

Before the
**United States Copyright Office,
Library of Congress**

In the Matter of)	
)	
)	
Exemption to Prohibition on)	Docket No. 2014-07
Circumvention of Copyright Protection)	
Systems for Access Control Technologies)	
)	

PROPOSED CLASS #21 PROPONENTS

REPLY COMMENT

**Intellectual Property & Technology Law Clinic,
University of Southern California**

Submitter Information:

USC Intellectual Property and
Technology Law Clinic
University of Southern California
Gould School of Law
699 Exposition Boulevard
Los Angeles, CA 90089
Phone: (213) 740-7088
E-mail: ipt@law.usc.edu

Dan D. Nabel, Esq. Interim Director
Mark Hilkert, *Law Student*
Abtin Amir, *Law Student*
Charlotte Wen, *Law Student*
Jonathan Levinson, *Law Student*

Table of Contents

Reply Comment for the “Class 21” Proposed Exemption	2
Item 1. Commenter Information	2
Item 2. Proposed Class Addressed	2
Item 2.1 Proposed Class 21: Vehicle software – diagnosis, repair, or modification	2
Item 3. Overview	2
Item 4. Technological Protection Measures and Methods of Circumvention.	3
Item 4.1 It Is Undisputed That OEMs Use TPMs to Restrict Firmware Access on Agricultural Equipment.....	3
Item 4.2 It Is Undisputed That These TPMs Can Be Circumvented.....	3
Item 5. Asserted Noninfringing Uses.....	4
Item 5.1 The Proposed Uses Qualify under 17 U.S.C. § 117.....	4
Item 5.2 The Proposed Uses Qualify under 17 U.S.C. § 107.....	8
Item 6. Asserted Adverse Effects.....	10
Item 7. Statutory Factors.....	11
Item 7.1 Respondents’ Assertion That Viable Legal Alternatives Exist Is Not Supported by Evidence.	11
Item 7.2 Respondents’ Business Interests Are Irrelevant to the Rulemaking Process.	13
Item 7.3 Respondents Failed to Support Their Assertions with Evidence.....	14
Item 8. Documentary Evidence.....	15

Reply Comment for the “Class 21” Proposed Exemption

Check here if multimedia evidence is being provided in connection with this comment

Item 1. Commenter Information

Submitter: Intellectual Property & Technology Law Clinic,
University of Southern California

E-mail Address: ipt@law.usc.edu

Phone Number: (213) 740-7088

Address: USC Gould School of Law
USC Intellectual Property & Technology Law Clinic
University of Southern California
Los Angeles, CA 90087-0074

Item 2. Proposed Class Addressed

Item 2.1 Proposed Class 21: Vehicle software – diagnosis, repair, or modification

This proposed class would allow circumvention of TPMs protecting computer programs that control the functioning of a motorized land vehicle, including personal automobiles, commercial motor vehicles, and agricultural machinery, for purposes of lawful diagnosis and repair, or aftermarket personalization, modification, or other improvement. Under the exemption as proposed, circumvention would be allowed when undertaken by or on behalf of the lawful owner of the vehicle.

As with our initial Comment, this Reply focuses primarily on the “agricultural machinery” portion of this proposed class.¹

Item 3. Overview

The Register and Librarian should approve the Proposed Class 21 exemption because Petitioners have established a compelling need for it. Farmers need access to diagnostic and repair information for their agricultural machinery to protect their livelihoods. They also need the ability to modify their agricultural machinery to fit their specific needs. When farmers circumvent access controls for the limited purpose of diagnosing, repairing, or modifying their agricultural machinery, they do not violate copyright law.

¹ On November 3, 2014, we submitted two separate petitions requesting an exemption allowing farmers to circumvent relevant TPMs for the purpose of diagnosing, repairing, and modifying their own farm equipment. Concurrently, EFF submitted a petition requesting a similar exemption covering motorized vehicles, generally. The Copyright Office, in its NOPR, combined these petitions and proposed a single, aggregated vehicle/machinery class.

Petitioners have supported these contentions with testimony from family farmers, large and small. Petitioners also submitted testimony from mechanics, ECU software developers, and even a rancher with extensive telecommunications expertise. Petitioners cited farm journals, technical journals, and manuals written by car-hacking pioneers.

Respondents failed to address any of Petitioners' evidence.

Most of Respondents' assertions simply have nothing to do with "copyright interests." Instead, Respondents focus on their own "business interests." They also speculate about far-fetched safety and environmental impacts, and try to paint vehicle owners who want to customize their equipment as reckless and irresponsible. Even if these assertions were relevant—they are not—Respondents have failed to support them with evidence.

The Registrar and Librarian should approve the proposed exemption because Petitioners have established a compelling need for it through testimonial and other evidence; and because Respondents neither rebutted Petitioners' evidence, nor submitted any contrary evidence.

Item 4. Technological Protection Measures and Methods of Circumvention

Item 4.1 It Is Undisputed That OEMs Use TPMs to Restrict Firmware Access on Agricultural Equipment.

Petitioners have shown—and Respondents expressly agree—that OEMs restrict access to embedded software using at least three TPM categories: (1) proprietary software that restricts access to the embedded software; (2) passwords that restrict access to the embedded software; and (3) computer memory modifications that restrict access to the embedded software.²

Item 4.2 It Is Undisputed That These TPMs Can Be Circumvented.

