



Understanding Electronic IDs for Trucks

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The Federal Motor Carrier Safety Administration has [issued an Advance Notice of Proposed Rulemaking \(ANPRM\)](#) on “Unique Electronic Identification” (UID). It would allow roadside enforcement to identify and perhaps monitor the condition of commercial motor vehicles (CMVs) on the highway. Through this ANPRM, FMCSA is seeking public comments on whether it should require UIDs, what information trucks should send to roadside enforcement, and what may be the costs and benefits of such a system.

This ANPRM followed the FMCSA grant of a petition from the Commercial Vehicle Safety Alliance (CVSA), a trade association representing commercial vehicle law enforcement, to consider requiring all interstate CMVs to have the devices installed.

In the UID petition to FMCSA, CVSA states that the goal is to improve the efficiency of today’s weigh station and roadside inspections, theoretically improving highway safety. CVSA is actively developing a “Level VIII” inspection regime, seeking to utilize electronic transmissions, such as UID, from CMVs on the road to determine which vehicles require inspections.



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Background on UID

CVSA originally petitioned FMCSA about UIDs in 2010 – a petition FMCSA ultimately denied in 2013. FMCSA said the petition lacked the information necessary to estimate the costs and benefits of an electronic ID mandate. Stymied by FMCSA, CVSA then approached the National Highway Traffic Safety Administration (NHTSA), which has jurisdiction over new vehicle manufacturing standards, with a revised petition requiring UID on new trucks only. NHTSA rejected the petition for many of the same reasons as FMCSA in 2013.

While FMCSA later reversed its UID decision in 2015, it took no formal action to implement UIDs, possibly because the stated purpose of the CVSA UID petition was to facilitate “wireless roadside inspections” (WRI) for the federal government. Key Congressional committees discouraged WRI until questions about government monitoring, data

privacy, and how the technology would be paid for were satisfactorily answered. (WRI is another name for CVSA’s “Level VIII” inspection regime.)

During the 2021 Infrastructure Investment and Jobs Act (IIJA) debate, several transportation industry stakeholders, including CVSA, supported an amendment requiring an electronic ID on all new trucks. The groups agreed that UID would be limited to a single point of data, such as the vehicle identification number (VIN). The VIN is specific to each vehicle and easily cross-referenced by governmental entities to additional information such as carrier name, license plate number, and USDOT number. To guard that private information, states have laws protecting VINs and criminalizing altering or removing them. The VIN amendment to the IIJA passed the House but got no further.



What the ANPRM Contains

The 2022 FMCSA Advance Notice of Proposed Rulemaking on Unique Electronic Identification begins by asking for comment on UID as a single point of data, but then it goes much further. The federal trucking regulator also wants to know if UID should transmit information about the motor carrier, such as carrier name and contact information, and data on the CMV, including GPS location date and time, license plate number, USDOT number, and gross vehicle weight rating.

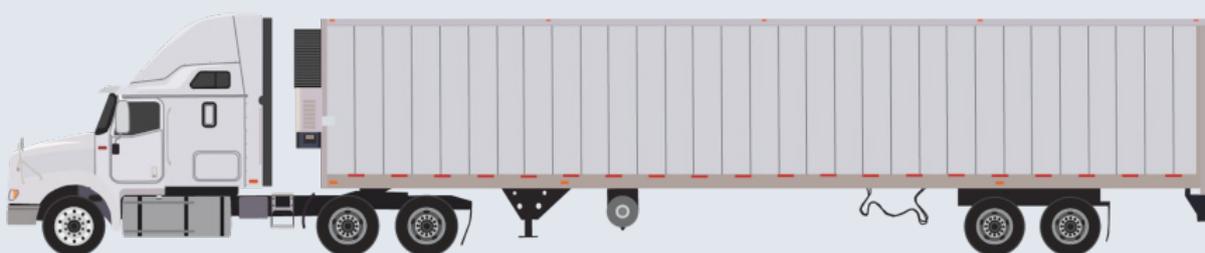
The ANPRM also asks whether UID should transmit information related to the CMV driver, including personally identifiable information (PII); Commercial Driver's License compliance, medical certification, hours of service, and electronic logging device reports. While FMCSA does ask whether the UID transmission should be "limited to non-PII information," the expanded data set considered in the ANPRM would fulfill the requirements for Level VIII inspections.

