

Autonomous Akin

Akin Gump
STRAUSS HAUER & FELD LLP

September 2022 Issue

SHARE THIS



Meet the Team

This new column will provide our readers with an opportunity to “meet the team” by highlighting a different member of our team each month and telling you a bit about their backgrounds and connections to the autonomous systems and advanced mobility space.

Rubén Muñoz

Partner in Charge of Philadelphia office

Member of intellectual property, autonomous systems and advanced mobility, and technology groups

What led you to a career at the intersection of law and technology?

It was a natural progression. After earning degrees in chemical and mechanical engineering, I joined Ford Motor Company’s Scientific Research Laboratory in the early 2000s and spent six years designing and testing advanced powertrains. At the time, Ford owned a stable of brands worldwide called the Premier Automotive Group that included Aston Martin, Jaguar, Land Rover and Volvo. My work was geared towards those brands. I worked with engineering teams from the United States, Europe and Japan and gained valuable insights into the complexities of designing, developing and ultimately manufacturing a vehicle. In 2004, I left Detroit and moved to Philadelphia for law school and have now been litigating patent and trade secret cases for some of the world’s biggest companies for nearly 15 years.

What are some emerging intellectual property (IP) issues in the advanced mobility space?

The IP landscape is changing rapidly in this area. In the automotive sector, for example, we have seen a confluence of technologies, with connectivity quickly emerging as a central pillar. Newcomers have become industry disruptors and traditional players have had to reinvent themselves with an eye towards the future. In terms of IP litigation, for instance, we have seen a high profile case involving trade secret misappropriation of self-driving technology as well as an uptick in worldwide patent litigation related to cellular connectivity. This patent litigation has led to some licensing agreements, but only through 4G. With the advent of 5G, another wave of litigation is likely. Issues related to licensing of standard essential patents (SEPs) under fair, reasonable and nondiscriminatory (FRAND) terms are also likely to play a prominent role. Through this newsletter, we aim to keep our readers informed of these and numerous other developments affecting this industry sector.

- [Unmanned Aircraft Systems \(UAS\)](#)
- [Advanced Air Mobility](#)
- [Technology, Environment and Legislation](#)
- [Autonomy & Electric Vehicles](#)
- [Events](#)

UNMANNED AIRCRAFT SYSTEMS (UAS)

Matternet M2 Drone Delivery System First to Achieve FAA Type Certification

Matternet, developer of the world's leading urban drone delivery system, today announced that the Matternet M2 drone has achieved Type Certification by the Federal Aviation Administration (FAA). As the first non-military unmanned aircraft to achieve Type Certification in the United States, this gives Matternet a strong competitive advantage in the drone delivery market. The completion of the four-year rigorous evaluation by the FAA proves the safety and reliability of the M2 aircraft, a key step in scaling U.S. commercial drone operations.

"We are incredibly proud that Matternet M2 has met the very rigorous safety standards of the FAA and is the first drone delivery system to be Type Certified in the United States," said Andreas Raptopoulos, founder and CEO of Matternet. "Drone delivery will revolutionize healthcare and e-commerce in the U.S. We've been at the forefront of this revolution since launching U.S. operations in 2019 — we are now ready for scale."

For the last four years, a select number of unmanned aircraft systems (UAS), including the Matternet M2, have been operating under Part 135, the FAA framework for revenue on-demand air carrier operations, using an exemption while the systems are evaluated. With a Type Certification, implementing new networks and getting approvals will be a more streamlined and predictable regulatory process. Additionally, air carrier operating licenses such as Part 135 on-demand transportation can only use Type Certified aircraft.

"This is a victory for not only Matternet, but for the whole UAS industry as it indicates a maturing of the industry and a shift away from exemptions and waivers towards more standard regulation," said Jim O'Sullivan, vice president of regulatory strategy for Matternet. "Matternet would like to thank the FAA, as well as our advisors at End State Solutions."

[Read Article](#)

New Drone Technologies Emerge for Low-Altitude Public Safety Applications

Several companies developing next generation technologies for drones exhibited their solutions at the fourth annual UAS Public Safety Summit last week. The summit was focused on applications related to public safety that enhance capabilities for law enforcement and first responders.

Hidden Level, headquartered in Syracuse, New York, specializes in low-altitude drone sensing software. The company offers a cloud-based solution, the Airspace Monitoring Service (AMS), to process data from sensors to track drones in real time. According to the company, its technology can detect the movements of more than 95 percent of commercially manufactured unmanned aerial vehicles.

Hidden Level is also involved in a partnership with Joby Aviation, developer of electric vertical take-off and landing (eVTOL) aircraft. The companies share their expertise in

designing scalable airspace operations, relying on data collected by Hidden Level's sensors installed in dense urban environments.

"We offer drone detection as a service," explained James Licata, VP of Strategy and Partnerships at Hidden Level. "We build our own sensor technology and install it ourselves on rooftops and cell towers, typically in metropolitan areas, to cover as wide an area as we can," he told Avionics International during the Public Safety Summit.