Petitioners have established numerous methods for circumventing these TPMs. Respondents have not contested the existence of these methods; they have not addressed any of Petitioners' evidence; and they have not provided any contrary evidence.³

² John Deere Opp'n at 4 ("Technological Protection Measures [] may include security handshakes, passwords, keys, cryptographic keys, codes, encryption, or other technical security mechanisms ..."); Eaton Corp. Opp'n at 1–2 (detailing the process it uses to install TPMs); Ass'n of Global Automakers Opp'n at 3 (admitting that "some automobile manufacturers restrict access to automotive software, and the underlying source code *to only those vetted and authorized licensees* ...") (emphasis added); General Motors Opp'n at 4–8 (devoting an entire section to "The Purpose of TPMs in the Modern Car"). Auto Alliance does not dispute that TPMs exist. Auto Alliance Opp'n at 3 ("Item 4: Technological Protection Measure(s) and Method(s) of Circumvention: N/A.")

³ At most, AEM asserts that hobbyists lack the skill to comply with other agencies' regulations—*not* that they lack the skill to circumvent TPMs. AEM Opp'n at 1 ("[individual hobbyists and enthusiasts] are unlikely to have the requisite skill ... to ensure that these modifications *comply with vehicle safety regulations or environmental regulations.*") (emphasis added).

Item 5. Asserted Noninfringing Uses

Petitioners have established that the proposed uses are likely to be non-infringing under both 17 U.S.C. § 117 and 17 U.S.C. § 107.

Item 5.1 The Proposed Uses Qualify under 17 U.S.C. § 117.

Petitioners have established that: (1) the owners of agricultural equipment own the copy of software embedded in their machines; (2) the adaptations and copies of that software are created as an essential step in the utilization of the software in conjunction with those machines; and (3) the adaptations and copies are not used in any other manner.

1. *The software embedded in an agricultural machine is owned by the machine's owner.*

The Section 117(a) ownership tests from both *Krause v. Titleserv* and *Vernor v. Autodesk* favor finding that agricultural machine owners own their copy of the software embedded within those machines.

In *Krause*, the Second Circuit held that “formal title in a program copy is not an absolute prerequisite to qualifying for § 117(a)’s affirmative defense,” and that “the absence of formal title may be outweighed by evidence that the possessor of the copy enjoys sufficiently broad rights over it to be sensibly considered its owner.”⁴ In *Krause*, the software user was the software’s owner, in absence of evidence to the contrary, because the software user spent a significant sum of money for the right to use the software indefinitely and without material restrictions, and had the right to discard or destroy it at will.⁵ Farmers similarly pay substantial sums for the right to indefinitely use, possess, discard or destroy their agricultural machines and its companion software, without any material restriction from the manufacturer, and no Respondent has introduced any contrary evidence. Owners of agricultural machines have the right to change the software because it is incidental to their use of the machine, just as they have the right to change the tires or the oil—each is merely an incidental component required to use the machine for the purposes for which it was purchased.

In *Vernor*, the court considered whether a copyright owner: (1) specifies that a user is granted a license; (2) significantly restricts the user’s ability to transfer the software; and (3) imposes notable use restrictions.⁶ Here, all three factors favor agricultural machine owners because they are not faced with a licensing agreement during use or at the time of purchase, and manufacturers do not impose any material transfer or use restrictions on those owners. Although John Deere and other Respondents were in the best position to produce evidence of licensing agreements or limitations in the context of agricultural machinery, none was submitted.⁷ Instead, John Deere recites a lengthy list of hypotheticals in which such an

⁴ *Krause v. Titleserv, Inc.*, 402 F.3d 119, 124 (2d Cir. 2005).

⁵ *Id.* at 125.

⁶ *Vernor v. Autodesk, Inc.*, 621 F.3d 1102, 1110–11 (9th Cir. 2010).

⁷ John Deere Opp’n at 24 (failing to attach a licensing agreement intended to limit vehicle purchasers’ rights); Auto Alliance Opp’n at 21 (same).

agreement “may” exist.⁸ Even if John Deere had shown that it independently licenses its preinstalled software to dealerships so they can charge vehicle owners for reinstallation or diagnosis—which it has not—those licensing agreements would not apply to machine owners who received their copy independently as pre-embedded software.

Respondent Auto Alliance quotes⁹—out of context—the portion of the *Krause* decision in which the court cites the CONTU Report¹⁰ to address software modifications that would “harm the interests of the copyright owner,” by injecting irrelevant business interests allegedly harmed by such modifications—without supporting their assertions. That section of the Report was actually concerned with harm to the copyright holder’s interest in the “underlying work.”¹¹ The Report foresaw legitimate alterations to one’s own software copies to better suit the owner’s needs, and analogized such modification to a book owner who takes extensive notes in the margins.¹² The Report explained that such modification is not likely to harm the copyright owner’s interest in the protected work unless the modifier “tries to copy and vend that work.”¹³ The Report concluded that, “[s]hould proprietors feel strongly that they do not want rightful possessors of copies of their programs to prepare such adaptations, they could, of course, make such desires a contractual matter.”¹⁴ The situation would be different if the software user’s “alteration somehow interfered with [the copyright holder’s] access to, or ability to exploit, the copyrighted work that he authored, or if the altered copy of [the software user’s] work were to be marketed by the owner of the copy.”¹⁵ The *Krause* court held that the software user adding features, fixing and changing source code, and copying the software to new computers, did not interfere with the copyright holder’s access to or ability to exploit their software, and the market for the software was not harmed because the user did not market the modified or copied version of the software.¹⁶