The ANPRM does not, in contrast to driver PII, explore whether proprietary motor carrier information (e.g., routes traveled, customers served, cargo carried) should be protected. FMCSA asks whether UID should transmit the pre-trip inspection date and time, and whether GPS coordinates and time should be transmitted, both of which could reveal the carrier's route of travel.

Today's CMVs often have sensors monitoring the mechanical condition and functioning of the vehicle components – information that CVSA may require for "Level VIII" inspections in the future. Other data stored on a CMV's electronic system could include evidence of a past highway infraction -- say, excessive speed sometime prior to the UID transmission. The ANPRM does not directly address either type of information, even though the promotion of UIDs by CVSA, from 2010 to the present, has referenced either WRI or "Level VIII" inspections.

In another departure from the IJA amendment, the ANPRM asks whether UIDs should be required only on newly-manufactured trucks, as adopted by the House of Representatives, or on all CMVs, new and old, and whether they should also be placed on trailers and semitrailers. CVSA has most recently petitioned NHTSA to require UIDs on all new CMVs, including trailers and semitrailers.

An ANPRM merely tests out proposals and solicits ideas. If the ideas submitted in comments to the ANPRM or found in the CVSA petition include, for example, the capture of "Level VIII" vehicle condition data or driver hours of service compliance, those ideas could become part of an FMCSA UID rulemaking proposal, a Notice of Proposed Rulemaking or NPRM.



Does UID Have a Safety Benefit

CVSA desires to “touch” more CMVs than today’s weigh station and roadside inspections achieve, with the stated goal of reducing crashes and improving highway safety. Effectively, CVSA wants to use the UID electronic transmissions to screen more CMVs which may have a safety issue from those which do not.

Neither the CVSA petition nor the FMCSA ANPRM offer any research or evidence to show that a UID mandate would improve highway safety or reduce crashes. However, in its 2015 appeal to FMCSA, CVSA references a 2009 CVISN report showing that identifying trucks and screening them for compliance would prevent crashes

from taking place by placing vehicles and drivers out of service (OOS). “Evaluation of the National CVISN¹ Deployment Program”² shows that inspections initiated by this screening would address just three of the top 19 causes of truck crashes; brake problems, load securement, and tire issues. However, law enforcement personnel only have the capacity to inspect 1% of trucks entering weigh station. And identifying, screening or inspecting trucks would not capture or correct the remaining 16 prevalent causes for crashes, primarily unsafe driver behavior. Conversely, in certain scenarios, a UID would allow trucks most in need of extra attention at inspection sites to drive by undetected.



¹ The Commercial Vehicle Information Systems and Networks (CVISN) Core and Expanded Deployment Program is a collection of information systems and communications networks that are owned and operated by governments, motor carriers, and other stakeholders that support commercial vehicle operations (CVO).

² <https://rosap.ntl.bts.gov/view/dot/37278>



Here is why: 14³ states have probable cause statutes, founded on constitutional due process concerns. These laws require a sworn officer to observe an individual or vehicle violation to take enforcement action, not merely by electronically identifying a vehicle or individual through a UID mechanism. With no ability to directly enforce violations revealed by UID-enabled systems, enforcement agencies would lack the authority to issue citations or warnings to encourage better safety practices. Due process concerns were among those raised by Congress when reviewing WRI.