The AMS collects data on any drones operating in a given airspace and shares that data with agencies such as local law enforcement or corporate security. Hidden Level installs the technology and maintains it, and provides a data feed to the agency.

[Read Article](#)

ADVANCED AIR MOBILITY

[NASA's AAM Playbook: Future Airspace \(VIDEO\)](#)

This AAM episode explains how the National Aeronautics and Space Administration (NASA) is helping to develop and test future airspace designs to enable new vehicles to safely co-exist with traditional aircraft.

[Watch NASA AAM Video](#)

[United to Invest \\$15 Million in Flying-Taxi Maker Backed by Embraer](#)

United Airlines Holdings Inc. is making another bet on flying taxis with a \$15 million investment in Eve Air Mobility, a company backed by the aircraft manufacturer Embraer. The airline said it has struck a conditional agreement to buy 200 of the four-passenger electric aircraft Eve is developing, with options to buy another 200. United said it expects the first deliveries of Eve's aircraft as soon as 2026.

United, which last month put down a \$10 million deposit for 100 electric flying taxis being developed by Archer Aviation Inc., said it would need hundreds of the aircraft to serve what it expects to be a booming market in the coming years.

The aircraft being developed by Eve, Archer and other startups will take off and land vertically like helicopters. The aircraft haven't yet been approved by regulators to fly passengers. The FAA has been examining aircraft, working on pilot requirements and looking into how to integrate planned vehicles into the airspace.

Airlines and leasing companies have been making investments and striking deals for preliminary orders in hopes that the aircraft will one day zoom around cities, whisking customers above congested highways to and from hub airports while reducing carbon emissions for such journeys.

United expects one-way trips to cost about \$100 to \$150—on par with Uber Black service from Manhattan to Newark Liberty International Airport, said Michael Leskinen, president of United's venture-capital fund for early-stage technologies. Adding a second air-taxi provider will complement its order from Archer. Eve's relationship with Embraer, the Brazilian regional-jet manufacturer, could be helpful in smoothing the regulatory process and developing infrastructure before the futuristic aircraft can transport passengers.

[Read Article](#)

[Boeing and Airbus Want to Get Greener.](#)

After two years of pandemic paralysis, the global aviation industry reconvened last month for the Farnborough air show 30 miles from London, carbon emissions were top of the agenda. Air-taxi startups like Vertical Aerospace and Boeing-owned Wisk worked hard to pitch their battery-powered vehicles as part of the green push. Europe's Airbus announced a project to test the clouds generated by hydrogen combustion. Engine makers debated how to scale up production of sustainable aviation fuel. What was conspicuously absent was talk of designing new "clean-sheet" jets instead of updating old ones.

In a recent report, the International Council on Clean Transportation forecasts that the aviation industry will fall far short of its pledge to generate net zero carbon emissions by 2050, based on measures announced so far. Crucially, improvements in jet-fuel-powered aircraft will play only a small role: Through 2035, only a 1.1 percent improvement per year in energy intensity is expected, almost all of it coming from models already in service today. The authors assume "no step-change improvement in the technical efficiency of delivered aircraft."

Today, manufacturers see even less of a business case for clean-sheet jets. The 20 percent reduction in fuel consumption new planes have achieved in the past may be hard to repeat, given that the low-hanging fruit in airframe and turbofan technology has already fallen. Most of the improvement historically came from engines, which is why CFM—a joint venture between General Electric and Safran—is studying whether "open fan" architectures can deliver another step-change in efficiency. But this could take decades.

Yet, with some short-term financial compromise, technological stagnation isn't inevitable. The newest engines built by CFM and its competitor Pratt & Whitney each have technology that the other lacks—cutting-edge materials and a gearbox, respectively. Crossbreeding them is certain to work. Alone, it could take each firm 15 years to acquire the necessary capabilities and overcome intellectual-property issues, but the right combination of ambition, government incentives and collaboration could bring it forward.

[Read Article](#)

Eve Announces First North American Urban Air Mobility Simulation in Chicago

Eve Holding, Inc. will conduct its first North American urban air mobility (UAM) simulation using helicopters powered by Blade Air Mobility, Inc., as a substitute for an eVTOL. The company aims to study operations, ground services, passenger journeys and eVTOL operator needs, creating more accessible and faster connections to Downtown Chicago. Eve will conduct its Chicago, Ill., UAM simulation over three weeks, starting with ground tests on September 12th and passenger flights on the 14th. Following the simulation, the city of Chicago will gain knowledge about the infrastructure and ecosystem needed to enable the launch and expected long-term growth of UAM in the area.

"Simulating the eVTOL operation in Chicago allows us to study how people will experience this service and understand the entire ecosystem requirements for our product and services, while showcasing the benefit of Urban Air Mobility in one of North America's most prominent and populated cities," said André Stein, co-CEO of Eve. "We are wrapping up preparations to execute these simulations seamlessly and look forward to helping prepare Chicago for a local zero-emission UAM solution that is quiet, efficient, and sustainable."

Eve will perform the ground tests at Vertiport Chicago, an existing downtown heliport facility, simulating services, infrastructure, and equipment requirements for the eVTOL. In the UAM infrastructure, a vertiport is an area of land or a structure used for the landing, take-off, charging and operation of eVTOL vehicles.

