



**U.S. Copyright Office  
Notice of Proposed Rulemaking  
17 U.S.C. §1201  
October 15, 2020  
Joint Industry Comments  
*Respectfully Submitted February 8, 2021***

*Proposed Class 12  
Computer Programs – Repair*



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**Item(s) 1. Commenter Information**

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Founded in 1900, the Equipment Dealers Association (EDA) – formerly known as the North American Equipment Dealers Association (NAEDA) – is a non-profit trade organization that represents retail dealerships that are directly focused on the sale and service of agricultural, construction, industrial, forestry, outdoor power, lawn and garden, and/or turf equipment. Together with our regional partners, we work to provide essential value to our members by enhancing the dealer-manufacturer relationship and advocating for a positive legislative and regulatory environment. EDA and its Affiliates support public policy that protects consumers and enhances public safety. Consequently, the associations oppose legislation or regulations that permit the widespread release of embedded code.

Associated Equipment Distributors (AED) is the international trade association representing companies that sell, rent, service and manufacture construction, mining, farm, energy, forestry and industrial equipment. Its more than 450 distributor members, which are predominantly small-medium-sized, family-owned businesses, have over 3,500 locations, employ 120,000 workers and account for more than \$51 billion of annual sales revenue of equipment and related supplies and services. AED also has 300 non-distributor members, which include equipment manufacturers and industry service providers. AED supports public policy that protects consumers and enhances public safety. Consequently, the association opposes legislation or regulations that permit the widespread release of embedded code.

EDA and AED members depend on the anti-circumvention provisions of the Digital Millennium Copyright Act (DMCA). EDA, its regional affiliates, and AED jointly submit these industry comments.

## **Item B. Proposed Class Addressed**

Proposed Class 12—Computer Programs-Repair

## **Item C. Overview**

The Notice of Proposed Rulemaking, dated October 15, 2020 ("Notice"), proposed renewal of the "Computer Programs-Repair of Motorized Land Vehicles" class of works exempted from the Copyright Act's anti-circumvention law, currently codified at 37 C.F.R. 201.40(b)(9): Computer programs that are contained in and control the functioning of a lawfully acquired motorized land vehicle such as a personal automobile, commercial vehicle, or mechanized agricultural vehicle, except for programs accessed through a separate subscription service, [1] when circumvention is a necessary step to allow the diagnosis, repair, or lawful modification of a vehicle function, [2] where such circumvention does not constitute a violation of applicable law, including without limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency, and [3] is not accomplished for the purpose of gaining unauthorized access to other copyrighted works. See 37 CFR 201.40(b)(9); Exemptions To Permit Circumvention of Access Controls on Copyrighted Works, 85 Fed. Reg. 65,293, 65,299–300 (Oct. 15, 2020) (Exemption L. Computer Programs-Repair of Motorized Land Vehicles (hereinafter "Proposed Class (b)(9)")).

In the Notice, the Copyright Office joined Proposed Class (b)(9) with various other petitions for proposed exemptions into an omnibus "Proposed Class 12," which relates generally to "new or expanded exemptions relating to diagnosis, repair, and modification of software-enabled devices." 85 Fed. Reg. 65,306–07. All petitions within Proposed Class 12 appear to request that third-party service providers be permitted to exercise rights under the exemption. *Id.* Additionally, within Proposed Class 12, certain petitioners seek to expand the existing anti-circumvention exemption for Proposed Class (b)(9) to also include: (1) "removal of the limitation to specific categories of devices," (2) "circumvention for purposes of modification of a device," in addition to repair-related activities and regardless of whether modifications are lawful modifications or unlawful modifications, and (3) removal of "current requirement that circumvention of TPM's in motor vehicles not constitute a violation of applicable law." 85 Fed. Reg. 65,307.

As set forth below, Proposed Class (b)(9) can be renewed in its current form, and potentially clarified with certain definitions. The Copyright Office, however, should not permit the expansion of Proposed Class (b)(9) in the guise of so-called “renewal” as part of a broader Proposed Class 12. First, expanding the exemption to include third-party service providers likely exceeds the permissible scope of these Section 1201(a)(1)(B)–(C) proceedings by violating the separate prohibitions on trafficking in circumvention tools and services as provided in Section 1201(a)(2) and 1201(b)(1), which are not subject to this triennial exemption procedure. Second, as noted in the Notice, the Copyright Office reviewed and declined to adopt the remaining proposed expansions in the 2018 Section 1201 Exemption Rulemaking. 85 Fed. Reg. 65,307 nn.201, 204. There is no reason to reach a different outcome here. Any proposed renewal should be subject to the same limitations as embodied in the current regulations, and additional definitional clarifications are warranted.

**1. Proposed Class 12 does not simply “renew” proposed Class (b)(9).**

The Copyright Office can renew or amend the previous exemption for Proposed Class (b)(9) as indicated in the Notice. 85 Fed. Reg. 65,299–300. The Copyright Office should not automatically or presumptively renew any prior temporary three-year Section 1201(a)(1) exemption without fresh consideration of the proposed renewal. Especially where, as here, Proposed Class 12 does not simply “renew” the Proposed Class (b)(9) as written, but rather results in an expansion of the existing exemption.

Fundamentally, Congress contemplated that any exemptions to Section 1201(a)(1)(A) would be revisited triennially to determine whether users of certain copyrighted works “are, or are likely to be in the succeeding 3-year period, adversely affected by virtue of [the anti-circumvention law] in their ability to make noninfringing uses[.]” 17 U.S.C. 1201(a)(1)(B). In so doing, Congress contemplated that any such exemptions would be temporary and closely scrutinized. These exemptions should not be transformed into the equivalent of a permanent statutory exemption by virtue of presumptive, successive renewals. Any proposed expansion of Proposed Class (b)(9), as set forth in Proposed Class 12, requires cautious review and restraint to avoid impairing intellectual property rights. This pertains not only to rights under copyright law, but also to interference with state and federal trade secret rights.

Further, in the global context, the temporary, three-year exemptions to Section 1201(a)(1)(A) are best cautiously applied. It is a peculiar limitation to U.S. copyright protection with respect to fixed statutory exemptions to more robust anticircumvention legislation implemented in other countries pursuant to the Berne Convention, such as the United Kingdom and Germany. Section 296A and Section 50B, Decompilation, Copyright, Designs and Patent Act 1988 (United Kingdom); Act on Copyright and Related Rights (Copyright Act), Article 69(e), Decompilation and Article 95(b) Measures in Respect of Limitations (Germany).

**2. No anti-circumvention exemption is warranted because of the availability of commercially available embedded software updates for repair.**

As discussed more fully, *infra*, Item E, the Copyright Office's inquiry must consider whether users of a copyrighted work are or likely will be "adversely affected" by the prohibition on circumvention in their ability to make noninfringing uses of a particular class of works. 17 U.S.C. 1201(a)(1)(B). For the purposes of Proposed Class 12, users of copyrighted works are not "adversely affected" because the proposed expansions do not fully consider commercially available embedded software updates for repair of motorized land vehicles.

**3. The limitations of Proposed Class (b)(9) should be maintained, including by the use of defined terms.**

The proposed expansions in Proposed Class 12 are overly broad. Similar to Proposed Class (b)(9), Proposed Class 12 should be limited to lawful repair and lawful modifications conducted by the owner of vehicle, which excludes tampering under environmental regulations and impermissible reverse engineering of embedded software in potential violation of Section 1201(f).

