The CERN Open Hardware Licence

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DOI: 10.5033/ifosslr.v4i1.65

Abstract
The CERN Open Hardware Licence was drafted to provide a framework for the collaborative development of hardware. The rationale behind the approach are set out and a summary of the provisions provided.

Keywords
Law; information technology; open source hardware

Introduction/background

It all started with the White Rabbit. Not any White Rabbit – a timing system initially developed for experimental physics facilities able to synchronize ~1000 nodes with sub-nanosecond accuracy over fibre lengths of up to 10km. And with an idea, a realisation, that hardware development need not be done in isolation, by a group of persons or entities with relatively long-standing or established relationships, but may instead gather contributions ranging from the single individual designer sitting in his basement to whole design teams from large organizations. Such cooperative development would have the double benefit of avoiding duplication of efforts while capitalising on the know-how, expertise, and ideas of dozens of contributors. Thus was born the Open Hardware Repository[1] (OHR). The second step to be taken to consolidate the envisaged scheme was to define the rules for sharing and distributing the designs placed on the OHR, and while the goodwill of contributors was driving the effort, it was also felt that a legal framework was to be put in place for contributions made by CERN to the OHR. Javier, the initiator and driver of this effort, contacted the Knowledge Transfer Group (KT) at CERN with well-defined ideas – collaborative development done in an open source manner – and a request for support – implementing this open source approach for electronics designs. KT indeed has the mission to optimise the impact CERN has on society, through, in particular, the dissemination of its technologies and know-how. In this regard, one of the goals underlying the framework was being able to track dissemination of the CERN electronics designs while ensuring recognition of their

1 http://www.ohwr.org

origin.

Main issues considered

If the aim was to do open source hardware development, then why not simply use an existing open source software or documentation licence? These options were of course carefully considered. Two of them were rapidly dismissed - a software or a documentation licence, albeit open source, did not sufficiently acknowledge the fact that tangible products were to be manufactured on the basis of the licensed documentation. This, incidentally, is one of the main difficulties with open hardware.[2] How adequate or useful is copyright licensing for this type of work? Copyright protects the expression of an idea, not the idea itself. Whether copyright subsists in the type of design drawings at hand is in itself a point to argue. Furthermore, does copyright protection extend to the transformation of a 2D work into its 3D form?[3,4] Nonetheless, assuming copyright does subsist, the approach was taken that a licence to the documentation[5] could well be the basis on which to form a contractual relationship between the licensor and the recipient wishing to either modify the design or manufacture products based thereon.

Also, one of the objectives CERN wished to attain through this framework was to track the actual ambit of dissemination of its designs. A mechanism to obtain information about the products manufactured on the basis of the documentation was hence on the wish list of licence features. Another item also on the wish list was a recognition of CERN's status as an Intergovernmental Organization for dispute settlement purposes. These two features did not appear in the existing open hardware licences, and thus was taken the opportunity to draft a licence which took into account these elements.

Persistence

One of the first choices that had to be made when initially drafting the CERN OHL was whether to make it copyleft. Considering CERN's rationale behind engaging in the open hardware approach, it was a thoroughly discussed question. On the one hand, while not wanting to be restrictive for the licensee, allowing redistribution under possibly 'proprietary' terms did not seem consistent with the goal of tracking dissemination. It was also felt fair that, should someone modify and distribute the documentation, the original licensor could benefit the same way that the licensee did, by obtaining the same licence conditions for the modifications as initially applied to the original work. There would therefore be some return for the original licensor. On the other hand, commercial considerations were also taken into account. Hardware is fundamentally different from software in

2 See John R. Ackermann, "Towards Open Source Hardware", University of Dayton Law Review, Volume 34:2 Winter 2009 p. 183, available at http://www.tapr.org/Ackermann_Open_Source_Hardware_Article_2009.pdf (accessed January 31, 2012)

3 See for instance in the UK the Copyright, Designs and Patents Act 1988: although it would be an infringement of the copyright in an artistic work to make a copy in three dimensions of a two-dimensional work (s.17(3)), s.51 provides that copyright in a design document is not infringed by making an article from it.

4 See S Bradshaw, A Bowyer and P Haufe, "The Intellectual Property Implications of Low-Cost 3D Printing", (2010) 7:1*SCRIPTed* 5, available at http://www.law.ed.ac.uk/ahrc/script-ed/vol7-1/bradshaw.asp (accessed January 31, 2012)

5 Documentation is defined as: "schematic diagrams, designs, circuit or circuit board layouts, mechanical drawings, flow charts and descriptive text, and other explanatory material that is explicitly stated as being made available under the conditions of this Licence."

that tangible goods are the ultimate outcome of the documentation – a manufacturer will necessarily enter the game at some point in time. Unlike software which can be distributed virtually cost-free, hardware requires very real investments for manufacture and distribution of the products concerned. Could a copyleft licence discourage companies from manufacturing and commercialising open hardware? Consultation with a few potential manufacturers of products based on documentation licensed as open hardware indicated that they were willing to engage with this scheme. Furthermore, should companies not wish to use copylefted documentation for manufacturing products, they could always approach the licensor(s) to request different conditions. Dual licensing could be an option – even though in practice only achievable in the event the number of licensors concerned is limited (except where elements of the design are licensed under very liberal, academic-style licences). This option could bring another kind of return, whether financial or otherwise.