[Read Article](#)

Some Skeptical About eVTOL Passenger Applications

Electric vertical takeoff and landing vehicles, known as eVTOLs, are a rage among many thinking about new sustainable ways to travel. Special Purpose Acquisition Companies (SPACs) have been a popular funding vehicle for eVTOL companies even though revenue streams may be many years away. The idea of Jetsons-like machines whisking us from center city to nearby airports and other destinations is a fanciful dream, and technology is trying to quickly make this a reality.

The current version of VTOL, helicopters, have made no meaningful inroads to the mass traveling public. Companies like Blade move people around New York City, but the services are not cheap and have reached only a tiny fraction of travelers. While eVTOLs could have better economics and ultimately do these trips much better than modern helicopters, there are five good reasons that eVTOLs will be highly challenged in regular commercial operation

The pilot issue is a massive one. If using pilots, there are questions about where they will come from, how they will be trained and how this career could be compared to, or relate to, flying commercial aircraft. The abstraction seen in many eVTOL papers and marketing materials talk about a “move to automated flight.” There is a difference between automation and autonomy, and truly replacing a pilot in operations around millions of people, is decades away. You could argue that replacing pilots is easier in large aircraft, who aren’t regularly operating in and around tall buildings and densely populated areas, even before eVTOLs could make this a reality.

eVTOLs promise efficient movement in busy places, when the roads are jammed and time is at a premium. This is not a 24/7, 365-day challenge for consumers. Even in New York, there are times that driving to LaGuardia or Kennedy airports is not a problem. Airlines can fly to Las Vegas and other places late at night and leave there early in the morning to add utilization to their fleet. It’s not obvious that eVTOLs will be a relevant option except for the busiest times in the busiest places given what it will cost to fly on this equipment. This suggests that utilization will be limited, again putting pressure on the fares needed.

[Read Article](#)

TECHNOLOGY, ENVIRONMENT AND LEGISLATION

Inside Flightradar24, the Website That Tracks Every Plane in The Sky

On an average day, more than 200,000 flights take off and land across the world. That includes commercial, cargo and charter planes—which account for about half of the total—as well as business jets, private aircraft, helicopters, air ambulances, government and military aircraft, drones, hot air balloons and gliders.

Most of them are equipped with a transponder, a device that communicates the aircraft’s position and other flight data to air traffic control, and that signal can be captured with inexpensive receivers based on a technology called Automatic Dependent Surveillance-Broadcast (ADS-B). That’s what flight-tracking websites do in a nutshell, providing users with a real-time snapshot of everything that’s in the sky (minus a few exceptions).

That’s now reaching far beyond aviation enthusiasts. When a U.S. Air Force plane carrying House Speaker Nancy Pelosi landed in Taiwan in early August, over 700,000 people witnessed the event as it happened, via flight-tracking service Flightradar24.

The plane, a military version of the Boeing 737 called C-40, departed from Kuala Lumpur in Malaysia before embarking on a circuitous path to Taiwan, in order to avoid encounters with the Chinese military, adding hours of flight time. That didn’t make it immediately obvious

what the final destination would be, sparking online conversations as the plane slowly veered north towards the island. As a result, it was the most tracked flight of all time on Flightradar24, with 2.92 million people following at least a portion of the seven-hour journey.

To gather the data, Flightradar24 has built its own network of ADS-B receivers, which they now say is the largest in the world at about 34,000 units, covering even remote areas like Antarctica. About a quarter of the receivers were built by Flightradar24 itself, but the majority are assembled by enthusiasts who provide the data on a voluntary basis. Because building a receiver is relatively cheap—components cost about \$100 altogether—many have signed up since Flightradar24 started opening up its network to the public in 2009.

Having such a granular and localized amount of data can be useful to get an early insight into emergencies and accidents: “We store everything that comes into our servers and if necessary we can go back into a specific receiver and extract the raw data. That’s usually done only if there’s been an accident or if we have a request from an air navigation service provider or an accident investigation branch,” says FlightRadar24’s director of communications, Ian Petchenik.

[Read Article](#)

[Reliable Robotics Receives FAA G-1 Acceptance for Autonomous Cessna Caravan System](#)

Reliable Robotics has received acceptance from the FAA for the certification basis associated with the autonomous aircraft navigation system it is developing. The California-based company’s G-1 issue paper was accepted by the FAA for the autonomous platform it is developing and has already demonstrated on the Cessna 208 Caravan.

First established in 2017, Reliable Robotics made headlines in recent years for completing several remotely piloted tests from its Mountain View, California, headquarters of its autonomous systems on several Cessna aircraft. In February 2021, Reliable Robotics remotely piloted a Cessna 208 Caravan, following similar achievements in 2020 and the autonomous flight of a Cessna 172 Skyhawk over a populated region in 2019.

The autonomous platform developed by Reliable Robotics is designed as an upgrade kit for fixed-wing aircraft. According to the company’s website, the system includes avionics, software, a communications system, remote command interfaces and a “backup system that has the capability to take over if needed.” Demonstrations of their technology have been remotely piloted from workstations at their headquarters that feature an iPad programmed to provide information and a user interface for the remote pilot to manage the flight plan, and maintain situational awareness over the aircraft.

