

History of the CERN Web Software Public Releases

François Fluckiger, Coordinator for open source software licencing at CERN (2011-2013),
Tim Smith, Coordinator for Knowledge and Technology transfer in IT Department

This note is an extended version of the article “Licencing the Web” (<http://home.web.cern.ch/topics/birth-web/licensing-web>) published by CERN, Nov 2013, in the “Birth of the Web” series of articles (<http://home.cern/topics/birth-web>).

It describes the successive steps of the public release of the CERN Web software, from public domain to open source, and explains their rationale. It provides in annexes historical documents including release announcement and texts of the licences used by CERN and MIT in public software distributions.

The world knows that CERN is the place where the World Wide Web was born. It probably also knows that one of the main reasons for the success of the web, beyond its own exceptional merit, is that the CERN web software was made freely available by CERN for anyone to use and improve. This article presents facts and commentary about the free release of the CERN web software, the consequence of which has impacted all levels of society.

This short narrative also illustrates the natural and progressive maturing process of CERN to find the best way to enable the scientific community and society at large to benefit from its software.

CERN was founded to “provide for collaboration among European States in nuclear research of a pure scientific and fundamental character” as stated in its Convention¹. Furthermore, openness was enshrined in the Convention, which states that “the results of its experimental and theoretical work shall be published or otherwise made generally available”.

Public Domain release

It is therefore no surprise that early in 1993, recognizing the large success met by the web software, CERN sought ways of maximizing its use by society: the time was ripe for the web software to be made available freely and at no cost for society.

Following internal lobbying by Tim Berners-Lee and Robert Cailliau, on the 30th of April 1993 CERN issued a public statement signed by Walter Hoogland, Scientific Director, stating that the three components of the web software (the basic line mode client, the basic server and the library of common code) were put in the public domain. The motivation for this action was explained in the statement: “CERN relinquishes all intellectual property rights to this code, both source and binary and permission is given to anyone to use, duplicate, modify and distribute it”.

The objective was clear and the means chosen to achieve it were easily comprehensible by the general public: “public domain” meant “belongs to no one”!

In the early 90’s the concepts of the open source were emerging. Richard Stallman had already created the Free Software Foundation, launched the GNU project and written the GNU General Public Licence (GPL). He was evangelizing the computing community, recommending protection of software by keeping ownership in order to better guarantee its free use.

Yet these concepts were still in their infancy and at CERN, as elsewhere, the feeling remained that the public domain option was the most suitable for “freeing” software. There was also the perception that “relinquishing intellectual property” combined with the term “public domain” looked more philanthropic, in particular when opposed to terms such as “copyright” or “property” which evoked negative connotations in terms of freedom.

¹ The Convention for the establishment of a European Organization for Nuclear Research (1953)

CERN Open Source release

In the summer 1994, Tim Berners-Lee left CERN to create the W3C at the MIT. François Fluckiger took over from him to lead his technical team at CERN. At that time, the Technical Team, comprised of people like Enrik Frystik and Dave Raggett, was preparing a major new release for the autumn, version 3 of the CERN server software called WWW (HTTPD). The first task of François was to publicly release this new version.

By that time, the Open Source movement had become more active, better known at CERN, and the risks of appropriation were more clearly described, in particular by Richard Stallman and the GNU project. François Fluckiger initiated discussions with Eva-Maria Groniger-Voss and Maarten Wilbers from the CERN legal service to evaluate the various options for the new release. It was clearly apparent that reiterating the public domain approach would pose two difficulties. Twenty years later, the same two difficulties still form a duo of issues which are central to any discussion that relates to intellectual property releases: the duo of Attribution and Appropriation. The Attribution issue refers to the fact that organizations which have developed and made freely available a software system may wish that their initial role is not totally forgotten when new versions and derivative works are produced by third parties. The Appropriation issue refers to the risk that an object which does not belong to anyone may be taken by a third party and turned into a proprietary object, denying in turn the right for others to use it freely.

Eva, Maarten and François visited WIPO (World Intellectual Property Organization) in Geneva to seek advice and concluded that the new version, which was significantly different from the previous one, would be released according to the Open Source principle. Open Source meant that CERN was to retain the copyright in order to protect the software from appropriation as well as to secure attribution, but would grant to anyone the perpetual and irrevocable right to use and modify it, freely and at no cost.