In comparison, electronic weigh station bypass programs – two major private systems and several operated by jurisdictions – overcome due process concerns because motor carriers volunteer to participate. These bypass programs allow participation only by qualified motor carriers with superior safety records, as measured by official government data that carriers can review and, as necessary, challenge. Motor carriers cannot, on the other hand, “confront” a UID transmission.

So, in all legal practicality, a sworn officer must conduct a visual inspection or observe a violation to issue citations or warnings. Three questions arise: what would be inspected, who would be inspected, and where would those inspections take place?

The “what would be inspected” question relates to the questions asked in the ANPRM – that is, what data would a UID transmit? “What would be inspected” also goes to the safety results that could be anticipated. Every safety-conscious motor carrier and professional truck driver wishes to share the road with vehicles and drivers similarly in full compliance with regulations. But even in a world in which all trucks and drivers on the road were inspected and compliant, that still would not account for the two major sources of

highway fatalities: car-truck crashes -- where over 70%⁴ of accidents are initiated by the passenger car driver – often the cause is speeding. UIDs do not address these critical safety issues.

The effectiveness of UIDs could also be limited by “who would be inspected.” The UID amendment discussed during IJA would have affected only newly-manufactured trucks. CVSA’s most recent petition to NHTSA covers only new trailers and semitrailers. The added cost and heightened scrutiny of UIDs might discourage the purchase of new equipment, which could delay the adoption of advanced safety systems. For UID to have any effect on highway safety, it would need to identify all trucks and trailers with safety issues. But a “new-only” UID mandate would mean older trucks, often most in need of extra attention at inspection sites, could drive by undetected.

A UID mandate solely on new equipment would create inequity between carriers that can afford new equipment and those that cannot. Carriers unable to afford new trucks or trailers equipped with UID would be forced to pull into inspection sites, while competitors with new equipment would be allowed to continue down the highway without delay.



³ <https://www.ncsl.org/research/transportation/traffic-safety-review-state-speed-and-red-light-camera-laws-and-program.aspx>

⁴ <https://news.umich.edu/most-fatal-crashes-involving-heavy-trucks-are-not-the-fault-of-truckers-u-m-study-says/>





Older trucks are also common in local and short-haul operations, where ELDs (electronic logging devices) are often not required. So, even a broad UID mandate, which included the transmission of driver data, would not capture the hours-of-service status of many drivers. For all these reasons, the safety effectiveness of UIDs should be discounted.

A violation identified and transmitted by a UID device raises the third question, “where would those inspections take place”? Roadside inspections would require safely pulling a truck out of the traffic stream to a location with sufficient room to conduct the inspection. That may not be practical.

Most likely, the inspections would be conducted at existing weigh stations. In fact, the CVSA petition speaks to using UID transmissions as a sorting mechanism, directing those in need of inspection into the weigh station while allowing compliant trucks to continue on at highway speed. This mandate approach would have the

federal government coopt bypass programs, taking a concept made successful by limiting voluntary participants to safe, qualified motor carriers and applying it to every truck on the road.

State and federal agencies responsible for commercial vehicle compliance inspect roughly two percent of commercial vehicles annually. If every truck on the road were equipped with UID, the number of inspections would skyrocket. In 2021, 23 percent⁵ of inspected trucks and six percent of drivers were found to have an out-of-service (OOS) violation. If UID transmits data that identifies an OOS violation, will the truck be required to pull over immediately until the issue is corrected? With inspection and parking facilities unable to accommodate current demand, where would these inspections take place? How would removing that many trucks, and delaying that much freight, from the road affect the supply chain and motor carriers? If an OOS is detected and the local jurisdiction does not immediately pull the truck over, is it liable for any crash resulting from the violation?

