

Software Licence Agreements HSF Policy Guidelines

J. Harvey¹ M. Jouvin² A. McNab³ E. Sexton-Kennedy⁴ T. Wenaus⁵

¹*CERN* ²*Laboratoire de l'Accélérateur Linéaire (CNRS)* ³*University of Manchester* ⁴*Fermi National Accelerator Laboratory* ⁵*Brookhaven National Laboratory*

Abstract

These guidelines were prepared by the HSF Startup Team in order to serve as an aid in establishing a Software Licence Agreement for software projects hosted by the HSF. The report contains background information on open source licences approved by the Open Source Initiative and concludes with a set of recommendations for choosing a licence and instructions for drafting text to include with the source code.

1 Introduction

A simple survey of software packages in common usage in HEP reveals a de facto widespread adoption of different software licences. Moreover policy documents on software licensing in HEP are difficult to find. In 2011 CERN setup a Task Force to provide recommendations for the licensing of software developed at CERN. The final report [1] is worth reading as it contains much useful background information and reference material. The main recommendation states that, "Whenever possible, software owned in whole or in part by CERN should be made available as open-source software and that the open-source licences used for CERN-owned software should be widely used licences approved by the Open Source Initiative (OSI)". This approach is in broad agreement with the policies adopted at other laboratories and has therefore been taken as the starting point for the recommendations contained in this report.

The philosophy of openness is enshrined throughout our field as exemplified by making the results of our experimental and theoretical work generally available. The same approach is followed here in order to help achieve our goal of providing reliable and long-lived software products through collaborative open-source software development. Open Source Software (OSS) is computer software with its source code made available with a licence in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose. The goal of the guidelines described in this note is to allow HSF and its projects to distribute and build upon their respective work. In this regard, HSF follows the example of other leading open-source software endeavours, such as the Apache Software Foundation [2]. This does not preclude the full rights of contributors (copyright owners) to use their original contributions for any other purpose outside HSF.

2 Basic Terminology

We begin by defining some of the key terms as described in [3].

- *Copyright* is a legal right created by the law of a country that grants the creator of original work exclusive rights to its use and distribution, usually for a limited time. Copyright is a form of intellectual property, applicable to any expressed representation of a creative work. It is often shared among multiple authors, each of whom holds a set of rights to use or licence the work. These rights frequently include reproduction, control over derivative works, distribution, and "moral rights" such as attribution.
- *Public domain software* is software that has been placed in the public domain. In other words there is absolutely no ownership such as copyright, trademark, or patent. Unlike other classes of licences, there are no restrictions as to what can be done with the software. The software can be modified, distributed, or sold even without any attribution. This is the simplest way to make open source software and allows people to share the program and their improvements, if they are so minded, but it

also allows the program to be converted into proprietary software. They can make changes, many or few, and distribute the result as a proprietary product. People who receive the program in that modified form do not have the freedom that the original author gave them. A software licence is a legal instrument governing the use or redistribution of software. A typical software licence grants an end-user permission to use one or more copies of software in ways where such a use would otherwise potentially constitute copyright infringement of the software owner's exclusive rights under copyright law.

- An *open source software licence* is a notice that grants the recipient of a piece of software extensive rights to modify and redistribute that software. Copyright law usually prohibits these actions, but the rights-holder (usually the author) of a piece of software can remove these restrictions by accompanying the software with a software licence that grants the recipient these rights. Software using such a licence can meet the conditions to be classed as open source software as conferred by the copyright holder. Open source licenses broadly divide into free software licenses and permissive software licenses. Free software licences include "copyleft" provisions, which require all future versions to also be distributed with these freedoms. These are termed "restrictive" licences.
- *Permissive software licences* do not impose these additional conditions and are usually just a grant of rights and a disclaimer of warranty, thus also allowing distributors to add restrictions for further recipients, or to produce an extended proprietary version of the software. All major open source software licences require that acknowledgement is given to authors of the software in documentation and/or at runtime. In an academic context these provisions can be useful in establishing the impact of a software project, and even when software released under a permissive licence is reused in a closed-source commercial product.

3 Main License Types

3.1 Copyleft License

Copyleft is a general method for making a program free, and requiring all modified and extended versions of the program to be free as well. Copyleft says that anyone who redistributes the software, with or without changes, must pass along the freedom to further copy and change it. Copyleft guarantees that every user has freedom and provides an incentive for other programmers to add to free software. A good example is the GNU C++ compiler.