The FAA’s acceptance of the G-1 issue paper provides Reliable Robotics with airworthiness and environmental requirements for the certification of its autonomous system. Their next steps will include the development of a G-2 issue paper, followed by the eventual demonstration of how the design of their system is in compliance with the requirements outlined in the issue papers. This would allow Reliable Robotics to achieve supplemental type certification (STC) for their system on the Cessna 208 Caravan.

[Read Article](#)

[Dauids Championing Advanced Air Mobility](#)

Q: As the Transportation and Infrastructure Committee Vice Chair, you introduced the AAM Coordination and Leadership Act. How will this legislation promote AAM and emerging technologies?

Rep. Sharice Davids: “AAM is an emerging sector of the aviation industry that creates an entirely new mode of transportation, using specialized vehicles to transport people and cargo between places previously not served by aviation, including both urban and rural areas. AAM will expand sustainable regional transportation options, offer new ways to move goods, create skilled jobs in Kansas’ aviation industry, and boost emergency preparedness and competitiveness.

This bill would develop an AAM interagency working group, composed of federal agency and civil aviation industry leaders, which will review policies and make recommendations to advance this emerging technology. By facilitating the coordination of government and industry, this bill will help harness the potential of this rapidly developing and transformative technology for the benefit of American industry.”

[Read Article](#)

[**FAA Enforcement Policy Regarding Production Requirements for Standard Remote Identification Unmanned Aircraft**](#)

For noncompliance with the remote identification production requirements applicable to unmanned aircraft, which occurs on or before December 16, 2022, the FAA will consider all circumstances, in particular, the delay in the FAA’s acceptance of a means of compliance, when exercising its discretion whether to take enforcement action.

[Read Federal Register Notice](#)

AUTONOMY & ELECTRIC VEHICLES

[**Honda, LG Energy Plan \\$4.4 Billion EV Battery Factory in U.S.**](#)

Honda Motor Co. and LG Energy Solution Ltd. announced that they plan to build a \$4.4 billion electric-vehicle (EV) battery factory in the U.S., the latest venture between auto makers and battery suppliers seeking to expand capacity by sharing upfront costs. The companies said they plan to begin construction of the factory early next year and start mass production by the end of 2025. The factory is planned for Ohio, the same state as Honda’s longstanding auto plant in Marysville, people familiar with the matter said. The companies didn’t name the location.

The U.S. plant represents the first major investment Honda has made in building out its own EV battery supply chain since announcing plans to go all-electric a little over a year ago. The Japanese automaker is targeting a full switch to EVs and fuel-cell cars by 2040.

“The key challenge in the EV era is the global procurement of batteries,” Honda Senior Managing Executive Officer Shinji Aoyama said at a briefing in April. He said Honda would start out working with partners but hoped to put more emphasis on developing batteries independently by the latter half of this decade, which he said would be the “the dawn of the popularization of EVs.”

Honda and LG said they want their plant to produce 40 gigawatt-hours of batteries annually. That would be enough for more than 700,000 vehicles based on the International Energy Agency’s estimate that the average EV’s battery capacity in 2021 was 55 kilowatt-hours.

[Read Article](#)

[**GM's Cruise Robotaxi Service to Expand into Phoenix, Austin**](#)

General Motors’ self-driving car company on Monday announced plans to expand a robotaxi service that recently launched in California into new markets in Arizona and Texas before

the end of this year. Cruise, a San Francisco startup that General Motors bought six years ago, told an audience at an investor conference that an autonomous ride-hailing service that began charging San Francisco passengers in June will make its debut in Phoenix and Austin, Texas, within the next 90 days.

As it already has been doing in parts of San Francisco during night-time hours, Cruise's ride-hailing service will transport passengers in vehicles that won't have a safety driver in them to take control if the robotic technology malfunctions. Cruise CEO Kyle Vogt didn't provide additional details about the ride-hailing services in Phoenix and Austin.

When its ride-hailing service enters Phoenix, Cruise will be competing with another robotaxi service run by Waymo, a Google spin-off, that already has been charging passengers there. Waymo is also testing a robotaxi service in San Francisco that hasn't yet been cleared to charge passengers. Although Vogt told investors that the driverless ride-hailing service in San Francisco is winning over many loyal customers, Cruise ran into problems the day after receiving its permit from California regulators to begin collecting fares.

In a regulatory disclosure made earlier this month, Cruise revealed that it recalled 80 of its driverless vehicles for a software update after one of the cars was involved in an accident that resulted in minor injuries. Cruise told the National Highway Traffic Safety Administration (NHTSA) that one of its vehicles was making an unprotected left turn at an intersection when it was hit by an oncoming vehicle. The Cruise vehicle had to be towed away from the scene, according to the regulatory filing.