⁵ <https://ai.fmcsa.dot.gov/EnforcementPrograms/Inspections/Visualization>



How Will the Data Be Sent

A larger problem may be the communication protocol proposed by CVSA and mentioned in FMCSA's ANPRM. It suggests the 5.9 GHz spectrum as the means for trucks to broadcast rich data such as driver PII and carrier information. At one time, 5.9 GHz was reserved for highway safety applications; now, the Federal Communications Commission (FCC) has reduced the bandwidth by more than half and opened it up to other uses. Connected vehicle advocates such as the Intelligent Transportation Society of America and AASHTO say the reallocation "would not allow sufficient spectrum for V2X to function, threatening the significant safety benefits this technology provides."

More to the point, the existing electronic weigh station bypass programs utilize communication channels other than 5.9 GHz. That means, to implement the UID system as proposed, states would need to set up their own broadcast capabilities, including overhead UID readers, message boards directing trucks chosen for inspection into weigh stations, and communications to trucks that need not pull in.

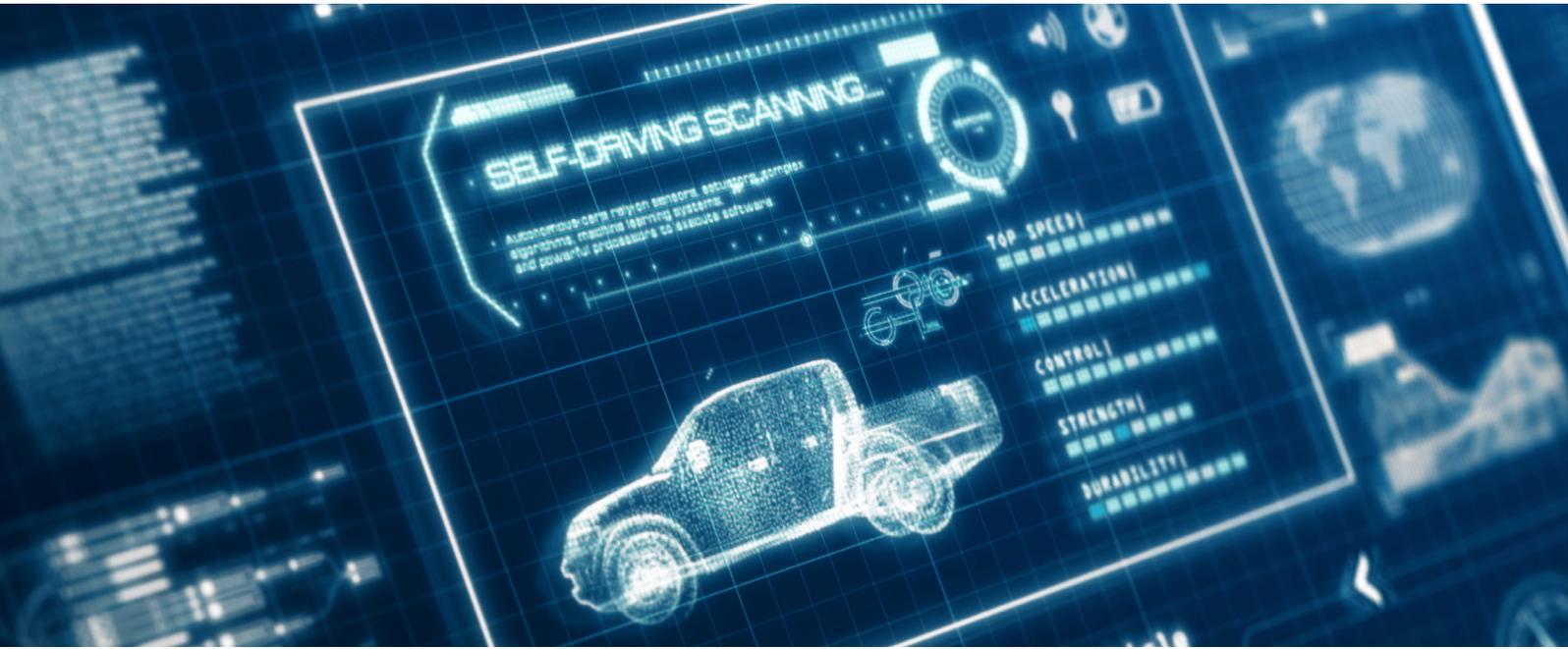
It would also mean that the UID on the truck itself would need to be capable of receiving, as well as sending, data signals no matter the technology FMCSA chooses.

