



September 18, 2015

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Vehicle Operations Tracking – On-Board Diagnostic (OBD) Proposed Regulations

Air Resources Board Members:

We are writing on behalf of the Alliance of Automobile Manufacturers (Alliance)¹ and Association of Global Automakers, Inc. (Global Automakers),² representing nearly every car and light-truck manufacturer in the United States. In California, our combined members represent about 99% of the new vehicle market.

This letter addresses the new “Vehicle Operation Tracking requirements” proposed in Sections (g)(6.3) through (g)(6.6).³ These proposed new requirements are beyond the scope of on-board diagnostics (OBD) and raise serious personal privacy concerns for drivers. In today’s rapidly changing world of data and connectivity, we are concerned the California Air Resources Board’s (ARB’s) proposal to collect vehicle operating data through the OBD system is not authorized, lacks reasonable justification or need, and may be implemented without sufficient protection of the vehicle owner’s privacy. These concerns extend to how consumers’ personally identifiable information such as the Vehicle Identification Number (VIN) and driving behavior data will be protected not only by ARB, but also by other parties that access this information through the OBD data connection port.

The automobile industry is in the midst of revolutionary changes. On the environmental front, the industry faces the most costly environmental regulations in history under greenhouse gas and fuel economy standards that double vehicle fuel efficiency between 2012 and 2025 at a cost of \$201 billion for the industry as a whole according to the United States Environmental Protection Agency (U.S. EPA). At the same time, the automotive industry is developing, deploying, and supporting plug-in and fuel cell electric vehicles and further reducing smog-

¹ Alliance members are BMW Group, FCA U.S., Ford Motor Company, General Motors, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen, and Volvo.

² Global Automakers’ members include Aston Martin, Ferrari, Honda, Hyundai, Isuzu, Kia, Maserati, McLaren, Nissan, Subaru, Suzuki, and Toyota.

³ A separate letter, dated September 18, 2015, was submitted that provides the Alliance’s and Global Automakers’ comments on the other elements of the proposed OBD regulations.

forming pollutants under both the California Low-Emission Vehicle program and federal Tier 3 program. In other areas, industry is introducing game-changing connected vehicle technologies to provide substantial benefits that improve on-road safety, reduce congestion, and provide additional system-based efficiencies throughout the transportation world. All of these must be accomplished while addressing vehicle safety and security. These programs require an unprecedented investment of capital and resources in research and development, design, development, testing, and validation. Yet, despite these efforts to reduce greenhouse gases and smog and improve on-road safety, we are now being asked to commit additional resources to add consumer data-collection capabilities to the OBD system – a directive that veers away from the fundamental purpose of OBD without either the need or the authorization to do so.

In addition, the OBD port has become, in many cases, a standardized and easily-accessible means to access the vehicle's electronic system. As vehicles become more and more reliant on electronics, more connected, and an increasing part of the "Internet of Things," how and why data is collected and analyzed becomes much more relevant for consumers. We recognize the benefits of the OBD system as an efficient tool to diagnose and repair emissions-related malfunctions, but an expanded use of the OBD system for data collection and research has broader implications and poses risks that must be considered.

The Alliance and Global Automakers do not support the proposed Vehicle Operation Tracking requirements. The remainder of this letter provides more details regarding our concerns. In addition, if ARB moves forward with these proposed requirements despite our concerns, this letter provides: (1) recommendations to address lead-time, phase-in, and general feasibility issues; and (2) necessary language to protect the data, ensure best practices to protect consumer privacy, and affirm that this data may not correlate with fuel economy or GHG certification or label data as calculated under separate U.S. EPA procedures.

The Proposal is Beyond the Scope of OBD and ARB's Authority

OBD was incorporated into the vehicle to monitor components that could affect smog-causing emissions performance. Hence, for the past 25 years, the OBD system has focused on malfunctions – detecting a malfunction, notifying the driver of the malfunction, and storing information to allow the repair technician to properly and quickly repair the malfunction. Automakers have been willing partners in the development of the regulations, and despite the significant technical challenges, have developed and certified OBD systems that monitor virtually every possible malfunction during a wide range of driving conditions. The program has succeeded in meeting the intended goals, and today, every state that conducts emission testing of in-use vehicles has replaced or supplemented the more burdensome, expensive and less effective dynamometer or idle tests with a simple check of the OBD system.⁴

The proposed Vehicle Operation Tracking requirements are not consistent with the intended purpose of the OBD system. The requirements do not monitor for malfunctions; they do not

⁴ Some states, such as Colorado, continue to require IM240 tailpipe testing for Inspection and Maintenance programs for older vehicles.

illuminate the malfunction indicator light (MIL, or “check engine” light); they do not assist with repairs. The requirements simply record data about the vehicle’s operation – miles driven, gasoline consumed, electricity consumed (for plug-in hybrid electric vehicles), and how long the vehicle operated at various speeds, etc. In effect, these new requirements represent a massive government data collection project designed to harvest information unrelated to OBD.