Under either a renewal of Proposed Class (b)(9), as currently codified, or Proposed Class 12, the exemptions for "repair" and "modification" should be restricted to circumvention that does not violate applicable law. For example, the proposed expansion to permit circumvention by third-party service providers is an end-run around the anti-trafficking provisions of Sections 1201(a)(2) and 1201(b)(1), which are not subject to these Section 1201(a)(1) proceedings. The anti-trafficking provisions make it unlawful to "manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that"

is designed or marketed for circumventing TPMs. Proposed Classes (b)(9) or 12 cannot overextend an exemption for end users beyond the proper scope of these proceedings to encompass third party service providers.

Additionally, the terms “repair” and “modification” would benefit from definitions for the purposes of Proposed Class 12 or Proposed Class (b)(9). Such exemption-specific definitions have been previously codified, including “repair” for the purposes of 37 C.F.R. 201.40(b)(10). Proposed definitions are provided below.

**a. “Repair”**

The term "Repair" should be defined as follows: Lawful maintenance or lawful restoration of the functionality of vehicle, its components, its systems or its embedded software in accordance with the manufacturer's original equipment specifications, applicable supplier specifications, and consistent with applicable manufacturer-authorized updates or recalls to the vehicle, its components, its systems, or its embedded software. Lawful repair, maintenance and restoration are consistent with applicable laws, regulations, and industry practices that relate to any applicable environmental, safety, security and engineering, requirements, including laws and regulations that apply to sales and servicing of new and used vehicles.

This definition is appropriate under the first and second Section 1201(a)(1)(C) factors. As explained *infra*, Item E.1–2, manufacturers and authorized dealers/service providers support access to updates to embedded software for repair. Further, this definition is appropriate in light of engineering considerations and functional safety, as explained *infra*, Item E.4–5, in conjunction with the fourth and fifth Section 1201(a)(1)(C) factors. To regulate repair of embedded software with copyrightable expression in vehicles poses the incidental or ancillary regulation of the functionality of equipment, which, at its limits, is excluded from copyright protection under 17 U.S.C 102(b) in potential excess of the authority provided by Congress under the Copyright Act. In the language of the Proposed Class (b)(9), which forms the basis of Proposed Class 12, the Copyright Office specifically references and regulates the copyrightable expression within "computer programs that are contained in and control the functioning of a lawfully acquired motorized land vehicle" and "vehicle function" as limited by its statutory authority under section 102(b) of the Copyright Act. Further, to regulate the repair of copyrightable expression in embedded software in vehicles in any Section 1201(a)(1) exemption

beyond statutory Section 1201(f) is to regulate indirectly and inherently function—such as its engineering and functional safety.

Vehicle manufacturers may include on-road vehicle manufactures, such as automobile manufacturers, truck manufacturers and bus manufacturers, or off-road vehicle manufacturers, such as agricultural equipment, mining equipment and construction equipment, and aircraft and satellite manufacturers. Thus, regulation of vehicle manufacturers also involves other regulators, including the U.S. Environmental Protection Agency (EPA), National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation (DOT), Federal Aviation Administration (FAA), and self-regulatory and industry practices adopted by vehicle manufacturers. The laws and regulations of EPA apply to both on-road equipment and off-road equipment, such as agricultural and construction equipment. The laws and regulations of the FAA apply to aircraft, whereas the DOT and NHTSA primary regulate on-road vehicles.

#### **b. Modification**

The language of the Proposed Class (b)(9) exemption, as currently codified, is clear that only "lawful modification" is permitted and excludes illegal tampering. In Proposed Class 12, however, the proposed expansion of the "modification" exemption should be rejected because it potentially includes not only lawful repair and maintenance, but also illegal tampering in violation of EPA regulations.

Under the EPA regulations, tampering is prohibited and subject to fines. For example, the EPA “prohibits anyone from tampering with an emission control device on a motor vehicle by removing it or making it inoperable prior to or after the sale or delivery to the buyer.” See <http://www2.epa.gov/enforcement/air-enforcement#engines>. A “vehicle’s emission control system is designed to limit emissions of harmful pollutants from vehicles or engines.” *Id.* The “EPA works with manufacturers to ensure that they design their components with tamper-proofing, addresses trade groups to educate mechanics about the importance of maintaining the emission control systems, and prosecutes cases where significant or imminent harm is occurring.” *Id.* The EPA may audit manufacturers on test equipment, test records, and tamper resistance methods, among other things. Certification Guidance for Heavy Duty On-Highway and Non-road CI Engines, 40 CFR Part 86 and Part 89, Section II, Paragraph C at p. 6, available at <http://www.epa.gov/otaq/documents/nonroad-diesel/420b98002.pdf>. If the



manufacturer seals adjustable parameters, the sealing method must provide a visual and “physical deterrence to tampering.” *Id.* at Section II, Paragraph M. The engine certification process includes a review of engine test information and tamper resistance, among other things. *Id.* at Appendix G and Appendix H. Individual vehicle owners that tamper with emission controls by changing software or otherwise can be fined. 40 C.F.R. § 1068.101(b)(1).

The EPA has explained, for example, that: “computer software that alters diesel fuel injection timing is a defeat device. Defeat devices, which are often sold to enhance engine performance, work by disabling a vehicle’s emission controls, causing air pollution. As a result of EPA enforcement, some of the largest manufacturers of defeat devices have agreed to pay penalties and stop the sale of defeat devices.” See also <http://www2.epa.gov/enforcement/air-enforcement#engines>. Embedded software is installed on the vehicle in object-code form, which necessarily requires reverse engineering to modify the software (to the extent possible for “lawful modification”). For example, to modify the embedded software, first the user would need to convert or decompile the object code of the software into source code of the software. Second, the user could review the decompiled code to put it in better format and proper syntax. Third, the user could change the code to modify it, if permitted under applicable law and if it were possible for the end user to develop safe software with applicable engineering tools and test facilities.

Here, Congress has already defined proper and lawful reverse engineering under the permanent statutory exemption of Section 1201(f), which is addressed in the Proposed Class (b)(9) by the requirement “where such circumvention does not constitute a violation of applicable law.” Therefore, for the above reasons, Proposed Class 12 needs to retain the limitation, “where such circumvention does not constitute a violation of applicable law.” Still, reverse engineering also has implications under any available trade secret protection of the embedded software, such as for processes, methods and other techniques. The potential jeopardy of rights created under the Defend Trade Secrets Act can be “other factors” under the fifth Section 1201(a)(1)(C) factor, discussed *infra* Item E.5. If a temporary Section 1201 exemption authorizes circumvention of security measures that protect software that is subject federal trade secret protection under the Defend Trade Secrets Act, the exemption will provide an incentive to would-be misappropriators to interfere with the reasonable security measures currently in place to protect trade secrets under the federal trade secret protection statute. 18 U.S.C. 1836.

#### **Item D. Technological Protection Measure(s) and Method(s) of Circumvention**

Technological Protection Measures will vary by vehicle, its systems, and its components, along with the manufacturers, suppliers, and licensors who provide, design and manufacture electronic systems, software, security features, and components, or TPMs that are required to comply with applicable industry standards or applicable data security requirements, financial regulations, privacy regulations, and applicable laws.