The spirit behind a Copyleft licence is the creation of an open community of users or developers where the licencees are encouraged not only to improve, correct, complement and integrate the software they receive but also to make available these enhancements to the entire community. The difference between copyleft and non-copyleft licences is that users

77 cannot take the free software and turn it into proprietary software, thus preventing any
78 member of this open community to depart from the principles of reciprocal contribution.

79 The Copyleft principles were laid down by Richard Stallman of the Free Software
80 Foundation in 1985, which was at the inception of the OSS movement through the creation
81 of the GNU project. Copyleft is a general concept, and therefore cannot be used directly;
82 you can only use a specific implementation of the concept. In the GNU Project, for
83 example, the specific distribution terms used for most software are contained in the GNU
84 General Public Licence (GPL) [4]. GPL version 3 was published in 2007 but many copyleft
85 projects (eg Linux) have chosen to continue with GPL version 2. GPL 2 and 3 software
86 amount to 24% and 10% of open source software respectively [6].

87 3.2 Weak Copyleft License

88 These typically follow the same rules as the GPL except that the user may use, unmodified,
89 the free software component in a larger program which is released under a licence different
90 from the free licence. The chief consequence is that the user is not obliged to provide the
91 full source code of its larger work under a copyleft licence.

92 The most widely used example of this type of licence is the GNU Lesser General Public
93 Licence (LGPL). Licences such as LGPL target libraries of software, which are designed
94 to be incorporated unchanged into larger programs. For example, the ROOT software
95 project [5] has adopted an LGPL licence.

96 LGPL is also frequently used for non-library software when there is a particular
97 concern from the licensor that the obligation to release the source of a work incorporating
98 unchanged the GPL-licensed software would seriously hamper its wide adoption. The
99 most common case is when a free library's features are readily available for proprietary
100 software through other alternative libraries. In that case, the library cannot give free
101 software any particular advantage, so it is better to use the LGPL for that library. The
102 LGPL licence is used for the GNU C library, for example, since using the GPL would have
103 driven proprietary software developers to use one of the many other C libraries.

104 As with full copyleft licences which prevent modified versions from being distributed
105 under a proprietary licence, weak copyleft licenses are intended to ensure the non-
106 appropriation by third parties of the Open Source software. As of July 2013, the LGPL
107 was used by 7% of all open source licenced projects [6].

108 3.3 Permissive License

109 These licences allow redistribution of the original or modified software and source code,
110 including under a different licence. Depending on the terms of the permissive licence,
111 the different licences may be proprietary licences or copyleft licences or other permissive
112 licences.

113 The Apache Software License (ASL), initially from 1999 and currently at version 2.0,
114 is one of the most widely used examples of a permissive licence. Like other open source
115 software licences, the licence allows the user of the software the freedom to use the software

116 for any purpose, to distribute it, to modify it, and to distribute modified versions of the
117 software, under the terms of the licence, without concern for royalties. The Apache Licence
118 does not require a derivative work of the software, or modifications to the original, to
119 be distributed using the same licence (unlike copyleft licences). The Apache Software
120 Foundation and the Free Software Foundation agreed that the Apache Licence 2.0 is a
121 free software licence, compatible with version 3 of the GPL licence, meaning that code
122 under GPL version 3 and Apache Licence 2.0 can be combined, as long as the resulting
123 software is licensed under GPL version 3.

124 Other well-known examples of widely used free software licences approved by the
125 OSI include the MIT and BSD licences. The MIT licences from 1988 onwards permit
126 reuse within proprietary software provided all copies of the licensed software include
127 a copy of the MIT Licence terms and the copyright notice. Such proprietary software
128 retains its proprietary nature even though it incorporates software under the MIT Licence.
129 The licence is also GPL-compatible, meaning that the GPL permits combination and
130 redistribution with software that uses the MIT Licence.

131 BSD licences from 1988 onwards are another family of permissive free software licences,
132 imposing minimal restrictions on the redistribution of covered software. Two variants of the
133 licence, the New BSD Licence/Modified BSD Licence (3-clause), and the Simplified BSD
134 Licence/FreeBSD Licence (2-clause) have been verified as GPL-compatible free software
135 licences by the Free Software Foundation, and have been vetted as open source licences by
136 the Open Source Initiative.

137 As of July 2013, the ASL, BSD and MIT permissive licences accounted for 42% of all
138 open source licensed projects [6].

139 4 Specific Constraints

140 4.1 Changing the License

141 The ability to change the license term of a project, including the right to dual-license it, is
142 an exclusive right of copyright holders. Except when explicitly stated otherwise, copyright
143 holders are all the people who contributed to the project. In large projects, after some
144 time, it may make impossible to change the license used by a project.

