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Volume 5, Issue 1

The Dispatcher

In this issue:

NHTSA on AVs 1-2

Version 2 provides guidance not regulation.

Dispatch Central 1-3

Distracted drivers

Electric outages

The Serge on BEVs

PSA Free2Move in US

Toyota's two wheeler

Mercedes mit drone

Shell game

The Dispatcher's office

SoftBank 3

Investment vision

Cybersecurity-Part 2 4

The Achilles Heel of Automated Vehicles

London's Congestion 4

What did you expect?

What3Words 5

Will it replace your street address, or?

Location Referencing 5

A short primer

Musings 6

Global Warming will get you

This Tesla Roadster owner wants to make sure that everyone knows his super sports car is not a gas guzzler with his 'NO CO2' license plate. I have always felt that those who need to tell us all they are holier than we are, are usually hiding something.



Telematics Industry Insights by Michael L. Sena

NHTSA on AVs: What a Difference a Year Makes

ONE YEAR AGO, on 20 September 2016, the U.S. Department of Transportation and its *National Highway Traffic Safety Administration* (NHTSA) issued its **Federal Automated Vehicles Policy**. Many (including your Editor) thought that Anthony Foxx, Secretary of Transportation, and Dr. Mark Rosekind, Administrator of NHTSA, would be kept in place by the next President to carry out the policies. The U.S. electorate put those ideas to rest. A new Secretary of Transportation, Elaine Chao, was appointed by the new President, and the previous executive director of NHTSA, Jack Danielson, served as Acting Deputy Administrator until 10 October when Heidi King was appointed Deputy Administrator.

On 12 September 2017, Secretary Chao released new Federal guidance, titled **Automated Driving Systems (ADS): A Vision for Safety 2.0**. Was this update necessary? Is it an improvement over the Foxx/Rosekind policy? Let's have a look. Full disclosure: I thought Version 1 was totally in line with what was needed, and said so in the 4 October 2016 issue.

As a prelude to the issuance of Version 2, the Senate and House committees on transportation issues held *Jelly Bean Parties*, called 'Hearings' in public, and invited representatives of companies working on developing automated driving systems to take part. GM, Ford, Waymo, among others were given the liberty to pick out the jelly beans they liked and leave those they did not. When the guests left, they had taken all the jelly beans that restricted the States from having any say in the systems they were developing and left all those that allowed NHTSA to pre-certify their systems with a Pre-Market Approval Authority, issue Cease-and-Desist orders, and provide Post-Sale Authority to Regulate Software Changes. The House and Senate included in their legislative proposals what was in the preferred jelly beans and left out what was in the ones that remained in the jars.¹

The House of Representatives passed H.R. 3388 – SELF DRIVE Act on 25 July 2017, and sent its version to the Senate. SELF DRIVE stands for 'Safely Ensuring Lives Future Deployment and Research In Vehicle Evolution'. Congrats to whoever came up with that one. The Senate Commerce Committee unanimously approved its bill on 4 October, and it now awaits a vote in the Senate. The Bill preempts States or Political Subdivisions of a State from "maintaining, enforcing, prescribing or continuing in effect any law or regulation regarding the design, construction, or performance of highly automated vehicles, automated driving systems, or components of automated driving systems unless such law or regulation is identical to a standard prescribed (by this law)".

Continued next page

Dispatch Central

Driven to Distraction

The AAA Foundation for Traffic Safety conducted a study to determine just how distracting infotainment systems are when used while driving. They found that the most distracting function is entering an address on a navigation system. It is even worse than texting! The worst placement for controls is down in the center console (i.e., knob in between the seats).

⌘

The Lines are Down

Question: When there is an extended power outage caused by a major storm, like the ones that roared over the Caribbean islands, Florida and Texas this year, what do electric car owners do when their cars' batteries run down?

⌘

BEVs Not So Holy

FCA CEO, Sergio Marchionne, made the following statement at the University of Trento where he received an honorary degree in engineering: "A forced introduction of BEVs (battery electric vehicles) on a global scale, without solving the problem of how to get clean energy, would endanger our planet's existence." Marchionne stated that two-thirds of global electricity is produced using fossil fuels such as coal and oil today, which means the actual CO₂ emissions of a battery-powered car are "at best" equivalent to those of a car with a gasoline engine. Who said he was only interested in selling cars?

