

# EmTech Perspectives

Emerging Technologies in a Time of Pandemic

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## Part II: Regulatory Challenges to Fully Utilizing Existing Technology

### AUTONOMOUS VEHICLES

On May 1<sup>st</sup>, Amazon Prime premiered [Upload](#), the story of a software engineer whose consciousness is transferred to the cloud after his fully autonomous vehicle (AV) rear-ends another car. The accident takes place in 2033. By then, the show imagines, vehicles that drive themselves will be the default. We won't spoil the ending. But, in the fictional 2033—only 13 years from now—the public is *astounded* when the vehicle is involved in a wreck. It is an entertaining take on the future. In reality, however, we've got a lot of regulations to update if autonomous vehicles (AVs) are going to play the role imagined in [Upload](#).

That's too bad, given the current state of affairs. As industry commentators have [noted](#), in this time of pandemic AVs could have provided much needed assistance with long-haul shipments, non-contact deliveries of food and other goods, and contact-free transportation of the sick or elderly to and from medical appointments. Some have [predicted](#) that the benefits AVs provide during public health crises will help propel them to wider acceptance and regulatory approval. And while there is still much work to be done on that front, there is a solid foundation to build on.

*In Part I of our series Emerging Technologies in a Time of Pandemic, we highlighted how some innovative businesses are leveraging technology to continue safely serving customers, despite restrictions put in place to control the spread of the coronavirus. Here in Part II, we take a closer look at two emerging technologies, autonomous vehicles and drones, with clear benefits to provide in a time of pandemic, but significant regulatory obstacles to overcome before they can be fully deployed.*

# “The person in the driver's seat is only there for legal reasons...The car is **driving itself.**”

It's old news that AVs, often referred to as self-driving, are on our roads already. Most vehicles on American highways have incorporated some level of automation for decades—cruise control is the classic example. Manufacturers have expanded on that early design. Today's luxury cars can parallel park themselves. Adaptive cruise control takes driver convenience one step further by combining traditional cruise control with forward vehicle detection, slowing or stopping the vehicle as traffic conditions dictate. But these innovations represent just the tip of the AV iceberg. For drivers who want to take it a step further (and can afford it), Tesla's Full Self-Driving Capability package can analyze highway traffic and even change lanes for the most efficient trip possible. [The company proudly proclaims](#), “The person in the driver's seat is only there for legal reasons...The car is driving itself.” In Pittsburgh, Pa. a hotbed of AV testing since 2017, Aurora Innovation and Argo AI have recently [resumed](#) testing of their AV platforms after a two month pause due to the coronavirus.

While passenger vehicle automation is exciting, heavy duty trucks drive more autonomous vehicle innovation than most people know. The trucking industry has experienced a [driver shortage](#) for most of the twenty-first century and labor is the industry's largest operating cost. The American Transportation Research Institute reported that in 2018 [driver wages comprised one-third](#) of a truck's per-mile operational cost. By way of comparison, diesel comprises only about one-fourth. When trucking costs fall, the prices of consumer goods fall with them.

Automated trucks have already safely delivered cargo without driver intervention. The first such delivery is widely believed to be a 132-mile Budweiser shipment from Ft. Collins, Colo. to Colorado Springs that took place on October 20, 2016. Just over three years later, a Plus.ai autonomous truck transported a refrigerated load of butter 2,800 miles from Tulare, Calif. to Quakerstown, Pa. To comply with federal trucking rules, a safety driver rode in the vehicle, ready to take over if anything went awry. And, in mid-May, trucking technology company Locomotion [announced](#) plans to partner with the Transportation Research Center (TRC), a testing and research facility in Ohio, to further develop its

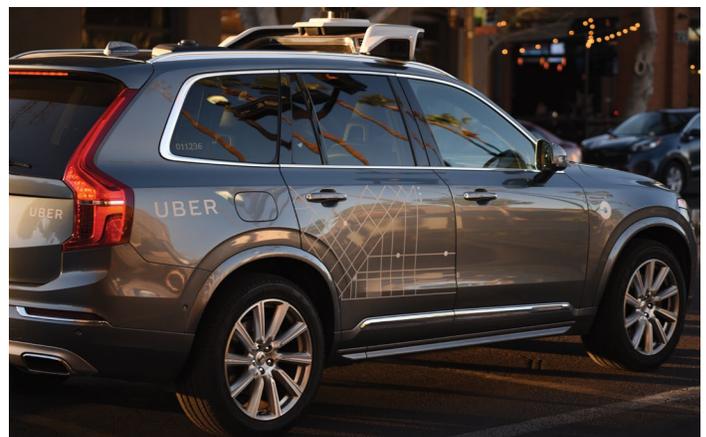


automated trucking platforms at TRC's 540-acre testing center with assistance from TRC's R&D team.

Today, almost all states have considered legislation allowing some sort of AV on their roads. The majority of states have adopted legislation that, at least, allows for AV testing. As states allow more freedom to experiment, technology providers have followed suit with more daring automated deliveries. One of the most frequently adopted AV technologies is [truck platooning](#)— where a convoy of two or more trucks link wirelessly, with each truck programmed to follow at a set distance behind a lead vehicle operated by a human driver. In a significant development, Locomotion [announced](#) in March that it had entered into a multi-year agreement with transportation company Wilson Logistics to deploy its platooning technology on 11 Wilson Logistics shipping routes. Again, the following truck will have a driver, but they will not be involved in operating the truck when the platooning technology is in use.

In fact, drivers aren't going anywhere in the near future. Your Tesla might drive itself, but you must be ready to take over the controls at a moment's notice. Uber, Lyft, and other ridesharing services are test-driving autonomous passenger service, but a back-up driver remains in each vehicle. Today, these seem like sensible precautions, especially after collisions during on-road testing resulted in fatalities.

