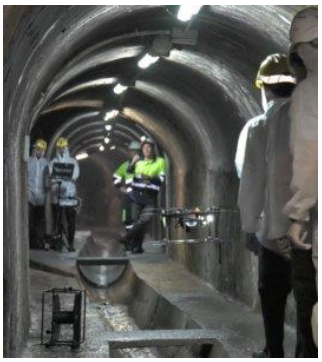


Figure 4: Timeline of Amendments.

During the second reporting period, all tasks from T5.1. (Preparatory activities) to T5.6 (Evaluation and selection of RTD proposals) were addressed. T5.1. to T5.5. were completely finalised at the end of the second reporting period. The Open Call (T5.6.) was immediately successful for the challenge on "Sewer Inspection". Three PDTI experiments were selected to join ECHORD++: ARSI, SIAR and RBODILLOS, which represent three different technological approaches to tackle the sewer challenge:

ROBODILLOS
comprises a scalable array of networked mobile robotic rovers and a base station.

SIAR
uses as starting point IDMind's robot platform RaposaNG. A new robot was built based on this know-how.



ARSI
The use of a Micro Aerial Vehicle (MAV) for inspection tasks in the sewer avoids the mobility constraints from which a ground robot would suffer.

In the case of Healthcare, the Open Call had to be re-launched (see Periodic Report of the RPII). At the end of the second reporting period, the second round of healthcare proposals had been evaluated remotely and the panel meeting was planned for July 13-14, 2015.

The main objectives for the third reporting period were thus to finalise the selection of three strong healthcare PDTI consortia and to implement a process for a successful cooperation between the public authorities, the E++ core partners (TUM, UPC and BOR involved in WP5). In particular the activities had to concentrate on:

- The panel to discuss, rank and suggest three teams to address the PDTI healthcare challenge on Comprehensive Geriatric Assessment,
- Include the three sewer teams and the three healthcare teams in the project via an Amendment (see description of WP1, task 1.4.),
- Organise the collaboration between public bodies, RTD consortia and the core members of ECHORD++ during Phase I of the technology development (Design Phase),
- Organise the communication & collaboration between these stakeholders during Phase I as well as the documents required for the on-site testing of the six teams.

During the reporting period the deliverables D5.3, D5.4, and milestone MS5 ("Second bunch of experiments and R&D partners for PDTI activities selected") were due.

Overall Objectives WP6:

WP6 is dedicated to increasing the visibility of E++ via conferences and fairs. To do so, E++ can rely on a speaker group set up to present E++ at different events. The goals in detail are:

- To increase the visibility of E++, capitalising on the visibility of ECHORD,
- To organise the structured dialogue like the one used in ECHORD,
- To develop and sustain external relations with all stakeholders involved: public bodies, partners, science communities and the general public, comprising policy makers, trade organizations and public users,
- To present E++ at relevant, selected events,
- To support the instruments experiments (WP3), RIFs (WP4) and PDTI (WP5) in attracting proposers and users/customers.

Third reporting period:

The third reporting period has been focusing on promoting the ECHORD++ concept and the outcome of the call 1 experiments among potential users and beneficiaries. The consortium has been in touch with all relevant stakeholder communities and organisations from the different target groups: Public Bodies, Industry, Academy and Citizens.

2.1.2. Follow-up of previous review

Hereafter are discussed the recommendations formulated by the reviewers at the second ECHORD++ review meeting, and the actions performed by project partners to follow-up on the recommendations.

General recommendations

Recommendation R1a: *Register ECHORD++ as a European Trademark (possibly in Asia as well). See recommendation R13 from the last time.*

The European Union Intellectual Property Office (EUIPO) received TUM's application to register ECHORD as a European trademark on 18th August 2016. The application was examined thereafter and finally published by the EUIPO on 9th November 2016. Currently the opposition proceedings are ongoing, meaning third parties could raise objections against the application, however, so far there have been none. The opposition period will end on 9th February 2017. Following that process, we will consider, in the coming

months, applying to register ECHORD as a trade mark also in relevant markets in Asia (e.g. China, Singapore, Japan, South Korea).

Recommendation R1b: *Expand on the ECHORD++ slogan idea "From the lab to the Market" with a value chain giving more details about where ECHORD++ and its instruments make the difference.*

In terms of the value chain, we have identified the following actions as contributing towards getting a product to market: RTD development, introduction to markets, customers and sources of finance. The following table shows which instruments contribute to each action.

Action	Experiments	PDTI	RIF	Booster Programme
RTD development	✓	✓	✓	✓
Intro to market	facilitating	✓	✓	✓
Intro to customers	facilitating	✓	?	✓
Intro to sources of finance	-	-	✓	✓

All three instruments of ECHORD++ contribute to the development of robotics technology. The introduction to markets is directly addressed in PDTI and the RIFs. Experiments are required to research relevant markets in order to meet KPIs that are tracked during the monitoring. Also, linking providers of robotics technology with customers is directly undertaken in PDTI and indirectly in experiments via their individual KPIs. The RIFs tackle this point by showcasing robotics technology to their users. RIFs are the only instrument of E++ that facilitate the access to finance for stakeholders in the value chain: end-users, researchers, technology providers etc. All four aspects will be addressed by a potential booster program for the experiments, which may start with RP4 (additional task, not originally foreseen in E++).

Recommendation R1c: *Monitor gender balance and increase the share of female experts in future reviewing /monitoring activities (Experiments, PDTI, RIFs).*

As is well known, Computer Science, Engineering and Robotics are still male-dominated domains in most countries, so it is difficult to achieve full gender parity. However, **several highly qualified women** participate as experiment moderators in ECHORD++. In particular, in a monitoring team composed of about a dozen members, six are females. Furthermore, for recruiting new external experts for experiment reviews, the ECHORD++ consortium will contact the initiators of the newly established Women in Robotics Directory (http://www.jadelemaitre.fr/women-in-robotics-directory/).

Within the RIF instrument, and at BRL in particular, the issue of gender imbalance is being addressed through a number of initiatives, including the support of existing gender balancing programmes, inviting local female Science, Technology, Engineering and Mathematics (STEM) students on RIF work placements, and proactively encouraging applications from female entrepreneurs and directors of start-up companies. As a result, the RIF@Bristol has experienced an increase in female participation in the programme to reach

23%, which compares very favourably with the UK national ratio of female engineers (9%). Future activities will include repeating work placements and supporting school outreach activities targeting secondary school female students.

Recommendation R1d: *For the reporting of the experiments and the PDTI, visualize the KPIs status by using a traffic lights overview (max. 1 page) for the next review.*

Following the reviewers' recommendations on representation of experiments' monitoring, we have adjusted the format of experiment progress deliverables D3.5.2 and D3.5.3 to provide a single-page overview of experiments' status, using the suggested traffic light format. Each of the main performance areas (KPIs, Milestones, Deliverables) of the experiments is assigned a color-coded value; red for severely lacking, yellow for lacking, green for good. The resulting one page summary provides a high-level view of the status of all experiments in a given call. In complement to this summary, experiment progress deliverables also provide concise justifications when necessary or useful, in particular for particularly problematic areas. Finally, for a more detailed picture of experiments' status and progress, the six-monthly Quality Management Report deliverable D1.2.6 provides the detail of experiments' performance, still in a traffic light format, but this time each individual performance metrics of the experiments. Active monitoring for PDTI has not yet begun, but will follow the blueprint established by Experiments' monitoring.

Recommendations concerning the experiments

Recommendation R2a: *Experiments move along a timeline (or value chain, see R1b) which ideally starts with the idea and ends with a marketable product. They should describe how they have progressed and where they stand in this process. The status could be visualized (e. g. using a "slider" or TRL scale). This would work well in combination with the traffic light approach.*

Following the reviewers' recommendation, TRL increase in each experiments has been given careful consideration, including initial TRL at experiment onset, final TRL at project conclusion, and expected TRL within two years. The collected results for the experiments in Call 1 are provided in the experiment outcome deliverable D3.6.1.

Recommendations concerning RIFs

Recommendation R3a: *Develop a branding strategy for the RIFs in the context of the ECHORD++ brand. This includes a coherent marketing and communication plan for all RIFs with the same corporate identity. Example: The YouTube channel specifically created for the Bristol RIF should be turned into a YouTube channel for all RIFs. Each RIF should communicate the other ones. A suggestion is to produce a short video, describing the RIF approach, what it is in concrete terms, what its benefits are and how it can be accessed. All three RIFs should be featured. The material is exciting enough to merit high number of hits. In addition to this, coherence also means the coherence of terminology used (e.g. the use of the term "engagement"). There are many possibilities inherent in the names used: Rif Chord… which suggest a musical motif though surely others are possible.*

Following the reviewers' recommendation, all three RIFs, in coordination with the outreach work performed in WP6, have pursued a concerted effort to improve visibility of the E++ RIF brand. As the result of a RIF marketing strategy meeting held in August 2015 in Munich, a number of videos and pictures, coordinated by the Public Relations personnel of TUM, were produced to showcase each RIF's resources

(as shown in *Figures 6* and *7*). A first video, providing a unified overview of what RIFs are and what their mission is, including footage and interviews of relevant personnel from all three RIFs, is under production. Then, another series of videos and pictures, providing 360 degree visuals and high-quality pictures of all three RIFs' equipment and infrastructures, was produced by an external video and photo production sub-contractor, commissioned by TUM. The subcontractor's team travelled to each RIF location to capture footage, thereby promoting homogeneity of tone and production values across video and photo material captured in all RIFs. The videos and the photos, in particular the 360° footage, proved to be a strong vector of communication at the different fairs and expositions attended. Virtual reality tours were offered at the ECHORD++ booths at Automatica 2016, RoboBusiness Europe, and the Hannover Messe (see *Figure 5*).

Figure 5: Virtual reality tours through the RIFs shown at Hannover Messe.

In complement to the above, coordinated communication actions, RIFs have engaged the public at large through a strong presence in social media. The RIFs at Peccioli and Bristol for example have opened and maintained twitter accounts (363 and 1269 followers, respectively), Bristol has launched a YouTube channel providing a series of case study videos to better address its national and international audience. Each of the above, separate communication channels provide a gateway, for the public at large, to the overall RIF environment.

While efforts were expanded towards achieving a coherent branding of the RIFs, RIF partners acknowledge that additional such efforts should be expanded in the next reporting period.

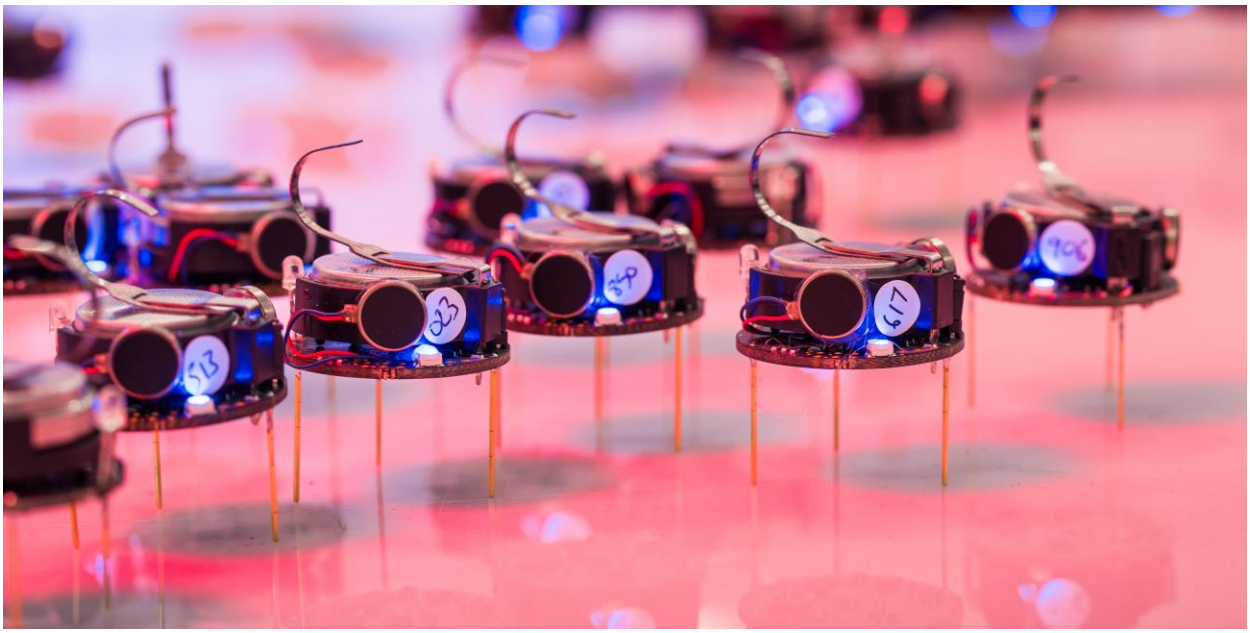


Figure 6: Kilobots at Bristol Robotics Laboratory.

Figure 7: Dairy farm – partner of the Peccioli RIF.