Continued next page

PSA (sort of) Returns to USA

By the time PSA stopped selling vehicles in the U.S. market in 1991, it had already acquired Citroën (1974) and Chrysler Europe (1978). Now, it has decided to return as a mobility company, not a car company, with the **Free2Move** services platform and app. The app combines car sharing, carpooling, ride sharing, bike sharing and public transit for short-to-medium distance trips. PSA acquired a majority share in Free2Move GmbH in December 2016. The company was formerly known as Car-jump but changed to Free2Move on 1 January 2017. Seattle, WA and Portland, OR are the first two cities where the services will be offered.



Toyota Puts on Belts and Braces²



Dr. James **Kuffner** is the Chief Technology Officer at the **Toyota Research Institute (TRI)** in Los Altos, CA and also serves as Area Lead, Cloud Intelligence. He recently presented Toyota's two-steering wheel self-driving and driverless test cars. He explained that the second steering wheel, which Kuffner called a "unique dual cockpit configuration," was included to allow a trained safety operator to take over during testing if need be when the car confronts obstacles in the road. Also, if Toyota's researchers want to let the car drive itself without anyone in the driver seat, they can with little concern that the vehicle will go on a joyride or make a dangerous maneuvers. It's certainly a good idea, but it is not 'unique'. Driver training cars have been built for years with two sets of controls for just those times when the trainee loses it. This VW Dual Control Driver Education Car is a '55.



Continued next page

NHTSA on AVs: What a Difference a Year Makes: (continued from p.1)

What the new NHTSA document provides is 'encouragement'. Every specific piece of guidance is preceded by the phrase: Entities are encouraged. In other words, everything is voluntary. If there should be any doubt, the title of Section 1 of the document makes this clear: *Voluntary Guidance for Automated Driving Systems*.

"This Voluntary Guidance provides recommendations and suggestions for industry's consideration and discussion. This Guidance is entirely voluntary, with no compliance requirement or enforcement mechanism. The sole purpose of this Guidance is to support the industry as it develops best practices in the design, development, testing, and deployment of automated vehicle technologies."

The second and final Section of the document is titled *Technical Assistance to States, Best Practices for Legislatures Regarding Automated Driving Systems*. NHTSA makes it clear what it sees as its responsibilities and what role the States could play.

NHTSA's Responsibilities

- Setting Federal Motor Vehicle Safety Standards (FMVSSs) for new motor vehicles and motor vehicle equipment (with which manufacturers must certify compliance before they sell their vehicles)
- Enforcing compliance with FMVSSs
- Investigating and managing the recall and remedy of noncompliances and safety-related motor vehicle defects nationwide
- Communicating with and educating the public about motor vehicle safety issues

States' Responsibilities

- Licensing human drivers and registering motor vehicles in their jurisdictions
- Enacting and enforcing traffic laws and regulations
- Conducting safety inspections, where States choose to do so
- Regulating motor vehicle insurance and liability

I find it odd that NHTSA seems to be more determined to control what the States do or do not do than controlling what the developers of systems should or should not do. However, it attempts to address what it admits is a valid concern of States, that it is not abrogating its

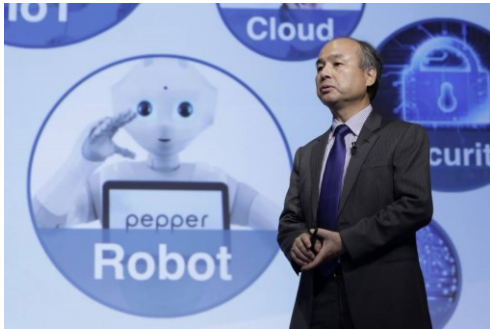
responsibility to keep their roads safe. In a footnote, NHTSA provides the following reassurance: *"The National Traffic and Motor Vehicle Safety Act, as amended ("Safety Act"), 49 U.S.C. 30101 et seq., provides the basis and framework for NHTSA's enforcement authority over motor vehicle and motor vehicle equipment defects and non-compliances with Federal Motor Vehicle Safety Standards (FMVSS)."*

