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PLUME–FEATHER, Referencing and Finding Software for Research and Education

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PLUME–FEATHER, Referencing and Finding Software for Research and Education

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Abstract.

PLUME-FEATHER is a non-profit project created to Promote economical, Useful and Maintained software For the Higher Education And THE Research communities. The site references software, mainly Free/Libre Open Source Software (FLOSS) from French universities and national research organisations, (CNRS, INRA...), laboratories or departments as well as other FLOSS software used and evaluated by users within these institutions.

Each software is represented by a reference card, which describes origin, aim, installation, cost (if applicable) and user experience from the point of view of an academic user for academic users. Presently over 1000 programs are referenced on PLUME. Although the server is maintained by a french institution, it is completely open to international contributions in the academic domain. All contained and validated contents are visible to anonymous public, whereas registered users can contribute, starting with comments on single software reference cards up to help with the organisation and presentation of the referenced software products. This first presentation is call for (further) contributions from the HEP community.

1. Introduction

PLUME (“feather” in english) — and its international version FEATHER — has been initiated by the CNRS lab UREC, which has been integrated into the central CNRS computing division DSI in 2011. The PLUME project thus receives fundamental support from the top management levels of one of the big research institutions in France (and Europe). It intends to be a platform “from academic people for academic people” about software. The main goals of PLUME-FEATHER are:

- promote the communities’ own developments,
- contribute to the developement and sharing FLOSS (Free/Libre Open Source Software) information, experiences and expertise in the community,
- bring together FLOSS experts and knowledgeable people to create a community,
- foster and facilitate FLOSS use, deployment and contribution in the higher education and the research communities.

The necessary resources are provided by the main partners involved in the project, including lab members of the CNRS (better known in HEP for its IN2P3 division), Inserm, CEA, RESINFO, RENATER and so on. The French PLUME server contains more than 1000 software reference cards, edited and peer-reviewed by members of the research and education community. It is online since November 2007, and the first English pages have been published in April 2009. Currently there are 84 software products referenced in the PLUME-FEATHER area. Therefore time has come to announce the availability and potential of the PLUME project on the international level to find not only users, but also contributors — editors and reviewers — of frequently used software in our domain.

2. PLUME at the time of CHEP 2012

In its fifth year of existence PLUME will attain 2,000 members from France and elsewhere. From an idealistic project of volunteers it has molted into an official service, which is supported by many research labs in the french speaking community and in particular CNRS. We would like the HEP community to use PLUME-FEATHER, the English portal of PLUME and, in the best case, join us. Looking for your favourite tools — GEANT and ROOT —, you will not be disappointed, but you are probably aware of many more useful software tools and applications that could make their way into the PLUME register, thus sharing your knowledge with the community immediately.

As an example, two out of the software themes in PLUME, which are most related to Computing in High Energy Physics had been exhibited at CHEP 2012 in New York.

2.1. Physics

The relatively recent theme of “physics” is still a vast container of software for optics, hydrodynamics, acoustics, electronics, astronomy and astroparticle physics and, last but not least, particle physics, which are represented for example by the probably most widely used library-framework application ROOT developed at CERN, or the GNU-licensed IDL alternative GDL. On the other hand we have instrumentation software like data acquisition, control and command applications as well as real time programming to the extent of modeling tools for this highly specialized kind of software engineering. The “mechanics” theme has been separated from the physics mainstream, without having found yet its own coordinator, thus going the natural way of splitting more specific themes from a more general portfolio, as the number of referenced software grows. However there is more “physics” software that deserves being known and brought to the knowledge of the community. The coordinator of the “physics” theme is co-author of this paper and welcomes any contact via e-mail concerning PLUME.

2.2. Distributed computing, GRID and Cloud

France Grilles, the National GRID Initiative and French partner of the European GRID Infrastructure EGI, is in charge of this theme, created about one year ago. This theme gathers various types of tools used in distributed computing on infrastructures providing users with a high level of quality. Site administrators may find tools to manage, deploy, monitor servers, clusters or sets of computers. NAGIOS, Maui or Quattor are examples of such tools. Users may find tools to manage their production or their data, such as DIRAC or iRODS. France Grilles and PLUME collaboration is a win-win game. PLUME receives from France Grilles teams skills, knowledge and relationships at national and international level. On the other hand France Grilles uses PLUME as the best tool to present its catalog of software to its french speaking users and to disseminate the developments of its working area worldwide in French and in English. PLUME is also a very fruitful source of contacts in all disciplines and a good way to collaborate with potential users, thanks to the PLUME team.

3. Submittal and Reviewing Process

PLUME defines five types of users for the purpose of its project:

- anonymous visitors — They can see most of the published information contained in the website.
- registered members — They can start to contribute with comments on software reference cards and contact other members via the PLUME e-mail interface. They can suggest (or request) reference cards that do not yet exist for a given software.
- contributors — They have contributed at least once to the site by either writing a reference card or peer-reviewing someone else's reference card.
- coordinators and editors-in-chief — In a way rather similar to classical journals, this team of about two dozens experienced contributors from very various academic domains gathers new proposals, organise reference card editors and peers for reviews, keeping an overall coherent and consistent scheme of the site among all different aspects.

In terms of production, information about any (academically used or produced) software can be published at various stages of its existence.

- At the very beginning, developers may just want to reference a piece of software that has been written in their lab, be it by themselves or other colleagues. This kind of publication allows to keep an up to date register of in-house developed products on one hand. On the other hand, there is a high probability that software has been developed or is going to be developed for similar or identical purposes in other labs. Collaborations on software development can be born or initiated like this.
- Users may install in-house or external software for test purposes. A publication of this fact in a **to-be-tested** card can help find other users in a similar situation, to exchange experience or help out with problems, that may be specific to the academic environment.
- The next step in the life of software in a research lab or university is typically the state of wide usage inside a lab. Its users can give a judgement that is objective albeit focussed on academic usage. These **to-be-validate** cards are of great help to people who want to choose among several available but otherwise unknown products.
- Finally, the last stage of a **validated software** is defined to be used on more than three different sites, hence more than two users. These cards are peer-reviewed, thus granting a high level of the contained information. They are updated at least once per year.

Other special purpose documents about computing resources or relevant news ("briefs") complete the portfolio of services provided by PLUME.

Quality is a buzz-word nowadays, and PLUME also serves this modern approach: Quality includes the announcement of existing and delivered services and products. PLUME is an ideal tool for this.

4. Call for Participation

We hope to receive many visits from HEP users, be it for using existing information or contributing new topics. Interestingly we found a contribution by a FERMI member [1] describing her experience to "beg, borrow and steal" software, otherwise said the software re-use paradigm. This confirmed us in our attempt to make the PLUME-FEATHER project better known to users outside France as well.

The PLUME website is <http://projet-plume.org>.

References

- [1] Heather Kelly, **Fermi Offline Software: The Pros and Cons of Beg, Borrow, and Steal**, this CHEP conference (2012)