Recommendation R3b: *Consider the role of system integrators in the RIFs and identify "touch points", synergies and possible forms of cooperation with integrators, as evidenced by examples of collaboration in experiment outcomes, testimonials or statements of intent.*

The RIFs have given careful consideration to the role of system integrators and conceive a clear demarcation between the service provided by RIFs and that provided by system integrators. In particular, RIFs act

at a lower TRL than system integrators, as an instrument to bridge the gap between more fundamental research and system integrators themselves. RIFs are in the process of building relationships with such system integrators, with the objective of facilitating future development of products and concepts investigated in RIFs. The RIF in Paris, for example, through its host institution CEA, is collaborating with system integrators within the context of a number of different platforms (concrete, physical test and integration sites); specifically, the Factory Lab (launched in October 2016), and FFLOR (to be launched in 2017).

Recommendation R3c: *Establish links with the Aeroworks project (coordinator based in Sweden) to facilitate knowledge transfer on test sites. Be on the lookout for other potential synergies e.g. Exotrainer, Medical topic group and other medical robotics projects.*

As suggested by the reviewers, the RIFs have been active in facilitating connections between RIF customers and interest groups of relevance. For example, the RIF in Peccioli introduced the SAGA Experimenters (interested in precision agriculture) with potential end-users (farmers in Tuscany), and put in relation Experiments involved with physical rehabilitation (LINARM++ and MOTORE++) and the Laboratory of Rehabilitation Bioengineering at Auxilium Vitae Volterra, allowing the Experimenters to receive direct feedback from Physiotherapists. In terms of relationships with European projects, both Peccioli and Bristol have, together, been actively engaging with the RoCKIn project. In addition, RIFs are directly involved with the EC project HORSE (I4MS) through CEA and TUM.

Recommendations concerning PDTI

R4a: Synthesize the valuable learning experiences from the PDTIs and feed this experience back to the SPARC PPP.

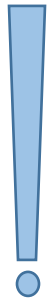
The experiences of PDTI were fed into the Deliverable D3.3.2 (named: consultations and resulting actions of innovative procurement) coordinated by euRobotics AISBL (Grant Agreement Number: 611247). The Leader of WP 5 (PDTI) contributed to this deliverable which was coordinated by Geoff Pegman, equally member of the E++ core consortium. Furthermore, Geoff Pegman has set up a Topic Group on Pre-Commercial Procurement in SPARC and was intending to prepare the call for PCP proposals in robotics for the April call.

2.2 Work progress and achievement during the period

The following section gives an overview of the progress achieved by the core consortium in the different Work Packages. WP 1 is identical with the Project Management and is therefore dealt with under section 2.3. of this report. The progress achieved by the partners selected under the first call for RTD experiments is provided in Annex I.

WP2 Highlights

- Successful relaunch of the IT platforms and addition of new features,
- Notable media presence triggered by both the experiments and the core consortium,
- Filming and shooting of professional videos and pictures for the RIF marketing,
- Increasing audience on the project's social media platforms,
- Successful collaboration with UPC as the leaders of WP 6 to continue the project's vast presence at conferences, fairs, workshops and other events.



2.2.1. Work Package 2: Service Center

The main achievements in WP 2 during the third reporting period were the successful relaunch of the IT platforms and the addition of new features, a notable media presence triggered by both the experiments and the core consortium, the filming and shooting of professional videos and pictures for the RIF marketing, an increasing audience on the project's social media platforms and the successful collaboration with UPC as the leaders of WP 6 to continue the project's vast presence at conferences, fairs, workshops and other events.

For the third reporting period the Service Centre ensured internal and external communication following a target-group centered multi-channel approach. Several efforts have been made to successfully promote the project and its results among the relevant audiences. The major tasks and achievements are described in detail below.

Task 2.1: Everyday work

The everyday work consisted of assisting experiment and PDTI partners as well as evaluators via email and telephone, providing general and specific information about the project to interested stakeholders and enabling communication among the core consortium partners. Anonymous customer satisfaction surveys among proposers and evaluators of the second call for experiments and the PDTI calls resulted in still positive feedback for the project's website and the internal portal, however we received frequent complaints about the portal's usability which was one of the reasons to change the IT service provider (cf. Task 2.2). The application and the evaluation process received positive feedback and was rated better than other EU-projects' application/evaluation processes. Also the sessions on public relations during the kick-off meeting for the first round of experiments was appreciated by the experiment partners, leading the consortium to follow this approach also for the second kick-off meeting in Palma de Mallorca.

The support by the ECHORD++ consortium received good and very good feedback likewise from proposers, evaluators and experiment partners. See Deliverable 2.1.3 for further details.

Task 2.2: Provider of the IT-infrastructure

After closing the second call for experiments, the consortium decided to change the serviced provider for the IT infrastructure. Several reasons have led to this decision. Mainly the quality of work delivered by the former service provider Actiworks declined over time which also resulted in too much time spent on testing by the consortium's staff and a slow and very reluctant response of Actiworks to requests for bugfixing. Moreover, the surveys conducted by the consortium showed that several users had given negative feedback on the usability of the monitoring platform.

Although it is true that some of these issues occurred even before the opening of the second call for experiments, changing the service provider during the call phases would have been very risky and costly. Therefore, we decided to take that step only after the call was closed. Based on three rival quotations the consortium contracted the Rome-based agency i2mfactory to implement the necessary improvements in design and usability and the missing features. The user requirements for the new infrastructure were discussed with i2mfactory during several phone calls and during a meeting in Munich from 28 – 29 October 2015. A follow-up meeting in Rome on 15th March 2016 was used to assess the process hitherto and to assure the quality and the timely delivery of the features which were still to implement.

Because of the – in comparison to the other tasks – lower effort, the consortium decided to have i2mfactory work on a relaunch of the public website www.echord.eu first. The main goal here was to present ECHORD++'s primary face to the stakeholders in a new, contemporary design, with a higher emphasis on visual elements.

The first draft of the public website was ready in December 2015 and presented to the Coordination Committee. The feedback from the ECHORD++ core partners was fed into a new development loop and the website went live in January 2016. The TUM team frequently interfaced with the web developer, providing important information about the project, the intended audience of the website, technical requirements and useful feedback received in the previous months. Important topics that were successfully addressed comprise the highlighting of the main motto of the project "from lab to market" as the central message to convey, in a new, modern, and engaging graphic design. The feedback received on the new website was very positive. Among the issues encountered, the transfer of the content from the old CMS (TYPO3) to the new one (WordPress) was not straightforward, but it was successfully sorted.

A first draft of the refined monitoring platform was released in February 2016, and the final version went live in April 2016. All previous issues, such as document upload and data loss, were successfully sorted with the new platform. Additionally, new reporting functionalities have been developed, such as summary tables. Graphic adjustment and usability improvements have made the monitoring platform not only reliable, but also much easier to use.

A presentation of the monitoring platform happened during the kick-off meeting for the second call of experiments in May 2016. Those experiments have been using the new platform from the very beginning and the feedback received so far has been very positive. Among the issues encountered with the monitoring platform, the preparation of the financial table was not straightforward, due to the different cost models of the ECHORD++ partners.

The draft RIF application and monitoring tool was released in February 2016 and the final version went live in April 2016. The tool allows each RIF to manage proposals to use the facilities and schedule the visits. It also provides summary tables with statistics. Although it was advertised in various ways, to date it has not proven to be a very attractive channel. It seems that the RIF audience so far is mainly based on local and regional contacts which use more traditional channels and do not need to apply via the online tool. For the future it would be interesting to promote it with further presentations at meetings with the various stakeholders to show the potential of the platform and the benefits in using it.

Overall, the new IT platform has proven to be an innovative project, developed on a modular base, through open-source technologies which have guaranteed a quick and sound integration of the various functionalities and - thanks to its user-friendly development - new modules can be easily added in the future.

Task 2.3: Planning of communication measures for all WPs

The communication plan and strategy developed in the early stage of ECHORD++ was and is being revised and adapted according to the strategic objectives of the project's communication. During the reporting period the experiments from call 1 were up and running and the experiments from call 2 started working. The RIFs were launched and operational, the PDTI consortia were in phase one.

Since after the closing of all calls the RIFs are the one instrument through which new partners can join the project, one goal of the communication strategy was to market the RIFs in order to attract new customers for them. A second goal was related to the experiments, in particular to communicate the results from the experiments from call 1 and to plan and already initiate the communication for the experiments from call 2. Since the PDTI solutions were in an early stage during the reporting period, promoting their results was not one of our main goals. However, the consortia themselves already achieved some coverage in local/regional media.

Concerning the RIFs, TUM initiated a RIF marketing meeting which was held in Munich in August 2015. In this meeting we discussed the current status of the RIFs in terms of marketing, named goals for the future and messages to be send out to potential customers, identified target groups, performed a SWOT analysis and collected ideas on marketing channels. In general, all RIF operators would like to achieve sustainability beyond the runtime of ECHORD++, based on further public funding and revenue generated by customers paying for access to the facilities and/or contract research. To pave the way towards sustainability, there must be a high level of awareness for the RIFs among the relevant stakeholder groups as well as their commitment to provide further funding respectively establish business relations with the RIFs.

One of the main challenges for attracting new users for the RIFs is to explain them what a RIF actually *is*. The consortium came to the conclusion, that the hitherto available material was not sufficient for the marketing needs of the RIFs. Especially the visual communication had to be improved. Therefore, TUM contracted the Munich-based photographer Hauke Seyfarth and videographer Sami Khatib to shoot pictures, videos and 360 degree tours of the facilities. The consortium chose to use the same photographer/videographer for all RIFs to ensure a consistent look of the material.

Figure 8: Welcome to RIF@Peccioli!

Furthermore, the consortium decided to make a special effort to attract more customers from outside the countries in which the RIFs are located. Denmark was chosen as a target country for its affinity with technology and the widespread knowledge of English. Upon recommendation of consortium partner Blue Ocean Robotics we identified RobobusinessEurope (1st – 3rd June 2016 in Odense) as ideal event to get in contact with potential RIF users from Denmark. With two invited talks, one workshop and a booth at the exhibition area, ECHORD++ had a very strong presence at the event. However, the matchmaking with an online tool, which should have been at the heart of the event, was basically unusable due to serious privacy issues of the tool – it was actually possible to access the profiles and the conversation of other attendees.

Continuing the successful strategy of committing the experiments to ECHORD++'s mission to go from lab to market a kick-off meeting was also held for the experiments from call 2. It took place from 3rd – 4th May in Palma de Mallorca. The meeting included a two-hour lecture on a practical approach to public relations, held by Sarah Cockburn-Price who can rely on a 25-year specialization in public relations for robotics. Furthermore, Prof. Cristian Secchi, coordinator of the TIREBOT experiment, provided insights from the perspective of a call 1 experiment on how to succeed at Public Relations and protection of Intellectual Property at the same time. The meeting was concluded with workshops on target audiences, events and media and practical exercises on public relations and intellectual property. In the aftermath of the kick-off meeting the consortium created for each of the experiments selected from the second call a collection of associations, conferences and trade fairs as well as press and media information, directly tailored to

the demands of the experiment's communication plans. These so-called "PR references" have then been discussed with the each of the experiments in telephone conferences to facilitate the creation of the final communication plans and to emphasise the importance of successful communication for going from lab to market. Both, the channels mentioned in the proposals and the then selected channels from the PR references documents were merged into a communication plan for each experiment. Those plans have been integrated into the monitoring platform to ease tracking and validating the progress of the experiments in terms of communication. Altogether, the consortium is convinced to have reached a high level of commitment for PR activities among the experiment partners, which has already produced some promising results. To encourage the experiments to take high-quality pictures of their work, the consortium offered a beam+ telepresence robot as an award for the best picture taken of a call 1 experiment. An independent jury of photographer Hauke Seyfarth, PR specialist Sarah Cockburn-Price and roboticist and ECHORD++ reviewer Nicola Tomatis evaluated the pictures for their technical quality, their originality and their entertainment value. During AUTOMATICA 2016 the ECHORD++ Best Picture Award was given to the EXOTrainer consortium as winners of the award during a ceremony moderated by Reinhard Lafrenz, secretary general of euRobotics AISBL.

Figure 9: The winning picture of the ECHORD++ Best Picture Award, showing a child walking for the first time in his life with the EXOTrainer exoskeleton.

Concerning PDTI, the consortium followed a similar approach, but on a smaller scale. During the kick-off meeting for the PDTI projects dealing with sewer inspection on the 15th November 2016 in Barcelona, a

session was dedicated to dissemination and outreach. PR references for the PDTI consortia active in healthcare an urban robotics will also be developed and discussed with the consortia.

The project website was always filled with the latest information about the progress of ECHORD++ as was the LinkedIn group, which has grown to almost 350 members (December 2016) – an increase by 40% compared to the last reporting period. The ECHORD++ twitter account is now fully operational and has 630 followers (December 2016). Also active on twitter are the RIFs in Bristol (1280 followers) and Pisa-Peccioli (370 followers since September 2016).