A report prepared by the ITS Joint Program Office of NHTSA, completed in March 2016, titled **Review of FMVSS for Automated Vehicles: Identifying potential barriers and challenges for the certification of automated vehicles using existing FMVSS**, puts a ding in the door of the current NHTSA regime's calming words. It states, in summary: *"The review revealed that there are few barriers for automated vehicles to comply with FMVSS, as long as the vehicle does not significantly diverge from a conventional vehicle design. Yet, automated vehicles that begin to push the boundaries of conventional design (e.g., alternative cabin layouts, omission of manual controls) would be constrained by the current FMVSS or may not fully meet their objectives. Many standards, as currently written, are based on assumptions of conventional vehicle designs and thus pose challenges for certain design concepts, particularly for 'driverless' concepts where human occupants have no way of driving the vehicle. Some constraints, of course, may be warranted; this work does not assess the merits of potential future requirements for such vehicles."*

In my opinion, someone told NHTSA to back off so the U.S. doesn't make the same 'mistake' it made with UAVs (aka drones). NHTSA's V1 policy followed the same cautious approach as the FAA's policy concerning the testing of drones. As a result, DJI, a Chinese company, owns the market for commercial and hobby small-to-medium-sized drones. For both commercial and strategic reasons, the U.S. wants and needs a strong domestic capability in the technologies that go into piloting land vehicles without drivers. It is why DARPA started the whole thing. If the costs of R&D can be spread out by incorporating the technologies into private cars, taxis and buses, so much the better.

It's Time to Talk About SoftBank and Its Vision Fund

SOFTBANK GROUP CORPORATION is a Japanese multinational corporation that was established in 1981 with the creation of J-Phone, the mobile phone division of Japan Telecom. The company survived after suffering huge losses in the dot.com crash, acquiring Yahoo Japan, Vodafone Japan and, in 2013, Sprint Nextel for \$22 billion. The firm is still run by its founder, Masayoshi Son, reportedly Japan's richest person.



Billionaire Masayoshi Son is the founder, chairman and CEO of SoftBank Group Corp.

In October, 2016, it formed the **SoftBank Vision Fund**. The intention of the fund is to make investments in the technology sector globally. Its ambition at its founding was to be one of the world's largest fund of its kind. Saudi Arabia's government is the biggest investor in the SoftBank Vision Fund; it may invest as much as \$45 billion over five years. Other investors include Apple, Qualcomm, UAE-based Mubadala Investment Company, Saudi Arabia's PID public fund, Foxconn, and Foxconn-owned Sharp.

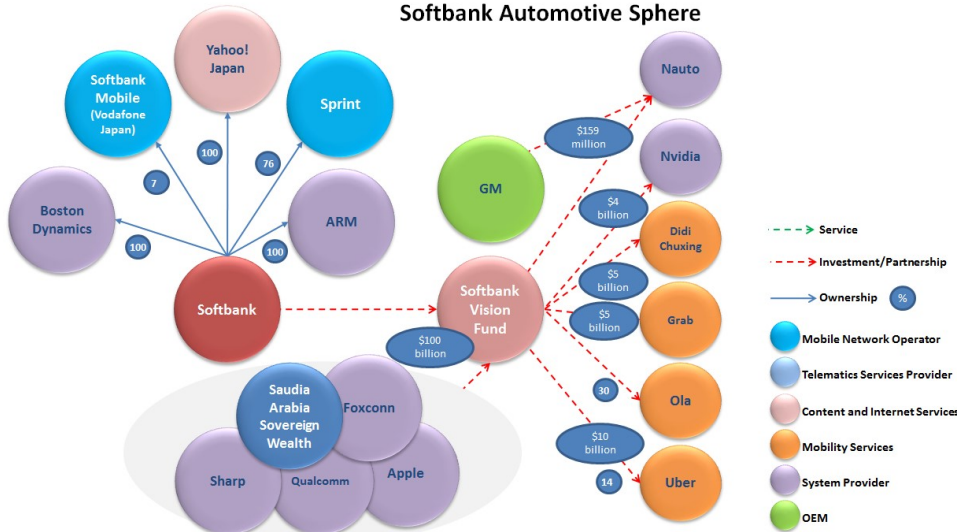
"Technology has the potential to address the biggest challenges and risks facing humanity today. The businesses working to solve these problems will require patient long-term capital and visionary strategic investment partners with the resources to nurture their success," Son said in a statement.

The areas where SoftBank and the Vision Fund invest include Internet-of-Things, AI, robotics, infrastructure, telecoms, bio tech, fintech, mobile apps and more. The SoftBank Vision Fund is consistent with this strategy and intends to help build and grow businesses "creating the foundational platforms of the next stage of the Information Revolution".

