

Re: GPL vs LGPL vs CAS

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Richard Fateman wrote:

- > *Again, this is probably not the right newsgroup,*
- > *but I think that the USERS of computers for*
- > *symbolic mathematics would benefit from the*
- > *coordination of all software, free or commercial.*
- >

I think it is the right newsgroup to discuss about how CAS software should be developed, where would you see this kind of discussion otherwise?

- > *It is in fact possible that Maplesoft WILL improve*
- > *GMP (i.e. give something back) even if it does*
- > *not have to.*
- >

It is indeed possible, but currently it seems they don't (maybe I'm wrong, but I don't think they have someone in their staff working on GMP, unlike for example Linux companies that are involved in free software projects) and it is not clear that they give some financial contribution to the GMP team.

And there is one deeper question: the development of science is an open process, therefore the software for science should also be open : the source code of the algorithms in a CAS should be published (I don't know for interfaces, but the distinction could be done, and proprietary interfaces could certainly work over open-source computing software much like proprietary software work with the linux kernel).

- > *I think the mixture of free / LGPL / commercial*
- > *software works pretty well in the Lisp community,*
- > *where various pieces of software, some contributed*
- > *by vendors, work on all ANSI Common Lisp implementations,*
- > *commercial or free.*
- >
- > *Most people will agree that it is a fairly daunting task for the*
- > *free-CAS community to duplicate or surpass existing*
- > *commercial CAS facilities in full generality.*

- > *So a person who insists on using only GPL and*
- > *non-commercial software*
- > *will not have access to all the best software, at*
- > *least any time soon.*
- >
- > *(It is, as has been frequently*
- > *demonstrated, possible for researchers to*
- > *exceed commercial CAS in particular respects, e.g.*
- > *speed on certain problems. This is not the "generality"*
- > *dimension of superiority.)*
- >
- > *Government research funding in the USA for building*
- > *computer algebra systems is \$0.*

There are however most probably academic positions in the corresponding fields of maths or computer science, and I don't see why contributing to an open CAS could not be seen as a research publication, therefore the number is \$0 only because people in these academic positions do not see software development as research.

- > *The continuing prospect*
- > *of EU funding for building a free system is, to me,*
- > *unclear. The fact that MuPAD went in part*
- > *commercial, suggests a problem in funding. There*
- > *is the RISA/ASIR free system in Japan, but I suspect*
- > *it is moving slowly if at all.*
- >

mupad is more open than other commercial systems (except for the kernel). At least if it fails commercially everyone has a copy of the library source code (I would of course prefer to see the library under a free license as it was promised by Oliver Kluge in Lyon in 2003). The problem of funding in EU is probably similar to the US one, it's that people having an academic position do not consider that software development is part of their research work.

- > *On the other hand, one formerly commercial system, Axiom*
- > *is now free. Macsyma, in reality the Maxima*
- > *system based on an older version which was always open-source,*
- > *has become more popular because the commercial 'fork'*
- > *is no longer supported.*

But these systems have suffered from a long hibernation period because the copyright owners needed time to acknowledge that they should be freed. New developments require therefore time (they need to catch up the improvements in CAS algorithms made during the 10 or 20 last years), it is not clear that they will do these improvements and expand outside of their initial users. If for example axiom had been developed openly from

scratch, it would probably be much more different.

- > *I understand that Sun Microsystems*
- > *is going "open source". So maybe commercial development*
- > *has a positive effect on free software, eventually.*
- >

I don't understand your point, Sun has always been ambivalent about open-source software, trashing linux, the only positive effect on free software I see is Open Office but it was not for free software that they did it, it was a commercial strategy against Microsoft (and it is not clear how software patents will be used against Open Office)

- > *Conclusion: I think it would be a mistake to let*
- > *doctrinaire adherence to GPL impede activities in CAS.*
- > *RJF*
- >

I do believe CAS software development should not necessarily be GPL, but at least open-source and the right choice of licence should be made after thinking of the balance of power, e.g. LGPL gives too much advantages to commercial software, dual-licensed GPL/commercial is probably a much better option.