Press releases by the core consortium were issued concerning the appointment of ECHORD++'s scientific project manager Dr. Reinhard Lafrenz as secretary general of euRobotics AISBL and ECHORD++'s presence at Hannover Messe and AUTOMATICA. The project has been widely covered in offline and online media with 130 references in newspapers, magazines, news websites, TV, etc.

Task 2.4: Maintenance of target-group specific data

The consortium is constantly expanding its network and establishing new contacts with relevant target groups inside and outside the robotics community. The growing contact data base resembles this effort with over 4.300 entries out of which almost 58% are new contacts gained during ECHORD++. Although the network established in the first ECHORD project is the basis for ECHORD++, the consortium is planning to reach a quota of at lest 70% new contacts at the end of the project's runtime.

The press release distribution list built up in the first reporting period is also kept up to date and expanded as new contacts with the media are established.

Task 2.5: Generation of PR-related material

The existing design templates (PowerPoint, Word, flyer, roll-ups, poster) have been adapted to the project's progress and been used at various occasions. In addition, we produced

- a brochure describing all the experiments selected from call 1, which we distributed at various occasions such as bauma fair, Hannover Messe, Robobusiness Europe and AUTOMATICA
- flyers for all the experiments from call 1 to be distributed at conferences, fairs and other events
- promotional material such as pens, stickers and USB-sticks to be distributed at conferences, fairs and other events

For the next reporting period, the consortium will update the experiment brochure with the experiments selected from call 2 and create a folder highlighting the PDTI solutions.

2.2.2 Work Package 3: Experiments

WP3 Highlights

- Successful completion of Call 1 Experiments, with first results extraction,
- Highlights of Call 1 include MODUL, MOTORE++, and SAPARO recording first sales of the product developed,
- Development of the Experiment Booster concept, to close the gap remaining between end of Experiment and successful commercialization,
- Selection of Call 2 Experiments, 16 strong projects selected, addressing a wide of Scenarios.

WP3 is concerned with the Experiments instrument of E++. During the reporting period, work in WP3 revolved around three major topics; 1) the monitoring of experiments in Call 1 and Call 2 (at times, simultaneously in parallel), 2) the selection of Call 2 experiments following the Call issue, which occurred in the previous reporting period, and 3) the beginning of result extraction and exploitation for Call 1. Hereafter, activities performed are discussed task-by-task.

Task 3.1: Phase I – Preparatory activities

This task was completed during the previous reporting period.

Task 3.2: Phase II – Consultation and coaching

This task was completed during the previous reporting period.

Task 3.3: Phase III Call Issue

This task was completed during the previous reporting period.

Task 3.3: Phase IV Evaluation and Selection

This task was completed during the previous reporting period.

Task 3.5: Phase V – Monitoring and Review

Over the eighteen month life-time of Experiments in Call 1, progress made by Experimenters was to be monitored through monitoring calls occurring every two months, and each Experiment was assigned a pair of dedicated moderators, from the monitoring team, to that end. Monitoring performance was initially strong. However, lack of resources towards the middle of the monitoring period (resulting to some extent from personnel changes at E++ partners involved in monitoring activities) had the effect that monitoring performance was not as strong as it should have been.

As the issue was identified, mitigating actions were taken to directly address the problem. In particular, additional personnel was recruited into the E++ project to contribute to Experiments' monitoring, the monitoring team expanded significant efforts to engage Experimenters through a wide range of communication avenues, including in-person interactions at trade fairs, and finally additional monitoring tools were introduced, to ensure fair and thorough assessment of Experimenters' achievements. Specifically, the monitoring team negotiated with Experimenters to add the production of a Final Report as part of their reporting duties. In addition, when possible, a final on-site review of Experiments in Call 1 was conducted. On the occasion of these reviews, an E++ technical expert (from the monitoring team) together with an external expert acted as reviewers. They were provided an overview of the Experiment's achievements, and an in-person demonstration of the product or technology developed. These reviews have proved instrumental in facilitating a fair final assessment of the Experiments' performance. Of the fifteen Call 1 Experiments, by the end of January 2017, twelve of them have had on-site reviews, one has had a final off-site review (lack of resources prevented an in-person demonstration of the technology), and the final two reviews are scheduled to occur in February 2017. A short summary of each Call 1 Experiment's achievement is provided in Annex 3 of this document.

While monitoring performance could have been stronger at points, the results of Call 1 Experiments are very good. Call 1 saw a majority of well-performing (and in some cases, even over-performing) Experiments, and a small subset of under-performing ones. As discussed in Section 2.1.2, following recommendations of reviewers, monitoring results have been represented using a traffic-light system, as seen in Deliverables D3.5.2 and D3.5.3. An overview of the final conclusion of monitoring for Experiments in Call 1 is provided in Annex 4.

Task 3.6: Phase VI – Result extraction and exploitation

As previously mentioned, and as presented in greater details in deliverable D3.6.1, results of Call 1 Experiments are strong. The monitoring team has been closely interacting with Experimenters to collect information reflecting Experiments' outcome. The detail of that information can be found in Deliverable D3.6.1, including changes in TRL over the Experiment's duration and in the two coming years, created jobs, patents, and turnover. Some of these details are show in *Table 1* and *Figure 10*.

A number of elements regarding figures provided in *Table 1* are discussed hereafter. In particular, it should be noted that the numbers were provided by the Experimenters themselves. Regarding status at the end of the Experiment, numbers provided can be expected to be objective. However, the projection over the next two years reflects the Experimenters' subjective opinion. In addition, and taking into account TRLs at the end of Experiments, as shown in *Figure 10*, there remains in most instances a gap to be filled before the technology is truly ready to be made available on the market (a majority of Experimenters reported a final TRL of 7). To further assist Experimenters, the E++ team is investigating the details of a possible Experiment Boosting Programme, to be discussed with the E++ reviewers. Finally, note that the figures provided by the Experimenters for the coming two years, in some cases, do not do justice to some of the follow-up activities. In the case of a number of experiments, there is a clear and well defined strategy to further develop the technology in-house over the coming years. And, especially in instances when one of the partners is a large business that intends to handle commercialisation (e.g. SAPARO) and/or integration in their own product development (MARS), expected commercialisation numbers in the longer-term are not necessarily shared.

	At the end of the Experiment			Expected in the next 2 years		
Experiment	**Patents**	**Jobs**	**Turnover €**	**Patents**	**Jobs**	**Turnover €**
2F	0	0	0	1	0	NA
3DSSC	1	2	0	2	6	400K-1.2M
DEBURR	0	0	0	0	2	150K
EXOTRAINER	0	1	0	0	5	1.5M
LINARM++	0	0	0	1	1	NA
MOTORE++	0	2	120K	0	1	200K
SAPARO	0	0	NA	1	2	NA
PickIt	0	0	0	1	1	NA
TireBot	0	1	NA	1	1	NA
COHROS	0	1	0	0	0	NA
DEXBUDDY	0	1	0	1	5	450K
MARS	0	1	NA	5	1	NA
MODUL	1	4	0	1	15	2M
LA-ROSES	0	1	NA	1	2	NA
GAROTICS	0	0	0	1	3	500K

Table 1: Patents, jobs and turnover resulting from activities in Call 1.

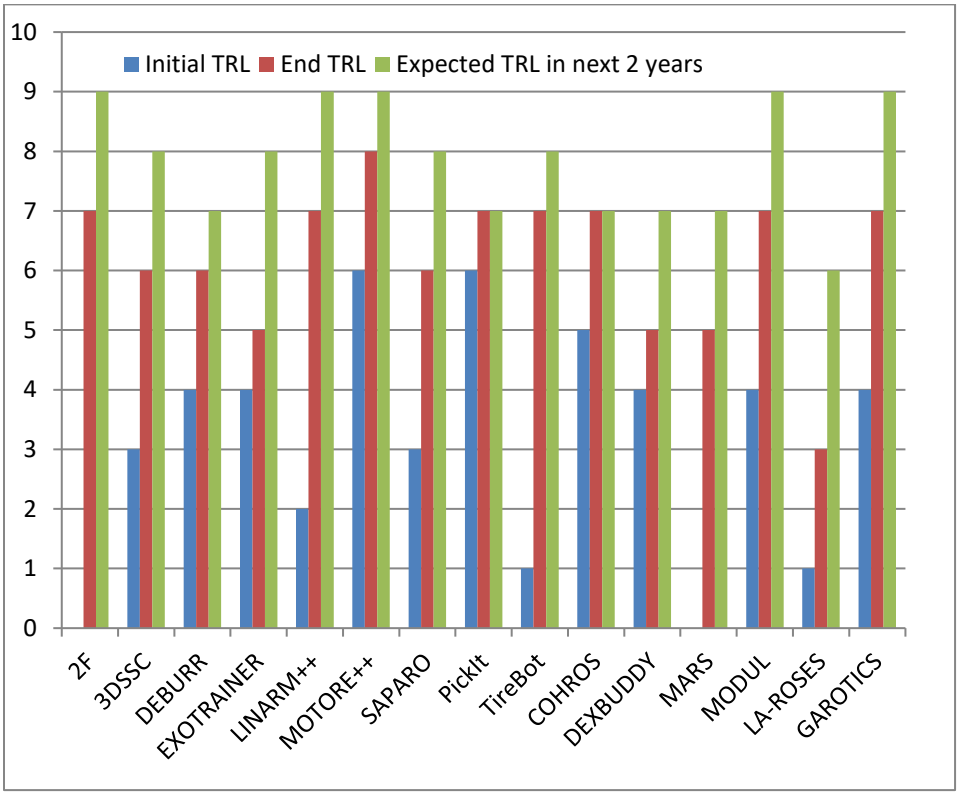


Figure 10: Change in TRL for Call 1 Experiments from start to end, and in the next 2 years.

Experiment	Start date	End date	Scenario
INJEROBOT	01/06/2016	30/11/2017	Agricultural and Food Robotics
FlexSight	01/09/2016	31/03/2018	Cognitive Logistics Robots
SAGA	01/06/2016	30/11/2017	Agricultural and Food Robotics
MAX-ES	01/09/2016	31/03/2018	Cognitive Logistics Robots
AAWSBE1	01/09/2016	31/03/2018	Cognitive Tools and Workers
WIRES	01/09/2016	31/03/2018	Cognitive Tools and Workers
Keraal	01/09/2016	31/03/2018	General Purpose Robotic Co-workers
SAFERUN	01/09/2016	31/03/2018	Cognitive Tools and Workers
DUALARM WORKER	01/06/2016	30/11/2017	Cognitive Tools and Workers
RadioRoSo	01/09/2016	31/03/2018	Cognitive Tools and Workers
HOMEREHAB	01/06/2016	30/11/2017	General Purpose Robotic Co-workers
FASTKIT	01/09/2016	31/03/2018	Cognitive Logistics Robots
CoCoMaps	01/09/2016	31/03/2018	General Purpose Robotic Co-workers
GRAPE	01/09/2016	31/03/2018	Agricultural and Food Robotics
CATCH	01/09/2016	31/03/2018	Agricultural and Food Robotics
HyQ-REAL	01/09/2016	31/03/2018	General Purpose Robotic Co-workers

Table 2: Selected Call 2 Experiments, start and end dates, addressed scenarios.

Task 3.10: Call 2- Phase IV: Evaluation and Selection

The second Call for experiments was issued in the previous reporting period, with a deadline for proposal submission on June 23rd 2015. Thirty four external evaluators were contracted to evaluate the 114 eligible proposals received. Reviewer selection was geared towards the inclusion of a greater ratio of industrial experts, in such a manner that the vast majority of proposals in Call 2 was evaluated by a review panel featuring at least one such industrial expert (true for 87% of Call 2 proposals, up from 66% in Call 1). The evaluation of Call 2 proposals was finalized on the occasion of a panel meeting, held on the October 7th 2015.

Proposals received showed good scientific and/or technological qualities (with an average of 4.47/5, versus 4.20/5 in Call 1), achieved solid Quality (4.25/5 in Call 2, 4.17/5 in Call 1) and Impact scores (4.44/5 in Call 2, 4.07 in Call 1). Sixteen proposals were selected for funding (14% success rate). The chosen Experiments are listed in Table 2, together with their start and end dates, and addressed Scenarios. The detail of the selection process and results is provided in Deliverable D3.4.2. A short description of the goals of each Call 2 Experiment can be found in the Publishable Summary of this document.

Task 3.11: Call 2- Phase V – Monitoring and Review

Call 2 Experiments have begun work either in June or September 2016, as shown in *Table 2*. Monitoring procedures employed to follow and oversee work performed in Call 2 build upon those employed in Call 1, and in particular learning from some of the shortcomings observed in the first Call. A stronger focus was brought to the KPI document. It now provides a concise overview of each Experiment's scope, and

lists all KPIs (technical, impact, dissemination), Deliverables, and Milestones. The content of each KPI document was the result of a negotiation between Experimenters and moderation team, at the end of which both parties agreed to the content included in the document. KPI documents will be maintained to include modification arising during the running time of the Experiments (some such adjustments have already taken place). The greater emphasis on this document is intended to provide an enhanced degree of transparency and accountability to the monitoring process for Call 2.