SoftBank expressed interest in a major investment in Uber over several months ago, before Dara Khosrowshahi stepped into the CEO job in August. Uber's board decided Tuesday, 3 October, to accept the investment from SoftBank, which will made in two stages. An initial investment of around \$1 billion will buy new shares to maintain Uber's current \$69 billion valuation. It will make another investment of around \$9 billion at a later stage to acquire between 14% and 17% of the company, and will have two members on the Uber board. Softbank has already invested in Uber's rivals Didi Chuxing, Ola and Grab, so it is not an exclusive relationship that the company was after.

It will be interesting to see if SoftBank makes more investments like the one in Nauto, a maker of cameras and computer vision software for self-driving vehicles.

Softbank Automotive Sphere



They Got the Order Right



MERCEDES-BENZ Vans and MATTERNET DRONES have developed a delivery solution involving road transport vehicles and unmanned aerial vehicles that puts their use in the proper order—at least for urban deliveries. Instead of trying to drop a package out of the sky onto a city balcony, the drone flies from a supply point, like a regional warehouse, to a waiting van that is positioned in a delivery zone in the city. The drone drops down onto the roof of the van, the mini-landing pad, and the van, with driver, makes the final drop-off. Smart.



Royal Dutch Shell is installing electric vehicle charging stations in the UK, The Netherlands and Norway. It has agreed to purchase Dutch-based NewMotion, which oversees more than 30,000 charging stations in Western Europe.



The Dispatcher's Desk



For those of my readers who have wondered where **The Dispatcher** is produced, here is the control center. On the top left corner you can see the instant messaging system for important news flashes, and on the right side is the most important tool, the pencil sharpener. If you are in the neighborhood, don't hesitate to drop by for a chat and a coffee.

London's Congestion

What did you expect?

IT'S CALLED A 'Duh Moment', and it's Ken Livingston, former Mayor of London, who should be having it. In 2003 he pushed through his Congestion Charging Zone scheme covering central London (below).



Several years later I was driving in a London Taxi and got an earful from the driver on how congestion had gotten worse because of all the bus lanes being created. Boris 'The Bicyclist' Johnson took over from 'Red' Ken in 2008 and started building bicycle paths, further reducing the supply side of the equation available for cars and trucks. What has been the result? Predictably, congestion in central London has worsened. Average speed on a weekday afternoon in rush hour inside the Congestion Zone has decreased between 2007 and 2016 from 15 miles per hour to 12, and the average delay has increased from 1.5 minutes per kilometer to almost 2.5 minutes.

The reason for this is that the demand side has been completely mismanaged. For one, there are too many exemptions, including those for so-called 'ultra-low emission' vehicles. The list of cars that meet the requirements is long, and, of course, Tesla is right there. Second, private-hire vehicles (read that Uber) are exempt, as long as the driver is registered. The number of licensed taxi and private-hire drivers rose from 67,000 to 115,000 between 2013 and 2016, and the number of private-hire vehicles entering the zone at least once per day rose from 50,000 to 85,000 in the same period. Private-hire vehicles make up fully 38% of the car traffic inside the congestion zone, which is double the share of the traditional black taxis.³

Those who do pay dish out £11.50 per day for the privilege to drive in the Zone and get stuck in traffic.

Cybersecurity: The Achilles' Heel of AVs – Part Two

Part one in the October issue addressed road transport vehicles that are driven by humans with the aid of advanced driver assistance systems (ADAS). Part two addresses the implications for self-driving and driverless vehicles.

WHAT DID RHODE ISLAND do to deserve Elon Musk's assertion that being there is a fate almost worse than death? He was speaking at a meeting of the National Governor's Association about the dangers of hackers potentially taking control of his company's cars when they were operating in Autopilot mode.

"I think one of the biggest concerns for autonomous vehicles is somebody achieving a fleet-wide hack," he said. "In principle, if someone was able to... hack all the autonomous Teslas, they could say - I mean just as a prank - they could say 'send them all to Rhode Island' - across the United States. And that would be the end of Tesla, and there would be a lot of angry people in Rhode Island."

Absolutely. If I were a Rhode Islander, I would be furious over having all of those Tesla drivers showing up in my state. Musk's cybersecurity solution "to prevent the Rhode Island scenario" is to install a so-called "kill switch that no amount of software can override." I think we need to come up with a better term for this 'last line of safety' device, don't you?