One of the existing electronic weigh station bypass programs has spent \$900 million to build out its communication system over 28 years at a third of America's weigh stations. The cost for states to replicate a similar system at all 2,000 weigh stations and other inspection sites would be extraordinarily expensive. And even then, it would be limited to those CMVs "who would be inspected," as discussed.

The sensitive nature of the data included in this UID ANPRM would require very sophisticated encryption systems that would be difficult to deploy and execute on a truck moving at highway speed. Many companies have difficulty deploying and maintaining data security tools. Applying this level of encryption to UID would be costly and create significant challenges for carriers and state agencies.



How Will the Transmitted Data be Used



The stated intention of the UID proposal is to enhance truck inspections but once the government has that data, there would be no limitations on how it would be used. FMCSA may be tempted to collect that transmitted data and directly use it in the Safety Management System ratings of carrier safety. Today the SMS is fed by truck inspections, citations, crash reports, and investigations. Each of those safety data sources involves some level of direct, personal involvement by law enforcement with a truck and a motor carrier. Aggregating UID transmissions for the trucks in a fleet would not require personal contact with the carrier and it could provide more robust data.

Aggregating UID transmissions for other purposes would also deny motor carriers the opportunity to confront and challenge the data in real-time. While some might argue that online search engines are no different; they already collect personal data (keystrokes and search queries) and use it to generate ads and tailored

search results – so why should FMCSA be denied better access to carrier safety data? The answer is that people voluntarily interact with online search engines. When government gets involved, due process requires the ability of the citizen to see and correct the information the government has collected before it is used.

Until now, the concept of a nationwide Vehicle Miles Traveled Tax (VMT) system has been cost prohibitive. In part, the price tag associated with equipping every commercial vehicle with a device that communicates the unique identity and location of a vehicle and tracks its movement would be very expensive. However, the FMCSA ANPRM on electric identification includes a device that would transmit a truck's GPS location with date and time stamp. Once the government receives GPS data as part of the UID transmission, nothing prevents it from using the information to implement a Vehicle-Miles Traveled (VMT) tax on commercial vehicles.



What Will the Trucking Industry Receive in Return

The data FMCSA wants to acquire from North America's motor carriers is extremely valuable. The government promised to deliver benefits to the trucking industry for the "Beyond Compliance" measure and the costly adoption of Advanced Driver Assistance Systems (ADAS). To date, those benefits have yet to materialize. One question the ANPRM fails to ask is how motor carriers will benefit from providing data that private industry would pay dearly for. The absence of this question could raise another from the trucking industry; shouldn't government deliver on the unfulfilled promise of benefits from previous programs before asking carriers for more?

Raising the fact that these benefits never appeared is often met by an emotional countercharge that dollar signs cannot replace the lives lost to our deteriorating highway safety climate. To the extent that highway safety is improved – over and above the impact of existing electronic weigh station bypass programs – that is a positive outcome everyone would share. But no data is offered to show how this UID mandate would improve highway safety or reduce crashes. UIDs will have a cost -- at this point, the initial and ongoing costs are unknown. That cost will be built into the price of new equipment or the price of a UID installed in older trucks. UIDs will require significant new investment by states in communication equipment, computers, and software. And roadside technology such as this is not a one-time investment. The cost to update and maintain these systems would also burden state budgets. Those investments are in part paid for by private industry through state and federal taxes.