The overall monitoring procedure follows that employed by the end of Call 1, including two-monthly moderating discussions (with two moderators assigned to each Experiment), the inclusion of a final report and of a final on-site review. Monitoring of Call 2 has, so far, proceeded smoothly.

2.2.3 Work Package 4: Robotics Innovation Facilities (RIFs)

WP4 Highlights

- Widespread engagement of the target audience, driving technology adoption of Robotics, with a strong emphasis on SMEs,
- Continuous technical collaborations at the RIFs with hosted customers,
- Development of service offers providing added value to customers beyond the initial (free) 6-week engagement, which will contribute to paving the way towards RIF sustainability beyond E++,
- Creation of a spin-off, geared towards commercialisation of technology, developed based on a technical collaboration at one of the RIFs (2 jobs, 5 patents),
- Critical and continued learning process of RIF partners on the implication of RIFs being embedded in different companies and organisational structures, company cultures, and different eco-systems,
- Linking RIF customers with financial institutes and banks to finance implementation of robotics technology into SME's manufacturing lines.

The Tasks of WP4 active during the reporting period pertain to the RIFs' actual operation, in particular as it concerns the engagement of potential users, the reception and handling of applications, the selection and scheduling of proposed collaborations, and the work involved in hosting and undertaking the collaborations themselves. Also of significant importance during the reporting period were the efforts exerted, by all RIF partners, in refining RIF operational procedures, in collaboration with one another, and in light of the experience acquired over two years of successful RIF operation.

Task 4.1. Definition phase for the RIFs and evaluation of proposals for structure and RIF handbook

Task not active during the reporting period.

Task 4.2: Set-up phase for the RIFs

While Task 4.2 was not, on a technical level, active during the reporting period, in practice, it is understood that RIFs, which are living, dynamic facilities, are potentially subject to changes in resources over the du-

ration of their activity period. Those changes have come, over the reporting period, in terms of both additional available equipment, and in terms of change in support personnel. Changes were recorded in the updated RIF Handbook (deliverable D4.5).

Task 4.3: Handling of applications, selection, prioritisation and scheduling

While RIFs have advertised the existence (and encouraged the use) of the centralized, online application tool available from the E++ website (*http://echord.eu/rifpanel/*), prospective clients commonly prefer to directly address their application to the desired RIF location. It can be pointed out that few applications emerge spontaneously, the overwhelming majority materializing as the result of a long engagement process of potential customers by the host RIF. At the point that an actual application is formulated, a direct conversation with the host has in most cases been well established, and the application naturally tends to be extended through established, direct communication channels.

Once the application has been formulated, selection criteria are uniform across RIFs, as detailed in the RIF Handbook. However, due to procedural specificities of the different RIFs (in some cases, as a direct result of procedures made mandatory by the host institution), applications are not necessarily explicitly scored against these criteria using the scoring sheet in the RIF Handbook. It is in the case of RIF@Bristol, but in some other cases, evaluation is performed implicitly through the engagement process. As the reporting period is coming to a close, the evaluation procedure is being actively discussed by RIF partners, discussion whose results will be reflected in the RIF Handbook in the short term. Additional details describing the work performed in Task 4.3 during the period can be found in Deliverable D4.3.3.

Interactions	Researcher	Entrepreneur	Start-Up	SME	Large Business	Public Body	Research Centre	HEI	Network	TOTAL
InfoDays	47	0	0	33	1	3	0	9	0	**93**
RIFLaunches	51	0	6	101	20	8	5	5	6	**202**
External Events	0	0	8	81	29	7	19	3	64	**211**
Collaborations	6	0	14	55	21	0	1	0	0	**86**
Workshops	32	3	8	149	40	9	2	13	6	**262**
Market Assessment	0	0	6	2	0	0	0	0	0	**8**
Internships	29	-	-	-	-	-	-	-	-	**29**
E++ Experimenters	0	0	0	5	2	0	3	0	0	**10**
Pipeline	0	2	3	56	32	1	3	2	3	**102**
	165	**5**	**45**	**482**	**145**	**28**	**33**	**32**	**79**	**1014**

	Researcher	Entrepreneur	Start-Up	SME	Large Business	Public Body	Research Centre	HEI	Network	TOTAL
Unique Clients	145	4	38	459	143	21	28	37	73	**948**
% of Total Clients	15%	0%	4%	48%	15%	2%	3%	4%	8%	

Table 3: Engagement and attendance numbers for all three RIFs, over their entire period of operation so far.

Task4.4: Operation of the RIFs with user access

Since beginning operations in earnest (towards the end of the previous monitoring period), all three RIFs have seen a tremendous volume of activities. Some of that volume is reflected in attendance and engagement numbers, as shown for the period since RIFs' launch in *Table 3*. The total number of over a thousand meaningful interactions does provide an idea of the volume of activity and of the scope over which RIFs have engaged their target audience. However, a number of facts should be pointed out and highlighted. In particular, the most significant number in *Table 3* is that of **Collaborations** (entry highlighted in blue), which is the label used to describe the essential type of RIF interaction with a client; that is, the event in which a client physically comes to the RIF, and collaborative technical work is performed for a duration that varies as function of the particular objective, but typically is of the order of six weeks. This number, after two years of operation is of **86 Collaborations**.

A second point that should be raised, is that a significant portion of RIFs' activities is not reflected in the engagement and attendance numbers in *Table 3*. In particular, focusing on the aforementioned Collaborations, the volume of efforts (in terms of time and personnel resources) required to bridge the gap between the initial interaction with a potential RIF client, and the moment when a firm commitment is achieved (signed contract), is very high. For any eventual Collaboration, this recruitment and negotiation process typically has a duration of several months, and not all such recruitment efforts are fruitful. While that situation was anticipated by all three RIF partners, it bears being underlined. In particular, although RIFs are conceived as low-risk, low-barrier of entry service providers, it remains that convincing for instance an SME to invest its own personnel resources in a RIF Collaboration, requires a long process to build the necessary trust, and clearly establish the value of the offered service. In light of these considerations, the number of above Collaborations (of the order of 15 per RIF and per year), can be better appreciated.

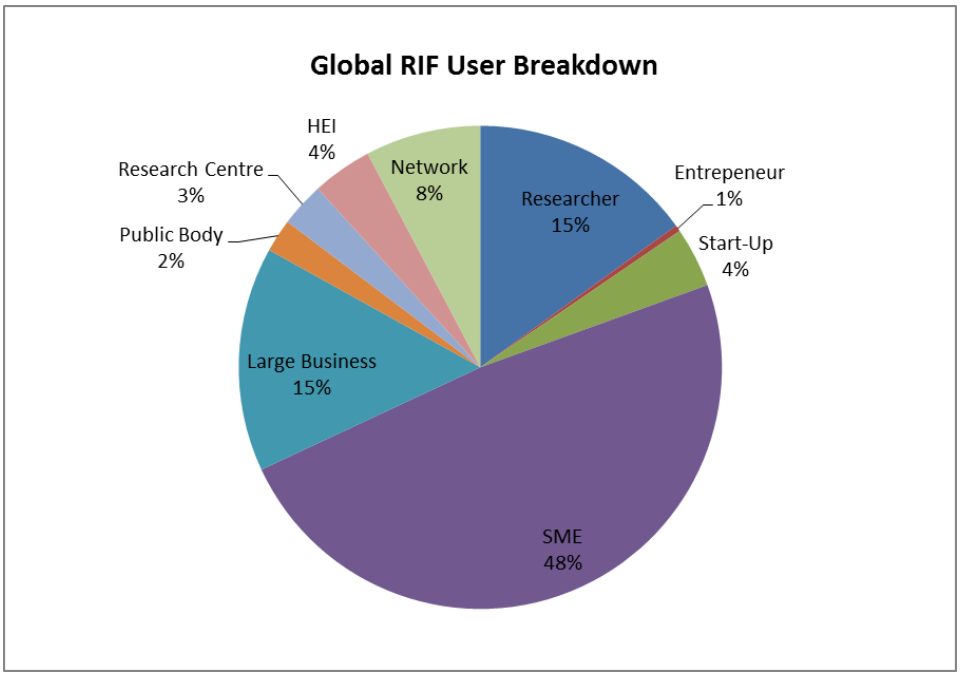


Figure 11: Breakdown of types of RIF customers.

In complement to the specific numbers provided in *Table 3*, the proportions of different types of RIF users engaged are represented in *Figure 11*. The main audience of RIFs by far and large is constituted of SMEs, followed by Researchers (for over 20% when accounting for HEIs and Research Centres), and Large Businesses.

In terms of services offered, the three RIFs have been actively developing support initiatives for their clients with a strong emphasis on assisting start-up companies. The offered services include product prototyping, IP policy and protection guidance, financial assistance, personnel skills development, and market research and assessment. Building upon their respective strengths, and when possible and opportune, tapping into the strength of their host institutions, each RIF has established a support programme made available to all RIF clients, as shown in *Table 4*.

Service Provision	**Bristol**	**Paris-Saclay**	**Peccioli**
Stage 1 Engagement (free access)	6 weeks	6 weeks	6 weeks
Stage 2 Engagement (fee-based)	Referral to BRL Solutions for follow-on R&D	-	-
Experimenting and testing	Yes	Yes	Yes
Assisted living test area	Yes	-	Yes
External test sites	No	-	Yes
Prototype design and production	Yes	-	Yes
Rapid prototyping	Yes (BRL)	-	Yes
Workshop facilities	Yes (BRL)	-	Yes
Concept proofing	Yes	Yes	Yes
Skills development workshops	Yes	Yes	Yes
IP (Intellectual Property) guidance	Via UWE Bristol & Wynne-Jones LLP	-	Yes
Funding opportunities	Via UWE Bristol	-	Yes
Marketing support	In-house & UWE Bristol	-	Yes
Business support	In-house & UWE Bristol	-	Yes
Market analysis	In-house & UWE Bristol	-	Yes
Legal analysis	-	-	In-House & DIRPOLIS
Insurance support	-	-	Yes
Usability, acceptability, dependability and benchmark analysis	Yes	-	Yes

Table 4: Services offered in the different RIFs.

In complement to the above discussion of RIF attendance and overall number of Collaborations, in the following we provide a rapid overview of the specific achievements of each respective RIF. A table summarizing a number of the most successful RIF Collaborations is provided in Annex.

RIF@Bristol achievements

Since launch in November 2014, the **RIF@Bristol** has continued to grow its network of clients within the UK and Europe and refined its service provisions in accordance with market demand. In particular, the RIF has experienced an increasing demand from industry to explore the application of collaborative robotics. As a result, several new cobot robots have been acquired to allow RIF clients to conduct feasibility studies. Staff members have undertaken collaborative robot training with ABB (YuMi), which will continue in Spring 2017. Outstanding achievements are listed below,

- **Representation of Females** has increased in **RIF@Bristol** to reach 23%; to be compared to the UK average of 9% female professionals in engineering,
- **Key Strategic Collaboration** with Welsh Government was established to tap into its SMART Cymru innovation programme network,
- **Successful Collaborations** with three UK companies to conduct feasibility studies (6 week engagements), resulting in the award of KTPs (Knowledge Transfer Partnerships) worth about £130k each,
- **New Key Relationships** established with two banking networks, Natwest and Lloyds,
- **Cross-border Engagements:** expanded collaborations beyond UK with engagements in Denmark and Czech Republic,
- **Branding**: developed the **RIF@Bristol** brand across digital media and physical promotional material including exhibition stand, promotional leaflets and merchandise.
- **Training and Upscaling of the Work Force**: commitment to the continued delivery in the local RIF workshop programmes.
- **Towards Sustainability**: successful trials of a two-tier engagement programme in Bristol to aid the continuation of RIF support beyond the current programme lifecycle.
- **Internship Programme** is growing, launched to aid collaborative work at the Bristol RIF.
- **Collaboration with the European Robotics League (ERL): RIF@Bristol** was certified as an "Anchor Personalised Assisted Living Studio" Testbed for ERL Service Robots.

RIF@Peccioli achievements

During the reporting period, the **RIF@Peccioli** has invested efforts into raising RIFs' visibility on social media (Twitter and YouTube), and through a newly launched bi-lingual website focusing on local audience engagement. The http://www.pecciolirif.com website has attracted 163 views in its first week with an audience spanning a significant portion of Europe (with significant connection number from Italy, Russia and Spain). In complement, two information workshops on the topic of manufacturing and targeting a local audience, were held (with a total audience of over 70 people). In the period, the **RIF@Peccioli** engaged a total of 35 SMEs in preliminary collaborations, from which 7 full-fledged Collaborations emerged. Some of the highlights of the activities undertaken are provided hereafter.