#### **Item E. Asserted Adverse Effects on Noninfringing Uses**

- 1. The limitations proposed above would not adversely affect “the availability for use of copyrighted works” to users of embedded software under the first Section 1201(a)(1)(C) factor.**

With respect to "Repair" (as defined above) of vehicles and embedded software as the copyrighted work, vehicle manufacturers, their suppliers, and authorized dealers are influenced by sales and competitive market forces to make available manufacturer-authorized software updates to embedded software. Without any circumvention, the users of embedded software can generally obtain or license commercially available software updates in a suitable form (e.g., typically object code form) for Repair to avoid disclosure of any trade secrets in the source code. For example, many manufacturers and authorized dealers support provision of reasonable customer access to manufacturer-authorized updates of embedded software for Repair by one or more of the following: authorized-dealer installation, customer download and installation, customary industry practices, or wireless download and installation, subject to availability, equipment capabilities, and reliable wireless coverage. In practice, the commercial availability of manufacturer-authorized software updates for license by customers and end users may vary by make, model, manufacturer and its suppliers, for example. See Exhibit B.

Previous Section 1201(a)(1) exemptions appear to address the availability of the copyrighted works by limiting or conditioning the availability and scope of the exemption on need or necessity. For some obsolete vehicles, new updates of embedded software may no longer be supported by the manufacturer or its supplier. However, it is possible that the authorized dealer, manufacturer, or its supplier may archive previous software updates for some time to provide

continued access to service older vehicles in the field, such that there is no need or necessity for the user to have the right to circumvent security features in violation of end user licenses, contractual restrictions, relationships, course of dealing or business/societal norms. For example, in the Proposed Class (b)(9), which can be adopted in Proposed Class 12, the language is limited to or conditioned on the exemption to "when circumvention is a necessary step to allow the diagnosis, repair, or lawful modification of vehicle function[.]" 37 C.F.R. 201.40(b)(9). Moreover, the reverse engineering exemption of Section 1201(f) is expressly conditioned upon availability and necessity: the exemption applies only to lawfully obtained computer programs "that have not previously been readily available to the person engaged in the circumvention," and then only applies to "those elements of the computer program that are necessary to achieve interoperability of an independently created computer program with other programs" without copyright infringement of the computer program.

Similar to Proposed Class (b)(9), need-based conditions should apply to the Proposed Class 12, as follows: if the customer has access to the commercially available object code version of the manufacturer-authorized embedded software of the vehicle for Repair, there is no need for any circumvention of the security features to undertake the repair; hence, the Proposed Class 12 exemption would not apply.

Based on the above considerations, the Proposed Class 12 exemption could be clarified so that the exemption only applies to embedded software that have not been commercially available in a suitable format for Repair, such as encoded, object code form or software as a service (SaaS) form (e.g., cloud update service); hence, the Proposed Class 12 exemption does not authorize circumvention of security measures applicable to any manufacturer-authorized software updates that are commercially available or actually provided to users for Repair, downloading, or installation in a vehicle, its systems, or its components. Here, the Proposed Class 12 exemption should not allow end users to violate any applicable contractual terms or license terms to copy confidential manufacturer-authorized software updates, for which commercial availability should have rendered the exemption moot in the first place.

- 2. The limitations proposed above would not adversely affect “the availability for use of works for nonprofit archival, preservation, and educational purposes” under the second Section 1201(a)(1)(C) factor.**

With respect to Repair of vehicles and embedded software as the copyrighted work, vehicle manufacturers, their suppliers, and authorized dealers are influenced by sales and competitive market forces to make repair information and diagnostic tools available to customers. For example, previously the Association of Equipment Manufacturers (AEM) and the Equipment Dealers Association (EDA) announced an industry commitment to make available through authorized dealers to support farmers and ranchers performance of basic service maintenance and repairs on agricultural equipment, such as tractor and combines, which is set forth in attached Exhibit B. See also <https://www.aem.org/news/aem-eda-announce-statement-of-principles-on-right-to-repair> and <https://r2rsolutions.org/learn-about-service-tools/>.

Commercially available diagnostic tools such as diagnostic readers are available to read standard or non-proprietary diagnostic trouble codes, or combinations of diagnostic trouble codes, such as a codes that conform to J1939 standards that have been applied to off-road vehicles. Some off-road equipment manufacturers generally offer specialized diagnostic tools that can read both standard and proprietary diagnostic codes associated with that manufacturer's equipment. Because diagnostic tools are commercially available for license or purchase of service, there is no need to allow users to circumvent security features on the vehicle to recreate additional or redundant diagnostic tools.

Similarly, copies of documentation, copies of manuals and other content for service, repair and maintenance are commercially available for license, purchase in printed or electronic form, or for online viewing, there is no need to allow users to circumvent security features that protect such content to create infringing content. Moreover, the diagnostic tools, repair documentation and repair information is also available for use of educational purposes in training customers, service technicians, and authorized dealers consistent with the second factor under Section 1201(a)(1)(C).

Based on the above considerations, the Proposed Class 12 exemption should be limited to not apply to users who circumvent security measures that protect any of the following items that are already commercially available: diagnostic readers, diagnostic tools, maintenance tools, manuals, documentation or digital content. For example, some manufacturers may provide commercially available computer programs or software as a service that includes the above features, such as for display on an integral electronic display of certain vehicles.

**3. The limitations proposed above would not adversely affect “criticism, comment, news reporting, teaching, scholarship, or research” under the third Section 1201(a)(1)(C) factor.**

Under the third factor, via a user interface (e.g., display, if available) on the vehicle, without any circumvention of security measures, an authorized end user can interact with a software-as-a-service (SaaS) instance or object code version of the embedded software to evaluate, criticize, comment, or report on publicly released features that are authorized to be available to end users under an applicable license, subject to applicable laws and regulations. For these reasons, any exemption should be subject to the current codified limitation on circumvention of security measures for "separate subscription service." 37 C.F.R. 201.40(b)(9). For example, vehicles are available for purchase or lease from authorized dealers in accordance with contract and license terms that allow the end user to evaluate the vehicle, to interact with user interface (e.g., electronic display), and to use the embedded code as a software-as-a service (SaaS) or in object code form only as an ordinary end user, without reverse engineering (e.g., to extract the source code of the embedded code).

Some embedded software can contain innovative and creative expression that could be infringed if greater access than authorized under the applicable license, such as software-as-a-service (SaaS) access or object code access were provided to the public. The embedded software may be protected by copyrights, trade secrets and patent rights. For instance, the embedded software can contain innovative and creative expression in embedded software and associated content related to informatics, infotainment, music recordings, video recordings, telematics, diagnostics, fleet management, predictive maintenance, satellite navigation, augmented maps, precision agriculture, precision construction, machine vision, artificial intelligence, vehicular guidance, autonomous control, display arrangement and customization, among other things. Accordingly, there is the potential for users to infringe the creative expression in embedded software and content in the vehicle if circumvention were permitted to access the object code software (e.g., for reverse engineering purposes beyond the statutory Section 1201(f) exemption) that is not required to Repair, evaluate or criticize the embedded software, such as if the end user seeks to circumvent security measures or subscription service to obtain upgraded features without paying applicable subscription or license fees.