Consistent with *Krause* and the CONTU Report, farmers are like the extensive marginal note-taker. They are merely modifying their own lawfully acquired copy of the software to better suit their needs, without affecting the copyright holder’s rights in their work, or the market for that work, while having no intention of trying to “copy and vend that work.” No respondent—including John Deere—introduced any evidence to support their claims that they placed restrictions on owners of agricultural machines or that they wished any such restriction to be “a contractual matter.” Thus, the evidence compels a finding that, at least in the context of agricultural machinery, such a copy is sold to the purchaser of the machine along with the machine itself.

⁸ John Deere Opp’n, at 5–6 (listing hypothetical contractual agreements without citing evidence).

⁹ Auto Alliance at 6–7.

¹⁰ *The Final Report on the National Commission on New Technological Uses of Copyrighted Works* (the “CONTU Report”) (1981), available at <http://repository.jmls.edu/cgi/viewcontent.cgi?article=1573&context=jitpl>.

¹¹ *See id.* at 63 (noting that “[p]reparation of adaptations could not, of course, deprive the original proprietor of copyright in the underlying work.”).

¹² *See id.*

¹³ *See id.*

¹⁴ *Id.*

¹⁵ *Krause*, 402 F.3d at 129 (explaining that the copyright holder “enjoyed no less opportunity after [software user’s] changes, than before, to use, market, or otherwise reap the fruits of the copyrighted programs he created.”)

¹⁶ *Id.* at 129.

2. *Adaptations and Copies of Software Embedded in Agricultural Machines are Made as an Essential Step in the Utilization of the Software in Conjunction with Those Machines.*

Users have “a right to make those changes necessary to enable the use for which [the program] was both sold and purchased,” and “conversion of a program . . . to facilitate use would fall within this right, as would the right to add features to the program that were not present at the time of rightful acquisition.”¹⁷ The *Krause* court explicitly rejected the “contention that the word ‘essential’ can apply only to a modification without which the program could not function.”¹⁸ The CONTU Report “persuasively rebuts” such a “narrow reading of § 117(a)(1).”¹⁹ The *Krause* court concluded that the following categories of modifications “were essential to the defendants’ utilization of the programs within the meaning of § 117(a)(1) because the ‘adaptations were essential to allow use of the program[s] for the very purpose for which [they were] purchased.’”²⁰

(1) correcting programming errors or “bugs,” which interfered with the proper functioning of the programs; (2) changing the source code to add new clients, insert changed client addresses, and perform other routine tasks necessary to keep the programs up-to-date and to maintain their usefulness to [the user]; (3) incorporating the programs into [new computers]; and (4) adding capabilities . . . which made [the user’s] copy of the programs more responsive to the needs of [the user’s] business.²¹

Petitioners submitted evidence—which Respondents failed to address—showing that the adaptations that agricultural machine owners make allow them to use those machines for the purpose they were developed and purchased (e.g., farming), and thus, are “essential steps” within the same accepted categories in *Krause*: (1) using the software to correct bugs caused by sensors or glitches that prevent proper functioning;²² (2) changing the software to allow farmers to access parts of the software necessary to perform maintenance and diagnosing problems to maintain their usefulness to the farmers;²³ (3) copying the software and settings from a working machine into another machine to prevent damage while changing settings;²⁴ (4) adding capabilities like fan clutch control for increased

¹⁷ *Id.* at 128 (citing the CONTU Report).

¹⁸ *Krause*, 402 F.3d at 127.

¹⁹ *Id.* at 128.

²⁰ *Id.* at 125 (citing *Aymes v. Bonelli*, 47 F.3d 23, 27 (2d Cir. 1995)).

²¹ *Krause*, 402 F.3d at 125.

²² USC Comment at 14, 18; Ex. 3, 14:40–15:56.

²³ USC Comment at 18; Ex. 6, 7:35–9:11.

²⁴ USC Comment at 11; Ex. 2, 7:8–8:15.

efficiency,²⁵ disability access and safety features,²⁶ or adding additional power,²⁷ making the farmer's machine and software more responsive to the needs of the farmers' business.²⁸

3. *Owners of agricultural machines are using their adaptations and copies of the software embedded in those machines for the purposes for which the software was developed, and not in any other manner.*

Whether a challenged use is a “use in another manner,” depends on “the type of use envisioned in the creation of the program,”²⁹ and on the facts of each particular case.³⁰ Adapting software to add features, or to better suit the needs of the user, while being used for the same general purpose for which it was developed and purchased “constitutes use in the *same* manner, with the benefit of an adaptation increasing versatility.”³¹ In *Krause* the court concluded that the software user's adaptation was within the exemption of Section 117(a)(1) because the software was developed and purchased to run the user's business, and the adaptations were ultimately for that same general purpose.³² The software embedded within an agricultural machine is designed to control and regulate the functions of that machine so that farmers can operate the machine for their businesses.³³ No Respondent has persuasively disputed that many farmers make adaptations to their vehicle software to better fit their business's needs and increase versatility without changing the general purpose that the software was developed for.³⁴