Support of the Experiment Instrument: provided consultancy on Legal Aspects to the SAGA Experiment, as well as links to potential end-users, assisted GAROTICS in connecting with interested end-users and possible providers of test environments, connected LINARM++ and MOTORE++ with BioEngineering of Rehabilitation Lab, Volterra (PI), put TIREBOT in relation with Gruppo Pretto S.R.L., Ponsacco (PI) to develop a use-case,

- **Outreach:** Organized and hosted two workshops to local SMEs, in Pisa and Florence, showcasing the opportunities provided by the RIF instrument; in addition **RIF@Peccioli** is in the process of organizing a new high-profile international event, the "International Robotics Festival," to be held in Pisa in September 2017.
- **Strong Engagement of SMEs:** Pursued active collaborations with SMEs (35 initial engagements, 7 Collaborations), collaborative work included the development of a robotic mobile platform able to check soil conditions in football arenas for TURF and MLR companies,
- **Key Strategic Partnership:** Reached an agreement on a collaborative project in Urban Robotics with the Peccioli Municipality,
- **Robotic Competitions:** Obtained Certification as Official TestBed for Rock EU2 and are in the process of facilitating and hosting two rounds of competitions in 2017, reached agreement to host the local tournament of the ERL Service Robots competition in January 2017.

RIF@Paris-Saclay achievements

During reporting period, the **RIF@Paris-Saclay** has continued structuring its activities to stimulate adoption and use of robotics. The major domains of application addressed are manufacturing and agro-food industry, while also keeping contacts in aeronautics, healthcare, and nuclear industry. The technological area the **RIF@Paris-Saclay** has primarily focused on is that of human-robot collaboration with no fences; using robots from RB3D (A615), SARAZIN Technologies (Cobomanip), KUKA (IIWA), and iSYBOT (SYBOT). Activities of the RIF has led to the creation of the CEA spin-off iSYBOT in October 2016.

Most of the **RIF@Paris-Saclay**'s audience has been national, but a cross-border Collaboration was hosted. A large part of the efforts conducted targeted SMEs, however, strong connections with a number of large businesses, often interested in the development of special solutions, not available off-the-shelf, have been maintained. Collaborations conducted revolved around proof of concepts and demonstrations (TRL6 to 7). As a complement to RIF activities, CEA has taken part in the creation of two technological platforms, dedicated to the adoption of ICT in manufacturing: the Factory-Lab (Paris, launched in October 2016), and FFLOR (East of France, to launch in 2017). Through these platforms, CEA is able to provide RIF clients connections to a number of key players of the "Industrie du Futur" in France, including ACTEMIUM, PSA, DCNS, SAFRAN, Dassault, CETIM, and Arts&Métier. Outstanding achievements during the reporting period are listed below.

- **Highly Successful Collaborations**, in particular on topics related to collaborative robotics for work cells, with focus on finishing operations (sanding, grinding, grape-cutting, polishing) of metal parts,
- **Start-up Creation:** Support for the creation of the spin-off iSybot (2 jobs, 5 patents),
- **License Transfer** to a large European group in robotics,

- **Outreach:** Active contribution to the development of a program to train young children teacher's pedagogues, program to be finalized in 2017. In addition, an information day was organized in March 2016, providing information E++ and its instruments,
- **Dissemination:** Attendance to professional fairs in Europe, including the Salon de l'Industrie, Innorobot, Hannover Messe, and I4MS in Amsterdam,
- **Connections to Professional Networks and Public Bodies:** The RIF@Paris-Saclay maintains regular connections with professional unions like SYMOP, and public bodies including the Ministry of Industry and Ministry of Research and Development in France,
- Connections to European Project: CEA is also engaged since November 2015 in the H2020 HORSE project, in which it constitutes a Competence Centre in robotics for the manufacturing industry.

Task 4.5: RIF Process Adjustment

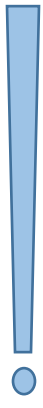
Adjustment of RIF procedures has been a continuous, although gradual process over the reporting period, and more generally since their launch in early 2015. Changes to procedures have been reflected in the RIF Handbook (see D4.5), where details can be found. These changes have been related to: the application review process, the notification of results, the fair treatment of applicants, the rules for access to equipment, and reporting duties of RIF customers, among other aspects. Additional changes have been made to the Handbook to reflect for instance the growing list of available equipment at the RIFs.

The aforementioned changes to procedures have stemmed from lessons learned based on the experience of over two years of RIF operation, and from continuous discussion and sharing of best practices between RIF partners. Among other aspects being currently actively discussed, one may mention the refinement of RIF performance metrics (as used for Quality Management, but also more generally in measuring and presenting impact of the RIF instrument), modalities of communication of technical information among RIF partners (as it pertains to new robotic equipment being made available on the market), and the exchange of connections to system integrators between partners, to facilitate further development beyond the work performed during the RIF Collaboration.

2.2.4 Work Package 5: Public end-user Driven Technological Innovation (PDTI)

WP5 Highlights

- Swift and effective process adaptation to address unforeseen incidents (replacement of Giraff, additional new partner to CLARK consortium to better cover user requirements in Phase II, redress of ARNICA),
- Evaluation measurements developed closely together with public body,
- Selected four strong teams (2 for Healthcare and 2 for Urban) with high potential for successful development of tailor-made robotics technology to fulfil the needs of the public bodies and market uptake of this technology after the runtime of E++,
- Kick-Off meetings for Urban Robotics and Healthcare at the beginning of Phase I, kick-off meeting for Urban Robotics Phase II.



Task 5.1: Phase I – Preparatory activities

All activities finalised in reporting period 1.

Task 5.2: Phase II – Active search for public partners

All activities finalised in reporting period 1.

Task 5.3: Phase III – Evaluation and selection of public bodies

All activities finalised in reporting period 2

Task 5.4: Phase IV – Definition of all details relevant for the call for scenario-specific R&D proposal

All activities finalised in reporting period 2.

Task 5.5: Phase V – Open call for Pilot-specific R&D proposals

All activities finalised in reporting period 2

Task 5.6: Phase VI – Evaluation and selection of proposals

Task 5.6 was finalized for sewer inspection at the end of RPII. For PDTI Healthcare the Open Call was relaunched with an updated Challenge Brief to integrate the telemedical aspects which are necessary in order to deliver a tailor-made technological solution, but which were not sufficiently addressed by the initial call text. This re-launch led overall to stronger proposals with more focussed consortia: In total 15 proposals were received. All 11 from the first call were re-submitted, some of them in a significantly revised form. 5 of them had enlarged their consortium to address the telemedical aspect and 2 consortia replaced at least one of the partners compared to their first submission. The second Panel Meeting took place in Barcelona on 13.07.2015. Three proposals were identified, and were to be funded in Phase I of PDTI healthcare:

ARNICA - Kompaï Robot for Robotized Comprehensive Geriatric Assessment: re-submission with the same consortium, but with a hospital as additional partner (Hospital Broca providing its expertise in the field of implementation of the CGA, and more generally in the analysis of age-related disorders making the consortium complete).

ASSESSTRONIC: completely new proposal.

CLARK - smart Clinic Assistant Robot for CGA: resubmission of former proposal CGAstation under a new name. Three partners of the consortium, including the coordinator, remained stable, whereas Giraff Technologies was substituted by the industrial partner MetraLabs GmbH.

The consortia were informed about the outcome per mail on August 24, 2015. Just after this communication, the CLARK consortium informed TUM about the bankruptcy of one of the partners – Giraff Technologies, a company that had been on the market since 2010, named "Most Promising Innovation" of 2011 by the AAL organisation and participated in other European projects such as ExCITE, Giraff+ and TERESA. The partner who was supposed to provide the platform for the technology development and to commercialise the product afterwards had to be replaced. In total, the consortium evaluated 7 different platform providers against Giraff as originally proposed based on a matrix covering the market perspective (commercialisation), the relevant features for the application, and the overall assessment of the system. The consortium opted for MetraLabs. The matrix and the motivation behind the selection are outlined in *Annex 5*.

A potential disadvantage of MetraLabs is the price (approx. 30.000 EUR) of the complete SCITOS G5 platform. The consortium will use PDTI to lower the prices of the platform to adjust to the budget constraints of publicly funded healthcare providers. One option already identified would be to lower the payload as the platform does not need to help the person to walk.

Task 5.7: Phase VII – Development of prototypes, scientific monitoring, feasibility studies

This task covers Phase I (Design Phase) and Phase II (Prototyping) of the technology development. The activities of RP3 were mainly focussed on Phase I, sewer also started with Phase II. In this reporting period,

Phase I was executed and finished with the selection of two RTD consortia per scenario. For both scenarios, Phase I started January 1st, 2016 and ended on June 30th, 2016. PDTI Urban also started with Phase II at the end of the reporting period.

Concerning PDTI Urban, during these six months the UPC Team has been in continuous contact with the consortia, answering technical questions. Several visits to the Barcelona sewer infrastructure have been realised by the consortia in order to test the prototypes. The public entity managed all these visits giving support to the operational performance. A final document of the "PDTI Sewer Evaluation Criteria Phase I" was elaborated between the public entity, BCASA and the UPC Team, technological coordinator of the process. This document was discussed during the kick-off meeting with all RTD consortia and a final version was sent on April 14th to all the consortia.

Figure 12: Mobility recovery test of prototypes of all three RTD consortia.

The final tests were made on July 6th and 7th, 2016. The Evaluation Panel took place on July 7th at 14pm at UPC. The evaluation was undertaken by two external experts Tjibbe Bouma and Alvaro Iriarte who also assisted with the onsite tests. The evaluation of the three technological proposals at the end of Phase I has been based on marks according to three basic criteria: Scientific and/or technological excellence, quality and efficiency of the implementation and the management of the project and potential impact through the development, dissemination and use of the project. Moreover, the items based on the challenge brief used for the evaluation were:

- Positive evaluation of the tasks and documentation required during the period (deliverables, milestones and dissemination milestones),
- Solution design and the logistics required and operational issues by using the solution,
- Test Series based on the viability of the robotic solution mobility in the sewer network conditions, the communication suitability in underground sewage system network and the autonomy versus mobility of the robotic solution,
- Economic viability of the proposal.

The outcome of the panel meeting - the evaluation and marks elaborated by the two external experts - selected two consortia to continue to phase II: ARSI and SIAR. The evaluation and selection were collected and communicate to the consortia on August, 8th. At the end of the reporting period, PDTI Urban started Phase II on September 15, 2016.

Phase I of PDTI Healthcare was officially kicked-off on February 18th, 2016 at the hospital Sant Antoni Abat in Vilanova i la Geltru. Before the kick-off meeting, the RTD consortia received a first outline of the deliverables that were to be handed in at the end of Phase I, which was discussed and finalised during the kick-off meeting. The deliverables included an initial description of how the RTD consortia were evaluated after Phase I. Furthermore, the RTD consortia received a detailed evaluation matrix a few weeks before the final testing, outlining each category of evaluation and the distribution of scores. The approach in developing the evaluation matrix and the test set-up is outlined in deliverable D5.4.: "Phase I - Design Phase: Selection of the two winning teams for Phase II." During the six months of Phase I, TUM, BOR and the public body were in ongoing contact with all consortia. In particular the public body answered the consortia's questions during phone calls, conference calls and physical meetings at the hospital. However, the intensity of the contact was dependent on the initiative of the consortia.

Figure 13: ARNICA performing BARTHEL Test, ASSESSTRONIC performing MMSE Test, CLARK performing Get Up and Go Test

The final testing was conducted at the Hospital Sant Antoni ABAT in Vilanova i la Geltru on July 6th and 7th, 2016. The panel meeting took place on July, 8th 2016, where the three external reviewers Malcom Fisk, Andreas Müller and Philippe Bidaut performed the evaluation based on their individual scores from the Evaluation Matrix. All reviewers have different fields of expertise to evaluate the solution designs from all perspectives. The evaluation matrix included seven main categories: general specifications, the system, evaluation and data management, ethics considerations, the economic viability, configuration and on-site testing evaluation. Among the evaluation criteria considered most crucial and where the RTD consortia could score highest, was Human-Robot Interaction because this is generally considered especially important in PDTI Healthcare and for the public body.

The outcome of the panel meeting was two selected RTD consortia for Phase II: CLARK and ASSESSTRONIC. For CLARK, there was one condition if they wanted to proceed to Phase II: to add a new partner to their consortium and thus a specific expertise that they lacked in Phase I. The new partner was supposed to help CLARK translate the end-users' needs into design and technical requirements to re-design parts of their solution.

On August 28th, ARNICA submitted a redress claiming a Conflict of Interest (CoI) with one of the independent reviewers. Conflict of Interest is assessed by the ECHORD++ core consortium according to a standard process (http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/pse/h2020-guide-

pse_en.pdf) before evaluators are subcontracted. The case was first evaluated by an internal redress committee. At ARNICA's insistence, the case was finally evaluated by the legal office of the EC who confirmed the correctness of the processes implemented by the E++ consortium to exclude CoI. Closing the redress took three months during which we could not process the Amendment to give funding security. The timeline of PDTI looks as follows at the end of RP3:

ACTIVITIES FOR RESEARCH AND TECHNICAL DEVELOPMENT OF PRE-COMMERCIAL PRODUCTS										
2014	2015					2016				
DEC 3rd	AN 15th - MARCH 15th	APRIL 16th	MAY 4th - JUNE 23r	JULY 14th		JAN 1st - JUN 30th	JUL 7th	JUL 8th		AUG 28 - DEC 6th
Market Consultation Day	Call 1 for RTD Proposals	EXPERT PANEL	Call 2 for RTD Proposals	EXPERT PANEL	Results	PHASE I Solution Design and First Prototype	Final Testing	EXPERT PANEL	Results	Redress

Figure 14: Timeline for healthcare.