The Vehicle Operation Tracking requirements do not fit within ARB’s own description of the purpose of the OBD II requirement, which is set forth in 13 CCR § 1968.2(a) as follows:

The OBD II systems, through the use of an onboard computer(s), shall monitor emission systems in-use for the actual life of the vehicle and shall be capable of detecting malfunctions of the monitored emission systems, illuminating a malfunction indicator light (MIL) to notify the vehicle operator of detected malfunctions, and storing fault codes identifying the detected malfunctions.

As noted above, the tracking requirements do not play any role in “detecting malfunctions of the monitored emission systems.” Moreover, we could find no authorization for the tracking requirements in any provision of the California Health and Safety Code, or in any other California statute. None of the statutory provisions relied upon by CARB for authority to promulgate the OBD regulations empower the agency to engage in the collection of vehicle usage data from private motorists.

Health and Safety Code Section 43018(c), the provision most relevant to OBD, directs ARB to “adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including ...[r]eductions in...in-use emissions from motor vehicles through improvements in emission system durability and performance.” While the longstanding purpose of the OBD system—monitoring the in-use effectiveness of emission-related components—has a clear relationship to that statutory purpose, the use of the OBD system to collect data on consumer driving behavior does not. Therefore, we do not believe the proposed requirements fit within the California legislature’s directive to “adopt standards, rules, and regulations ... *necessary* for the proper execution of the powers and duties granted to, and imposed upon by [Health and Safety Code Division 26] and by any other provision of law.” Health and Safety Code § 39601(a) [emphasis added.] The vehicle tracking requirements are clearly not necessary for the OBD system to carry out its duly authorized functions.

We support the continued use of the OBD system as a tool for ensuring that emission control systems function as intended throughout a vehicle’s useful life. However, the workload associated with designing, developing, testing, and certifying the OBD systems is already enormous. There is no need for ARB to add more requirements for the purpose of turning every vehicle into a potential research platform.

The Proposal does not Adequately Address Personal Privacy or Data Security

Automakers take great pride in providing their customers with safe, reliable products, including data privacy and data security. Starting in the spring of 2014, members of the Alliance and Global Automakers came together to create a set of privacy principles for vehicle technologies and services (the “Privacy Principles”). This culminated in a letter to Federal Trade Commission (FTC) Chairwoman Edith Ramirez from the Alliance and Global Automakers (see Attachment 1).⁵

The Privacy Principles acknowledge that technologies and services in automobiles are increasingly designed to enhance vehicle safety, improve vehicle performance, and augment the driving experience, and many of these technologies and services rely upon information generated by vehicle systems. Sometimes, that information includes data pertaining to how drivers operate their vehicles, so-called driver behavior data. The Privacy Principles represent a unified commitment to responsible stewardship of the information collected to provide vehicle services. Under the Principles, driving behavior data is highly confidential; the generation of such data should be minimized to the extent possible, and the data should be collected only when necessary, with the consent of the consumer.

The Vehicle Operation Tracking proposed regulations would require every vehicle record data on fuel consumed, electricity consumed, time in different speed zones, engine run time, distance traveled, acceleration, and time in different engine operating modes (charge depleting, charge sustaining, etc.) for the life of the vehicle. This is an extraordinary amount of data to maintain on the vehicle. In addition to the aggregated data maintained for the life of the vehicle, the proposed regulations also require the OBD system to record the same data over the last 50 hours of vehicle operation (short-term vehicle operation tracking).

This information – collected both over the vehicle’s lifetime and over the last 50 hours of operation – will be recorded and stored without most consumers’ knowledge, consent, or ability to opt-in to the data recording. While ARB points out the data are collected in a cumulative rather than trip-by-trip format, the proposal would still mandate the collection of a vast amount of information about consumer driving behavior that could be used to generate an overall picture of how, and how much, the consumer drives.

ARB has not adequately addressed the extent to which the information collected is considered personally identifiable information when combined with the VIN, which is specific to a vehicle and vehicle owner. While the Initial Statement of Reasons (ISOR) notes obtaining the information will require access to the vehicle, a fairly broad group of people and businesses – from repair shops to car washes – have access to consumer vehicles. There are no restrictions preventing the information from being accessed and stored with the VIN, which is also available electronically from the OBD system. Successive downloads of life-time and short-term data could reveal driver operating patterns.