[Read Article](#)

[**Check Out Lincoln's Eye-Popping Take On the Self-Driving Car**](#)

Lincoln's new autonomous car concept offers a lot to gawk at. One thing it doesn't offer: A steering wheel. The automaker unveiled its newest creation in honor of its 100th birthday. The concept car, which is a computer generated model at the moment, is meant to pay homage to the Model L, the brand's first luxury vehicle, although the resemblance is more notional than directly inspirational. Where the original L had all the boxy hallmarks of the stately vehicles of the era, the new L100, which debuted at the Pebble Beach Concours d'Elegance in California, is best described as a drop of quicksilver with nary a hard angle to speak of.

There's plenty to glom on to from a design perspective, but the interesting thing is that we're getting a glimpse of how automakers potentially may view cars of the future. The L100 is strictly a concept, not a production vehicle, but it is a salient peek into the driverless future. It has no driving instrumentation, which is a profound departure from contemporary autonomous vehicles. It also has no steering wheel, opting instead for a crystal "chess piece" joystick in the center console.

"Concept vehicles allow us to reimagine and illustrate how new experiences can come to life with the help of advanced technologies and allow our designers more creative freedom than ever before," said Anthony Lo, chief design officer, Ford Motor Company, which owns the Lincoln brand. "With the Model L100, we were able to push the boundaries in ways that evolve our Quiet Flight brand DNA and change the way we think about Lincoln designs of tomorrow."

[Read Article](#)

[**GM Bets on Electric Vehicles for the Masses with a \\$30,000 SUV**](#)

General Motors Co. is ready to test both the mass market's appetite for electric vehicles and its own strategy to provide them. The Company expects to make the electric model of its popular Chevrolet Equinox sports utility vehicle (SUV) available for sale in about a year with

a \$30,000 price tag. According to reports, it may go 250 miles on a single charge and will be the first high-volume GM vehicle with its Ultium battery, the linchpin of the automaker's \$35 billion gamble to overtake Tesla Inc. in EV sales.

Chief Executive Officer Mary Barra pledged to make all of GM's vehicles battery powered by 2035, part of her ballyhooed "Everybody in" plan to make vehicles a climate change solution by selling them en masse. By offering an electric version of the high-volume Equinox family SUV, the company will test how cheaper products perform in a market now dominated by \$70,000 luxury cars, and if the Ultium battery makes those sales profitable.

"To get to a high volume of EVs you have to reach the mainstream market," Barra told Bloomberg TV. "We're seeing a tipping point where people will consider an electric vehicle. We're hearing, 'If it's got the range and fits my lifestyle, I can afford it.' That's when they will make the decision to go EV."

GM's push is to make the Equinox affordable and also build out the charging network so people with lower incomes can use the car as an everyday driver.

[Read Article](#)

[**Apple's Car is Loved by Consumers BEFORE It Even Exists - 26 Percent Would Consider Buying One from The iPhone Maker - As Firm Hires Former VP of Hyundai's Autonomous Vehicle Lab**](#)

Apple's nonexistent self-driving car is already being embraced by consumers as a new survey reveals that 26 percent of drivers would 'definitely consider' buying a vehicle from the iPhone maker. Consulting firm Strategic Vision surveyed 200,000 new car owners and for the first time added Apple to the more than 45 brands that consumers could share their views on.

Only Toyota and Honda ranked higher on the brand consideration question, at 38 percent and 32 percent, with Tesla taking 20 percent. In addition, when asked about quality impression, 24 percent of car owners gave Apple high marks. Bloomberg's Mark Gurman has reported that Apple would like to have a fully autonomous electric car ready sometime in 2025—but the road to this type of technology is littered with numerous failed or abandoned efforts. The tight-lipped tech giant has not said much as of late regarding the car project. CEO Tim Cook told *The New York Times* last year: "We'll see what Apple does. We investigate so many things internally. Many of them never see the light of day."

Still, the company recently revealed that it has hired Gregory Baratoff, who worked at Hyundai, most recently as VP of its autonomous vehicles lab, and oversaw camera sensors development at Continental Corporation in Germany.

[Read Article](#)

[**Battery Recycling Race Heats Up After Inflation Reduction Act**](#)

The world's biggest auto makers are betting that recycled material from old batteries will help supply the metal they need to build electric cars. The latest wager is on a startup that says it can take advantage of the Inflation Reduction Act.

Jaguar Land Rover and South Korean conglomerate SK Group are among the investors putting more than \$300 million into Ascend Elements, a startup that aims to serve an emerging center of battery production in the Southeastern U.S. The company says it has an efficient way to turn used lithium-ion batteries into new components. Other investors include Fifth Wall, a venture investor with a clean-energy focus.

The funding is split between equity and debt and values Ascend at more than \$500 million. Ascend and other upstarts such as Redwood Materials Inc. and Li-Cycle Holdings Corp. have said they would spend billions of dollars to supply battery makers with the inputs they need. Recycling startups typically break down old batteries or scrap material from manufacturing, then use chemical processes to produce components that can go into new batteries.

The recyclers are jockeying for large customers that need more of those materials to meet their electric-vehicle goals. Car makers are trying to limit their dependence on China, which dominates the battery supply chain. Investors are pouring money into recycling in part because nearly all new mines and processing facilities in the U.S. face local opposition due to worries about environmental damage. That typically stalls progress and means it takes up to a decade or more to get projects up and running.