The 15 November 1994, François Fluckiger announced the decision with a message sent to the entire web community.² The message explained the new policy and its rationale: *“The new versions will remain freely available, for general use, and at no cost. The only change is that the material distributed will remain copyrighted by CERN. As a consequence, a copyright notice will have to appear in copies, but also, the rights of the users will be protected, in particular by preventing third parties to turn free software into proprietary software, and deny the users the rights to freely use the material.”*

Having opted for an open source approach, the question arose: which open source license to use? Several public licenses existed. They had been developed by open source promoters and were available for insertion in any new software module willing to adopt them. GPL was one of them. However, after some consideration, CERN opted to develop its own specific open source licence in order to more easily accommodate the specific legal status of CERN as an International Organization. The first two phrases of the CERN license text³ clearly summarized the dual nature of the licence: copyright and free use:

“The copyright and all other rights relating to this computer software, in whatever form, including but not limited to the source code, the object code and user documentation, are vested in CERN.

CERN, on a royalty-free and non-exclusive basis, hereby grants permission to use, copy, change, modify, translate, display, distribute and make available this computer software, subject to the following conditions”.

Having made the choice of Open Source and that of a CERN-specific licence instead of a public licence, another decision had had to be made: which category of licence to adopt? Indeed, Open Source licences break down into three main categories, with respect to which obligations may apply to those who, as licensees, receive the Open Source software and create derivative works, by modification or inclusion into a wider work. CERN opted at that time for a fully permissive licence. This meant that the licensees had the right to release derivative works under a licence of their choice, provided they perpetuated the statement attributing the credit of the initial work to CERN: *‘This product includes computer software created and made available by CERN. This acknowledgement shall be mentioned in full in any product which includes the CERN computer software included herein or parts thereof’.* . .

This was the first software released by CERN as Open Source. But we shall see later, CERN was still learning.

² Message entitled: Distribution of CERN WWW software, posted on Tue, 15 Nov 1994 23:05:59 +0100, See appendixes

³ First CERN-specific Open Source Licence, See Appendix

MIT Open Source release

In 1995 the World Wide Web Consortium (W3C) was fully established at MIT, soon complemented with a European Leg at the Institut de Recherche en Informatique et Automatique (INRIA). So whilst V3.0 of the web was the first release by CERN of Open Source software, it was also the last release by CERN of any web software.

Indeed, the ball was now in the court of the W3C. And again, the question arose: in what form to release new versions developed by the W3C? But based on CERN decision in favor of Open Source, as well as on MIT past experience with the X Consortium, a consortium similar to W3C, it became clear to Tim Berners-Lee that the Open Source policy was the only option to both protect and permit free use.

In July 1995, MIT released version 3.1 of the WWW (HTTPD) software, based on the CERN version 3.0. Just as CERN had done six months earlier, an MIT-specific licence⁴ was chosen, close to the CERN one. It was also a fully permissive licence.

Since then all the subsequent versions of the web software released by the MIT were Open Source. They always faithfully reproduced the CERN credit notice. The attribution issue had therefore been satisfactorily addressed by the first CERN-specific licence.

Towards “Copyleft”

By adopting an Open Source policy in 94, CERN had made a significant step towards better understanding the mechanisms for freely distributing its software. But we were still learning and the maturing process was not over yet.

Indeed, a few years later we started to appreciate not only the power but also the risks of a fully permissive licence which allows derivative works to be distributed under a different licence. Even though a fully permissive licence was a powerful incentive for dissemination of CERN software, it held within it the seeds of more subtle forms of appropriation, and more importantly, did not provide the necessary incentive for what was later called “collaborative dissemination”. What is this? Collaborative dissemination is the creation of open communities of users who are invited to improve and complement the software they receive and share their enhancements with the entire community. The vehicle for this is not a permissive licence as it does not encourage the licensees to reinvest their improvements in the community. The appropriate vehicle is Copyleft licensing.

The philosophy of Copyleft licences may be summarized as follows: *“As a User (the Licensee) of the licensed software, you cannot redistribute the original or a derivative work with fewer rights than the ones you yourself received”*. As a consequence, since an Open Source user receives the source of the software, then the user must, in turn, provide the source of any modified version. Furthermore, as a derivative work must be distributed under the same licence, Copyleft licences are said to ensure the non-appropriation by third-parties of the Open Source software

Today, Copyleft licensing is the recommended and most frequently used means for freely and openly distributing CERN software. CERN has abandoned private licences and uses public licences certified by the Open Source Initiative (OSI) authority. Like our research at CERN, this also was a journey of discovery. We had to learn, and this learning was largely achieved through the most famous of all CERN software, the one that changed the face of the world.