⁵ Mitch Bainwol and John Bozzella, letter to The Honorable Edith Ramirez, 12-Nov-2014, <http://www.autoalliance.org/index.cfm?objectid=8646F280-6A97-11E4-866D000C296BA163>

There are an increasing number of wireless devices connected to the OBD system. For example, a recent search of online retailer Amazon.com identified no less than 304 wireless OBD II Diagnostic Scan tools; 295 of these are under \$100. Insurance companies and other aftermarket providers offer wireless devices that connect to the OBD system. In light of the many parties that have a potential interest in gathering vehicle specific information, ARB's proposal has the potential to unleash a new wave of concern about data privacy.

ARB suggests privacy will be protected by aggregating the data. However, studies have found aggregation can fail as data is combined with other data sources – a situation more likely in the rapidly developing era of the Internet of Things. Most OBD-II scan tools or plug-in devices can retrieve the VIN number. According to the Privacy Principles, the VIN is personally-identifiable information, and it could potentially be used to de-aggregate data, making it personally identifiable.

ISOR Statements do not Provide Regulatory Certainty

The ISOR contains a series of statements apparently intended to reassure the public that vehicle data will not be collected without their consent. For example:

- “ARB is not proposing to mandate or require drivers or vehicle owners to make such data available to ARB or anyone else”;
- “ARB or its designated contractor would solicit voluntary participation from vehicle owners to allow ARB to collect the data from their vehicles”;
- “...the collection could readily be structured such that it is optional and the data gathered only if the vehicle owner/driver consents to such additional data being collected”;
- The need to plug a tool into the diagnostic port “virtually ensures that there is some level of participation by the vehicle operator in granting access.”

Traditionally, the language in an ISOR clarifies intent and purpose of the regulation, as exercised by ARB in the proposal related to the Vehicle Operation Tracking elements, but this language is not legally binding. We conducted a legal review related to preamble, or ISOR, language, and could not find any cases under federal or California law where the court held statements in the preamble (or ISOR) as binding upon an agency as a matter of law. Federal courts appear to consistently view statements in preambles as interpretive guidance or general statements of policy that are not subject to notice and comment and are thus not legally binding. See, e.g., *Peabody Coal Co. v. Director, Office of Workers' Compensation Programs, et al.*, 746 F.3d 1119, 1125 (9th Cir. 2014); see also *Troy Corp. v. Browner*, 120 F.3d 277, 287 (D.C. Cir. 1997) (holding U.S. EPA's statements in the preamble to a regulation were viewed as general policy statements rather than binding requirements), *Center for Auto Safety, et al. v. The Federal Highway Administration*, 956 F.2d 309, 313 (D.C. Cir. 1992) (technical advisory language has no

independent legal effect). The U.S. Court of Appeals for the D.C. Circuit has “often recognized that the preamble to a regulation is evidence of an agency’s contemporaneous understanding of its proposed rules.” *Wyoming Outdoor Council v. U.S. Forest Service*, 165 F3d 43, 53 (D.C. Cir. 1999).

Although there is little California case law on this topic, it is generally understood that California agencies treat ISOR language in the same manner as federal courts and agencies. Consequently, a California court may determine that ISOR language is not binding on the agency, but merely expresses interpretative guidance or the current view of the regulation.

Fundamentally, we think the Vehicle Tracking Operation proposal should be withdrawn. At a minimum, however, the regulations (not just the ISOR) should state that ARB will notify the consumer and obtain consumer consent before downloading any vehicle usage data, including specific consent for any onward sharing of the data by ARB with any other persons or government agencies. The final regulatory language, as well as the Final Statement of Reasons (FSOR), should elaborate on ARB’s procedures for obtaining consent, while making the public aware of the potential for a third-party to access their data through either the OBD data port or remotely if a wireless device is installed.

There is No Effective Way to Prevent Unauthorized Data Collection by Third Parties

While ARB’s intent may be to implement robust policies for its own data collection activities, there is no guarantee that other parties will follow the same practices.

California OBD regulations are *de facto* national standards. For years, the U.S. EPA has accepted compliance with the California OBD program as being in compliance with the federal requirements, and for the overwhelming majority of vehicles, automakers have applied the California OBD program as a national program. More recently, the U.S. EPA amended its OBD regulations under the Tier 3 program to incorporate by reference the most recent ARB regulations at the time.