An article in the August 22, 2017 issue of *MIT Technology Review* by Simson Garfinkel, titled *Hackers Are the Real Obstacle for Self-Driving Vehicles* (he means 'Driverless', that is cars and trucks without a human driver), provides a good analysis of the problem: "These vehicles will have to anticipate and defend against a full spectrum of malicious attackers wielding both traditional cyberattacks and a new generation of attacks based on so-called adversarial machine learning. As consensus grows that autonomous vehicles are just a few years away from being deployed in cities as robotic taxis, and on highways to ease the mind-numbing boredom of long-haul trucking (I wonder if he has ever driven a long-haul truck to verify that it is 'mind-numbing'. Ed.), this risk of attack has been largely missing from the breathless coverage."

Simson suggests that one possible reason driverless cars could be subjected to malicious attacks is anger and a desire for revenge by out-of-work truck and taxi drivers. Rather than going to the trouble of hacking the computer systems, he says a high-power laser pointer could "dazzle" the vehicle's control systems.

Vehicle manufacturers and their suppliers, (spurred on by the financial markets. Ed.), are rushing to get driverless vehicles on our roads before there are rock solid solutions to prevent security breaches that could endanger the lives of humans riding in those vehicles, but there is not enough consideration being given to the security problem. Words like 'pranksters' trivializes the severity of the consequences, and comparisons to computer security are not totally relevant, especially since we have not found solutions to secure computers against hacking. With personal computers, a malicious hack can have catastrophic financial and emotional consequences, but a hack of a vehicle can result in death.

Musk does not say who would be operating the 'kill switch', but if it's just another AI device, there is a risk that it can also be compromised. Clarence Hempfield, VP of Location Intelligence at Pitney Bowes, wrote an interesting piece in *Tech Crunch* in February of this year titled: *Why a cybersecurity solution for driverless cars may be found under the hood*. He suggests that automakers could leverage their location-based services infrastructure, such as ONSTAR, MBRACE, VOLVO ON CALL, to monitor their vehicles in real time. If their automated systems identify peculiar driving behavior, their service operators (humans) could take immediate action, first contacting the occupants and back-up driver, and then taking over control of the vehicle. Excellent suggestion, and one that I have supported. Car companies should be working with their connected services contractors right now to build out the infrastructure in good time for when it will really be needed.

There are two reasons that both government and industry are not concentrating on cybersecurity for driverless cars. One, it's really difficult. Two, it's much easier to focus on an easier target, that is, data privacy. Increasing data privacy and increasing security are not two sides of the same coin, as we see on a daily basis in pronouncements from law enforcement agencies complaining that greater privacy (e.g. resulting from the EU's GDPR) is making their jobs more difficult. These two groups need to get on the same page.

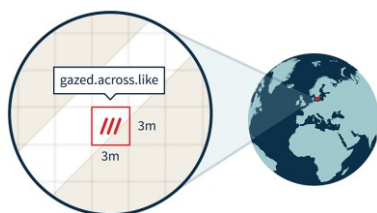
Just Three Words and You Know Where You Are. Or?

"JUST WHAT THE world needs," quipped Righty, the bird perched on my right shoulder, as I clicked on the link to open *WHAT3WORDS*. I had received the link from Dr. Michael Dobson, President of Telematics LLC, former Chief Cartographer and CTO for Rand McNally, with the note that Mercedes-Benz was going to include it in its upcoming navigation systems.³

"Don't be so judgmental," countered Lefty, his alter ego twin, from my left shoulder. "Maybe it is exactly what the world needs. Let's have a look."

The screen filled with the *WHAT3WORDS* website as we sat quietly and read what the company had to say about itself.

WHAT3WORDS provides a precise and incredibly simple way to talk about location. We have divided the world into a grid of 3m x 3m squares and assigned each one a unique 3 word address. Everyone and everywhere now has an address. The system uses a wordlist of up to 40,000 words, depending on the language version used. The algorithm sorts the list so that simpler and more common words are used in more populated areas, whilst longer words feature in unpopulated areas.



There was a graphic illustrating the concept (copied above). The three words, *gazed.across.like* is the name of a 3m x 3m square, and it points to a location on a two-dimensional globe that is somewhere in southern Sweden. I clicked on the map application in the web site and typed in the three words. The location was not in Sweden at all.

"It's a place in London," exclaimed Lefty. "Maybe it's their office."

I typed in the address that was listed on their contact page: 242 Acklam Road, London, W10 5JJ, UK. The following popped up: *ports.motor.wasp*. It was in another part of London.