**4. Circumvention would have an adverse effect on the market for and value of the copyrighted works, under the fourth Section 1201(a)(1)(C) factor.**

Under the fourth factor, the expansions sought by some petitioners in Proposed Class 12 would impair the market or potential market for used vehicles that incorporate embedded software. The limitations proposed above, including definitional limitations for “Repair” and “lawful modification,” coextensive with the definition Repair, are appropriate to protect the market for and value of these copyrighted works embedded in vehicles. Vehicle purchasers and dealers would need to evaluate or inspect used vehicles for unauthorized modifications to embedded software, such as tampering that might violate applicable environmental laws or cause safety problems. First, there is an expense for such evaluation and inspection. Second, there is an expense for remedial measures to delete unauthorized modifications (e.g., unauthorized under end user license terms) that are acceptable under Proposed Class 12 to return the vehicle to the manufacturer's original equipment specifications. Third, the cost of the vehicle, which incorporates the embedded software, and the value of the embedded software itself, are likely reduced by the aforementioned inspection and remediation costs associated with prying, tampering and modification authorized under any exemption.

**5. Other factors, including safety, vehicle engineering, and trade secrets warrant the limitations described above under the fifth Section 1201(a)(1)(C) factor.**

Under Section 1201(a)(1)(C), the Copyright office may consider other factors as appropriate. Here, the Copyright Office should consider safety, the complexities of vehicle engineering, and interference with the statutory reverse engineering provision and federal trade secret rights.

**a. Safety**

In the language of the current exemption, the Copyright Office qualified the scope of exempted circumvention to avoid interference with other laws and government regulations to "where such circumvention does not constitute a violation of applicable law, including without limitation regulations promulgated by the Department of Transportation or the Environmental Protection Agency, and is not accomplished for the purpose of gaining unauthorized access to other copyright works." 37 C.F.R. 201.40(b)(9). Permitting circumvention of TPMs under copyright could interfere with the requirements imposed by the EPA. As explained above, EPA restrictions on tampering require security measures (e.g., technological protection measures (TPMs)) to prevent tampering with emission controls. The same security measures may protect

copyrightable expression of embedded software and against tampering with emissions controls. Further, although the Department of Transportation and the NHTSA regulate the safety and security of on-road vehicles, both on-road vehicle and off-road vehicle manufacturers and suppliers are subject to voluntary, self-regulation, such as adoption of industry practices and standards that can form part of the manufacturer's original equipment specifications for a respective vehicle.

Accordingly, the proposed exemption should exclude any lawful modifications that are more than "Repair" (as defined above) or that deviate from the manufacturer's original equipment specifications or manufacturer-recommended updates to the vehicle. Likewise, any exemption should require any lawful modifications conform to the manufacturer's original equipment specifications for a respective vehicle, including but not limited to applicable industry standards and engineering practices for the vehicle.

#### **b. Complexities of Vehicle Engineering**

The engineering of vehicle components, systems, and embedded software requires sufficient funding for development, design and testing; extensive software and equipment; and experienced engineering staff, among other things. Teams of engineers may use modeling, software simulations, hardware-in-loop testing, integration and system design, and other appropriate testing and quality control to provide reliable and safe vehicles that incorporate embedded software. For example, some manufacturers may adopt ISO 26262 "Road vehicles-Functional Safety" for corresponding vehicles in accordance with industry practices. Different software engineering practices can be applied to the factory automation setting, rather than vehicle design; functional safety under the generic standard IEC 61508 can be applied as general concept for software engineering. Valeriy Vytakin, *Software Engineering in Industrial Automation: State-of-Art Review*, IEEE Transactions on Industrial Informatics, Vol. 9, No. 3 (Aug. 2013) at pp. 1234–49. There are limitations of current safety standards that may be applied to automated or driverless transportation system, such as ISO 26262, SAE J3061, and ISO/PAS 11281. Krzysztof Czarnecki, *Requirements Engineering in the Age of Societal-Scale Cyber-Physical Systems: The Case of Automated Driving*, 2018 IEEE 26th International Requirements Engineering Conference, at pp. 3–4. The safety and engineering considerations for aircraft control can be more complex than for ground based vehicles. *See also*

<https://spectrum.ieee.org/aerospace/aviation/how-the-boeing-737-max-disaster-looks-to-a-software-developer>

To the extent that lawful “Modifications” exceed “Repair” (as defined above), or do not conform to the manufacturer's original equipment specifications and engineering practices, safety concerns arise. This creates a tension between the proper public policies of the Copyright Office and Department of Commerce. Likewise, to the extent that recommended modifications (e.g., safety updates) by the original equipment manufacturer are not followed or broad exemptions to circumvention are approved, safety concerns can arise.

### **c. Interference with the Statutory Reverse Engineering Exemption and Federal Trade Secret Rights**

Any exemption to the anti-circumvention law should be consistent with the statutory limitation on reverse engineering, and also not impair rights under federal trade secret law.

The proposed expansions that some petitioners seek in connection with Proposed Class 12 are an end-run around the statutory reverse engineering limitation in Section 1201(f). Modification of embedded software is generally not authorized under any end-user license that covers embedded software of the vehicle, or its controller or copies of software obtained under section 109. As explained above, to modify the object code version of the software, reverse engineering is generally required to convert or decompile the object code version of the software into source code. Any proposed exemption should not exceed the limitations of the statutory reverse engineering exemption embodied in Section 1201(f).

Further, the expansions sought by some petitioners in Proposed Class 12 would tend to frustrate federal trade secret rights. To prevail in a federal trade secret claim under the Defend Trade Secrets Act, a party needs to show it took reasonable measures to keep the information secret, which would ordinarily include the same type of reasonable security measures (e.g., technological protection measures (“TPMs”)) that apply under the DMCA, and the information was misappropriated (e.g., improperly reverse engineered) by the defendant. 18 U.S.C. 1836; *See also Philips Med. Sys. Nederland B.V. v. TEC Holdings, Inc.*, No. 1:17-cv-02864, 2018 WL 2009430 (N.D. Ga. 2018). Similarly, in the EU under the Trade Secret Directive, EU 2016/943, a trade secret must be “subject to reasonable steps under the circumstances, by the person lawfully in control of the information to keep it secret.” The triennial rulemaking tends to frustrate



the intellectual property owner's security measures (e.g., TPMs) that protect embedded software that is subject to both copyright and trade security protection.

The proposed expansions sought in connection with Proposed Class 12 have the potential to arm infringers with an excuse to circumvent security features that may violate license terms and confidentiality restrictions arising from relationships or customary practice and social norms. However, copyright protection is limited to expression of embedded software and does not cover functional features, such as any "idea, procedure, process, system or method of operation," that are excluded from copyright protection and which may fall under patent or trade secret protection. (17 U.S.C. 102(b)). To the extent that the Proposed Class 12 exemption is not clearly limited, or is incapable of any practical limitation, to the copyrightable expression in the embedded software, the exemption to circumvent may interfere with federal trade secret protection; particularly so where contract, relationship, course of conduct, or social norms require the applicability of trade secret protection to protect the intellectual property rights of innovative manufacturers and software developers. The Copyright Office's approval of an exemption, and any circumvention that follows, is not necessarily done with the consent of the trade secret holder and should be considered destructive of any federal trade secret rights that the trade secret holder would otherwise hold. No security measure no matter how reasonable or how robust would be adequate under the existing U.S. regulatory regime to allow trade secret protection for software in an environment where new temporary exemptions continue to accumulate.