Based on previous experience, it seems likely that what ARB adopts in this regulation will once again become the *de facto* national standard. If so, not only will the data be available to ARB regulators (and anyone else in the state of California that buys a generic tool for as little as \$20 to download the data), but the data becomes available to anyone in all 50 states. Thus, in spite of CARB’s assurances that the data will only be collected with a vehicle owner’s permission and will not be misused, we think there will be many opportunities for unauthorized and improper data collection across the country. To the extent that ARB moves ahead with this proposal in spite of the concerns expressed, it is important that the regulations, as well as the ISOR and FSOR, specify the limitations on the collection and use of this data.

To the point that parties other than ARB may want to download this data, ARB mentions that California’s Inspection and Maintenance (I/M) program is not currently capable of downloading this data. However, other state I/M programs do collect data and may consider updating their systems to download this data; at some point, California’s I/M program may also make such

updates to expand data collection. It is not clear, however, if they will or are required to inform the consumer of this data download, nor how they will aggregate and protect the data. To our knowledge, all state I/M programs download VIN data, which is easily linked to the driver and the driver's personal information, during I/M.

CARB Should Clarify That Vehicle Tracking Data Will Not be Used for Compliance Purposes

The ISOR states "the data could not be used to retroactively increase or decrease the assigned credit values..." However, as noted above, the ISOR does not have the weight of regulation. This is concerning because nowhere do the regulations clearly delineate how the Vehicle Operation Tracking data may, and may not, be used in the future. At a minimum, we believe language prohibiting the retroactive use to adjust assigned credit values must also be included in the regulatory language.

ARB's ISOR also states that "[v]ehicle manufacturers could also be required to collect and report the data to ARB from a limited number of in-use vehicles to help verify compliance as is currently done with other ARB requirements." We do not agree the data should be used in this manner, given the well-known fact that "your mileage will vary" depending on a myriad of factors such as individual driving style, urban vs. highway driving patterns, terrain, weather, vehicle loading, and the addition of aftermarket tires or other components, to name a few. Whether on an individual vehicle basis or in aggregated form, the data will be a product of individual consumer behavior and will not be correlated to laboratory test results. At most, any data collected as a result of this proposal should be used only as a research tool to inform updates to future rulemakings and transportation models (how vehicles perform on-road, driving conditions and scenarios, and vehicle miles traveled). Any final rule adopted by ARB should clarify that the data would only be used for research purposes and not compliance. It should also affirm that data collected through the OBD system are expected to vary from the fuel economy certification and label values that are based on highly regulated test requirements under very controlled conditions.

Recommended Changes

For all the reasons discussed above, the Vehicle Operation Tracking proposed requirements are flawed, and the Alliance and Global Automakers recommend they be excluded from the final regulation. To the extent ARB proceeds with these requirements despite the serious concerns associated with this proposal, we recommend the following changes to avoid significant disruption:

1. **Phase-in**: The proposed regulation requires that all 2019MY vehicles contain all of the new monitoring parameters. However, SAE has not defined any of the new parameter IDs (PIDs), and will not do so until the regulation is finalized. The definition process will standardize the method for calculating PIDs across industry and ensure the data is robust, comparable, and appropriate. If the SAE Committee expedites the process, it could probably define all of the new PIDs within about a year of when the final regulations are issued. However, the regulations are unlikely to be finalized before mid-

2016, making defined PIDs available, at the earliest, in mid-2017. By that time most 2018MY vehicles will already be certified and the OBD software on most 2019MY vehicles will be finalized and locked to further changes. Thus, implementing the new requirements across all 2019MY vehicles would be all but impossible. Traditionally, such requirements are allocated three years of lead-time, phased in over a three-year period, and allow an alternative phase-in for flexibility. This would allow manufacturers to implement the requirements on a subset of their products, and obtain some real world feedback before broadening the implementation.

Recommendation: We recommend a three year phase-in of 30/60/100%, beginning with the 2020MY. We also recommend allowing the alternative phase-in specified in the regulation.

2. **Units**: Sections (g)(6.6.2)(A) and (B) specify the units and the precision of those units. For example, these sections would require storing up to 2.7 million miles of distance data to the nearest 3 feet. First, it's not clear OBD systems can determine distance to that degree of precision. Second, it's not clear why such precision is needed. The same is true for storing time values (136 years of data to the nearest one second), fuel consumption (1.1 million gallons to the nearest 1/5th of a teaspoon), and electricity consumption (4.3 million Kilowatt-hours to the nearest watt-hour; note that the average California house would not consume this much electricity in 600 years). Historically, SAE has established both the standardized units and the level of precision. ARB staff frequently participates in the SAE Committees, and we would expect their participation in developing the units, their precision, and the definition discussed above.