"O.K.," said Righty, impatiently. "I think we get it. But if we know the address, why do we need

to convert it to a combination of three silly words that have nothing to do with one another or the place?"

"What if you don't have an address?" retorted Lefty. "What if you are in the middle of the Alps and you have an accident? How do you tell the emergency people where you are? Or maybe you are in a foreign country, you can't pronounce the street names, and you are trying to tell someone where to pick you up. Maybe the application can take your geographic position and give you the three words."

We tested it by using the lat/long of our position on my phone's map app. We tried a few formats before we got it right. I typed in 58.17347, 13.55068 and it put us right where we were at the time, in Falköping, Sweden.

"I'm sold," declared Lefty. "I wonder how many 3-meter squares it takes to cover the earth."

"56 billion if you take the area of the surface of the earth and divide it by 9," replied Righty, quick as a flash, "but they say they have 57 trillion squares. Using 3-word combinations and 40,000 words, you can produce close to 64 trillion unique sets without duplicates. They probably used a Mercator wall map as their model, and I'll bet you can't get a pizza delivered on the North Pole."

Righty was right. When I typed in 90, 0, we got the following: *Warning - This location is close to one of the poles and may not display correctly*. It didn't display at all.

"I still have a lot of doubts," Righty said, "especially about the whole idea of using random words. When there is a street, why not use it as one of the words? And what 3-meter square do I use to get to Heathrow Airport?"

It didn't look like Righty was going to become a fan of this location referencing method. It's one of many (see sidebar), and it does seem to have some good application areas, such as finding the right door in an arena. I clicked on the News section to read about what Mercedes-Benz intended to do with it.

Mercedes-Benz has built what3words into their next generation infotainment system launching next year. Drivers will be able to type or say 3 words to pinpoint an exact destination anywhere in the world.

Writing from guarded.patron.stardom, **your Editor would welcome your thoughts.**

Location Referencing

LOCATION REFERENCING SYSTEMS address the problem of identifying accurately and efficiently the position of an entity or event in multiple map databases employing different coordinate systems or map projections, having different scales and positional accuracy and containing different levels of content. For example, if I am in the Chicago traffic management center and I want to send a message to all motorists that West Roosevelt Road between South Ashland Avenue and South Racine Avenue in the easterly direction will be closed for maintenance between 22.00 and 05.00 for the next five days, I will have a message that is 176 characters long. I could probably get it down to a 140 characters to fit into an SMS, but when the whole location referencing activity got started at the end of the 1980s, there was no SMS or 'texting'. There was also no public GPS; that came in 1995, and it provided a positional accuracy of +/- 100 meters (around 1 degree) until 2000 due to Selective Availability. That still required three decimal degrees (e.g. -172.156), so a single coordinate pair required up to 16 characters and all you got for that was a point that was up to 100 meters from the actual location.

RDS-TMC (Narrow-band Radio Data System for the Traffic Message Channel) was one of the earliest location referencing systems for communicating traffic information. It was based on pre-coded tables of locations and detailed event lists that could be transmitted in an FM broadcast. It is still used today for delivering traffic information. AGORA, ILOC, TPEG-LR, OpenLR, UniversalLR and GATS Geocode: the list of methods is long and will continue to grow.

For a complete description of the different location referencing methods, I highly recommend two papers written by Kees Wevers, Principal of BrightAngel ITS and former Chair of the Location Referencing Group within the TMC Forum. The first paper, **The Evidence Project – Evaluation of ILOC Referencing**, was written by Kees in 1999 when he was working with Navigation Technologies B.V. The second paper, **Map-based location referencing: status and prospects** (Tech Paper EU00467) was written for the ITS World Congress in Vienna, 22-26 October 2012.

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Footnotes:

1. P1 On Friday, 10 October 2017, NHTSA held an Automated Driving Systems Public Workshop to obtain feedback on its Vision for Safety guidance. In its news release on the workshop, it described it "overall, as a productive, open forum" with over 100 attendees present."

2. Braces is the British English word for 'suspenders', the clever invention that holds up men's pants.

3. Mike Dobson has an excellent blog, called *Exploring Local*, in which he discusses issues in depth of 'all things spatial'. He has written on What3Words with the caption Not.Quite.Right. I highly recommend it.