Another important factor to take into account for this decision was the question of compatibility of this licence with other (types of) licences. This is an issue which is being discussed in particular in the context of v.1.2 of the CERN OHL.

Recognition

As mentioned, it is important for CERN that it is able to demonstrate its impact on society, and the extent of dissemination of its work and technologies is one type of information helping achieve this goal. Thus, receiving information on the number of products manufactured using CERN open hardware documentation appeared on the wish list of elements to include in the licence agreement. Nonetheless, CERN did not want to scare companies – the purpose was not to obtain sensitive data or impose reporting obligations. It was also rapidly pointed out that this could not be formulated as a hard requirement or it would fail the 'desert island' test. What remains is hence an invitation for manufacturers to inform the licensors having expressed interest in receiving this information about the type, quantity, and dates of production of products based on the documentation. The requirement to maintain all copyright notices on the documentation fulfils its wish to ensure the proper acknowledgement of its contribution.

The CERN OHL v.1.1[6]

Throughout the drafting process, one of the concerns for the CERN OHL was to keep it as user-friendly as possible, not foregoing legal soundness in a framework where many uncertainties remain.

The licence agreement thus contains a very short definitions clause, and the definitions themselves were made as concise as possible, while making the CERN OHL applicable to all kinds of hardware documentation. The CERN OHL applies to the documentation only and does not purport to cover accompanying software. It does however extend to patents held by the licensor which may be necessary to make use of the documentation. The rights granted under this licence agreement relate to the documentation itself, and to the manufacture of products based thereon.

6 Available at http://www.ohwr.org/licenses/cern-ohl/v1.1

One recurring element in the licence agreement concerns proper acknowledgement of licensor(s) through copyright and trademark notices, as well as maintaining of the disclaimer of warranties. This has to be complied with when redistributing the Documentation, modified or not. In case modifications were made, that fact has also to be recorded, together with the details thereof, the modifications licensed under the same conditions, and notification sent to the licensor whose documentation was modified, as well as to others who expressed a wish to be notified.

Article 4 deals with manufacture of products based on the documentation and imposes the same obligations concerning acknowledgement and disclaimer of warranties as apply to the documentation itself. It furthermore invites the licensee manufacturer to inform the licensor who has indicated its wish to receive information about the production.

Article 5 contains rather standard warranty and liability clauses, and article 6 contains the boilerplate provisions. One particularity is the dispute settlement clause which has been drafted with the aim of safeguarding privileges and immunities of Intergovernmental Organizations.

Conclusion

Today the CERN OHL is the licence used in 19 projects hosted on the Open Hardware Repository. CERN OHL - licensed products are present in company catalogues. Hardware development projects hosted on the Open Hardware Repository are seeing active involvement by companies to develop or produce open hardware; other proofs that 'commercial' and 'open' is a winning combination. The CERN OHL is an attempt at enabling this combination, and is also evolving – we are currently discussing v.1.2 to integrate comments and feedback received from the community, users and experts in the field alike, since releasing v.1.1.

CERN OPEN HARDWARE LICENCE v1.1

Preamble

Through this CERN Open Hardware Licence ("CERN OHL") version 1.1, the Organization wishes to disseminate its hardware designs (as published on http://www.ohwr.org/) as widely as possible, and generally to foster collaboration among public research hardware designers.

The CERN OHL is copyright of CERN. Anyone is welcome to use the CERN OHL, in unmodified form only, for the distribution of his own Open Hardware designs. Any other right is reserved.

1. Definitions

In this Licence, the following terms have the following meanings:

"Licence" means this CERN OHL.

"Documentation" means schematic diagrams, designs, circuit or circuit board layouts, mechanical drawings, flow charts and descriptive text, and other explanatory material that is explicitly stated as being made available under the conditions of this Licence. The Documentation may be in any medium, including but not limited to computer files and representations on paper, film, or any other media.

"Product" means either an entire, or any part of a, device built using the Documentation or the modified Documentation.

"Licensee" means any natural or legal person exercising rights under this Licence.

"Licensor" means any natural or legal person that creates or modifies Documentation and subsequently communicates to the public and/ or distributes the resulting Documentation under the terms and conditions of this Licence.

A Licensee may at the same time be a Licensor, and vice versa.

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3.4 comply with section 3.1;

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3.6 license the modified Documentation under the terms and conditions of this Licence or, where applicable, a later version of this Licence as may be issued by CERN; and

3.7 send a copy of the modified Documentation to all Licensors that contributed to the parts of the Documentation that were modified, as well as to any other Licensor who has requested to receive a copy of the modified Documentation and has provided a means of contact with the Documentation.

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6.3 CERN may publish updated versions of this Licence which retain the same general provisions as this version, but differ in detail so far this is required and reasonable. New versions will be published with a unique version number.

6.4 This Licence shall terminate with immediate effect, upon written notice and without involvement of a court if the Licensee fails to comply with any of its terms and conditions, or if the Licensee initiates legal action against Licensor in relation to this Licence. Section 5 shall continue to apply.

6.5 Except as may be otherwise agreed with the Intergovernmental Organization, any dispute with respect to this Licence involving an Intergovernmental Organization shall, by virtue of the latter's Intergovernmental status, be settled by international arbitration. The arbitration proceedings shall be held at the place where the Intergovernmental Organization has its seat. The arbitral award shall be final and binding upon the parties, who hereby expressly agree to renounce any form of appeal or revision.

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