Moreover, the last time the Register addressed whether owners of devices with embedded software (cell phones) also owned the copy of software on their devices, the Register concluded that the state of the law was too unclear to “develop conclusions sufficient to permit determination of the software ownership issue.”³⁵ In granting the proponents' exemption, the Register further determined that the unclear state of the law made it “impossible for proponents to have established their case in any event,”³⁶ and held that the respondents who failed to submit evidence failed to rebut the Petitioners' *prima facie* case.³⁷ Here, Respondents also failed to submit evidence of licensing agreements or

²⁵ USC Comment at 17–18; Ex. 4, 23:00–24:29.

²⁶ USC Comment at 17–18 (citing *Tractor Modifications for Saving Lives*, WEST VIRGINIA AGRABILITY PROJECT, CENTER FOR EXCELLENCE IN DISABILITIES, <http://wvats.cedwvu.org/factsheets/tractorfact.pdf> (discussing the need to modify tractors for individuals with arthritis, amputations, or balance difficulties; providing modification examples); Timothy Prather, *Adaptive Controls for Tractors and Machinery*, AGRABILITY PROJECT, available at <http://fyi.uwex.edu/agrability/files/2010/02/adaptivecontrols.pdf> (same).

²⁷ USC Initial Comment at 16–17; Ex. 2, 3:20–4:24; Ex. 4, 23:17–24:44.

²⁸ USC Initial Comment at 16; Ex. 2, 3:10–4:24; Ex. 4, 23:17–24:44.

²⁹ *Krause*, 402 F.3d at 129.

³⁰ *Id.* at 130.

³¹ *See id.*

³² *See Krause*, 402 F.3d at 129–30.

³³ *See* John Deere Opp'n at 18 (stating that “vehicle software controls the engine, brakes and other critical functions of the vehicle...”).

³⁴ USC Initial Comment at 9–11 (explaining that owners of agricultural machines wish to circumvent TPMs and access the software in order to diagnose, repair, and make modifications in order to increase their versatility).

³⁵ Recommendation of the Register of Copyrights, Section 1201 Rulemaking: Fifth Triennial Proceeding, 92–93 (Oct. 12, 2012) (“2012 Recommendation”), available at <http://www.copyright.gov/1201/>.

³⁶ *Id.* at 92.

³⁷ *Id.* at 89–90.

restrictive contracts, and Auto Alliance admits that, “[j]ust as somewhere, somehow, some smartphone user might be able to establish that she was under applicable law the owner of the firmware in her phone, and thus entitled to exercise the Section 117 privileges, the same might conceivably be true of some motor vehicle owner.”³⁸

In sum, the Register should find that agricultural machine owners own the copy of software embedded in their machines and are entitled to exercise the Section 117 privilege.

Item 5.2 The Proposed Uses Qualify under 17 U.S.C. § 107.

1. The first factor favors fair use.

The first factor weighs in favor of fair use because modifying embedded software in agricultural machinery to allow for new and more efficient consumer uses transforms the software³⁹ and is noncommercial. Respondents do not dispute that such uses are noncommercial and fail to even address the *Author’s Guild* case cited by Petitioners. Instead, Respondents make two assertions for the proposition that modifying vehicle software cannot be transformative as a matter of law. Both assertions lack merit.

First, Respondents contend that modifying ECU software “to perform the identical function as it previously did, albeit with different parameters or values, is not transformative.”⁴⁰ This contention misconstrues the nature of the proposed exemption and ignores Petitioners’ evidence (i.e., the numerous examples of farmers modifying software so that their vehicles can perform *new* functions). This contention is also directly undermined by the Respondent most familiar with agricultural machinery—John Deere—which admits, albeit in language slanted by advocacy, that modified software “in many cases is being used to undermine or *reverse the purposes* for which it was intended.”⁴¹ Indeed, it is axiomatic that farmers would not need to modify the software on their vehicle ECUs if the vehicles could already perform the functions desired by the farmers. Unlike the jailbreaking of videogame consoles for interoperability referenced by Respondent Auto Alliance,⁴² modifying ECU software to allow agricultural equipment to perform entirely new functions is quintessentially transformative under *Author’s Guild*.

Second, Respondents contend that under *Sega* and *Connectix*, modifying software can be fair use only if the copy is intermediate or transient.⁴³ Respondent GM even suggests that the “final product” must not “contain or modify any of the Plaintiff’s copyrighted work.”⁴⁴ As *Sega* recognizes, however, the Copyright Act does not distinguish between copies of a copyrighted work “on the basis of what stage of the alleged infringer’s work the

³⁸ Auto Alliance Opp’n at 6.

³⁹ *Authors Guild, Inc. v. HatbiTrust*, 755 F.3d 87, 96 (2d Cir. 2014) (“a transformative work is one that serves a new and different function from the original work and is not a substitute for it.”)

⁴⁰ General Motors Opp’n at 14–15.

⁴¹ John Deere Opp’n at 6–7 (emphasis added).

⁴² Auto Alliance Opp’n at 8.