## **Documentary Evidence**

Exhibit A

EPA Tampering Bulletin

Exhibit B

Industry Commitment





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

ASSISTANT ADMINISTRATOR  
FOR ENFORCEMENT AND  
COMPLIANCE ASSURANCE

November 23, 2020

**MEMORANDUM**

**SUBJECT:** EPA Tampering Policy: The EPA Enforcement Policy on Vehicle and Engine Tampering and Aftermarket Defeat Devices under the Clean Air Act

**FROM:** Susan Parker Bodine

SUSAN  
BODINE

Digitally signed by  
SUSAN BODINE  
Date: 2020.11.23  
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This policy concerns the civil enforcement of the Clean Air Act's (Act or CAA) prohibitions on tampering and aftermarket defeat devices. The EPA's goal in issuing this Policy is to ensure we achieve the human and environmental health protections Congress intended by enforcing these prohibitions while not unduly restraining commerce in the aftermarket sales and service industry. The EPA reaffirms its longstanding practice of using enforcement discretion not to pursue conduct that could potentially constitute a violation of the Clean Air Act if the person engaging in that conduct has a documented, reasonable basis to conclude that the conduct does not adversely affect emissions. *See* Mobile Source Enforcement Memorandum 1A (June 25, 1974). The EPA evaluates each case independently, and the absence of such a documented reasonable basis does not in and of itself constitute a violation.

This Policy supersedes and replaces the following: Mobile Source Enforcement Memorandum 1A (June 25, 1974); Exhaust System Repair Guidelines (March 13, 1991); Engine Switching Fact Sheet (March 13, 1991). These former statements of EPA policy, addenda to them, and all statements restating or interpreting them, no longer apply. The EPA has undergone reorganizations since the issuance of these former statements, but each was issued by an office of the EPA that was responsible for (among other things) the civil enforcement of the prohibitions on tampering and aftermarket defeat devices. Based on this history, and in consultation with the EPA's Office of Transportation and Air Quality, this Tampering Policy is issued by the Office of Enforcement and Compliance Assurance.

This Policy is nonbinding and in no way affects the EPA's authority to investigate and enforce compliance with the Act. *E.g.*, CAA §§ 113, 114, 204, 205, 206, 208, 307, 42 U.S.C. §§ 7413, 7414, 7523, 7524, 7525, 7542, 7607. This Policy is not a final agency action. It is direction for EPA personnel regarding the potential investigation and prosecution of civil enforcement actions, and to inform the public. The EPA independently evaluates each case, considers relevant case-specific facts and circumstances, and reserves the discretion to act at variance with this Policy. The EPA also reserves the right to change this Policy at any time. This Policy creates no obligations on regulated parties, but instead describes steps they may take to avoid becoming the subject of an EPA enforcement action.

Questions about this Policy—or tips about conduct that might be illegal activity—may be directed to the EPA's Vehicle and Engine Enforcement Branch. Contact [tampering@epa.gov](mailto:tampering@epa.gov).

**EXHIBIT**

**A**

## **Scope of this Policy**

This Policy addresses only potential civil enforcement actions under section 205 of the Act, 42 U.S.C. § 7524, for violations of sections 203(a)(3) or 213(d) of the Act, 42 U.S.C. § 7522(a)(3) and 7547(d), and 40 C.F.R. § 1068.101(b)(1)–(2). Note that state and federal law might apply to actions taken in the course of vehicle maintenance or modification, including the criminal prohibition against tampering with emissions monitoring devices (such as onboard diagnostic systems), in section 113(c)(2)(C) of the Act, 42 U.S.C. § 7413(c)(2)(C).

Section 203(a)(3) of the Act prohibits tampering with emissions controls, and also prohibits making and selling products with a principal effect of bypassing, defeating, or rendering inoperative emissions controls. The prohibitions in section 203(a)(3) apply to all vehicles, engines, and equipment subject to the certification requirements under section 206 of the Act, or other design requirements in the Act or regulations. This includes all motor vehicles (e.g., light-duty vehicles, highway motorcycles, heavy-duty trucks) and motor vehicle engines (e.g., heavy-duty truck engines). Section 213 of the Act and regulations written thereunder apply these prohibitions to nonroad vehicles (e.g., all-terrain vehicles, off-road motorcycles) and nonroad engines (e.g., marine engines, engines used in generators, lawn and garden equipment, agricultural equipment, construction equipment). Certification requirements include those for exhaust or “tailpipe” emissions, evaporative emissions, and onboard diagnostic systems. The prohibitions also apply to those products (e.g., replacement engines under 40 C.F.R. § 1068.240 and products under transition programs like that in 40 C.F.R. § 1039.625) that might be exempt from the Act’s certification requirements but still must have emissions controls and meet standards.

The Act’s prohibitions on tampering and defeat devices apply for the entire life of vehicles, engines, and equipment. They apply regardless of whether the regulatory “useful life” or warranty period has ended.

This Policy does not address vehicles, engines, or equipment that are excluded from the definitions of motor vehicle, motor vehicle engine, nonroad vehicle, and nonroad engine. *See* 40 C.F.R. § 85.1703 (defining “motor vehicle”). For example, this Policy does not address vehicles originally built and used exclusively for competitive motor sports, which are excluded from the Act’s definitions of motor vehicle and nonroad vehicle. Also, this Policy does not address EPA-certified motor vehicles that are converted into a vehicle used solely for competition motorsports, nor aftermarket parts purportedly manufactured or sold for that purpose.

This Policy does not address conduct that is expressly addressed by regulations. This, for example, includes requirements for certification of new vehicles, engines, and equipment (including the regulatory requirements to disclose auxiliary emissions control devices and demonstrate they are not defeat devices), alternative fuel conversions at 40 C.F.R. Part 85, Subpart F, rebuilds pursuant to 40 C.F.R. § 1068.120, and the conversion of nonroad vehicles and nonroad engines for competition use only pursuant to 40 C.F.R. § 1068.235.

If conduct is addressed in a *general* manner by this Policy but that same conduct is addressed in a *specific* manner by a separate EPA enforcement policy, then the specific policy governs. Under such circumstances, if the EPA withdraws the specific policy, then the EPA Tampering Policy will govern. For example, the EPA has a 1986 enforcement policy that specifically addresses replacement catalysts for light-duty gasoline motor vehicles that are beyond their emissions warranty. Sale and Use of Aftermarket Catalytic Converters, 51 Fed. Reg. 28,114 and 51 Fed. Reg. 28,132 (Aug. 5, 1986). The EPA Tampering Policy includes provisions that generally address replacement after-treatment systems like catalysts. If the EPA withdraws this 1986 catalyst policy, then the generally applicable provisions of

the EPA Tampering Policy will apply to replacement catalysts for light-duty gasoline motor vehicles that are beyond their emissions warranty.

