



Summary and Analysis for Members of The Repair Association <http://repair.org>

Regarding: Software-Enabled Consumer Products – Study by the US Copyright Office December, 2016

<https://www.copyright.gov/policy/software/software-full-report.pdf>

By Gay Gordon-Byrne

Executive Director, The Repair Association

December 31, 2016

Repair.Org Executive Summary

The USCO did a thorough job of evaluating current copyright law in the context of repair, resale, improvement, security research and interoperability. Our various efforts in testimony were clearly heard and well-documented. Among the stars of the footnotes are ORI, EFF, Public Knowledge/OTI, Consumers Union, SEMA, iFixit and Repair.org, and Aaron Perzonowski of Case Western.

The Copyright Office evaluated and largely agreed that our arguments in favor of Congressional action had merit – and then determined that the DMCA is just fine as it is. They noted a few areas of possible concern with they will “monitor” but the conclusions are largely a set of weak excuses justifying inaction. They may recommend action related to Section 1201 in their separate study.

While a total punt in terms of recommending any action, the details of the report are extremely helpful to Right to Repair. In concluding that the DMCA is just fine – they lay out in detail both the specific elements of the DMCA Sections 102, 106, 109 and 117 that already support access, repair, resale, modification, research, and interoperability of embedded software. They then identify that the solution to manufacturer interference in current rights lies in contract law – which they point out is the responsibility of states.

This is hugely useful document in terms of supporting the specifics of how state contract law can be used to make sure that manufacturers do not use unfair and deceptive contracts to remove rights that already exist in federal law. Legislators will be happy to know that they aren’t interfering with copyright law (a common lobbyist claim) but are instead affirming federal law in a form of reverse-preemption. The USCO proclaims in this document that unfair purchase or license contracts can be prevented through state right to repair laws.

If you notice any errors or omissions in this summary, please bring them to my attention so this summary can be improved.

The following notes refer to the specific pages in the PDF document and use the title headings in the order in which they are presented.

Executive Summary (pages i,ii,iii)

The summary reiterates the limited scope of the request from Senators Grassley and Leahy. The USCO intentionally did not consider issues outside of copyright such as privacy and cyber-security and further separated anything related to Section 1201 as being the subject of a separate study. They explain their position that there isn't a need to change law to create a statutory framework explicitly for repair and tinkering because legal doctrines within the DMCA already apply. Specifically:

- Section 117 allows for repair and tinkering through fair use, merger, *scenes a faire*.
- First sale right in section 109 protects resale
- Security Research is ok even with 1201
- Did not see statutory need to change copyright law for interoperability and competition.

“The Copyright Office also examined the reach and scope of licensing practices for embedded software, and issue that implicates several subsidiary issues including: the relationship of the Copyright Act to state contract law; whether, and in what circumstances, violations of the terms of software licenses would constitute copyright infringement; and confusion among consumers regarding the licensing terms for embedded software.”

They concluded that a fundamental problem lies with making a definition of embedded software as different from other (licensed?) software. Despite this dodge, later in the document the USCO makes multiple references to software that is primarily functional and serves to support use.

Background and Study History – page 1-8

Section A provides a useful summary of the history of copyright law up to and including YODA and Unlocking Technology Act. Section B reviews the Study History including all the official notices, hearings and comment periods.

Defining “Software Embedded in Everyday Products” pg 8-11

Despite having claimed difficulty of defining embedded software, this section lists common characteristics of embedded software as the focus of their study. Having created reasonable definitions –the USCO contradicts itself by reiterating suitable definitions are lacking. This definitional impasse is reiterated throughout the document and is frequently contradicted.

- Consumer grade vs industrial grade where contractual and licensing agreements are between parties with similar bargaining power. [This distinction is particularly important as the basis of consumer protection law]
- Embedded software is created for a particular product to control that product's basic operation.

- May be distributed with the product without payment of a separate charge or fee

Relevant Legal Doctrines pgs 12-20

Basics of Copyright Protection:

Copyright of software as well established as legal principle protecting works with some minimal creative spark. Even if the work is marginally creative, authors have the right to reproduce, copy, prepare derivative works, distribute and display the work publicly even if the code has some functional purpose. Even so, there are existing significant limitations on the scope of copyright protection that permit legal repair, reuse, modification and research laid out below:

- Idea/Expression Dichotomy – (Section 102(b)) is the principle that limits copyright protection to the actual code, not the idea, principles, processes, procedures or procedures.
- Merger – is the principle that if there are only a few ways to write code to go from point A to point B, the author is not allowed a monopoly over such limited options for expression. This greatly impacts copyrights on programming that deals with compatibility requirements, external attachments, and hardware design standards where options do not exist. They use a “Bubble Sort” algorithm as an example of the type of code which is not protected by copyright because the “expression merges with the method”.
- Scenes a Faire (French meaning “making a scene”) - is the principle that the “expressive elements of a work are not entitled to protection if they are standard, stock, or common to a particular topic, or if they necessarily follow from a common theme or setting.”
- Fair Use – (Section 107) limits protected uses of software – such as for interoperability, including reverse engineering, to make attachments.
- First Sale – (Section 109) provides that only the Owner of the software can make claims, not a party that licenses materials that they do not own.
- Section 117 (a) - allows the owner of the software to make copies or adaptations for use or archival purpose. The definition of “owner” in this section is problematic as very few licensors of software are considered “owners” of the underlying source code. (This issue is covered further in the Study) Section 117 (b) – makes it clear that there are limitations regarding the resale or transfer of copies permitted under the Section.
- Section 117 (c) and (d) allows the owner or lessee of a machine to make an authorized copy of software, or use a third party, for purposes of repair.
- De Minimis - is the principle that the degree of copying is important to the courts when determining infringement.

Ownership v Licensing – Section C (pgs 21-25)

This section deals with the nuances of how software licenses can be “owned” in the context of transfer of copies and not with how licenses interfere with property ownership. We already know that stand-alone product licenses require the consent of the author for transfer.

Other Areas of Law – Section D (pgs 25-26)

The study request asked for a response regarding other areas of law that might intersect with Copyright Law. Other than state contract law- which has an extensive section of its own, the USCO did not find it was necessary to address patent, trademark, unfair competition, false advertising, privacy concerns, torts, nor the effectiveness of consumer protection law.

Section IV. Analysis of Specific Concerns Raised by Software-Enabled Consumer Products (pgs 27-69)

This section is the meat of the study. In the section summary, the USCO reiterates that existing legal doctrines including “idea/expression, dichotomy, merger, scenes a faire, section 117, and fair use are well-suited to address some of these concerns...”. The USCO uses this argument to reject the idea that “bright line” legislative fixes are suitable because legislation would be unable to keep pace with evolving technology. (We disagree)

The details of this section are a road map guiding lawful use of embedded software.

Resale (pgs 27-29)

The USCO didn’t see any evidence that *consumers* were not able to transfer or resell their software-enabled devices and also failed to find evidence that the security patching of consumer products are subject to such limitations. This is quite a statement given the testimony provided by consumer groups such as ourselves. In making this assertion, the USCO appears to have relied on the Department of Commerce Internet Policy Task Force and was likely very selective about their sources on this matter.

Following the assertion that consumers are not having problems, they then admitted that enterprise level products (NetApp, Oracle, Palo Alto Networks, and EMC)) engage in resale limitations. Quoting from page 30:

“These types of products are not purchased by the average consumer, and do not raise the same concerns about the inequality of bargaining power or the enforcement of contracts of adhesion”..... then goes on to conclude “The Copyright Office agrees that if license agreements in the future interfere with consumers’ ability to resell or otherwise dispose of their software-enabled products, such as practice would be a concern worthy of legislative attention”.

Repair and Tinkering (pgs 31-34)

The USCO concludes that repair and tinkering are already legal under existing copyright law and that most problems are already enforceable in the Courts. They again advance the idea that it would be too difficult to define repair or tinkering for Congress.

- Under Section 106 (1) it is legal to make copies (reproduction right) for test and evaluation

- Under Section 106 (2) it is legal to prepare derivative works
- Under Section 106 (3) it is legal to resell a modified device to a 3rd party and
- Under Section 106 (5) it is legal to display copyrighted material to share insights about how to fix or modify for others.

Under the principle of Idea/Expression Dichotomy, Merger, and Scenes a Faire, Section 102(b) allows modification of code for use, replication of code for testing.

“And where the expressive elements of the embedded program may be influenced by external factors, such as the mechanical specifications for the device or part, or relevant industry standards, the scenes a faire doctrine may likewise limit the scope of the copyright.”

De Minimis Uses – are unfortunately heavily limited by court interpretation of how much code is OK to copy, or how mundane the features are that are being copied.

Section 117 (pgs 35-38)

“...many software-enabled products are sold without any license agreement, in which case a purchaser of that devices should be considered the owner of the device itself and the software embedded therein, and should be entitled to repair or maintain that program consistent with section 117(a).”