⁴³ *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992), *as amended* (Jan. 6, 1993); *Sony Computer Entm’t, Inc. v. Connectix Corp.*, 203 F.3d 596 (9th Cir. 2000).

⁴⁴ General Motors Opp’n at 15.

unauthorized copies represent.”⁴⁵ Moreover, the vast majority of fair use cases involve situations in which the “final product” permanently contains part of the old work, albeit in a new and transformative way.

2. *The second factor favors fair use.*

Respondents disagree as to the level of creativeness of ECU software.⁴⁶ In any event, Respondents supply no evidence whatsoever as to the nature of their own (or any other) ECU software, even though they are in the best position to do so. One Respondent relies exclusively on *Oracle Am., Inc. v. Google Inc.*⁴⁷ In *Oracle*, however, the Federal Circuit reaffirmed that “where the nature of the work is such that purely functional elements exist in the work and it is necessary to copy the expressive elements in order to perform those functions, consideration of this second factor arguably supports a finding that the use is fair.”⁴⁸ Moreover, as Respondents admit, the appellate court in *Oracle* did not even decide the fair use issue but instead remanded the determination back to the district court.

The second factor weighs in favor of fair use because (a) Respondents admit that ECU software is highly functional; and (b) Respondents have submitted no evidence of any “highly creative” elements in ECU software, despite being in the best position to do so.

3. *The third factor favors fair use.*

Petitioners previously asserted that, under the *Authors Guild* case, this factor weighs in favor of fair use even though the entire work may be copied in some situations because such copying is, in such cases, necessary to achieve a transformative purpose.⁴⁹ None of the Respondents make any attempt to distinguish this legal authority. Instead, Respondents make a wide range of confusing arguments. For example, John Deere contends that, under this third factor, “TPMs for in-vehicle entertainment systems encourage content providers to create and distribute highly-expressive copyrighted works that might otherwise be easily copyrighted or pirated.”⁵⁰ John Deere then asserts that “[s]ome agricultural vehicles support the use of various creative software tools with imaginative interfaces or user-configurable interfaces” and that “[s]uch vehicle software would be vulnerable to copying in the absence of TPMs.”⁵¹ These assertions do not appear to have any logical relation to the amount of the work copied (or any other relevant fair use factor). Even if they did, John Deere submits no

⁴⁵ *Sega*, 977 F.2d at 1518.

⁴⁶ *Compare* General Motors Opp’n at 16 (“... the vehicle software in ECUs is a highly creative work designed by specialized engineers ...”) with John Deere Opp’n at 7 (“Although the vehicle software is to some degree functional in nature, it does include creative elements as well.”)

⁴⁷ 750 F.3d 1339 (Fed. Cir. 2014).

⁴⁸ *Id.* at 1375.

⁴⁹ *Cf. Authors Guild*, 755 F.3d at 98 (“For some purposes, it may be necessary to copy the entire copyrighted work, in which case Factor Three does not weigh against a finding of fair use.”); *Perfect 10, Inc. v. Amazon, Inc.*, 508 F.3d 1146, 1165 (9th Cir. 2007) (“even making an exact copy of a work may be transformative so long as the copy serves a different function than the original work”) (citing *Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 818 (9th Cir. 2003)).

⁵⁰ John Deere Opp’n at 8.

⁵¹ *Id.* at 8–9.

evidence to support these dubious propositions (e.g., that agricultural machinery is often equipped with music/video entertainment systems).

4. *Fourth Factor*

The fourth statutory factor weighs in favor of fair use because there is no potential market for software designed to achieve innovative uses that OEMs neither anticipated nor intended. Respondents misconstrue the relevant market entirely (i.e., the market for the modified copyrighted work itself—not the market for vehicles containing the original copyrighted work). As one Respondent admits, “it is true that there is no separate market for the computer programs and other works at issue here aside from the vehicle in which they are embedded.”⁵² Nevertheless, Respondents focus on things like “vehicle values”⁵³ and amorphous concepts such as “brand equity.”⁵⁴ These considerations have absolutely no bearing on “whether the secondary use”—here the modified ECU software—“*usurps* the market of the original work”⁵⁵—here the original ECU software. Even if they did, Respondents have supplied absolutely no evidence to support their assertions (again, despite being in the best position to do so).

Item 6. **Asserted Adverse Effects**

Petitioners have shown distinct, verifiable, and measurable impacts resulting from TPMs controlling access to agricultural machinery’s embedded software. TPMs affect farmers—particularly small, family farmers—and independent repair shops in at least eight ways: by (1) putting small farmers’ crops and livelihoods at risk;⁵⁶ (2) forcing small farmers to pay dealers to get their machines running even after they have fixed the machines themselves;⁵⁷ (3) allowing OEMs to monopolize diagnosis and repair of agricultural machinery;⁵⁸ (4) allowing OEMs to prevent farmers from taking adequate preventative measures;⁵⁹ (5) preventing farmers from safely increasing their own equipment’s engine power;⁶⁰ (6) preventing farmers from increasing their own equipment’s environmental efficiency;⁶¹ (7) allowing OEMs to prevent farmers with disabilities from improving accessibility and implementing safety features;⁶² and (8) unnecessarily inflating prices of

⁵² Auto Alliance Opp’n at 9.