This Policy does not address remanufacturing a vehicle, engine, or piece of equipment into a “new” product. As with manufacturing from new components, manufacturing a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine from used components is generally subject to the Act’s certification requirements. Generally, the remanufactured vehicle, engine, or equipment must be covered by an EPA certificate of conformity (either its original certificate or a new certificate) or exempted from the certification requirements before being sold, offered for sale, or placed back into service.

This Policy does not address potential violations of section 203(a)(3) by original equipment manufacturers (OEMs).

Lastly, this Policy addresses only the federal Clean Air Act. Many states also have laws prohibiting tampering with in-use vehicles, and some states also prohibit dealers from selling tampered in-use vehicles. In addition, there are state and local inspection programs that require periodic vehicle inspections to determine the integrity of emissions control systems. This Policy does not affect a person’s obligation to comply with such state and local laws.

### **Aftermarket Defeat Devices and Tampering**

Vehicle manufacturers employ a wide variety of elements of design to control emissions. Examples include fueling strategies, ignition timing, exhaust gas recirculation systems, filters, and catalysts. Aftermarket parts with a principal effect of bypassing, defeating, or rendering inoperative any aspect of these elements might be illegal aftermarket defeat devices. The EPA enforces the Act’s prohibitions on tampering and aftermarket defeat devices to prevent air pollution that harms people’s health, especially oxides of nitrogen and particulate matter, and to maintain a level playing field in the aftermarket parts and service industries. The agency generally focuses its civil enforcement efforts on companies that manufacture or sell aftermarket defeat devices, companies that tamper with commercial fleets of vehicles, and service shops that routinely delete emissions control equipment.

All modern motor vehicles and engines, and many nonroad vehicles, engines, and equipment, are equipped with electronic control units (ECUs). ECUs are computers that process user input (like throttle position), the conditions inside and outside the engine and emissions control systems (like atmospheric conditions, engine load, emissions levels), and other information. Based on this information, and according to their programming, ECUs direct the operation of the engine and emissions control systems. OEMs design fuel injection timing—and fueling strategy generally—to be a primary emissions control device and program the ECU accordingly. As described below, ECUs also commonly manage after-treatment systems and onboard diagnostic systems. Products that change an ECU—commonly known as tuners—might be an illegal aftermarket defeat device, the use or installation of which might constitute illegal tampering.

Besides the ECU, OEMs also employ various emissions control equipment. These include exhaust gas recirculation (EGR) systems, which recirculate an engine’s exhaust back through the engine to reduce emissions. This also includes a variety of after-treatment systems (which are commonly managed by software in the ECU) which treat exhaust from the engine in order to reduce the amount of pollution emitted into the ambient air. Such devices include three-way catalysts, diesel oxidation catalysts, diesel particulate filters, and selective catalytic reduction systems. The manufacture, sale, offering for sale, or installation of hardware that modifies such emissions control equipment might be prohibited by the

Clean Air Act. Common examples are products that block EGR systems and hollow “straight” pipes that replace filters or catalyts that belong in the exhaust system.

Any part or component that changes an onboard diagnostic system (OBD system) might be an illegal aftermarket defeat device, the use or installation of which might constitute illegal tampering. OBD systems are critical to ensure vehicles, engines, and equipment continue to meet emissions standards throughout the product’s life. Egregious examples of aftermarket defeat devices are *delete kits* which include replacement exhaust pipes to remove after-treatment systems and tuners that both reprogram engine function and override the OBD system so the tampered vehicle will operate without any “check engine” light or other result from the OBD system.

### **Legal Context for This Policy**

This Policy concerns the enforcement of Part A of Title II of the Act, 42 U.S.C. §§ 7521–7554, and the regulations promulgated thereunder. These laws reduce air pollution from mobile sources. In creating the Act, Congress found, in part, that “the increasing use of motor vehicles . . . has resulted in mounting dangers to the public health and welfare.” CAA § 101(a)(2), 42 U.S.C. § 7401(a)(2). Congress’ purpose in creating the Act, in part, was “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” CAA § 101(b)(1), 42 U.S.C. § 7401(b)(1).

As required by the Act, the EPA has prescribed standards applicable to the emissions of certain air pollutants from nearly every vehicle, engine, and piece of equipment containing an engine that is introduced into United States commerce. Regulated air pollutants from vehicles, engines, and equipment include oxides of nitrogen, hydrocarbons, carbon monoxide, particulate matter, and greenhouse gases. Regulated products include motor vehicles, motor vehicle engines, nonroad vehicles, nonroad engines, and equipment containing nonroad engines.

To ensure that every vehicle, engine, and piece of equipment introduced into United States commerce satisfies the applicable emissions standards, as required by the Act, the EPA administers a certification program. Under this program, the EPA issues certificates of conformity (COCs), and thereby approves these products for introduction into United States commerce. As described above, OEMs employ many elements of design to meet emissions standards, and pursuant to EPA regulations they must describe these elements in their COC applications and actually employ them in their products to maintain compliance.

The Act requires OEMs to provide emission-related warranties for their products. CAA § 207, 42 U.S.C. § 7541. The EPA has specified warranty requirements by regulation.

The Act’s prohibitions against tampering and aftermarket defeat devices are set forth in section 203(a)(3) of the Act, 42 U.S.C. § 7522(a)(3).<sup>1</sup> The Act directs the EPA to enforce emissions standards

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<sup>1</sup> **Tampering:** CAA § 203(a)(3)(A), 42 U.S.C. § 7522(a)(3)(A), 40 C.F.R. § 1068.101(b)(1): “[The following acts and the causing thereof are prohibited–] for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter prior to its sale and delivery to the ultimate purchaser, or for any person knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser[.]”

for nonroad vehicles and nonroad engines in the same manner as for motor vehicles and motor vehicle engines. CAA § 213(d), 42 U.S.C. § 7547(d). Accordingly, the EPA has issued regulations prohibiting tampering and aftermarket defeat devices for nonroad vehicles and nonroad engines at 40 C.F.R. § 1068.101(b)(1)–(2). Where this Policy refers to the prohibitions in section 203(a)(3) regarding motor vehicles and motor vehicle engines, unless otherwise noted, it also refers to the prohibitions on tampering and aftermarket defeat devices for nonroad vehicles and nonroad engines in 40 C.F.R. § 1068.101(b)(1)–(2).

Section 203(a)(3)(A) prohibits tampering with emissions controls, including those controls that are in the engine (e.g., fuel injection, exhaust gas recirculation), and those controls that are in the exhaust (e.g., filters and catalysts). Section 203(a)(3)(B) prohibits aftermarket defeat devices. This includes hardware (e.g., modified exhaust pipes) and software (e.g., engine tuners and tunes). Oftentimes, aftermarket defeat devices, while sold as a single product, alter numerous emissions-related elements of design. For such aftermarket defeat devices, multiple violations occur when a person manufactures, sells, offers for sale, or installs them.

The EPA may bring enforcement actions for violations of section 203(a)(3) under its administrative authority or by referring matters to the United States Department of Justice. CAA §§ 204, 205, 42 U.S.C. §§ 7523, 7524. Violations are subject to injunctive relief under section 204 of the Act, 42 U.S.C. § 7523. Persons violating section 203(a)(3) are currently subject to a civil penalty of up to \$48,192 (for manufacturers and dealers) or \$4,819 (for individuals) for each act of tampering, and \$4,819 for each aftermarket defeat device. These amounts periodically increase with inflation. 40 C.F.R. § 19.4.