At the same time, existing electronic weigh station bypass programs have made substantial investments at no cost to the states. Motor carriers have voluntarily underwritten those

investments via low-cost subscriptions to the bypass programs. As an example, states would need to replace weigh-in-motion scales (WIMs) that weigh trucks on the mainline at highway speeds. Bypass organizations have installed hundreds of these, each costing between \$250,000 and \$450,000 to install. If FMCSA's unfunded UID mandate supplants bypass programs, states would bear an additional infrastructure investment of at least \$50,000,000 if weight compliance remains a priority for commercial vehicle compliance agencies. If states choose to forego replacing WIMs, all weight compliance would occur at the weigh station, increasing the number of trucks pulling in to be weighed.

In addition, participating motor carriers have committed resources to equip their trucks and train their drivers in the use of existing weigh station bypass technology. The safety results have been positive. The CVSA petition and the FMCSA ANPRM do not mention any possibility of integrating existing electronic weigh station bypass programs into the UID universe. Therefore, all these private investments must be considered terminated.



Commercial Driver versus Motor Carrier Issue Rankings

The first section of the Top Industry Issues report details the results of the overall industry survey of industry stakeholders including employee drivers and owneroperators, motor carrier executives, and other trucking industry stakeholders. However, each stakeholder group has different levels of involvement in, and perspectives on, how these topics impact them. As a result of these varied experiences, the selection and ranking of

issues will differ across these groups. To provide insight into the differing perspectives in the ATRI survey sample, a separate analysis is provided to juxtapose how commercial drivers and motor carriers rank the issues (Table 2).

The rankings of industry issues by truck drivers and motor carrier executives are invariably influenced by their day-to-day experiences and encounters. A divergence of opinions between these two groups can provide deeper insight into the consequences of an industry issue.

Rank	Commercial Drivers	Motor Carriers
1	Truck Parking	Driver Shortage
2	Fuel Prices	Driver Retention
3	Driver Compensation	Fuel Prices
4	Detention / Delay at Customer Facilities	CSA
5	Speed Limiters	Economy
6	Economy	Lawsuit Abuse Reform
7	HOS Rules	Insurance Cost / Availability
8	ELD Mandate	Diesel Technician Shortage
9	Driver Training Standards	Detention / Delay at Customer Facilities
10	Transportation Infrastructure / Congestion / Funding	Truck Parking

Truck Parking is now back on the motor carrier list after several years of absence, despite it being an annual top three issue for drivers since the first driver-carrier comparative list was included in the 2016 report.



A Path Forward

In the absence of evidence showing that a new unfunded UID mandate would improve highway safety or reduce crashes, perhaps professional drivers can offer an experienced voice on the subject. Recent research indicates that the demand for more data would have an adverse effect on the supply chain and driver shortage.

A survey by Randall Reilly in June 2022 disclosed that 27% of truck drivers would leave the industry if a UID mandate became law. With the driver

shortage already exacerbating supply chain issues, driving more than a quarter of all drivers from the industry could bring the movement of freight to a halt. A requirement to broadcast PII could raise yet another barrier to driver recruitment.

Professional drivers who are out on the road every day provide valuable guidance on a path forward to improved highway safety – without an intrusive government program.

Instead of UIDs, FMCSA should take three steps:



The 2022 American Transportation Research Institute “Critical Issues in the Trucking Industry” survey, revealed that driver detention and inadequate truck parking contribute to truck driver fatigue and hours of service compliance issues. More particularly, they can encourage a driver to speed – to make up lost time and to find a place to rest. Speeding, by both truck drivers and motorists, has been a major safety issue in CVSA Roadcheck results. By addressing driver detention and truck parking, FMCSA can improve safety without adopting a program that would convince truck drivers to leave.

Inadequate driver training also appears near the top of drivers’ concerns. FMCSA made strides toward improving truck driver training through the Entry-Level Driver Training program, only to see those steps diluted by the waivers granted under COVID-19, which allowed third parties to serve as both instructors and evaluators of that training. Professional drivers can tell when a new recruit has not truly learned the skills to operate their truck safely. It is good to have a truck driver training standard – but only if it is followed in practice.



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