⁵³ *Id.*

⁵⁴ *Id.* at 10.

⁵⁵ *Caribou v. Prince*, 714 F.3d 694, 708 (2d Cir.), *cert. denied*, 134 S. Ct. 618 (2013) (emphasis in original).

⁵⁶ USC Comment Ex. 4, 6:50–8:25; Ex. 3, 3:10–4:40 and 8:24–9:10; Ex. 6, 1:07–2:04.

⁵⁷ USC Comment Ex. 6, 8:24–9:10; Ex. 4, 19:03–20:11 and 26:23–27:19; Ex. 5, 4:10–5:20. Unlike older equipment whose fault codes could be erased by disconnecting the power, new machines store fault codes until manually erased. *See e.g.*, http://www.aalcar.com/library/battery_disconnect_problems.htm.

⁵⁸ USC Comment Ex. 5, 18:12–18:23 and 10:14–10:49; Ex. 4, 6:50–9:37.

⁵⁹ USC Comment Ex. 4, 20:51–22:47 and 9:37–13:27; Ex. 5, 20:51–22:47.

⁶⁰ USC Comment Ex. 6, 3:45–6:33; Ex. 4, 22:47–25:20; Ex. 3, 11:42–13:04; Ex. 2, 17:1–end.

⁶¹ USC Comment Ex. 2, 3:10–4:19; Ex. 4, 23:37–24:14; *See, e.g., Ecomodder.com*, <http://ecomodder.com/Ekotuning.com> <http://www.ekotuning.com/>.

⁶² Danielle Kurtzleben, *The Rapidly Aging U.S. Farmer*, February 24, 2014, available at: <http://www.usnews.com/news/blogs/data-mine/2014/02/24/us-farmers-are-old-and-getting-much-older>; *See, e.g., Tractor Modifications for Saving Lives*, WEST VIRGINIA AGRABILITY PROJECT, CENTER FOR EXCELLENCE IN DISABILITIES, available at <http://wvats.cedwvu.org/factsheets/tractorfact.pdf> (discussing the need to modify tractors for individuals with arthritis, amputations, or balance difficulties; providing modification

agricultural equipment in secondary markets.⁶³ Petitioners have submitted evidence for each of these eight adverse effects.

With a few limited exceptions,⁶⁴ Respondents do not dispute these adverse effects or challenge Petitioners' supporting evidence. Instead, Respondents contend that there are "viable alternatives" and that a host of horrors—relating mostly to their own business interests—will occur if the exemption is approved. These contentions are addressed in Item 7, below.

Item 7. Statutory Factors

Petitioners have established that the statutory factors favor granting the proposed exemption for two main reasons. First, under the "availability for use" factor, existing TPMs substantially inhibit farmers' ability to use embedded software, and no legally available alternatives exist on the market.⁶⁵ Second, under the "effect of circumvention" factor, allowing farmers and other vehicle owners to access embedded ECU software for the purposes of diagnosis, modification, and repair will not have adverse effects on the market for, or the value of, ECU software.⁶⁶

Respondents assert that viable legal alternatives exist, but fail to support this assertion with persuasive evidence. They also attempt to shoehorn their business interests into the fifth statutory factor—which are neither relevant, nor supported by evidence.

Item 7.1 Respondents' Assertion That Viable Legal Alternatives Exist Is Not Supported by Evidence.

Respondents assert that three viable legal alternatives to TPM circumvention exist: (1) diagnostic tools and repair information provided by OEMs as required by the Memorandum of Understanding and Right to Repair Agreement (collectively, the "MOU/R2R");⁶⁷ (2) proprietary diagnostic tools available for some types of agricultural machinery; and (3) do-it-yourself updates to control modules. These alternatives are legal, but not viable.

examples); Timothy Prather, *Adaptive Controls for Tractors and Machinery*, AGRABILITY PROJECT; <http://fyi.uwex.edu/agrability/files/2010/02/adaptivecontrols.pdf>(same); USC Comment Ex. 4, 24:27–25:19.

⁶³ Greg Peerson, *Two Answers for Everything*, Farm Journal, August 26, 2014, available at http://www.agweb.com/article/machinery_pete_two_answers_for_everything_NAA_Greg_Peterson/.

⁶⁴ For example, John Deere alleges "[m]ost repairs for vehicles, such as automotive vehicles, do not relate to software, but to mechanical components" and such repairs do not "require circumvention to access controls." John Deere Opp'n at 10. To support this assertion, John Deere submits a slideshow that doesn't explain its methodology, didn't collect its own data, and doesn't include agricultural machinery. John Deere also fails to address Petitioner's numerous examples demonstrating situations where it *is* necessary to circumvent access controls.

⁶⁵ USC Comment at 19.

⁶⁶ *Id.* at 20.

⁶⁷ Auto Alliance Opp'n, Ex. A ("R2R Agreement").

1. *The MOU/R2R does not provide viable alternatives to TPM circumvention because it does not apply to agricultural machinery, and would not allow for modifications.*

The MOU/R2R does not provide viable alternatives, for at least two reasons.