145 Although this rule applies to any license, it is more a concern for copyleft licences as
146 permissive licenses give anybody the right to fork the project with a new license. For this
147 reason, some projects, when there is no risk (or a low risk) of appropriation of the work
148 by a third party, prefer to use a permissive license in order to keep a greater flexibility
149 to evolve (including restrict) the licence in the future. A well known example is Apache
150 where a development community exists and where most people (including commercial
151 vendors) contribute their modification back to the community even though this is not a
152 legal requirement of the permissive Apache licence.

153 To avoid problems in changing licence, some projects or software foundations (like the
154 Apache Software Foundation) have an explicit transfer of copyright to one single legal
155 entity by each project contributor. This is the main alternative for project with copyleft

156 licenses. As with any change related to licensing, it has to be decided early in the life of
157 the project as it requires the agreement of all copyright holders.

158 Where a non-permissive licence is required to distribute software binaries or packages,
159 one option is maintain the source code repository under a permissive licence but re-licence
160 the software at distribution time under the required licence. This maintains flexibility
161 about what licence to use in the future, but allows linking or repackaging with more
162 restrictively-licensed open source software in the present.

163 4.2 Collaboration Agreements

164 For software developed in collaboration between partners from different institutes consid-
165 eration may be given to establishing a Collaboration Agreement. This should define the
166 licence to be used for the jointly developed software and typically also describes other
167 rules for governing the way decisions are taken e.g. rules for accepting new members and
168 rules for managing the development life cycle of the product. Typically, it also identifies
169 a 'prime distributor' that takes the role of managing and deploying new releases of the
170 software. Transferring copyright to the prime distributor may also help ensure the software
171 can be maintained over the full life-time of the project in situations where the original
172 developer (i.e. owner) can no longer be contacted.

173 4.3 Commercial Exploitation

174 Any software distributed under a given licence may also be distributed under one or more
175 different licence(s). This is often referred to as dual or multiple licensing. A frequent case
176 of dual licensing is the public release of a programme under a Copyleft licence (such as
177 GPL) and, contemporaneously, a bilateral agreement between the programme owner and
178 a third party company for the commercial exploitation of the software.

179 In the case of permissive free software licences, as all permissions for appropriation
180 have been given to any third party, and so commercial exploitation by dual licensing
181 becomes unnecessary. Therefore, permissive licenses, such as the ASL, MIT and BSD
182 licenses, are preferred by many companies because such licenses make it possible to use
183 open-source software code without having to turn proprietary enhancements back over to
184 the open source software community. These licenses encourage commercial adoption of
185 open-source software because they make it possible for companies to profit from investing
186 in enhancements made to existing open-source software solutions.

187 5 Recommendations

188 HSF encourages all its members and partners to make available the software they develop as
189 Open Source, unless forbidden due to external constraints such as collaborative agreement.
190 Only open-source software can become HSF projects. The open-source licence(s) adopted
191 should be widely used licences approved by the Open Source Initiative (OSI). It should

not be necessary to create a new licence and using a unusual licence may hinder the redistribution of the software by third parties.

The exact licence chosen may depend on several factors but they should enable the following key points:

- Make the software distributable by other projects through their natural software distribution channels. This should anticipate their need to distribute modified versions of the software to fix bugs downstream or address compatibility requirements.
- Make the software and its source code reusable by other HSF or open-source projects using the most widely used open-source licences, whether copyleft or permissive.
- Build a community around the software project and maximize the contributions by the users back to the project.

The GNU and Apache projects have demonstrated that these goals can be achieved either with copyleft or permissive licence approaches. Both approaches have vocal supporters and no consensus has emerged in the last 30 years of open source software development.

For projects producing libraries and taking the copyleft route, LGPL should be preferred for program libraries when the goal is to allow wide and rapid adoptions by applications with different licenses.

Permissive licences are good candidates when adoption by commercial partners must be possible and that there is a risk that at a later stage it will be difficult to contact all the copyright holders to discuss dual licensing. This is sometimes a requirement in projects funded by governmental bodies. In the copyleft case, it may be necessary to require that the copyright of contributions are assigned to the project to achieve this.

Whatever the licence chosen, software must contain in the notice a statement acknowledging the copyright owner(s) and the licence chosen. See next section for examples.