Pg 36: The concept of consideration also applies. Software for windshield wipers is invisible to consumers but the operating system for a personal computer is not.

Pg 37: Section 117(a) should allow a user to adapt code and carry that code into a replacement part of device and to hire a 3rd party to help. Footnotes support the idea that it is legal to add features to the program that were not present at the time of acquisition.

However, modifications may not be readily transferrable under Section 117 (b) without the permission of the rights holder (original author).

Fair Use (pgs 38 -41)

Four factors are discussed starting with the purpose of the code for personal or commercial use. Fair Use would apply to an individual, but not a repair business even if the code were the same. However, if the purpose of the repair is restoration – its ok. They note this was their intent in granting the exemption for vehicle repair, diagnosis and modification that just took effect.

The second factor is that of the nature of the copyrighted work gives more protection to expressive works (music, film) than purely functional work. They also note that

“...the user is typically interested in the portions of the code that are broken....The fact that the program is damaged often means that it cannot be used for any purpose (expressive or otherwise).... Because embedded programs have no function when removed from a software-enabled device, the user may not be able to exploit the expressive elements of the program (if any) until the repair is complete. “

Third factor allows for extensive copying of code in order to determine the fault, then restoration back to the software-enabled device.

Fourth – The USCO considered the market value of the copyrighted work. The Office sees that repair of a software-enabled device doesn't *"have an adverse impact on the market for the relevant copyrighted work – the software itself."*

The summary argument on the final paragraph on pg 41 explains:

"These types of computer programs are not distributed as standalone works. They are distributed with a specific device and their sole purpose is to operate or control that device. Because there is no market for the programs themselves and because the programs have no value apart from the devices they operate, repairing these programs is not likely to interfere with any market likely exploited by the copyright owner. "

Security Research (pgs 42-51)

Most of the arguments made previously are reiterated in this section. In the summary paragraph on page 44, the USCO didn't see a reason to recommend legislation but reinforces the notion that many problems of security research are already legal under copyright law, but may be breach of contract law where state law controls. This section also reinforced the notion of "Purely Functional Code" as being less deserving of copyright protections, and that existing law, particularly Section 117, already provides protecting the right to backup, modify, adjust, and restore embedded software.

Interoperability and Competition (pgs 51-58)

The USCO takes the position that uncertainty about Fair Use of software argues against legislative solutions claiming again that there is too much risk of making errors in light of the rapid pace of technological change. The extensive review of the same principles (above) comes to the conclusion that copyright law (particularly section 102(b)) is just fine as it is. Issues stemming from section 1201 are reiterated as being a different study. There is a lot of case law referenced which makes for interesting reading but doesn't address issues of Repair.

Licensing of Embedded Software (pgs 60-69)

The USCO takes up the question of End User License Agreements (EULA) noting ".....concerns about the use of license agreements to restrict the ability of consumers to engage in legitimate activities involving their software enabled products." The Office points out that these concerns are not limited to embedded licenses but also apply to separately licensed products as well.

Relationship to State Contract Law (pgs 62-65)

This section lays out how contract law applies more generally to violations of EULA than Copyright Law. Violations of EULA would be enforceable as breach of contract and not copyright infringement. The USCO goes further and digs into questions of "if consumers can be fairly understood to have agreed to the terms of software licensing agreements, given their length and complexity"... and then concludes

that “Courts appear to have addressed these concerns, however, by applying standard state-law requirements for contract formation.”

1. Breach of Contract versus Copyright Infringement

“This issue is particularly important in the context of software-enabled consumer products, given the significance of issues regarding resale, repair, tinkering, and interoperability of such products discussed above. “

The USCO also points out that Rights Holders (manufacturers) cannot sue Licensees for copyright infringement, but only breach of contract. However there is no legal precedent arising out of litigation that resolves the question of if a private agreement (aka a license) can nullify a right already granted under Copyright, Patent, or other law.

2. Confusion Among Consumers Regarding Licensing Terms

Consumers are clearly at an unfair disadvantage in terms of negotiating or understanding complex licensing terms. The USCO defers (dodges) these enormous problems to the Department Of Commerce and their Internet Policy Task Force.

“Like the Internet Policy Task Force, the Copyright Office agrees that it would be beneficial if manufacturers, as part of the sale of software-enabled consumer products, made clear what rights consumers had in the goods they were buying, including the right to resell, repair, and improve the device. “

Section V – Conclusion (pg 69)

The Copyright Office does not see the need to recommend any legislative action by Congress, but is “Monitoring” the situation. We respectfully disagree.