First, the MOU/R2R does not apply to agricultural machinery because it is limited to vehicles “designed for transporting persons or property on a street or highway.”⁶⁸ It does not require agricultural machinery OEMs to provide any diagnostic tools or disclose any repair information. As a result, the MOU/R2R does nothing for researchers, educators, innovators, and owners of off-road vehicles. Since this denial of access affects a broad range of legitimate users, Petitioners have demonstrated substantial, rather than *de minimis* impacts.

Second, the MOU/R2R does not allow farmers to *modify* their off-road vehicles. It only concerns dealer and OEM-approved *diagnostics and repairs*.⁶⁹ So even if the MOU/R2R applied to off-road agricultural vehicles, it still would not allow farmers to, e.g., make minor changes to embedded software to adapt to a differently-sized tire, modify their equipment to comply with regulatory requirements, or adapt agricultural equipment to better suit certain crops.⁷⁰ Petitioners have therefore demonstrated “distinct, verifiable, and measurable impacts” that existing TPMs have on legitimate uses of ECU software through ample evidence, which Respondents fail to even address.⁷¹

2. *Proprietary diagnostic tools are not viable legal alternatives to TPM circumvention because they only provide limited diagnostics for some agricultural machinery.*

Respondent John Deere has also proposed a two-step alternative to TPM circumvention that fails to address Petitioners’ evidence. First, John Deere asserts that vehicle owners can use proprietary diagnostic tools—e.g., On-Board Diagnostic scanners or JDLink software—to diagnose their machines. Second, they can order replacement parts and software modules if the diagnostics reveal that any control modules need to be replaced.⁷²

This alleged alternative fails to address any of the adverse effects advanced by Petitioners.⁷³ Even taken most charitably, John Deere’s evidence only shows that farmers can access some diagnostic information, in certain situations. Petitioners do not dispute that *some* diagnostic codes are available to farmers. The problem is that farmers have substantially *less* access than dealers.⁷⁴ This limited access to diagnostics puts farmers in remote areas at the mercy of OEM and dealership timelines for much-needed vehicle repairs.⁷⁵ For example, such farmers cannot clear fault codes that render their machinery inoperable,⁷⁶ need to wait

⁶⁸ R2R Agreement § 1.

⁶⁹ *Id.* § 2(b)(i).

⁷⁰ USC Comment at 10 (citing Ex. 3, 11:42–13:02).

⁷¹ *Id.* at 19–20.

⁷² John Deere Opp’n at 11–12.

⁷³ USC Comment at 12.

⁷⁴ *Id.* Ex. 5, 16:40–19:25.

⁷⁵ *Id.* at 12–14.

⁷⁶ *Id.* at 14.

for technicians to travel to their remote farms,⁷⁷ or have to wait for new modules to be shipped—instead of simply circumventing TPMs to repair the modules themselves.⁷⁸ These farmers still risk losing entire crops if their machines break down at critical points in the season and OEMs respond sluggishly to service requests.⁷⁹

Respondents also point out that new John-Deere tractor models come with a Service Advisor Tool that allows authorized technicians to make remote repairs in areas with “adequate wireless service.”⁸⁰ This alleged alternative also fails to address Petitioners’ evidence: farmers in remote areas are unlikely to have “adequate wireless service”—especially in their fields—so they would still need expensive towing services to move a broken-down tractor to an area with wireless access.⁸¹ And, this alternative only applies to brand-new John-Deere tractors.⁸² Respondents failed to provide any evidence suggesting that an appreciable number of farmers own these models.

3. *Do-it-yourself updates to control module software are not viable legal alternatives to TPM circumvention because they require information from the manufacturer.*

Respondent John Deere asserts that farmers do not need to circumvent TPMs to update or replace software in control modules because this work can be done by the vehicle owner on a do-it-yourself basis.⁸³

This assertion is unsupported by the record. John Deere failed to provide any evidence showing that vehicle owners can perform these software updates themselves. Petitioners have shown that vehicle owners cannot perform these updates without information from the manufacturer.⁸⁴

Item 7.2 Respondents’ Business Interests Are Irrelevant to the Rulemaking Process.

The “primary responsibility” of the Register and the Librarian in the rulemaking proceeding is: (1) “to assess whether the implementation of access control measures is diminishing the ability of individuals to use copyrighted works in ways that are not infringing,” and (2) “to designate any classes of works with respect to which users have been adversely affected in their ability to make such noninfringing uses.”⁸⁵ To make this assessment, the Register and the Librarian look at five factors to balance “the availability of copyrighted works for use, the effect of the prohibition on particular uses, and the effect of

⁷⁷ *Id.*

⁷⁸ *Id.* at 13.

⁷⁹ *Id.*

⁸⁰ John Deere Opp’n at 12.

⁸¹ USC Comment at 13.

⁸² John Deere Opp’n at 12.

⁸³ *Id.* at 11.

⁸⁴ USC Comment Ex. 5, 26:40–27:25.