Even though recycling is viewed as greener than mining, the startups will also have to keep their energy, water and chemical footprints down to stay competitive.

CEO Mike O’Kronley said Ascend’s facilities run on renewable power and the company reuses chemicals. The former executive at A123 Systems—a battery startup that received government funding then went bankrupt a decade ago—said consistent demand from consumers and large companies will help this generation of clean-energy startups avoid the sector’s past pitfalls. “The difference now is that the market is ready,” he said.

[Read Article](#)

Struggling EV Startups Won't Get a Tesla Rebound

Electric-vehicle startups had a rip-roaring 2021 as investors placed bets on which would be the next Tesla Inc. This year has been more like a pileup on the track. Startups that raised billions during the boom are struggling with supply-chain issues and soaring commodity prices. Investors have realized that building cars is extraordinarily capital-intensive and companies will burn plenty of cash before they can manufacture their models at scale and turn a profit.

Instead of focusing on growth at all costs, the auto makers are cutting spending to preserve cash. For investors, it’s easy to think this will be a repeat of Tesla’s near-death experiences as the company launched its first mass-market model. But times are different now. Tesla CEO Elon Musk later tweeted his company was “about a month away from bankruptcy” as it launched its mass-market Model 3. Now, it’s the world’s most valuable auto maker.

Tesla would not only survive but thrive with a significant first-mover advantage. Once launched, the Model 3 and subsequent Model Y SUV dominated electric-vehicle sales in the U.S. Even with new competition from other auto makers, the Models 3 and Y still accounted for 60 percent of U.S. electric-vehicle sales this year through August, according to industry data firm Motor Intelligence. And Tesla’s sales volumes allowed it to sell more than \$3 billion worth of regulatory credits to other auto makers who lacked significant electric sales of their own in 2020 and 2021.

For now, the startups have enough cash to survive. Rivian reported finishing the second quarter with about \$15.5 billion in cash and cash equivalents on hand. Lucid, which reported \$4.6 billion cash on hand at the end of June, filed a shelf agreement last week that it said would allow it to raise an additional \$8 billion over the next three years.

But without the potential for Tesla’s early market domination, nor the billions the company earned from selling credits, EV newcomers may never reach the kind of valuation investors were hoping for this time last year.

[Read Article](#)

Call for Participants to Shape ANSI Roadmap of Standards and Codes for Electric Vehicles at Scale

The American National Standards Institute (ANSI) is seeking participants to support the development of a roadmap of codes and standards for EVs at scale. The roadmap will be developed by the ANSI Electric Vehicles Standards Panel (EVSP).

The roadmap will address critical codes and standards issues including high-power DC charging, storage (i.e., microgrid, distributed energy resource management systems) integrated with DC charging, vehicle grid integration, high-power scalable/interoperable wireless charging and vehicle-oriented systems. Subject matter experts representing the following types of organizations (among others) are invited to participate:

- Vehicle original equipment manufacturers (OEMs)
- Energy service providers (electric utilities, energy retailers)
- EV services providers (charging network operators)
- EV fleet operators/managers
- Cloud service providers
- Providers of telematics user services
- Building energy management system operators
- Distributed energy resource aggregators
- Standards developing organizations
- Non-Standards Development Organization (SDO) consortia/alliances
- Government (federal, state, local)
- National labs.

Those interested in participating are invited to review the panel architecture and schedule of working group calls and sign up for one or more working groups. The working groups are holding virtual meetings twice a month with subgroups developing content covering specific issues over the next several months. Even those unable to make all the calls can contribute to the document's development. Public comment on the draft roadmap is targeted for mid-February 2023, and publication of a final roadmap is targeted by mid-May 2023. Participation is open to EV stakeholders that have operations in the United States.

[Go to ANSI Website](#)

The Trouble with Comparing Next-Gen Car Batteries

As manufacturers seek to move beyond lithium-ion, they face one big challenge: There's no yardstick for measuring performance. "The storage battery is ... a mechanism for swindling," the esteemed scientist said. "Its efficiency after a certain number of charges ... begins to diminish, and its capacity and efficiency both diminish after a certain time."

The year was 1883. The speaker was Thomas Edison.

Batteries have improved dramatically since then, with new architectures and chemistries increasing driving range from only 4 miles around the time Edison spoke, to 70 miles for General Motors Co.'s 137-horsepower EV1 in the 1990s, to 375 miles for an 825-horsepower Tesla Model S today. Scientists and manufacturers promise similarly dramatic

improvements with the next generation of batteries that will power vehicles even farther, charge faster, last longer and require fewer rare or toxic materials such as cobalt, lithium and nickel. And they'll be cheap enough for use even in budget models.