ACTIVITIES FOR RESEARCH AND TECHNICAL DEVELOPMENT OF PRE-COMMERCIAL PRODUCTS								
2014	2015				2016			
NOV 20th	JAN15th-FEB28th	MAY 19th			JAN1st JUN30th	JUL6th-7th		SEP15th
Open Market Consultation INFODAY	Call for RTD Proposals	EXPERT PANEL	Results		PHASE I Solution Design and First Prototype	EXPERT PANEL	Results	Kick-Off PHASE II

Figure 15: Timeline for sewer scenario.

Task 5.8: Phase VII – Selection of most feasible prototypes for small-scale test series

Not due in this reporting period.

Task 5.9: Phase VIII – Result extraction and PCP manual generation

Not due in this reporting period.

2.2.5: Work Package 6: Structured Dialogue and Outreach Centre

Task 6.1: Overall outreach and communication planning

The action plan for outreach and communication was updated during the reporting period. The consortium paid special attention to events useful for the promotion of the results of the first call of experiments and of the first phase of PDTI.

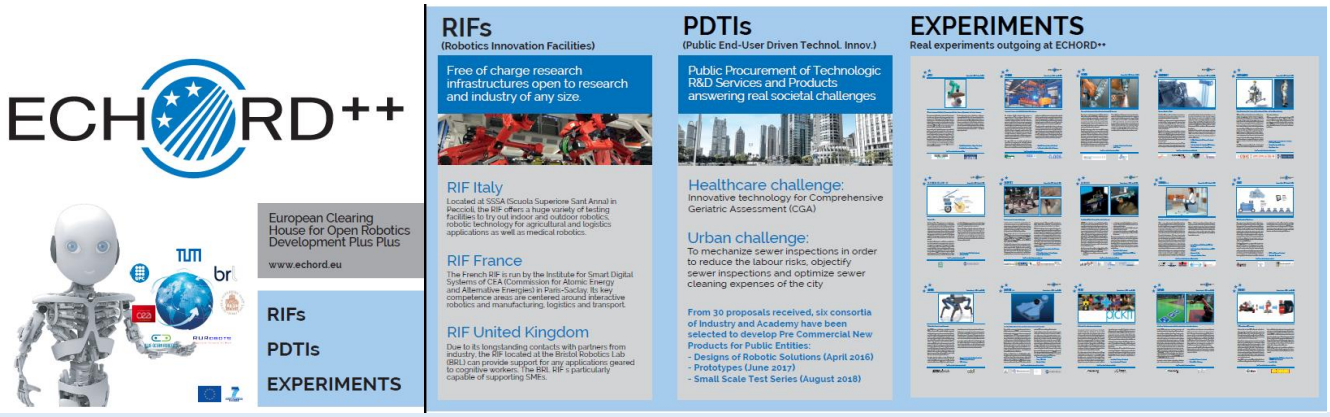
Task 6.2: Representation E++ at workshops, conferences, etc. & Task 6.3: Organisation of major fairs and events

During the last six months of 2015 ECHORD++ has participated in IROS 2015 and Smart City World Congress 2015. In both Fairs, ECHORD++ presented a booth with general information on the three E++ instruments: Experiments, PDTIs and RIFs. A workshop on Urban Robotics was organised on IROS 2015 and at

the Smart City World Congress a presentation on Innovative Public Procurement was performed in the Government Panel. In 2016, different dissemination activities were made by the different core partners of E++. Some experiment prototypes were showcased at Hannover Messe in April 2016, on a shared booth with Bayern Innovative, and at Automatica in June 2016. In this last fair, seven E++ prototypes were shown with great success for all the experiments partners. Later on, in November, the PDTI Sewer Prototypes and videos of ARSI and SIAR were shown at the E++ booth at the Smart City World Congress. E++ also participated in EFTA 2016 and in IROS 2016 with two workshops: Echord++ Experiments Procedure and Healthcare Robotics respectively.

In the following table you can find an overview of the fairs and events ECHOR++ participated in since August 2015:

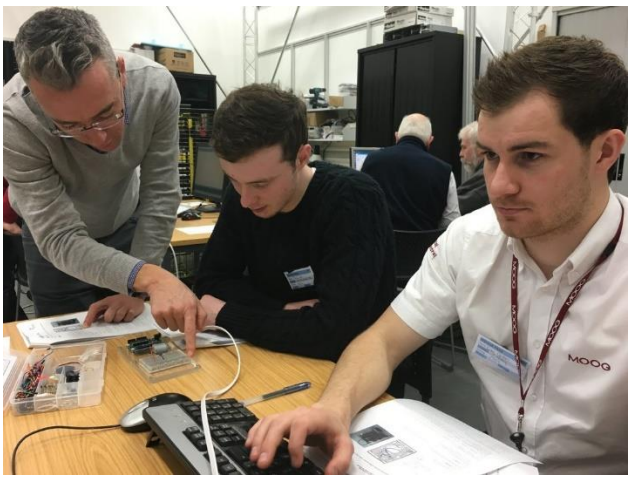
2015				
EVENT	**VENUE**	**DATE**	**INVOLVED IN-STITUTIONS**	**DETAILS**
BBC Panorama	Bristol, UK	August 26th	BRL	Dissemination Event for General Public
Smart Agricul-ture Conference	Birmingham, UK	September, 8th	BRL	Business Conference
Venture Fest Wales	Cardiff, UK	September, 29th	BRL	Business Conference
FT Future of Manufacturing	London, UK	September, 30th – October, 7th	BRL	Business Conference
IROS 2015	Hamburg, Germany	September 29th –October, 1st	UPC, TUM SSSA	STAND. Graphic Image of all the Echord++ Instruments and Experiments Call 1 Brochure
IROS 2015	Hamburg, Germany	October 2nd	TUM, UPC, SSSA	WORKSHOP Urban Robotic Applications. Invited Speakers and call for posters



SMART CITY WORLD CONGRESS & EXPO	Barcelona, Spain	November 17th – 19th	UPC	STAND Echord++ PDTI in Urban Scenarios.

SMART CITY WORLD CONGRESS & EXPO	Barcelona, Spain	November 17th	UPC	PRESENTATION: GOVERNEMENT PANEL GO-32. Developing Innovative Public Procurement Practices. Presentation and open discussion: A. Sanfeliu

2016				
EVENT	VENUE	DATE	INVOLVED INSTITUTIONS	DETAILS
STEM Masterclass	Bristol, GB	January 13th	BRL	Workshop STEM
Intro Mechatronics	Bristol, GB	January 21st, 28th – March, 17th, 24th	BRL	Business Workshop. Introduction to Mechatronics F. Dailami



EPSRC	Bristol, GB	January 26th	BRL	Funding Opportunities SPARC F. Dailami
Welsh Govt-RIF Briefing	Bristol, GB	February 1st	BRL	Training Welsh Government RIF
SME Day (FET)	Bristol, GB	February, 24th	BRL	Business Dissemination
ESTnet Awards 2016	Cardiff, GB	March, 2nd	BRL	Business Networking
Intro to Robot	Bristol, GB	March 3rd , 10th	BRL	Workshop: Introduction to Robots
British Science Week	GB	March 11th	BRL	Series of Events
Venture FEST East Midlands	Leicester, GB	March, 16th	BRL	Business Networking
BAUMA	Munich, Germany	April, 11th-17th	TUM	Stand together with other institutions at the world's most important trade fair for the construction industry. Presentation of the 2F experiment.
MOD Presentation	Filton, GB	April, 15th	BRL	Business Dissemination
HANNOVER MESSE	Hanover, Germany	April, 24th-27th	TUM	Two booths, one with Bayern Innovativ and one upon invitation of the EU Commission
Glos Business Show	Cheltenham, GB	May, 18th-19th	BRL	Business Exhibit and Talk

INNOROBO 2016	**Paris, France**	**May 24th – 26th**	**CEA-UPC**	**CEA participation**
Workshop with CNA		**May 2016**	**SSSA**	**Introduction to CNA's affiliated SMEs to ECHORD++ and the concept of the RIF (audience: 30 people)**
Robobusiness	**Odense, Denmark**	**June 1st - 3rd**	**TUM, BRL, BOR**	**Echord++ booth at the business fair**

Workshop: workshop about healthcare robots & end-users needs. ECHORD++'s Workshop at RoboBusiness Europe focused on the development and implementation of healthcare robotics in collaboration with public bodies. We invited speakers who are working closely together with end-users on developing and implementing different robotic solutions in Danish healthcare institutions. In addition, the three teams ARNICA, ASSESSTRONIC and CLARK working on ECHORD++'s PDTI Healthcare Challenge presented their approaches towards using robots in Comprehensive Geriatric Assessment

Festa de la Ciencia	**Barcelona, Spain**	**June 18th**	**UPC**	**Popular Workshop on Urban Robotics with citizen participation. 3 sessions**

Automatica 2016	Munich, Germany	June 21st – 24th	UPC - TUM	STAND 7 Echord++ Prototypes were presented with a great success

ForItAAL Summer School	Peccioli, IT	June 2016	SSSA	Get to know ECHORD++ and the Peccioli RIF (audience: 50 people)
Science Museum Robot show	London, GB	July, 4th	BRL	Exhibit and Talk
EFTA 2016	Berlin, Germany	September, 6th	UPC	Workshop: Robotics Technology Transfer: Innovation from Academia to Industry (RTT2016). Coordinator Antoni Grau. UPC
Venturefest Wales	Cardiff, GB	September, 28th	BRL	Business Networking
IROS 2016	Korea	October 9th – 14th	TUM, BOR, UPC, BRL	Workshop "Robotic Healthcare"
	Exeter, GB	October, 18th	BRL	Business Networking

Venturefest South West				
Smart City World Congress and Expo 2016	**Barcelona, Spain**	**November 17th – 19th**	**UPC - TUM**	**STAND. PDTI Sewer Prototypes ARSI and SIAR**

Italy-Japan workshop	**November 2016**	**SSSA**	**ECHORD++ and the Peccioli RIF.**
Workshop with ARtex	**December 2016**	**SSSA**	**Introduction to ARtex's affiliated SMEs to ECHORD++ and the concept of the RIF (audience, 50 people).**

During these 17 months E++ conducted a broad range of dissemination activities. It was not always easy to convince Experiments partners to participate in fairs and workshops showing their experiment's results. E++ is encouraging them to participate as we can see in the programmed plan for 2017. An Overview of the programmed activities for 2017 can be seen in the next table.

ECHORD++. WP6. DISSEMINATION ACTIVITIES SEPTEMBER 2016- SEPTEMBER 2017

ECHORD++	2016					2017								
WP1. General Management														
WP2. Service centre				END NOV 30th										
WP3. Experiments. First CALL														
Second CALL START 01/06/-01/09/2016														
WP4. RIFs														END PHASE II
WP5. PDTI START PHASE II 01/09/2016														
	3T / 34-36		4T / 37-39			1T /40-42				2T /43-45			3T / 46-48	
WORKPACKAGE 6 . Structured Dialogue			WORKSHOP HEALTHCARE	STAND & WORKSHOP		STAND? 24m2	Agricultural Workshop		STAND? / SIZE??		WORKSHOP	STAND	STAND	
T 6.3. Organization of workshops, conferences, major fairs and events			IROS 2016	SMART CITY WORLD CONGRESS EXPO		GLOBALROBOT EXPO	EUROBOTICS FORUM	HANNOVER MESSE	INNOROBO		IROS 2016	MEDICA	SMART CITY WORLD CONGRESS	
CORE PARTNERS	AUGUST / SEPT / OCT /NOVEMBER		Oct 9th- 14th	Nov 15th- 17th	DECEMBER	JANUARY Madrid, FEBRUARY	Edinburgh, March, 22-24th	April 24th- 28th	Paris, May 16th-18th	JUNE / JULY / AUGUST	Vancouver, September 24th-28th	Dusseldorf, November 13th-16th	Barcelona, Spain November	
TUM			Coordinator											
SSSA			Attend											
CEA														
UPC		ETFA 2016 E++ Workshop. From ACADEMY to INDUSTRY	Attend	Coordinator						FESTA DE LA CIENCIA I TECNOLOGIA. BARCELONA				
BRL / BRISTOL RIF		VENTUREFEST WALES												
		VENTUREFEST MANCHESTER												
		INTROBIZ EXPO WALES 20/09												
		VENTUREFEST BRISTOL												
BOR														
RUROBOTICS														
EXP1 PARTNERS														
3DSSC 05/2015	?	Industrial European Dairy Show Oct 4th-7th												
CoHRoS	?	PROTOTYPE OK ¿?												
debur	?	Int. Conf. on Photonic Technologies Sep 19th-22nd												
DexBuddy 01/2015	?													
EXOTrainer	YES	MEDICA Nov 14th-17th	ORTO MEDICAL CARE Nov 24th-26th			Prototype			Prototype			Prototype		
2F 05/2015	?													
GARotics 05/2015	?													
LA-ROSES	?		MEDICA Nov 14th-17th											
LINarm++	?	Annual Int.l Conf. IEEE Engineering in Medicine and Biology Society Aug 17th-20th	MEDICA Nov 14th-17th PROTOTYPE OK?											
MARS	?	EIMA Int. Agricultural Machinery Exh. Nov 9th-13th												
MODUL	YES	SINDEX Sep 6th-8th				Prototype		Prototype						
MOTORE++	YES		MEDICA Nov 14th-17th									Prototype		
pickit 01/01/2015	YES	PROTOTYPE OK ¿?												
SAPARO 01/2015	?	PROTOTYPE OK ¿?												
TIREBOT	?													
PDTI HEALTH PARTNERS										3 PROTOTYPES				
AQUAS														
CONSORCI GARRAF														
ARNICA	YES													
ASSESSTRONIC	YES													
CLARK	YES													
PDTI URBAN PARTNERS				3 PROTOTYPES										
BCASA						EIP WATER				Water Innovation Europe 2017				
AJUNTAMENT BARCELONA														
ROBODILLOS	YES			PROTOTYPE OK										
ARSI	YES			PROTOTYPE OK		Prototype								
SIAR	YES			PROTOTYPE OK		Prototype								
EXP2 PARTNERS														
AAWSBE1						Prototype								
CATCH														
CoCoMAPS														
DUALARMWORKER														
FASTKIT									Prototype					
Flexsight								Prototype						
GRAPE														
HOMEREHAB														
HyQReal														
INJEROBOT														
KERAAL									Prototype			Prototype		
MAXES														
RadioRoso									Prototype					
SAFERUN														
SAGA														
WIRES														