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**Aftermarket Defeat Devices:** CAA § 203(a)(3)(B), 42 U.S.C. § 7522(a)(3)(B), 40 C.F.R. § 1068.101(b)(2): “[The following acts and the causing thereof are prohibited–] for any person to manufacture or sell, or offer to sell, or install, any part or component intended for use with, or as part of, any motor vehicle or motor vehicle engine, where a principal effect of the part or component is to bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter, and where the person knows or should know that such part or component is being offered for sale or installed for such use or put to such use[.]”



## **EPA Enforcement Policy Statement on Tampering and Aftermarket Defeat Devices**

**The EPA typically does not take enforcement action for conduct that might be a violation of section 203(a)(3) of the Clean Air Act if the person engaging in the conduct has a documented “reasonable basis” to conclude that the conduct (or, where the conduct in question is the manufacturing or sale of a part or component, the installation and use of that part or component) does not and will not adversely affect emissions. This Policy Statement does not apply, however, to conduct affecting an OBD system, which may be subject to enforcement regardless of effect on emissions.**

The EPA typically considers the documentation of a reasonable basis to be relevant only if that documentation exists at or before the time the conduct that might be a potential violation of section 203(a)(3) occurs (including sale, installation, and service).

When determining whether service performed on an element of an emissions control system was illegal tampering, the EPA typically compares the element after the service to the element’s fully-functioning certified configuration (or, if not certified, the original configuration), rather than to the element’s configuration prior to the service. Where a person is asked to perform service on an element of an emissions control system that has already been tampered with, the EPA will generally take no enforcement action against that person for their subsequent conduct if the person restores the element to its certified configuration or declines to perform the service.

The EPA has identified several ways that a person may document a reasonable basis to conclude their conduct does not adversely affect emissions. The list on the following pages is meant to be illustrative and is not exhaustive. Insofar as this Policy describes a reasonable basis or other consideration partly in terms of specific numbers, test methods, or other criteria, they reflect the EPA’s anticipated judgment in distinguishing between those situations where the EPA would likely investigate further and those situations where the EPA would likely exercise enforcement discretion based on the information available and take no further action. The EPA retains discretion to vary from those criteria. In considering whether to bring an enforcement action under section 203(a)(3), the EPA considers each case independently, taking into account all relevant case-specific facts and circumstances.



- A. Identical to Certified Configuration:** The EPA will typically find that a person has a reasonable basis for conduct if that conduct:
- (1) is solely for the maintenance, repair, rebuild, or replacement of an emissions-related element of design; and
  - (2) restores that element of design to be identical in all emissions-related respects to the certified configuration (or, if not certified, the original configuration) of the vehicle, engine, or piece of equipment.

Notes on Reasonable Basis A:

- i. The conduct (e.g., maintenance, repair, rebuild, or replacement) should be performed according to instructions from the OEM of the vehicle, engine, or equipment.
- ii. The “certified configuration” of a vehicle, engine, or piece of equipment is the design for which the EPA has issued a certificate of conformity. The “original configuration” means the design of the emissions-related elements of design to which the OEM manufactured the product. The appropriate source for technical information regarding the certified or original configuration of a product is the product’s OEM.
- iii. In the case of a replacement part, the part manufacturer should represent in writing that the replacement part will perform identically with respect to emissions control as the OEM’s part to be replaced, and should make available either: (a) documentation that the replacement part is identical in all emissions-related respects to the replaced part (including engineering drawings or similar showing identical dimensions, materials, and design), or (b) test results that support the representation. Such written representations may be in literature that accompanies the product, or in a publicly available source such as a product catalogue or website.
- iv. In the case of replacement parts, this reasonable basis applies equally to new parts as to used or remanufactured parts.
- v. In the case of engine switching, the person installing an engine into a different vehicle or piece of equipment would have a reasonable basis if they could demonstrate that the resulting vehicle or piece of equipment is: (a) in the same product category (e.g., light-duty vehicle) as the engine originally powered, and (b) identical (with regard to all emissions-related elements of design) to a certified configuration of the same or newer model year as the vehicle chassis or equipment. Alternatively, one may show through emissions testing that there is a reasonable basis for an engine switch under Reasonable Basis D (Emissions Testing), below. Note that there are substantial practical limitations on switching engines. Vehicle chassis and engine designs of one vehicle manufacturer are distinct from those of another, such that it is generally not possible to put an engine into a chassis of a different manufacturer and have it conform to a certified configuration.

- B. Emissions Testing for Replacement After-Treatment Systems for Older Vehicles, Engines, and Equipment:** The EPA will typically find that a person has a reasonable basis for conduct if:
- (1) that conduct involves a replacement after-treatment system, the replacement after-treatment system is used to replace the same kind of system on a vehicle, engine, or piece of equipment, and that replaced system is beyond its emissions warranty; and
  - (2) emissions testing shows that the vehicle, engine, or piece of equipment with the replacement after-treatment system meets or would meet all applicable emissions standards for an amount of time or distance (as applicable) that is equivalent to at least 50% of the regulatory useful life for that category of vehicle, engine, or piece of equipment; and
  - (3) the replacement after-treatment system bears a permanent label stating the name of the manufacturer of the system, the part number or identifier, the date of manufacture, and the suitable applications for the system.

Notes on Reasonable Basis B:

- i. This reasonable basis applies equally to new replacement after-treatment systems as to used or remanufactured replacement after-treatment systems.
- ii. The EPA is unlikely to find that there is a reasonable basis if the system sold, offered for sale, or installed on a vehicle, engine, or piece of equipment is not on a list of applications approved by the after-treatment system manufacturer.
- iii. In demonstrating the durability of a replacement after-treatment system, one may employ accelerated aging techniques and OEM deterioration factors (as specified in the pertinent application for EPA certification) if doing so is consistent with good engineering judgment and is acceptable by the California Air Resources Board for purposes of obtaining an Executive Order for that kind of replacement after-treatment system.
- iv. In screening replacement after-treatment systems for potential investigation or enforcement action, EPA enforcement personnel will typically consider whether the system is covered by a warranty from its manufacturer (in terms of both emissions performance and structural integrity). The EPA generally views a warranty as providing further support for an identified reasonable basis, as described above, if the warranty lasts for a distance (or operating hours, as applicable) equivalent to at least 50% of the useful life of that category of vehicle, engine, or piece of equipment. In the case of replacement after-treatment systems for motor vehicles and motor vehicle engines, the EPA generally views a warranty as providing further support for an identified reasonable basis, as described above, if the warranty lasts at least until whichever of the following occurs first: 2 years (for heavy-duty applications) or 5 years (for light-duty applications), or 50% of the useful life of that category of motor vehicle or motor vehicle engine.

- C. New After-Treatment Systems that Decrease Emissions:** The EPA will typically find that a person has a reasonable basis for conduct if:
- (1) that conduct involves mechanically adding an after-treatment system;
  - (2) the system is added into the exhaust of a vehicle, engine, or piece of equipment;
  - (3) the vehicle, engine, or piece of equipment is EPA-certified as having no such system and originally manufactured without any such system; and
  - (4) any person familiar with emissions control system design and function would reasonably believe adding the system would decrease emissions.