Some companies make their test cells almost by hand because they can't afford to build a pilot facility—meaning they have greater control over the outcome. Just as a tailored suit will fit better than one off the rack, comparing an artisanal battery to a factory-made model gives an advantage to the handmade version. But whether it performs the same when manufactured on an assembly line is anyone's guess. Testing, meanwhile, can happen under vastly different conditions, and a battery that does great at 113F might not perform as well at normal temperatures. "It's even difficult for scientists or researchers with many years of experience to compare," says Moshiel Biton, CEO of battery startup Addionics in Israel. "This is a huge problem."

Steve Harris, an engineer at the Department of Energy's Lawrence Berkeley National Laboratory, who's worked on battery tech for Ford and GM, recalls the hype in the early 2010s over lithium-sulfur batteries, which were reported to have terrific performance per gram. "What nobody was paying attention to is, grams of what?" Harris says. Then in 2015, Brian McCloskey, a professor at the University of California at Berkeley, published a paper showing that lithium-sulfur anode batteries with such allegedly fantastic energy density required huge amounts of another battery component, the electrolyte, to deliver the reported capacity—which essentially made them unworkable for cars. "There are different ways companies can mislead people," Harris says. "You selectively give data that makes you look good. You don't provide critical information. You show performance under very ideal conditions." In other words, as Edison said, you swindle.

[Read Article](#)

Self-Driving Cars Are a Thing of the Future. But Is That Future Right Around the Corner?

The future of driving isn't just about electrification. It's about automation. Yes, just as it seems like science-fiction to drive several hundred miles without a drop of gas—available now, of course, with the growing popularity of EVs—soon you'll be the passenger rather than the driver of an autonomous vehicle.

Imagine one day you hop in your driverless car in the morning, and since it's a weekday it knows you want to go to the office, unless you instruct it otherwise. When it drops you off, the vehicle goes back home instead of you paying for parking. But how, when and where truly driverless cars will be the norm is up for debate, though experts agree it's coming "down the road" perhaps sooner than you think.

According to Renub Research, a market research and consulting company, the U.S. autonomous vehicles market will balloon into a \$186 billion industry by 2030, up from \$4 billion in 2021, based on its recently published report. Along with the convenience of being driven around, autonomous cars are said to be a safer ride.

That is, if human error accounts for as much as 94 percent of all road accidents, according to the NHTSA, then perhaps it makes sense to rely more on technology to help keep us safe.

"Consider it an extra set of eyes that can provide some vehicle control, such as maintaining a distance with a vehicle in front of you, a form of adaptive cruise control, as well as maintaining your lane position for you, and safely changing lanes, as well. We don't have the ability to remove the driver from the equation right now ... the driver cannot tune out and stop paying attention to the road," adds Kristin Kolodge, vice president of auto benchmarking and mobility development at J.D. Power.

But it may be coming as soon as next year.

[Read Article](#)

Soon Electric Vehicles Could Charge Faster Than Your iPhone

For many Americans, EV are alluring up until the point they think about taking it on a long road trip. A gas powered car will likely let them drive a median of 400 miles on a full tank—and a refill takes minutes. A full charge on an electric vehicle is more likely get them somewhere between 200 to 300 miles, and could take upward of 15 to 30 minutes of charging before hitting the road again. That's one of the major challenge facing politicians and car companies attempting to increase electric vehicle adoption: a skeptical consumer base willing to find any reason to not make the switch.

In a report released this week, government researchers said they have found a way to charge electric car batteries up to 90 percent in just 10 minutes. The method is likely five years away from making its way into the market, scientists said, but would mark a fundamental shift.

There are other problems facing the industry. J.D. Power and Associates said many electric vehicle customers aren't satisfied with public charging stations, notably because units malfunction or are out of service.

Marc Geller, a spokesman for the Electric Vehicle Association, an industry nonprofit, said that it's largely a perception that quicker charging times are a large barrier for customers to not purchase electric vehicles. "That perception is obviously both true and largely irrelevant," he said. The larger issue, Geller added, was that demand is outstripping supply.

[Read Article](#)

BMW Starts Making Fuel-Cell Systems for Hydrogen Car Fleet

BMW AG has started producing fuel-cell systems for its hydrogen-powered iX5 sport utility vehicle, moving forward with a climate-friendly alternative fuel that its German rivals don't expect to be viable in passenger cars.

"Hydrogen will become more relevant in individual mobility due to its advantages," Chief Executive Officer Oliver Zipse said Wednesday at an opening event for the production site in Munich. "Hydrogen-powered cars are the ideal technology for us to complement pure battery-electric vehicles."

BMW plans to produce fewer than 100 iX5 hydrogen vehicles by the end of this year for testing and is "seriously considering" the possibility of mass producing fuel-cell cars within this decade. Toyota Motor Corp. will provide the fuel cells, while BMW has developed some components such as compressors, and will produce the fuel-cell systems in Bavaria.

BMW will start delivering iX5 hydrogen vehicles to selected partners in Europe, the U.S. and Asia from the end of this year, the company said. The aim of the field test, which will run for up to two years, is to gain insights into every day usage of the cars. Zipse said in early August that hydrogen-powered models might be an option for BMW's new "Neue Klasse" platform starting in 2025. By then and until 2030, the charging infrastructure for electric vehicles will be insufficient in many countries, making hydrogen-powered vehicles important for achieving climate goals, he said at the event.