Task 6.4: R&D publications and project outcome announcements

The first annual White Paper describing the first 24 months of the PDTI instrument in urban scenario has been prepared during this period. The evaluation process developed in the PDTI Urban Robotic challenge and the lessons learned from it have been specified for futures innovative Public Procurement Calls. The second annual White Paper describes the evaluation process and the lessons learned from PDTI Healthcare challenge. “From lab to market” will be the slogan of the next Echord++ activities based on the project outcomes.

2.3 Project management during the period

WP1 Highlights

- Success in keeping the project on rails in spite of numerous adverse circumstances and unforeseen events
- Delays inherited from previous periods remained but were not made worse In spite the aforementioned difficulties
- Customer satisfaction questionnaires (D2.1.3.) showed a high level of appreciation for the service team – particularly in terms of responsiveness, quality of advice and problem-solving capacity.
- Strong reactivity and commitment to quality management of the coordinating team, as illustrated for example in the mitigating measures put into place to ensure successful conclusion of the Call I experiments

The project management in ECHORD++ is covered by Work Package 1, which is dedicated to the coordination of the whole project, the integration of all the work packages, the establishment of efficient management and collaboration infrastructure, the quality assurance, as well as the control of budget and spending.

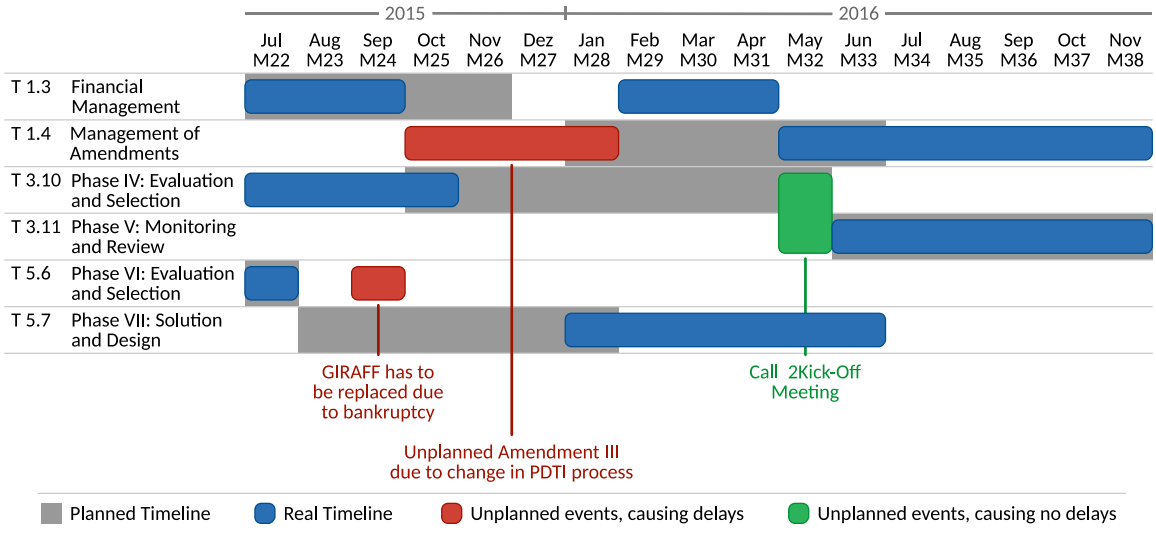


Figure 16: Timeline of amendments and delays.

The additional Amendment to include PDTI RTD consortia had an impact on both: the Cost Claim after the second reporting period (task 1.3.) had to be interrupted for four months, and the Amendment IV to include the Call II experiments (Task 1.4.) had to be delayed for eight months. The positive impact was that the kick-off meeting for Call II experiments was able be held before the amendment started. The kick-Off meeting contributed to streamlining the budgets for Call II experiments.

We missed some of our own KPIs, particularly with regard to finances and contracts, but this was due to a very large extent to unforeseen events and limitations of the FP7 tools (see Task 1.4.). One issue that has taken significant management time has been the change of the PDTI process implemented after the start of the project. This change of the project's set-up had the following implications for ECHORD++:

- Increase of the number of participants to be added to the project due to the increase of competing consortia (from four to six consortia)
- Adding risk to the project as the requirement / obligation of having two competing consortia at the end instead of just one per scenario implies the necessity of having two strong development approaches (an enormous problem in the introduction of innovation procurement as public authorities are obliged to "sponsor and support" potentially weaker approaches to allow for choice at the end). We still query if this should be a mandatory requirement on the project rather than a desirable outcome.
- Adding a third (short phase) at the beginning to strengthen the projects for the second and third phases. This may require an extension of the overall project timescale.
- Separating the integration of Call 2 experiments and PDTI RTD consortia and thus adding another Amendment. Yet another amendment will be required to shift budget between Phase I and Phase II and to reduce the consortia from three to two per scenario.
- Less budget for the individual consortia due to the increase of the number of consortia

Task 1.1: Overall Project Management

Coordination at PI level worked well during the reporting period. Apart from informal bi-lateral meetings between the coordinator and members of the Coordination Committee, we had three official meetings of the **Coordination Committee**: in December 2015 in Munich, in May 2016 in Palma de Mallorca (combined with the kick-off meeting for Call II experiments) and in October 2016 (combined with IROS in Korea). Also, the annual **Advisory Board Meeting** took place and its recommendations have already been largely implemented. There was an in-depth discussion on the infrastructure programs run in the Asian countries by representatives gathered around the table and the ways to trigger technology development for the public sector via those infrastructures (providing a potential link between RIFs and PDTI in ECHORD++ and beyond).

PM has generally been good. In some areas our performance was not as strong as expected, for instance monitoring of some experiments suffered from a lack of resources at some point during the reporting period. The shortcomings were identified and we took mitigating actions, as discussed in the WP3 section.

Task 1.2: Quality Management

An assessment of the project's performance against pre-defined targets is given in *Annex 1*.

In spite of the above delay issues (see *Figure 16*), if we were not able to meet the originally established performance objectives, we still were able to achieve reasonable levels of performance as described by the QM KPIs. When possible, we took measures as best as possible to mitigate the negative effect of these delays. For instance, flexibility in the starting date of Call II experiments, prioritized pre-funding and reimbursements for SMEs etc.

Following reviewers' recommendations, the monitoring of **Experiments** has used a traffic light format to represent each Experiment's status (see Section 2.1.2). This format allows for a single-page, synthetic overview of performance of the entire Call 1 (used in monitoring deliverables D3.5.2 and D3.5.3). In complement, a more detailed traffic-light document was produced, describing with the same traffic-light representation the status of all KPIs, Deliverables and Milestones of each Experiment (found in the six-monthly QM reports D1.2.5 and D1.2.6).

A set of specific performance indicators had initially been proposed for **RIFs**. However, as RIFs were launched and started operation, discussions pertaining to performance assessment of RIFs were conducted among RIF partners, and adjustments to the original set of indicators were performed. These adjustments were motivated by a number of factors, including unanticipated or underestimated difficulties in collecting information from RIF clients following their RIF stay, and challenges (or delays) in producing a fair and accurate assessment of the longer-term impact of the RIF stay on the client. As an illustration, the RIF at Bristol, has had to wait over two years to see the concrete, quantifiable results (in terms of jobs created and generated income) of a RIF collaboration that occurred during the RIF's beta phase Impact was significant, but could only be quantified in the longer term. Similarly, impact of a number of RIF collaborations having occurred during the reporting period will only be quantifiable at later stages. Results of the aforementioned discussion on RIF performance assessment, including selected performance indicators, can be found in the six-monthly QM reports D1.2.5 and D1.2.6.

Overall, the **dissemination and outreach activities** of ECHORD++ were very successful and resulted in a high visibility of the project. The performance of the online channels (website and social media) exceeded expectations, and also the number of references in the media was quite high even though the experiments, and even more the PDTI consortia, have just started their

outreach activities. Most remarkably, the references in consumer media were higher than expected, indicating that advances in robotics technology are more and more interesting for a non-technical audience. The number of contacts in the contact database has not yet reached the target value. However, we are very confident that we will be able to gather the necessary contacts in the last two years of the project. The attendance to workshops, conferences and especially trade fairs was beyond expectations.

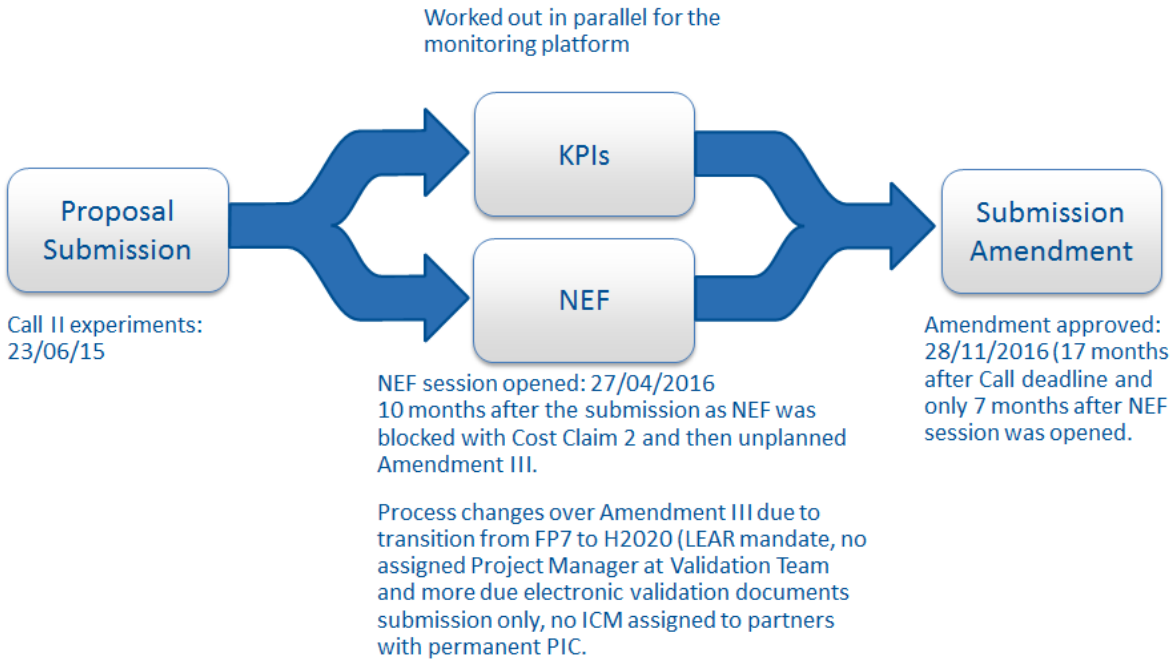
The quality assessment of all deliverables of the core consortium due during this reporting period was performed in physical meetings. The deliverables have been discussed and consolidated. This approach also allowed an alignment of the activities within WP3, WP4 and WP5.

Task 1.3: Financial Management

The total grant of ECHORD++ amounts to 19.750.000 €. A pre-funding of 8.920.000 € was granted to the project. Retaining 5% of the maximum total grant for the security fund, the pre-funding physically transferred to the coordinator's account amounted to 7.932.500 €. After **pre-funding** the core consortium (in total: 1.957.109 €), the Call I experiments (total: 2.534.519 €), the Call II experiments (total: 2.456.351 €), the PDTI public bodies (total: 169.252 €) and the PDTI Phase I consortia (total: 143.390 €), the remaining pre-funding of 671.879 € will be sufficient to cover the pre-funding of PDTI Phases II and Phases III.

