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PYPY

**Researching a Highly Flexible and Modular Language Platform and Implementing it
by Leveraging the Open Source Python Language and Community**

STREP

IST Priority 2

D01.2-4 Overview on Project Organization Activities

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Abstract

In this Technical Report we present the reporting procedures put into place in the PyPy project, including an overview of the deliverable reports submitted during the EU project. We also present the management structure and the regular meeting procedures we employed for coordinating work and decision making processes. Sprint-driven development has been a core practice in the project and sprints were the main form of physical meeting for the developers (both Consortium and community) and we list here the sprints arranged. Finally, we describe the information infrastructure (mailing lists, website, newsletters and IRC channels) that we used for coordinating the PyPy project.

Purpose, Scope and Related Documents

This Technical Report describes the main regular management activities and infrastructure established to coordinate the project both on a technical and on formal level. This report tries to facilitate an understanding of the organization of PyPy's distributed work environment.

This document presents an overview of the means of coordination that have been of use in the project and core results of the coordination efforts, such as reports collected and meetings held. It does not give a detailed insight into how the Consortium has been structured and has evolved during the project (relating to partners, contractual amendments or budget shifts) - nor does it present any technical results of the development process. As such this document is a complement to the Periodic and Final Activity Reports.

This Report contains the information of the three Technical Deliverables D01.2, D01.3, D01.4, packaged into one document.

For more in-depth understanding of the context and evolution of the project please also refer to the following documents:

- D14.1 *Report About Milestone Phase 1*
- D14.3 *Report About Milestone Phase 2*
- D14.4 *Report About Milestone Phase 3* (to be submitted April 2007)

The technical infrastructure providing for the on-line coordination activities is described in [\[PyPy2007c\]](#).



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1 Executive Summary

The distributed environment of the PyPy project with team members spread all over Europe formed a challenge for coordinating the PyPy EU project. An additional requirement, underlying the coordination activities, was the aim to conduct a transparent and equal style of communication and decision making on all involved levels.

This setting required the evolution of sophisticated techniques of virtual communication, both for the organisation of technical coordination and mentoring and the formal organisation of the Consortium itself.

Similar to the project's style of work, the effort of report writing was shared between many people, requiring centralized monitoring in the form of "report release management". To track progress of both work and cost/person-month consumption in this dynamic environment, a number of internal reporting methods were employed.

During the EU funding period various coordinating bodies such as the Consortium, the Technical Board and the Management Team were put into place, all interacting as needed with the active developer group consisting of EU-project participants and contributors from the Community. The planning and coordinating of sprints proved a major task that touched all organizational levels of the project.

In order to organize the information flow on the different project levels, a set of virtual information channels was used, including mailing lists, IRC (Internet Relay Chat) channels and the project's website, in general aiming at providing an infrastructure that is easy to use, transparent and open to external parties.

These activities, involving both technical coordination and formal Consortium management, have obviously not only been carried out by the management team itself, but also by those who were directly involved with the matters at hand.

After the end of the EU project period, the organizational structure of the project is likely going to change in many ways. While, as described in [PyPy2007c], the development and communication infrastructure will continue to be available and maintained, many of the EU-project specific organizational levels will probably not be used any more, such as the Consortium, the Technical Board or the Management Team in their current set-up.

Current plans, being discussed among the Technical Board, community members and Consortium partners outline a continued open project structure, allowing all interested parties to participate in the known communication and contribution channels. There will likely be a trusted fixed group of PyPy core contributors that is going to take care for codebase consistency, development, release and sprint planning. This group is also meant to take care of negotiating with external parties about funding the overall project progress and sprints in particular. It thus acts as an interface towards both the community and commercially interested partners, and will also be the mediating body in case of conflicts. According plans continue to evolve and will be described separately, e.g. in the Periodic [PyPy2007d] and Final Activity Reports [PyPy2007e].

2 Collecting and Monitoring of Reports Including Reports to the EU

2.1 Report Writing Procedure

When we discuss reporting in PyPy, we are referring to both the process of writing deliverable reports of the EU contract and the formal and informal reporting procedures within the Consortium that were put into place to track the developments of the project in a transparent way.

2.2 EU Reports

EU deliverable reports were usually written by more than one person and were also reviewed by other persons involved in carrying out the related tasks and, whenever feasible, by external stakeholders with deep knowledge of the domain area.



The organization of writing reports, monitoring of deadlines and review procedures was done by a jointly assigned 'report release manager' - a technique borrowed from open source software release management. The responsibility of actually delivering correctly and in time remained with the involved partners in the work package, especially the lead partner.

The planned and actual delivery dates of the Contractual and publication dates of the Technical Reports are reported in the Periodic Activity Report of the Second Reporting Period. [PyPy2007d]

Similar to the contractual deliverables, the other contractual project reports, especially the Activity and Management Reports, were common efforts, shared among the people involved with project management as well as most of the other partners, who contributed with review and partner-specific information.