⁴ Copyright 1995, Massachusetts Institute of Technology. See Appendix.

Appendixes

Announcement to WWW community of open-source conditions for WWW software

It may still found at <http://tech.groups.yahoo.com/group/www-talk/message/7636> or <http://www.intercom.co.cr/www-archives/1994-q4/0691.html> <http://1997.webhistory.org/www.lists/www-talk.1994q4/0691.html> .

Distribution of CERN WWW software

Francois Fluckiger (fluckiger@vxcrna.cern.ch)

Tue, 15 Nov 1994 23:05:59 +0100

Dear Colleagues,

Some of you asked about the conditions for the distribution of new versions of the CERN WWW Library of Common Code (libwww), the CERN Line Mode Browser (www) and the WWW HTTP Daemon (httpd).

The new versions will remain freely available, for general use, and at no cost. The only change is that the material distributed will remain copyrighted by CERN. As a consequence, a copyright notice will have to appear in copies, but also, the rights of the users will be protected, in particular by preventing third parties to turn free software into proprietary software, and deny the users the rights to freely use the material.

These principles are those used by most distributors of free software, including the X consortium.

The proper copyright notice is being ratified and will be available in a few days.

We hope all those who have trusted CERN WWW software will continue to do so, and will appreciate that these conditions not only maintain the free distribution but better protect it.

Francois Fluckiger
Leader, WWW development, CERN

First CERN open source licence used in November 1994 for HTTPD version 3.0

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MIT open source licence used in July 1995 for HTTPD version 3.1

Used in July 1995 by MIT for release 3.1 and subsequent versions

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webmaster@w3.org, May 1995

Acknowledgement to CERN by MIT in WWW Software Releases

Present in July 1995 MIT HTTPD release 3.1 and subsequent versions

CERN ACKNOWLEDGMENT

"This product includes computer software created and made available by CERN. This acknowledgment shall be mentioned in full in any product which includes the CERN computer software included herein or parts thereof."

Summary of historical facts

Date	Facts
Apr 1993	<ul style="list-style-type: none"> • CERN relinquishes the Intellectual Property rights to the WWW Software (three parts) and puts it in the Public Domain (30/04/1993). • Result of lobbying by Tim Berners-Lee and Robert Cailliau • Signed by Walter Hoogland • Main part (“HTTPD”) is Version 2.04
Jul-Aug 1994	<ul style="list-style-type: none"> • Tim Berners-Lee moves to MIT. • François Fluckiger (FF) takes over the management of the CERN WWW technical team.
Oct1994	<p>CERN WWW technical team prepares major new release (version 3) of the core Software (“HTTPD”)</p> <ul style="list-style-type: none"> • FF Eva Groniger-Voss (EG-V) and Maarten Wilburs (MW) from the legal service evaluate options. • Two issues are identified: Appropriation by Third Party and Loss of Attribution to CERN. • EG-V, MW and FF meet IPR expert at WIPO, Geneva • First CERN-specific open-source license developed by EG-V and MW. <ul style="list-style-type: none"> ○ Licence is fully permissive. ○ Anyone is authorized to create derivative works (by modification or inclusion) and licence it under a different licence. ○ Obligation is however made to licensees to perpetuate the credit to CERN
Nov1994	<ul style="list-style-type: none"> • FF announces the 15/11/1994 on public WWW lists that the next version will be copyrighted by CERN but will remain free. • He explains that <i>“the rights of the users will be protected, in particular by preventing third parties to turn free software into proprietary software, and deny the users the rights to freely use the material”</i>
Nov 1994	<ul style="list-style-type: none"> • CERN releases Version 3.0 of WWW (HTTPD) under the new CERN Open Source software licence • Licence is permissive for inclusion and modification. Contains specific obligation to maintain CERN credit in derivative works. • This is the last version released by CERN.
July 1995	<ul style="list-style-type: none"> • MIT releases Version 3.1 of WWW (HTTPD) under an MIT open-source SW licence. • MIT licence close to CERN licence, fully permissive. • MIT respects CERN licence obligation to perpetuate credit to CERN.