All **Cost Claims** geared to RPII were paid as accepted by the EC within 14 days after the overall Cost Claim was accepted.

Task 1.4: Management of Amendments



The Amendment procedure was refined and tested for the integration of Call I partners and Public Bodes (Amendment no. 2). This procedure was validated successfully during the integration of RTD consortia in PDTI (Amendment no. 3, managed in 4 months). However, when we used these procedures for Call II partners, we discovered that the transition to Horizon 2020 had resulted in changes to the amendment process. In particular we encountered the following issues:

- Indirect Cost Models are not foreseen for Horizon 2020 validated partners
- Extended LEAR mandate was also requested for FP7 validated partners

Communication and documents validation processes with the Validation Team were modified without notice

3. Deliverables and milestones tables

Deliverables table

No.	Name	WP No.	Nature	Delivery date from Annex I	Actual/ Forecast delivery date	Planned effort (from Annex I)	Comments
D1.1	Project Plan	1	0	31.10.13	Version 1: 30.09.13 Version 2: 18.06.15	17	Not due in this reporting period.
D1.2.1	1st six- Monthly QM Report	1	R	31.03.14	29.05.14	1.5	Not due in this reporting period.
D1.2.2	2nd six- Monthly QM Report	1	R	30.09.14	30.09.14	1.5	Not due in this reporting period.
D1.2.3	3rd six- Monthly QM Report	1	R	31.03.15	30.06.15	1.5	Not due in this reporting period.
D1.2.4.	4th six-Monthly QM Report	1	R	30.09.15	30.09.15	1,5	The report was provided on time, and then updated three times in order to reflect the entire Amendment III from submission to approval in this report.
D.1.2.5.	5th six-Monthly QM Report	1	R	31.03.16	31.03.16	1,5	The report was provided on time, but then updated three times in order to cover the entire Cost Claim from opening of the NEF to approval in order to report on the strategic KPIs related to this.
D1.2.6.	6th six-Monthly QM Report	1	R	30.09.16	07.10.16	1,5	The report was submitted with a slight delay, but then updated four time in order to cover the entire Amendment IV (inclusion of Call II experiments) and report on all strategic KPIs related to this.
D1.3.1	1st Periodic Report	1	R	31.05.14	02.06.14	2	Not due in this reporting period
D1.3.2.	2nd Periodic Report	1	R	30.07.15	30.07.15	3	Not related to this reporting period.
D1.3.3.	3rd Periodic Report	1	R	29.01.17	30.01.17	3	The report was submitted with one day of delay.
D1.4.1	Amendment request 1	1	O	unplanned	18.06.2015	unplanned	Not due in this reporting period.
D1.4.2.	Amendment Request 2	1	O	30.10.14	30.06.15	2	Inclusion of Call I partners and PDTI public bodies. Originally planned as Amendment 1. Delayed because of unplanned Amendment D1.4.1. which took a long time due to validation of Blue

							Ocean Robotics. Then the first Cost Claim had to be processed. 8 months delay.
D1.4.3.	Amendment Request 3	1	O	Not planned	26.01.16	unplanned	Inclusion of PDTI RTD consortia for Phase I. Original plan (with just two PDTI phases and four competing consortia instead of six) was to combine this with the inclusion of Call II experiment partners.
D1.4.4.	Amendment Request 4	1	O	30.03.16	28.11.16	3	Inclusion of Call II experiment partners. This Amendment was originally planned as Amendment 2 to include the experiment Call II partners and the PDTI Phase I partners together. Still 8 months delay caused by D1.4.1. which was unplanned.
D2.1.1	1st Customer Satisfaction Survey	2	R	30.09.14	30.09.14	16.20	Not due in this reporting period.
D2.1.2.	2nd Customer Satisfaction Survey	2	R	30.09.15	30.09.15	16.20	Not due in this reporting period.
D.2.1.3.	3rd Customer Satisfaction Survey	2	R	30.09.16	30.01.17	16.30	Evaluations done on time (30.09.16), but analysis done in January 2017. Call 2 Applicant Satisfaction Survey, PDTI Applicant Satisfaction Survey.
D2.2	Project Website	2	0	30.11.13	31.10.13	9.5	Not due in this reporting period.
D2.3	Communication Plan	2	R	31.12.13	21.02.14	4	Not due in this reporting period.
D2.4	Contact data base	2	R	.30.11.13	08.5.14	4	Not due in this reporting period.
D2.5	First set of PR-related material including presentations	2	R	31.12.13	28.02.14	8	Not due in this reporting period.
D3.1	Collection of guidelines, templates, and supporting documents	2	R	28.2.14	04.04.14	3	Not due in this reporting period.
D3.2	Report on information events and coaching activities	2	R	31.3.14	31.3.14	9	Not due in this reporting period.
D3.3.1	Call texts	2	0	28.2.14	10.03.14	2	Not due in this reporting period.
D3.3.2	Call texts	3	0	31.07.15	07.05.15	2	Not due in this reporting period.
D3.4.1	Collection of documents with final ranking, evaluation reports, statistics, and funding suggestion	3	R	31.07.14	14.08.14	4	Not due in this reporting period.

D3.4.2.	Collection of documents with final ranking, evaluation reports, statistics, and funding suggestion.	3	R	31.12.15	05.02.16	4	The panel meeting took place in October 2015 and the preparation of the statistical data took some more time.
3.5.2.	2nd six-monthly report on experiment progress and reviews	3	R	31.12.15	31.08.16	6	The report was delayed due to fixing the monitoring platform and the negotiations and KPI document development with all the experiments.
3.5.3.	3rd six-monthly report on experiment progress and reviews	3	R	31.08.16	31.08.16	6	
3.6.1.	Final report on the outcome of the experiments Call I	3	R	30.11.16	27.01.17	10	The report was delayed in order to integrate as many final on-site review results as possible.
D4.1	Operational Handbook	4	R	28.2.14	28.2.14 Version 14: 26.08.15	5.5	Not due in this reporting period.
D4.2	Report on set-up phase	4	R	30.09.14	10.12.14	5.5	Not due in this reporting period.
D4.3.1	Report 1 on selection /prioritisation and user schedules	4	R	30.09.14	30.06.15	0.9	Not due in this reporting period.
D4.3.2.	Report 2 on selection/ prioritisation and user schedules	4	R	30.09.16	24.11.15	0.9	This deliverable was slightly delayed as it took some time to collect the consistent numbers from all three RIFs. Reporting routine of the three RIFs still under revision at that time.
D4.3.3.	Report 3 on selection /prioritisation meeting and user schedules	4	R	30.09.16	31.01.17 (draft on 24/01/17)	0.9	This deliverable was submitted outside of the reporting period and slightly after the due date of the submission of this periodic report. A draft, though, was sent 24/01/17 after a physical meeting in Munich on the recording of relevant data in the three RIFs and the processes standing behind this, all three RIFs being embedded in different organizational set-ups (internal) and different eco-systems (external).

D4.4.1.	Report 1 on the outcome of the individual RIFs	4	R	30.09.15	24.11.15	63.75	This deliverable was slightly delayed as it took some time to collect the consistent numbers from all three RIFs. Reporting routine of the three RIFs still under revision at that time.
D4.4.2.	Report 2 on the outcome of the individual RIFs	4	R	30.09.16	31.01.17 (draft on 24.01.17)	63.75	This deliverable was submitted outside of the reporting period and slightly after the due date of the submission of this periodic report. Again, the evaluation matrix of the three RIFs was intensively discussed during a physical meeting in Munich, as the RIFs are embedded in different environments internal (company structure and culture) and external (eco-system).
D4.5.	Revised operational handbook			30.09.2015	Draft sent December 2016	4	The handbook was revised and re-submitted after the review meeting at reporting period 1. The latest version of the continuously updated handbook has been submitted outside of the reporting period and slightly after the due date of the submission of this Periodic Report.
D5.1	Operational Handbook	5	R	28.02.14	Version 1: 28.01.14 Version 5: 25.08.15	7	Not due in this reporting period,
D5.2	List with the public bodies interested in participating and their proposals as input for the evaluation	5	R	31.07.2014	Version 1: 31.05.14 Version 2: 30.09.14	7	Not due in this reporting period.
D5.3.	PDTI: Open Call and selection of RTD consortia	5	R	30.09.2015	30.09.16	23.5	This deliverable covers the activities for the preparation of the Open Call – from the development of the Challenge Briefs for healthcare and urban robotics, the launch and re-launch of the calls, as well as the selection with the evaluation and the panel meetings. Despite the relaunch the deliverable was provided on time.
D5.4.	Phase I - Design Phase: Selection of the two winning teams for Phase II	5	R	31.03.2016	31.03.16	8	The first version of the deliverable was provided as scheduled, but then it needed revision to include the outcome of the actual on-site testing and the panel meetings. Another revision was done after the redress was closed for healthcare.
D6.1	Action plan for communication / PR measures	6	R	31.12.13	Version 1	4	Communication plan is updated annually.

					31.12.13 Version 2 08.05.14		
6.2.1.	1st Annual White paper on the structured dialogue	6	R	30.09.15	31.12.16	9	This White paper is focused on PDTI. It was continuously updated t follow the process and completed then in December 2016 after the selection of the RTD teams was finalized.
6.2.2.	2nd Annual White Paper	6	R	30.09.16	20.01.17	9	The second Annual White Paper will be replaced by an Elvesier edition on robotics for the elderly. The proposal has been submitted on 20.01.17. This is expected to have a high impact.

Milestones table

No.	Name	Means of verification (from Annex I)	Delivery date from Annex I	Achieved Yes/No	Actual/Forecast achievement date	Comments
MS1	Project Kick-off	Agenda and minutes of this Kick-Off meeting	M1 31.10.13	Yes	Done	Kick-Off Meeting in Paris, mid-October 2013
MS2	Definition Phase for RIFs, PCP Pilots completed	Definition of the flowcharts for both instruments: RIFs (in deliverable D4.1), and the PCP Pilots (in deliverable D5.1)	M6 31.3.2014	Yes	Done	The Operational handbook for both instruments include a flowchart to manage both instruments. For the PCP Pilots the flowchart illustrates the activities geared to the active search for public bodies and the definition of the challenges for both scenarios. After this, the management of the RTD proposals / experiments will be very similar to the experiments (WP 3). The only difference will be that the products /services will be developed in a competitive approach and that it must be possible to compare the progress within the "competition" at any time (so fix common performance indicators for all RTD consortia working on the same scenario).
MS3	First bunch of experiments, RIF users and public bodes for PDTI selected	Experiments: Mail with evaluation results sent out to the applicants PDTI: Mail with evaluation results sent out to the public bodies who submitted a challenge RIF users: First engagement mails sent to RIF users	M13 31.10.2014	Yes	As planned	Experiments: The mail with the outcome of the evaluations was sent to the applicants on 14.08.2014. PDTI – selection of public bodies: The mail to inform the public bodies (who had submitted challenges) about the outcome of the evaluations was set out on 10.10.2014. RIFs: The first RIF users (to carry out the beta test) were attracted to the RIFs on 01.11.2014 (CEA), 27.02.2014 (SSSA) and 31.01.2014 (BRL)
MS4	First bunch of experiments, RIF operational phase start and R&D specification for PDTI finished	Experiments: Start date of first bunch of experiments according to contacts RIFs. First user engagements signed PDTI: technical details for Challenge brief fixed for both scenarios.	M16 01.01.2015	Yes	As planned	Experiments: The first bunch of experiments started on 01.01.2015 (those accepting to start without the signed contract /Amendment) RIFs: the beta test phase was fully running; before the official launch of the RIFs. RIFs: The first RIF users (to carry out the beta test) were attracted to the RIFs on 01.11.2014 (CEA), 27.02.2014 (SSSA) and 31.01.2014 (BRL). This was to gain first experiences. The RIFs were officially launched for unlimited public access on: November 26, 2014 (Bristol); January 14, 2015 (CEA) and February 9, 2015 (SSSA) The specifications for both PDTI scenarios were fixed after the selection of the public bodies in November / December 2014. But a fine-granular specification was developed for the Challenge Briefs prior to the Open Call (launched on 15.01.2015)

MS5	Second bunch of experiments and R&D partners for PDTI activitiesPilots selected	Panel meetings	M30 31.03.16	Yes	Experiments: as planned PDTI Urban: slightly delayed (19.5.15) Healthcare 1: 16.4.15 Healthcare 2: delayed by 3,5 months	The panel meeting for Call II experiments took place on 7.10.2015. The panel meeting on urban robotics (sewer) took place on 19.05.15 The first panel meeting on healthcare took place on 16.04.2015, the second panel meeting after the re-launch of the call on 13.07.015.

4. Explanation of the use of resources and financial statements

The NEF is in amendment mode to process Amendment V (reduction of number of PDTI consortia) between Phase I and Phase II including the shift of budget from TUM to the remaining partners plus termination of the partners who belong to the two PDTI teams that have to leave.