But, as the technology progresses, the time will come to take the human out of the driver's seat. Vehicle design rules for cars and trucks presume a human driver. Truck safety regulations also require a human driver.



Individual states can make changes to their trucking safety laws, but driverless trucks won't be able to cross state lines given today's federal rules. Until those regulations are updated, the cost savings and pandemic-related benefits promised by AV remain a pipe dream.

The National Highway Traffic Safety Administration (NHTSA) issues the Federal Motor Vehicle Safety Standards (FMVSS), which impose manufacturing standards on vehicles. NHTSA has [issued guidance](#) for states to allow AV testing. And, this year [NHTSA took its first steps to amend the FMVSS for AV](#). NHTSA has also issued FMVSS waivers to allow for greater testing. The Federal Motor Carrier Safety Administration, which regulates operations of heavy-duty trucks, has analyzed its regulations to [identify what must change](#) to allow AV.

These are good first steps. But, they are the easy ones. The hard work comes when someone must certify that an AV is safe enough to operate on the open road without a driver. Only then will we be able to experience the AV future imagined in Upload, or, more poignantly, to benefit from their deployment during a time of pandemic.

## DRONES

In Part I of this series, we highlighted the nascent use of drones during the pandemic, including expanded [drone prescription](#) medicine deliveries. Despite these developments, regulatory barriers and privacy concerns exist that continue to inhibit the widespread use of drone services to reduce social contact while providing delivery of goods.

Generally, the Federal Aviation Administration (FAA) has exclusive jurisdiction over the regulation of airspace. This authority includes the regulation of drones, or, as they are officially called, "unmanned aircraft systems" (UAS) to ensure the safety of flights, not to mention people and property on the ground. The FAA imposes a number of operational requirements on drones and their pilots. Under Part 107, all commercial drone operators are required to obtain and carry a Remote Pilot Certificate and comply with registration requirements for the drones they operate. For example, the drones, including payload, may not exceed 55 lbs; they must fly in daylight, with a minimum weather visibility of three miles from the control station, at a maximum allowable altitude of 400 ft, at a maximum speed of 100 mph, and comply with other operational limitations.

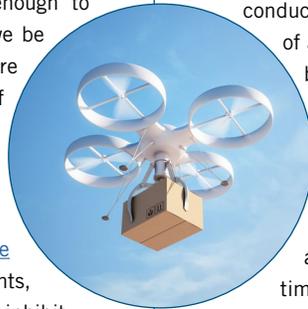
These requirements are not insurmountable, as waivers may be obtained from the FAA, but the operational limitations and FAA's lengthy waiver process have slowed the widespread use and operation of drones for business ventures. For example, drones may not fly over people, except those directly participating in the drone's operations. Although the FAA is working to address this through rulemaking activities promulgated in 2019, the requirement makes it difficult to use drones for commercial activities (including package delivery) in urban or suburban areas.

The requirement that has perhaps most hampered the expansion of drone delivery services is that drones remain within the operator's or a visual observer's sight at all times. The FAA recently announced its partnership with a number of drone technology developers to collaboratively establish requirements for Remote Identification (Remote ID), which would provide real-time identification and location information on drone operations conducted in the nation's airspace. This will be a critical component of authorizing operation of drones "beyond visual line of sight," but it is unlikely that the line of sight requirements will be removed any time soon.

It is possible to request a waiver of these requirements from the FAA, but that process can be cumbersome and time-consuming. While the FAA states that it will try to review and respond to requests [within 90 days](#), actual response times are often much longer, all the while preventing businesses from testing or starting operations. A couple of companies, such as Wing Aviation, LLC and UPS Flight Forward, Inc. have successfully obtained approval to operate package delivery services in the last year or so as commercial drone airlines under Part 135, and the FAA [recently announced](#) that it is currently working on seven additional applications.

Though the FAA generally regulates air space, individual states also play a role. FAA recognizes that states have the right to exercise their police powers and, to the extent they do not expressly conflict with federal law, enforce statutes related to drone operations, as well as state common laws related to trespass, invasion of privacy and other tort-based causes of action.

The issue of invasion of privacy from drone activity has become a point of contention during the pandemic. In April, the Police Department in Westport, Conn., announced that it was partnering with aerial services company DragonFly to test five "pandemic drones" to enforce social distancing and monitor the spread of COVID-19. These drones reportedly



“ This authority includes the regulation of drones, or, as they are officially called, **unmanned aircraft systems** (UAS) to ensure the safety of flights, not to mention people and property on the ground. ”



had the capability to monitor heat signatures, track the distance between people, and even recognize when individuals are coughing. But, the Westport Police Department discontinued the program after receiving responses from the community that cited privacy concerns, including from the Connecticut ACLU. The program lasted less than a day. Clearly, any federal, state, or local agencies looking to use drones for surveillance or to enforce laws, such as social distancing orders, will have a difficult time alleviating privacy and surveillance concerns before the technology will be widely adopted.

While the technology exists for AVs and drones to provide more essential services during this pandemic, regulatory challenges have hampered technology companies' use of their products to their full potential. It will be some time before federal agencies promulgate rules allowing for the widespread deployment of these technologies. As these regulations are developed, AV and drone companies will be able to point to the pandemic as a missed opportunity to deploy their technologies to meet demand and can impress upon federal agencies the need for regulations that allow these technologies to serve society.

## **WE ARE EXCITED TO ANNOUNCE....**

Babst Calland's Emerging Technologies Group has recently created [EmTech Law Blog](#) which contains news, articles and legal and regulatory information published by our attorneys in an effort to provide timely legal and business information on issues impacting companies developing or investing in new technologies, new companies, and new ideas.

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