In addition, the following points must be taken into consideration:

1. When contributing to an existing project, release your modified versions under the same licence as the original work.
2. A licence should be assigned to tutorials, reference manuals and other large works of documentation. The GNU Free Documentation Licence (GFDL) [7] is a strong copyleft licence for educational works, initially written for software manuals, and includes terms that specifically address common issues arising when those works are distributed or modified. Licences from the Creative Commons family are also gaining ground in this area and provide a viable alternative. [8]

6 Examples

This section contains examples for specifying licence terms, based on real licenses from different HEP laboratories. You can use them as a source of inspiration but you need to customize them to your specific needs and local context.

229 The licence should contain a statement in the header of each source file acknowledging
230 the copyright of the owner(s) and the applicable licence.

231 (i) Copyright

232 6.1 Copyright

233 In the following we give some examples of Copyright statements that are used by CERN
234 depending on whether the software is owned solely by CERN or by CERN and external
235 partners:

- 236 • for software owned solely by a single institute, in this case CERN:

237 © Copyright [year] CERN

- 238 • for software developed by a collaboration but where ownership has been transferred
239 to a single institute, in this case CERN:

240 © Copyright [year] CERN [for the benefit of the [Name of appropriate
241 group] Collaboration]

- 242 • for software owned by partners in small collaborations:

243 © Copyright [year] [names of all copyright holders]

- 244 • for software owned by partners in large collaborations:

245 © Copyright [year] Copyright Holders of [name of the collaboration or
246 joint project]. See [https://link] for details of the Copyright Holders

247 6.2 Applicable licence

248 One of the following licence statements must be included, immediately following the
249 copyright statement, **and followed by the text of the relevant license as shown in**
250 **the references:**

- 251 • For software distributed under the default GPLv3 licence [9]:

252 This software is distributed under the terms of the GNU General Public
253 Licence version 3 (GPL Version 3).

- 254 • For software distributed under the LGPLv3 licence [10]:

255 This software is distributed under the terms of the GNU Lesser General
256 Public Licence version 3 (LGPL Version 3).

- 257 • For software distributed under the Apache licence v2 [11]:

258 This software is distributed under the terms of the Apache version 2.0
259 licence.

- 260 • For software distributed under the BSD-2-Clause licence [12]:

261 This software is distributed under the terms of the BSD-2-Clause licence.

- 262 • For software distributed under the BSD-3-Clause licence [13]:

263 This software is distributed under the terms of the BSD-3-Clause licence.

- 264 • For software distributed under the MIT licence [14]:

265 This software is distributed under the terms of the MIT licence.

266 The verbatim text of the licence should be copied either in a dedicated file which is
267 part of the distribution (in this case the filename is COPYING) or directly below the
268 licence statement.

269 The text of each licence to be copied verbatim for each of these licences can be found
270 here [9,10,11,12,13,14].

271 References

- 272 [1] Final Report from the task force on Open Source Software Licence at CERN: <http://indico.cern.ch/category/4252/>
273
- 274 [2] The Apache Software Foundation: <http://www.apache.org>
- 275 [3] http://en.wikipedia.org/wiki/Software_licence
- 276 [4] GNU GENERAL PUBLIC LICENCE Version 3, 29 June 2007 [http://www.gnu.org/](http://www.gnu.org/copyleft/gpl.html)
277 [copyleft/gpl.html](http://www.gnu.org/copyleft/gpl.html)
- 278 [5] ROOT software terms and conditions: <https://root.cern.ch/root/License.html>
- 279 [6] Top Open Source Licences, source BLACKDUCK, July 2015: [https://www.](https://www.blackducksoftware.com/resources/data/top-20-open-source-licenses)
280 [blackducksoftware.com/resources/data/top-20-open-source-licenses](https://www.blackducksoftware.com/resources/data/top-20-open-source-licenses)
- 281 [7] GNU Free Documentation Licence (GFDL): [http://www.gnu.org/licenses/fdl.](http://www.gnu.org/licenses/fdl.html)
282 [html](http://www.gnu.org/licenses/fdl.html)
- 283 [8] Creative Commons licences: <http://creativecommons.org>
- 284 [9] Text of GPL v3 licence, June 2007: <http://opensource.org/licenses/GPL-3.0>
- 285 [10] Text of LGPL v3 licence, June 2007: <http://opensource.org/licenses/LGPL-3.0>

- 286 [11] Text of Apache 2.0 licence Jan 2004: [http://opensource.org/licenses/Apache-2.](http://opensource.org/licenses/Apache-2.0)
287 0
- 288 [12] Text of BSD-2-Clause licence: <http://opensource.org/licenses/BSD-2-Clause>
- 289 [13] Text of BSD-3-Clause licence: <http://opensource.org/licenses/BSD-3-Clause>
- 290 [14] Text of MIT licence: <http://opensource.org/licenses/MIT>