[Read Article](#)

Natilus Selects Pratt & Whitney Canada as Supplier of Engines for Innovative New Natilus N3.8T Autonomous Cargo Aircraft

Natilus, a U.S. company producing the world's first purposefully designed and manufactured autonomous aircraft for air freight transport, has announced that it has selected Pratt & Whitney Canada to supply the engines for the first of the Natilus family fleet: the N3.8T. The company is initially producing the N3.8T as a prototype and as long-term short-haul air cargo feeder. The first N3.8T aircraft is under production and is scheduled to fly in 2024.

"Natilus has designed and developed a blended-wing autonomous aircraft that can offer services at a fraction of the cost of today's transport, while reducing negative impacts on our environment. We wanted to select an engine supplier that shares our vision of innovation, safety and efficiency. Pratt & Whitney Canada is recognized and respected for their worldwide support of customers, while the PT6A engine is the benchmark in reliability and has an unmatched history of performance with low Time between Overhauls," said Aleksey Matyushev, Natilus Co-founder and CEO.

"Pratt & Whitney has a long-standing commitment to supporting innovation for sustainable aviation, and so we are pleased that Natilus has recognized the capabilities of the PT6 engine family to increase efficiencies in the air cargo transport industry while reducing carbon emissions," said Nicholas Kanellias, vice president, General Aviation, Pratt & Whitney Canada. "The selection of the PT6A-67D to power Natilus' innovative cargo aircraft further asserts the dependability, versatility and flexibility of the PT6 turboprop engine family, the world's most popular engine in its class."

Today, there are only two ways to move cargo internationally: by air and by sea. The difference between the cost and time of these two modes of transportation is dramatic, with sea freight currently 13 times less expensive, but 50 times slower in delivery. Natilus intends to revolutionize the air transport industry by providing the timeliness of air freight at an affordable cost reduction of 60 percent to increase the competitiveness of the air cargo market.

[Read Article](#)

California Approves Rules to Ban Gasoline-Powered Cars by 2035

California approved regulations banning the sale of new gasoline-powered cars and trucks by 2035, an action aimed at addressing climate change that could speed the nation's transition to electric vehicles. The aggressive target was a contentious topic when Democratic Gov. Gavin Newsom first announced it through an executive order two years ago, after the Trump administration had moved to strip California of its unique ability to set higher air pollution-related standards than those set by the federal government.

Still, auto industry lobbying groups cautioned that the target remained extremely difficult to achieve, noting that many factors, including the build-out of EV charging networks and availability of raw materials needed to make batteries, affect how quickly new car sales can realistically go fully electric.

The regulations, which apply to sales of new cars, pickup trucks and SUVs, establish annual thresholds for the share of zero-emission vehicles auto makers must sell in the state each year, starting at 35 percent in 2026, and ramping up to 68 percent by the 2030 vehicle model year and 100 percent by 2035.

While EV sales still account for only around 6 percent of U.S. new-vehicle sales, they surpassed 16 percent in the second quarter in California, which has long been a pioneer in EV adoption.

Since Gov. Newsom first floated the plan in 2020, many major car makers have said they are working toward an eventual phase-out of gas-powered vehicles, with varying timelines and regional differences. GM, the largest auto maker by U.S. sales, in late 2020 pegged the

same 2035 target for ending sales of nearly all of its internal-combustion vehicles. GM on Thursday reiterated that plan and said it shares California's vision of an all-electric future.

[Read Article](#)

EVENTS

[Aviation Week Aerospace IT](#)

October 6 – 7, 2022

Chicago, IL

[ICAO DRONE ENABLE SYMPOSIUM 2022](#)

November 14 – 16, 2022

Montreal, CA

[Annual Aviation Issues Conference](#)

January 8 - 12, 2023

Maui, HI

If you would like further information, please contact:

[Jennifer Richter](#)

[Cliff Sweatte](#)

[Christian Davis](#)

[Susan Lent](#)

[Rubén Muñoz](#)

akingump.com

© 2022 Akin Gump Strauss Hauer & Feld LLP. All rights reserved. Attorney advertising. This document is distributed for informational use only; it does not constitute legal advice and should not be used as such. Prior results do not guarantee a similar outcome. Receipt of this information does not create an attorney-client relationship. Do not act upon this information without seeking professional counsel. All content is presented by Akin Gump and cannot be copied or rebroadcasted without express written consent. Akin Gump Strauss Hauer & Feld is the practicing name of Akin Gump LLP, a New York limited liability partnership authorized and regulated by the Solicitors Regulation Authority under number 267321. A list of the partners is available for inspection at Eighth Floor, Ten Bishops Square, London E1 6EG. For more information about Akin Gump LLP, Akin Gump Strauss Hauer & Feld LLP and other associated entities under which the Akin Gump network operates worldwide, please see our Legal Notices page.

[Update Your Preferences](#) | [Subscribe](#) | [Unsubscribe](#) | [Forward to a Friend](#) | [Legal Notices](#) | [Privacy Policy](#)

This email was sent by: 2001 K Street, N.W., Washington, DC 20006-1037