<http://blog.telematics.com/?cat=13>



This is a real moose crossing the road in front of my car; it is not a cardboard moose being dragged across the road to test a driverless car's vision system. I saw him running through the wood and stopped in good time, as did the cars approaching in the opposite direction. He paused long enough for me to take out my trusty phone camera and snap a photo, and then we were all on our way. The number of accidents in Sweden involving moose increased 19% between 2015 and 2016, with a total of 5,846.

Musings of a Dispatcher: GLOBAL WARMING will get you.

I'VE BEEN THINKING a lot about climate change lately, especially about the term GLOBAL WARMING. The news in late August and September was dominated by climate events called *Harvey*, *Irma*, *Maria* and *Jose*. *Irma* was the strongest hurricane ever recorded in the Atlantic Ocean. The WASHINGTON POST wrote on the 23rd of September: "*The 2017 hurricane season has been a full-on assault from Mother Nature...Is Earth trying to eject us from the planet?*"

I was eight when I experienced my first hurricane. It was named *Diane*, and it wiped out an entire section of Scranton after dropping more rain on the city than in any other place along its path.



There were three explanations given by adults for the hurricane. The most common was that God (or 'the gods' or 'Mother Nature') did it, or caused it to happen, because people had either done something bad or had failed to do something good. Some of our teachers tried to explain that events like hurricanes, earthquakes, volcano eruptions and

the simplest thunderstorms can be explained scientifically. There is no magic performed or an all-powerful puppeteer in the heavens pulling invisible strings. At the time, few people admitted to being an atheist; I suspect those who promoted this scientific view probably were. A good number of people simply said that these sorts of things just happen, there is no explanation for why or when they do, and it's just a matter of accepting them, hoping for the best and cleaning up the mess afterward.

It's not much different today when it comes to how people explain natural events, except we have more surveys and statistics on the percentages of people who hold different views. The United Nations' *Intergovernmental Panel on Climate Change* (IPCC) writes that "the science now shows with 95% certainty that human activity is the dominant cause of observed warming since the mid-20th century." In a July, 2017 survey by the Yale Program on Climate Change, it was found that seven in ten Americans do believe climate change is happening, but only 58 percent believe it is mostly human-caused. Thirty percent say it is mostly a natural occurrence, which could put them either in the 'God did it' camp or with the agnostics.

This result matches a pattern of attitudes on scientific matters. A quarter of U.S. adults say evolution was guided by a supreme being. The same survey found that

34% of Americans reject evolution entirely, saying humans and other living things have existed in their present form since the beginning of time—which, for them, started about six thousand years ago. This is their 'belief', and that is the operative word in this discussion.

It doesn't matter if 97% of the world's scientists are absolutely certain that the planet is headed toward destruction—and its inhabitants are the cause—if a large minority of those inhabitants in many countries **BELIEVE** those scientists are misguided heathens. In some countries, the non-believers are a majority.

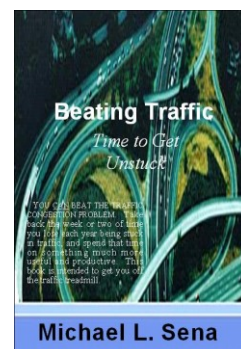
Environmentalism is the alternative religion created by the strongest believers in the bogeyman deity, GLOBAL WARMING. Like other religions, it offers salvation in return for abiding by a set of rules. Its high priests have now penetrated the political walls of many countries, and laws are being passed that enforce their principal rule: Use no energy. The main problem with offering an alternative religion is that others already have their own, and Environmentalism's gospel of 'no cars, no planes, no meat, no lots of other things' does not necessarily sound so very attractive.

It's a pity it had to be this way. It would have been much easier to get everyone rowing in the same direction if we didn't set up an opposing force. After all, we are all in the same boat: PLANET EARTH.

About Michael L. Sena

Michael Sena works hard for his clients to bring clarity to an often opaque world of vehicle telematics. He has not just studied the technologies and analyzed the services. He has developed and implemented them. He has shaped visions and followed through to delivering them. What drives him—why he does what he does—is his desire to move the industry forward: to see accident statistics fall because of safety improvements related to advanced driver assistance systems; to see congestion on all roads reduced because of better traffic information and improved route selection; to see global emissions from transport eliminated because of designing the most fuel efficient vehicles.

This newsletter touches on the principal themes of the industry, highlighting what is happening. Explaining and understanding the how and why, and developing your own strategies, are what we do together.



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