⁸⁵ 77 Fed. Reg. 65261 (October 26, 2012); *see also*, 17 U.S.C. § 1201(a)(1)(C); *MDY Indus., LLC v. Blizzard Ent., Inc.*, 629 F.3d 928, 944–45 (9th Cir. 2010); S. Rep. No. 105-190, at 12.

circumvention on copyrighted works.”⁸⁶ As Respondents admit, this assessment involves “copyright interests,” not “business interests.”⁸⁷ For example, when considering the jailbreaking of phones, the Register and Librarian rejected Apple’s objections “to the installation and use of ‘unapproved’ applications” because these objections had “nothing to do with its interests as the owner of the copyrights...” but instead related to Apple’s “interests as a manufacturer....”⁸⁸

Respondents focus mostly on their own business interests—rather than any copyright interests—and make numerous unsupported and self-serving claims about public safety. For example, Respondents worry about their ability to effectively update customer software and ensure the integrity of their own internal quality-control processes; hypothetical impacts on insurance costs; and the effect the exemption would have on their customers’ warranties, downstream purchasers of their vehicles, and the auto repair market. As with Apple’s rejected arguments, these objections have more to do with Respondents’ business interests as manufacturers than their copyright interests as software developers. Respondents also discuss at length how potential safety risks would affect their reputation, which, again, primarily concerns Respondents’ business interests.

Item 7.3 Respondents Failed to Support Their Assertions with Evidence.

Even if any of Respondents’ assertions related to their copyright interests, they are not supported by sufficient evidence.

Respondents have not provided support for their assertions that, if the exemption is granted, the resulting modifications will disrupt the secondary market for used vehicles,⁸⁹ erode resale value,⁹⁰ void manufacturer warranty,⁹¹ disrupt software updates,⁹² cause adverse impacts on auto insurance,⁹³ confuse distribution of liability,⁹⁴ “unravel the legal and fiscal infrastructure of existing automobile repair markets,”⁹⁵ and “negatively impact the perception of the durability and performance of [OEMs’] products.”⁹⁶

Respondents have not substantiated or supported their arguments that the exemption would result in risks to public safety and security, cause more individuals to be injured by modified cars,⁹⁷ or have deleterious effects on environmental health. They have

⁸⁶ 77 Fed. Reg. 65261 (October 26, 2012); *see also*, *MDY Indust.*, 629 F.3d at 945–46 (citing H.R. Rep. No. 105-551, pt. 2, at 26).

⁸⁷ *See, e.g.*, Auto Alliance Opp’n at 20.

⁸⁸ 75 Fed. Reg. 43829 (July 27, 2010).

⁸⁹ AGA Opp’n at 7–8; Auto Alliance Opp’n at 20; Eaton Opp’n at 3–4; General Motors Opp’n at 6; John Deere Opp’n at 9.

⁹⁰ Auto Alliance Opp’n at 9.

⁹¹ AGA Opp’n at 7–8.

⁹² AGA Opp’n at 7.

⁹³ AGA Opp’n at 8.

⁹⁴ Auto Alliance Opp’n at 20.

⁹⁵ AGA Opp’n, at 2, 6.

⁹⁶ Eaton Opp’n at 4.

⁹⁷ Auto Alliance Opp’n at 17.

established that ECU code⁹⁸ and vehicle engines can be complicated,⁹⁹ but not that the exemption would incentivize vehicle owners unfamiliar with these systems to make dangerous modifications. They list a slew of them—for example, “sacrificing safety for horsepower,” “disabling the brakes,”¹⁰⁰ or “tampering with security lock software,” but provide no evidence to suggest that vehicle owners would ever be likely make these modifications.¹⁰¹ Respondents also provide colorful illustrations of the “potential” for modifications to go horribly wrong—for example, they paint the ominous pictures of a hapless vehicle owner whose innocent modification “incidentally create[s] a *potential* software malfunction that undermines critical systems”¹⁰² and a woefully unlucky owner whose “ill-considered software changes,” combined with “certain operating circumstances[,] conspire to result in a run-away vehicle on an extended downhill.”¹⁰³ Respondents cite no sources to support these stories, which they themselves describe as “unlikely” to occur.¹⁰⁴

The only concrete examples of the potential for dangerous or harmful modifications that Respondents have provided are modifications that are already illegal for reasons unrelated to copyright law.¹⁰⁵ As Respondents themselves note, tampering with vehicle odometers violates “the laws of virtually every state;” the unsafe placement of entertainment systems violates “federal motor carrier safety regulations;”¹⁰⁶ and aftermarket tampering with emissions controls violates existing EPA regulations.¹⁰⁷ Granting the exemption would not lift the bans on those types of modifications. They will remain illegal.

Item 8. Documentary Evidence

Petitioners have not submitted additional evidence with this Reply Comment.

⁹⁸ AGA Opp’n at 6.

⁹⁹ Eaton Opp’n at 3.

¹⁰⁰ Auto Alliance Opp’n at 19.

¹⁰¹ AGA Opp’n at 7.

¹⁰² AGA Opp’n at 7 (emphasis added).

¹⁰³ Eaton Opp’n at 3.

¹⁰⁴ *Id.*

¹⁰⁵ Auto Alliance Opp’n at 17–18.

¹⁰⁶ *Id.* at 18.

¹⁰⁷ 42 U.S.C. § 7522(a)(3)(A) (it is prohibited “for any person knowingly to remove or render inoperative any [emissions controls] after such sale and delivery to the ultimate purchaser.”). *See also* U.S. Environmental Protection Agency, *Clean Air Act: Mobile Source Civil Penalty Policy* (Jan. 16, 2009), http://www2.epa.gov/sites/production/files/documents/vehicleengine-penalty-policy_0.pdf; John Deere Opp’n at 21.