2.3 Internal Reporting

Internal technical reporting took place on partly formal, but more importantly informal levels. A central reporting tool has been the automated SVN-commit-notification emails, providing all involved developers with a traceable view on each change to the shared codebase and documentation, including the author's name and a short log message describing the implemented change.¹

Day-to-day technical assessment was carried out by frequent discussions of the people involved with carrying out the work, via IRC (Internet Relay Chat) mainly, on the channel #pypy on freenode.net, stating problems and usually implementing solutions without formal internal reporting procedures. At the end of the First Reporting Period and for the 4th and 5th contract amendment, however, the Technical Board collected status reports of the single work packages from all partners.

Time and cost tracking was done on a central level. All partners committed their time-track data monthly to a shared repository, providing time consumption transparency to the management team and all other Consortium partners. In addition to the cost statements of the First Reporting period, two interim cost estimates (draft form c information) were collected in summer 2005 and 2006 in order to closely track budget consumption and adjust the budget distribution accordingly.

3 Organizing Meetings and Sprints

3.1 Meetings of the PyPy community: pypy-sync

After the first period of the project, synchronization meetings (pypy-sync) were constituted in order to better synchronize work between sprints when working in this distributed and dispersed manner. The strategy of the sync-meetings was to coordinate work of the community. This was non-funded work as well as funded - although the main work coordinated in many cases covered the EU-funded part of the work. Sync-meetings have been open for anyone to attend, and because of that sync-meetings have only been arranged via IRC, on #pypy-sync on freenode.net. More information on how pypy-sync meetings have been organized in the PyPy project is given in [Düring2006].

During the EU-funded part of the project 27 sync-meetings have been organized.

3.2 Meetings of the Technical Board

The Technical Board was constituted to allow the core developers of PyPy to coordinate the development work of Consortium partners, ensuring the contractual implementation of the project against the background of the open and partly non-funded development process.

¹The technical implementation of the shared repository and commit-notification structure is described in [PyPy2007c].



The Technical Board was responsible for high-level technical decisions, such as technical priorities, work distribution and dealing with problems affecting the technical progress as a whole, such as the health incident of a core developer in Summer 2006.

It should be noted that none of the core developers represented partners with a budget under the Type of Activity “Management of the Consortium”. The role and work of the Technical Board was an integral part of succeeding with the strategy of “leveraging the community”. Much decision power over the technical coordination of the partners, all related to work of a management nature, was delegated to the Technical Board.

During the EU project the Technical Board met 15 times, mostly via IRC on the non-public #pypy-tb channel on freenode.net. When deemed necessary the Technical Board invited non-members involved in the issues on the agenda to participate.

3.3 Meetings of the Management Team

The management team cared for all consortium and contract related matters, acted on developments impacting the formal project implementation and organized the according communication with the EU.

The management team held seven meetings with a prepared agenda and according minutes. Additionally, informal phone conferences, physical and other remote and face-to-face synchronizations took place, coordinating both high-level and day-to-day management issues.

3.4 Meetings of the PyPy Consortium

For Consortium related decisions the representatives of the partners gathered for Consortium meetings, mostly held remotely on IRC on the non-public channel #pypy-consortium, but also physically in relation to project sprints. The Consortium meetings were organized by the management team.

During the EU-funded project period, the Consortium held:

- a kick-off meeting in Saarbrücken, Germany (at DFKI), among other things setting up the Consortium Agreement
- 17 Consortium meetings (3 of which were in physical meetings)

3.5 Sprints

Sprints² have been the core development coordination practice used in the PyPy EU-project. As such sprint planning and organizing as well as having the possibilities to coordinate results working face-to-face when co-located meant that sprints involved coordinating not only technical work but also Consortium- and management-level work, thus touching all levels of the PyPy EU-project.

Sprints have been announced on the PyPy community website, by emailed announcements to the pypy-dev mailing list as well as by announcing on Python mailing lists such as comp.lang.python. The results of the sprints were documented in sprint reports (see section “Newsletter for External Stakeholders”).

Sprint organization has been a shared effort of all partners, involving both technical and formal project management. Here is a list of all sprints arranged during the project:

Before EU-funding period:

²For a more in-depth explanation of the practices of sprinting done in PyPy see [\[PyPy2007b\]](#).

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Location	Start date	End date
Hildesheim, Germany	2003-02-17	2003-02-23
Gothenburg, Sweden	2003-05-24	2003-05-31
Louvain-La-Neuve, Belgium	2003-06-21	2003-06-24
Berlin, Germany	2003-09-29	2003-10-04
Amsterdam, the Netherlands	2003-12-14	2003-12-21
EuroPython/Gothenburg, Sweden	2004-06-01	2004-06-07
Vilnius, Lithuania	2004-11-15	2004-11-23

During the EU-funded period:

Location	Start Date	End Date	Participants
Leysin, Switzerland	2005-01-22	2005-01-29	14
PyCon/Washington, USA	2005-03-19	2005-03-22	13
EuroPython/Gothenburg, Sweden	2005-07-01	2005-07-07	20
Hildesheim, Germany	2005-07-25	2005-07-31	20
Heidelberg, Germany	2005-08-22	2005-08-29	6
Paris, France	2005-10-10	2005-10-16	14
Gothenburg, Sweden	2005-12-05	2005-12-11	22
Mallorca, Spain	2006-01-23	2006-01-29	15
PyCon/Dallas, USA	2006-02-27	2006-03-02	20
Louvain-La-Neuve, Belgium	2006-03-06	2006-03-10	9
Leysin, Switzerland	2006-04-03	2006-04-09	10
Tokyo, Japan	2006-04-23	2006-04-29	12
Düsseldorf, Germany	2006-06-02	2006-06-09	12
EuroPython/Geneva, Switzerland	2006-07-06	2006-07-09	24
Limerick, Ireland	2006-08-21	2006-08-27	7
Düsseldorf, Germany	2006-10-30	2006-11-05	14
Leysin, Switzerland	2007-01-08	2007-01-14	17
Hildesheim, Germany	2007-03-01	2007-03-05	19

4 Project Website / Newsletter for External Stakeholders

4.1 The PyPy Website and Repositories

The PyPy project used two websites. The first is <http://pypy.org>, a project website presenting a summary of the objectives and partners involved of the EU-funded part of the project. This page links to the main community website at <http://codespeak.net/pypy>.

The strategy of the summary project page was to have information through an easy URL for external stakeholders that would not necessarily be too interested in the development side of the project.

The main website has the purpose of catering to visitors that are interested in the development part of the project. There is a clear strategy of avoiding EU jargon in this public community area. Here news articles, sprint announcements, release announcements, sprint reports and extensive documentation is published.³

³Find a more detailed description of the on-line documentation in [PyPy2007a].



All content of the web pages is stored in version control system repositories, just like the project's source code. One part of the repositories is closed to the public, namely the Consortium administration section. Here all minutes of Technical Board meetings, Management Team meetings and Consortium meetings are archived, as well as all contractually related documents, cost statements and time-sheets from the Consortium partners.

All partners, managers as well as developers working in the partners' organisations, can access all data in this repository. This means that the different partners can view each other's submitted information. It was done with the sole purpose of having as much openness and transparency within the Consortium structure as possible.

4.2 Newsletter for External Stakeholders

Because of the aim to influence the main CPython implementation, the community around PyPy and Python was the main target for dissemination of the results. With this taken into account and considering the fact that the core practice for project coordination was through sprints, the newsletters for external stakeholders consisted of the sprint reports produced.

The sprint reports summarize the technical achievements of the sprints, who contributed to them and where the sprints were organized. During the project, 16 sprint reports have been produced.

The sprint reports have been distributed via email to pypy-dev (and Python mailing lists) and uploaded to the website, from where a list of all sprints and their reports is accessible.

4.3 Mailing Lists and IRC Channels

The following mailing lists have been used in the project:

- pypy-funding (Consortium members mainly)
- pypy-eu-svn (automated mailing list tracking changes to files in the Consortium repository)
- pypy-manage (a recent mailing list made for the Management Team to prepare issues that should be brought to the Consortium level for decision making)
- pypy-dev (the main development mailing list) (324 subscribers as of 2007-02-19)
- pypy-svn (automated mailing list tracking changes to files in the source code repository) (56 subscribers as of 2007-02-19)
- pypy-sprint (mailing list for coordinating sprint organisation and logistics)

The main mailing lists have accessible archives dating back to 2003. Backdating makes it easier for new contributors to enter the project and understand the background and evolution of the project.

The following IRC channels have been used in the project all hosted at freenode.net (URL: <http://freenode.net>):

- #pypy-funding (channel for discussing Consortium issues)
- #pypy-manage (recent channel for preparing Consortium issues by the Management Team)
- #pypy-Consortium (recent non-public channel, used for Consortium meetings only)
- #pypy-sync (channel used for pypy-sync meetings)
- #pypy-tb (channel for coordination and meetings of the Technical Board)

The main IRC channels have IRC logs/archives dating back to early 2005. Such logs are used for supporting and validating minutes of the meetings (pypy-sync, Technical Board and Consortium - a quality measure that was not part of the original Quality Assurance plan [PyPy2005]).



5 Glossary of Abbreviations

The following abbreviations may be used within this document:

5.1 Partner Acronyms:

DFKI	Deutsches Forschungszentrum für künstliche Intelligenz
HHU	Heinrich Heine Universität Düsseldorf
Strakt	AB Strakt
Logilab	Logilab
CM	Change Maker
mer	merlinux GmbH
tis	Tismerysoft GmbH
Impara	Impara GmbH

References

- [Düring2006] Beatrice Düring, *Trouble in Paradise: the Agile Open Source Project PyPy, EU-funding and Agile Practices*, AGILE 2006, Minneapolis, USA
- [PyPy2005] *Create QA Plan for the Project*, PyPy EU-Report, 2005
- [PyPy2007a] *Tutorials and Guide Through the PyPy Source Code*, PyPy EU-Report, 2007
- [PyPy2007b] *Documentation of the Development Process*, PyPy EU-Report, 2007
- [PyPy2007c] *Development Tools and Website*, PyPy EU-Report, 2007
- [PyPy2007d] *Periodic Activity Report (Reporting Period II)*, PyPy EU-Report, 2007
- [PyPy2007e] *Final Activity Report*, PyPy EU-Report, 2007