Recommendation: We recommend that ARB eliminate the units specified in Section (g)(6.6.2)(A) and the number of bytes for storage and accuracy specified in Section (g)(6.6.2)(B). Instead, the regulation should specify that each number shall conform to the standardized format specified in SAE J1979. As noted above, ARB staff frequently participates in the SAE committees including SAE J1979, and would be encouraged to do so as SAE defines the PIDs.

3. **Compliance Exclusion**: As noted earlier, the ISOR mentioned that this data will not be used to retroactively revise credit values, but the ISOR only mentions this in reference to off-cycle credits, and the regulations themselves do not address the issue of data usage.

This data should not be used for compliance purposes at all because data collected by the OBD system is not correlated with or related to the highly controlled testing mandated by ARB and U.S. EPA. In contrast, the data obtained from vehicle OBD systems under the Vehicle Operations Tracking requirements will likely deviate from the results obtained by official fuel economy and GHG testing. Correlating the results of even minor changes in a single test can take years of testing and analysis.⁶ One cannot

⁶ One current example is the change of certification fuel from E0 (gasoline with 0 percent ethanol) to E10 (10% ethanol). ARB and EPA adopted the change in certification fuel over two years ago, and had knowledge that of the

correlate the proposed Vehicle Operational Tracking data representing an infinite number of possible conditions, speeds, loads, temperatures, accelerations, and fuel to the controlled test cycles and fuels used to determine certification and label values for GHG, fuel consumption, and fuel economy.

It would be unreasonable and unfair to upend a system ARB and U.S. EPA established and mandated automakers perform with an entirely new system that is untested and uncorrelated to the current testing, reporting, and compliance regime. Consequently, if ARB chooses to pursue these regulations, the regulations (not the ISOR) should clearly state this information will not be used for compliance, credit calculation, or certification determination.

Recommendation: We recommend ARB include language in the regulation to clearly indicate that information tracked and recorded in Section (g)(6.3), (6.4), and (6.5) does NOT correspond to certification or label values used for GHG or fuel economy. The values may NOT be used for compliance testing, credit calculation, or certification determination. The following statement, if located in Section (g)(6), would suffice:

“(g)(6) Vehicle Operation Tracking Requirements: The information recorded in Sections (g)(6.3), (g)(6.4), and (g)(6.5) reflects driving behaviors and conditions that do not correspond to regulated test procedures, and the resulting data are not expected to align with certification or label values for greenhouse gas, fuel consumption, or fuel economy. These values cannot be used for compliance testing, credit calculation or adjustment, or certification determination.”

4. **Data Privacy:** Finally, as detailed above, additional language is necessary in the regulations and the FSOR, to codify ARB’s intent, protect the data and consumer, and set a strong regulatory precedence for how others might consider collecting this data once it is readily available on all vehicles.

Recommendation: We recommend that ARB include the following regulatory language Section (g)(6) to ensure the privacy of the data that will be recorded and collected.

(a) For any requirement imposed by Section 6 herein, all data collected or received by ARB will only be:

(1) Obtained with the voluntary and fully informed consent of the vehicle operator;

(2) Collected and stored in an aggregated form that does not identify any specific driver behavior or other personal data concerning the vehicle operator, including the vehicle identification number, and would specifically

change years before that. However, to date (two years after the regulations were finalized), there is no agreement on the expected results of a single vehicle tested on the exact same test cycle when it is tested using E0 versus E10. As a result, manufacturers continue to test vehicles on both E0 and E10.

exclude any data that could be used, directly or indirectly, to identify a particular vehicle's current or past location or current or past vehicle operation;

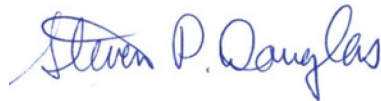
(3) Collected through a secure wired connection, not remotely or wirelessly, by physically plugging a specialized tool into the diagnostic port inside the vehicle while the vehicle is on;

(4) Used by ARB for research purposes.

(b) Compliance with Section 6 shall not create any statutory, regulatory, or common law liability upon the regulated entities for any breaches of cybersecurity, privacy or other laws or regulation. A regulated entity shall have no duty or obligation to disclose to any individuals or entities, other than ARB, the data collected or received by ARB pursuant to this Section, and there shall be no private right of action for a failure of any regulated entity to disclose the data collected pursuant to this Section.

The Alliance and Global Automakers appreciate the opportunity to comment on the proposed regulations and look forward to continuing to work with ARB as the rule is finalized. If you have any questions or need additional information, please feel free to contact us.

Sincerely,



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