

# LHC Experiment SW Licensing Issues



Meeting with Fastjet developers  
CERN, June 14, 2017

<http://hepsoftwarefoundation.org>

# Licensing Requirements for Experiment SW

- Increasing collaboration around experiments: need to have an explicitly defined licensing scheme
  - Define how the SW can be used by other parties, inside or outside the experiment
- “Industry/commercial partners” are more and more involved in experiment SW
  - Yandex (Russian Google) is a member of LHCb collaboration
  - CMS has some non academic partners too
  - ATLAS have worked with Google and Intel
  - They want to be able to reuse their contributions freely and potentially to reuse some of ours (win-win scheme)
- US government/policy based on the idea that public research is paid via taxes and must be usable by the industry
  - Apache2-like licenses favored over restricted ones
  - To make things simple, tend to be the opposite in Europe...

# Open Source Licenses

- Two main families
  - GPL and the likes: designed to ensure that every modification done or every fork remains open-source, to increase the community participation in the development. Said to be *viral*.
  - Apache2 and the likes (MIT...): designed to favor adoption of the SW by any parties with the conviction that the value of the SW is its community and that there is no advantage to fork it as a private SW. Said to be *permissive*.
  - See the HSF note <http://hepsoftwarefoundation.org/notes/HSF-TN-2016-01.pdf>
- Compatibility issue: an Apache2-licensed SW cannot use GPL-licensed parts
  - Directly or indirectly
  - LGPL is a “relaxed GPL” that is compatible with Apache2 and other permissive licenses
- Devil is in the details, e.g. which court a party can be assigned to
  - CERN as an international organisation cannot be trialed at a national court
- Importance of using well known licenses in case of issues involving lawyers

# Contribution Recognition and Licenses

- Contribution recognition is linked to the copyright, not the license
  - Licenses like Apache2 makes mandatory for any SW using the licensed package to keep the mention of the original copyright
  - Copyright can be owned by the individuals who did the work or the institution who employs them: national law may enforce one (e.g. in France, copyright of a work done in a public organisation belongs to the organisation)
- License is an exception to the default exclusive right of use of the copyright owner
  - Open source licenses make it mandatory to give access to the source in addition to the binary
  - Open source licenses define how contribution recognitions (copyrights) are transferred and what happen to offenders but do not add any protection
  - They impact adoption and how a community is built around the SW

# Fastjet License Issue

- LHC SW analysis done and identified generators as the main problematic SW as far as the licensing is concerned
  - [https://indico.cern.ch/event/643785/attachments/1468728/2271690/lcgstack\\_licenses.png](https://indico.cern.ch/event/643785/attachments/1468728/2271690/lcgstack_licenses.png)
  - Main source of “GPL pollution”
- Fastjet is not the only case but used as a test case to understand what could be done
  - To improve the situation for LHC experiments
  - To meet the developers’ requirements
- Goal of this meeting: have any party understanding others’ requirements, identify possible solutions and agree on how to move forward (if possible!)

# Possible Ways Forward

- Cleanest one would be to change the Fastjet license to something compatible with Apache2
  - Apache2 is the license envisioned by LHC experiments, but not a requirement for its dependencies
  - Main license meeting this requirement is LGPL
  - Changing a license normally requires the ability to contact all copyright owners
- Turn Fastjet into a plugin
  - From the GPL point of view, does not change anything (<https://www.gnu.org/licenses/gpl-faq.en.html#GPLPlugins>)
  - Some people argue that a court will not accept GPL arguments...
  - Open the path for undefined status...
- Ad-hoc “solutions”: double licensing, tolerance for violating the license...