- D. Emissions Testing:** The EPA will typically find that a person has a reasonable basis for conduct if:
- (1) that conduct alters a vehicle, engine, or piece of equipment;
  - (2) emissions testing of an appropriate test vehicle, engine, or piece of equipment that had been identically altered by the conduct shows that the vehicle, engine, or piece of equipment will comply with all applicable regulations including emissions standards for its full useful life; and
  - (3) (where the conduct includes the manufacture, sale, or offering for sale of a part or component) that part or component is marketed as suitable only to those vehicles, engines, or pieces of equipment that are appropriately represented by the tested product.
- E. EPA Certification:** The EPA will typically find that a person has a reasonable basis for conduct that has been certified by the EPA under 40 C.F.R. Part 85 Subpart V (or any other applicable EPA certification or exemption program).

Notes on Reasonable Basis E:

- i. This reasonable basis is subject to the same terms and limitations that the EPA issues with any such certification. E.g., 40 C.F.R. Part 85, Subpart V.
- ii. In the case of an EPA-certified aftermarket part or component, a reasonable basis generally would exist only if: the part or component is manufactured, sold, offered for sale, or installed on the vehicle, engine, or equipment for which the aftermarket part or component is certified; the installation is performed according to manufacturer instructions; the part or component has not been altered or customized; and the part or component remains identical to the EPA-certified part or component.

- F. CARB Exemption:** The EPA will typically find that a person has a reasonable basis for conduct if the emissions-related element of design that is the object of the conduct (or the conduct itself) has been exempted by the California Air Resources Board (CARB).

Notes on Reasonable Basis F:

- i. This reasonable basis is subject to the same terms and limitations that CARB imposes with any such exemption. Generally, the conduct must be legal in California.
- ii. In the case of an aftermarket part or component, the EPA considers exemption from CARB to be relevant even where the exemption for that part or component is no longer in effect due solely to passage of time.
- iii. In the case of a replacement after-treatment system, the EPA considers exemption from CARB to be relevant even where the vehicle, engine, or equipment on which the system is installed is not among the vehicles, engines, or equipment covered by the CARB exemption, provided that the manufacturer of that replacement system, using good engineering judgment, represents that the system will not adversely affect emissions when used on the other vehicles, engines, or equipment (e.g., because as compared to the vehicles, engines, or equipment covered by the CARB exemption the other vehicles, engines, or equipment are certified to an equivalent or less stringent emission tier level, have the same exhaust configuration, and have similar or less demanding physical characteristics including vehicle weight and engine displacement).

#### General Notes on Emissions Testing:

- i. Where the above-described reasonable bases under the Policy Statement involve emissions testing, unless otherwise noted, the EPA expects that testing to be consistent with the following in order to form a reasonable basis.
- ii. The emissions testing may be performed by someone other than the person engaging in the conduct (such as an aftermarket parts manufacturer), but the person performing the conduct should have all documentation of the reasonable basis at or before the time the conduct occurs. Such documentation may be in literature that accompanies the product, or in a publicly available source such as a product catalogue or website.
- iii. The emissions testing and documentation are generally the same as the testing and documentation required by regulation (e.g., 40 C.F.R. Part 1065) for the purposes of original EPA certification of the vehicle, engine, or equipment at issue. Accelerated aging techniques and in-use testing are acceptable only insofar as they are acceptable for purposes of original EPA certification. One may employ OEM deterioration factors as specified in the pertinent application for EPA certification if doing so is consistent with good engineering judgment.
- iv. The applicable emissions standards are either the emissions standards on the Emissions Control Information Label on the product (such as any stated family emission limit, or FEL), or if there is no such label, the fleet standards for the product category and model year. To select test vehicles or test engines where EPA regulations do not otherwise prescribe how to do so for purposes of original EPA certification of the vehicle, engine, or equipment at issue, one should choose the “worst case” product from among all the products for which the part or component is intended. The appropriate source for worst-case technical information is the product’s OEM.
- v. The EPA expects that the vehicle, engine, or equipment, as altered by the conduct, would perform identically both on and off the test(s), and should have no element of design that is not substantially included in the test(s).

#### Other Conditions and Notes:

- i. The documentation of the above-described reasonable bases under this Policy Statement must be provided to the EPA upon request, based on the EPA’s authority to require information to determine compliance. CAA § 208, 42 U.S.C. § 7542.
- ii. The EPA will review reasonable bases as set forth in this Policy in the context of an investigation, and does not issue pre-approvals of reasonable bases.
- iii. A reasonable basis consistent with this Policy does not constitute a certification, accreditation, approval, or any other type of endorsement by the EPA (except in cases where an EPA Certification itself constitutes the reasonable basis). No claims of any kind, such as “Approved [or certified] by the Environmental Protection Agency,” may be made on the basis of this Policy. This includes written and oral advertisements and other communication. However, if true on the basis of this Policy, statements such as the following may be made: “Has no adverse effect on emissions, consistent with the EPA Tampering Policy (2019).”



ASSOCIATION OF  
EQUIPMENT MANUFACTURERS



**EquipmentDealers**  
ASSOCIATION

## **Farm Equipment Manufacturers and Dealers are Committed to Providing Maintenance, Diagnostic, and Repair Tools to End Users**

*The “Right to Repair” is not the Right to Modify*

The Association of Equipment Manufacturers (AEM), the Equipment Dealers Association (EDA), and their members are dedicated to supporting farmers and their equipment needs, reducing downtime and maximizing productivity. Therefore, AEM and EDA reiterate their joint commitment to provide end users with the information and tools needed to maintain, diagnose, and repair their equipment.

To the extent not already available, the maintenance, diagnostic and repair information listed below will be made available to end users through authorized agricultural dealers at fair and reasonable terms, beginning with tractors and combines put into service on or after January 1, 2021. End users will also be able to purchase or lease diagnostic tools through authorized agricultural dealers. Certain information and tools may be available earlier.

Manufacturers, through authorized agricultural dealers, are committed to provide access to:

- Manuals (Operator, Parts, Service)
- Product Guides
- Product Service Demonstrations, Training, Seminars, or Clinics
- Fleet Management Information
- On-Board Diagnostics via diagnostics port or wireless interface
- Electronic Field Diagnostic Service Tools, and training on how to use them
- Other publications with information on service, parts, operation, and safety

Using this information and these tools, which will be available for purchase, lease, or subscription through authorized dealers, end users will be able to identify and repair numerous problems they may encounter with their equipment.

The industry supports equipment users’ ability to maintain, diagnose, and repair their machinery. However, the ability to diagnose and repair does not mean the right to modify. For safety, durability, environmental, and liability reasons, diagnostic and repair information and tools will not permit consumers to do the following:

- Reset an immobilizer system or security-related electronic modules,
- Reprogram any electronic processing units or engine control units,
- Change any equipment or engine settings negatively affecting emissions or safety compliance,
- Download or access the source code of any proprietary embedded software or code

This commitment to providing maintenance, diagnostic and repair tools is a reaffirmation of the importance of seeking commonsense solutions to meet users’ needs. The industry is eager to continue working with end users to provide the most innovative and high-quality equipment to meet the needs of modern production agriculture.

Learn more at <http://www.R2RSolutions.org>

**EXHIBIT**  
**B**