

FOSS projects and the European Research & Development Framework Programme



As part of its research funding activities the European Commission has been funding research into Free, Libre and Open Source software (FOSS) for a number of years. Many projects make use of existing FOSS, or release their results as FOSS. Some focus on FOSS itself, seeking to improve the technologies used and to remove barriers to FOSS adoption and use. These are the projects that are highlighted in this leaflet.

Projects from Framework Programme 6 & 7



QualiPSO aims to help industries and governments to fuel innovation and competitiveness in today's and tomorrow's global environment, by providing the way to use trusted, low-cost, flexible Open Source software to develop innovative and reliable information systems. To meet this goal, QualiPSO is defining and implementing the technologies, processes and policies needed to facilitate the development and use of Open Source software components, with the same level of trust traditionally offered by proprietary software.
<http://www.qualipso.org/>



Free and Open Source software is developed through cooperation between volunteer programmers, public institutions, and the software industry. The **MANCOOSI** (Managing the Complexity of the Open Source Infrastructure) project aims to improve support for software upgrades from the Open Source infrastructure. Maintaining the set of components installed on a machine in a consistent state is a daunting task that is becoming recurrent.
<http://www.mancoosi.org/>

FLOSS [include]

FOSS is arguably one of the best examples of open, collaborative, internationally distributed production and development that exists today. With partners around the globe, the **FLOSSInclude** project will develop a roadmap for international cooperation to realise the potential of FOSS as a tool for social and economic development. <http://www.FLOSSinclude.org/>

Projects investigating Quality and FOSS



Industry, SMEs, public administrations and individuals are increasingly relying on libre (free, open source) software as a competitive advantage in the globalisation, service-oriented software economy. Because of that, detailed, reliable and complete information about libre software is needed, and specifically about its development process, its productivity and the quality of its results. It is important to know how to benchmark individual projects against the general level, and how to learn from, and adapt, the methods found in libre software to their own development processes, especially within industry.

FLOSSMETRICS addresses those needs by analysing a large quantity (thousands) of libre software projects, providing detailed quantitative data about them. Several aspects of libre software development (software evolution, human resources coordination, effort estimation, productivity, quality, etc.) will be studied in detail.
<http://FLOSSmetrics.org/>



Currently, most companies select FOSS in an ad-hoc manner and often neglect to consider important factors. In response, the **Qualoss** project proposes to build a methodology for assessing the robustness and evolvability of FOSS endeavours. This includes the assessment of software code but also of the other elements that constitute an FOSS endeavour, i.e., work products, community members, software processes, and tools and libraries. The results of an assessment on all FOSS endeavour elements will provide a comprehensive picture and will therefore improve the decision makers' confidence in making an informed decision about FOSS endeavours. <http://www.qualoss.org/>

Metric-based evaluation has been at the heart of software quality assessment for some time and the topic has subsequently reached maturity within the research context. The **SQO-OSS** project aims to leverage and expand upon what is known in order to automate software quality assessment. In particular, the project aims to assess open source software and publish a league table of open source quality. Through these means the project aims to raise awareness of automated software quality assessment practices and the quality of open source products whilst concurrently aiding software procurers in their selection of products. <http://www.sqo-oss.eu/>

Other projects from Framework Programme 6



To cope with the need for adaptability at the higher level, the infrastructure at the lower level must support dynamic, on-demand allocation and assembly of resources. FP6 funded **XtreemOS** project is facing this challenge from a fairly unexplored view: embedding grid features at operating system level. Being now at its halfway, XtreemOS project has just released the first version of XtreemOS open source operating system, targeting both PCs and HPC clusters, while another version for mobile devices is foreseen by the beginning of 2009. <http://www.xtreemos.eu/>

SELF sharing knowledge about free software

The **SELF** platform aims to bring together universities, training centres, Free Software communities, software companies, publishing houses and government bodies to centralise, create and disseminate information, educational and training materials on Free Software and Open Standards.



With the growing number of the open-source software ecosystem in terms of contributors, applications and users, the production of large scale open-source software such as a Linux distribution raises complex issues. As Ian Murdock (creator of the Debian project) notes, "Linux is not a product. Rather, Linux is a collection of software components, individually crafted by thousands of independent hands around the world, with each component changing and evolving on its own independent timetable.[...] Linux is not a product. It is a process." **EDOS** tackled this process by bringing together theoretical specialists in constraint programming and formal methods, distributed databases, software engineering and open-source editors. EDOS delivered innovative solutions for dealing with three key Linux processes: (i) software dependency management, (ii) system testing, (iii) code and binaries dissemination over the Internet in P2P. The benefit is a dramatic productivity increase for Linux editors. <http://www.edos-project.org/xwiki/bin/view/Main/WebHome>

Free/Libre/Open Source Software (FOSS) is much discussed, especially in the context of development and economic growth. But very little hard data are available on the use, deployment and development of FOSS outside Europe and North America. **FLOSSWORLD** reproduced a number of surveys previously carried out in Europe (and to some extent in the US) in selected developing countries in Asia, Africa and Latin America. Where in the world do FOSS developers live? Does their contribution and motivation differ based on the countries and regions in which they live and work? What about the role of employers, higher education institutes and governments?

FLOSSWORLD collected, for the first time, comparable data from several countries in order to answer these questions. <http://FLOSSworld.org/>



The **tOSSad** project improved the outcomes of the European FOSS communities by supporting the coordination and networking of these communities throughout Europe.

This was achieved by means of state-of-the-art studies, national programme initiations, usability cases, curriculum development and the development of a collaborative information portal.



Traditionally, flexible computer languages allow to write a program in short time but the program then runs slower at the end-user. Inversely, rather static languages run faster but are tedious to write programs in. Today, the most used flexible and productive computer languages are hard to get to run fast, particularly on small devices. During its EU project phase 2004-2007 **PyPy** challenged this compromise between flexibility and speed. Using the platform developed in PyPy, language interpreters can now be written at a higher level of abstraction. PyPy automatically produces efficient versions of such language interpreters for hardware and virtual target environments. Concrete examples include a full Python Interpreter, whose further development is partially funded by the Google Open Source Center – Google itself being a strong user of Python. PyPy also showcases a new way of combining agile open-source development and contractual research. It has developed methods and tools that support similar projects in the future. <http://codespeak.net/pypy/dist/pypy/doc/home.html>

For further information
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<http://cordis.europa.eu/software-services>