

# The Dispatcher

## Special interest features covered in each issue:

- Autonomous and self-driving cars
- Map data and navigation
- Data privacy
- Third party automotive services
- Regulations and Standardisation

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## Telematics Industry Insights by Michael L. Sena

### Report from Dispatch Central

DISCONNECT USED AS A NOUN means 'a lack of or a break in connection, consistency, or agreement'.<sup>1</sup> It was reportedly first used as a noun in 1976, although the phenomenon it describes is as old as human history, maybe older. I have found disconnects to be common between governmental bodies, particularly within the European Commission, and the 510 million citizens whose interests they supposedly represent. Disconnects are especially egregious when it comes to policies regarding transportation. While the 12 million people in the EU who earn their livings directly from the automotive industry are delighted by the news that car sales figures for November were up significantly, and it looks like 2016 will be another banner year, there are people in governments doing everything in their power to make both building and owning motorized vehicles economically unviable.

One of the companies reaping a well-deserved harvest is JLR. In the U.S. market, Jaguar's sales rose by over 100% compared to the same period last year. JLR's CEO said recently that he wants JLR to build a million cars per year in the not-too-distant future (they sold just under 500,000 in 2015), and he wants to build them in Warwickshire, UK. It would mean 10,000 new jobs, he said. But he needs the government to invest in infrastructure. It seems that the available amount of electricity needed

to build all the additional cars exceeds the available supply. Will the UK government invest, or will they find reasons to let those new I-Pace EVs be built in someone else's back yard? We shall see.

After the new President of the U.S. is sworn in at the end of January, a new Secretary of Transportation will be presented to the Senate for approval. Her name is Elaine L. Chao. She served for eight years under George W. Bush as his Secretary of Labor and was Deputy Transportation Secretary under George Bush, the elder. She will need all the experience she can muster to oversee the infrastructure investments promised during the campaign.

### Autonomous Driving News

APPLE WROTE A LETTER on the 22<sup>nd</sup> of November to outgoing NHTSA Administrator, Mark Rosekind. Contrary to most of the articles posted on various web sites and blogs, the purpose of the letter was not to confirm or deny that Apple was building an autonomous vehicle or even working on the software to drive one. The letter was written in response to NHTSA's request for comments on its Federal Automated Vehicles Policy. I found the five-page letter and read it with interest. In

an age of Tweets, it was extremely refreshing to read a letter that was both respectful and thoughtful on one hand, and intelligent and well-reasoned on the other. The letter is signed by Steve Kenner, director of Product Integrity.

Apple's number one point concerned the exemption process for testing internal development vehicles on public roads. The Vehicle Safety Act requires companies to certify vehicles to

the FMVSS (Federal Motor Vehicle Safety Standards) before first sale. But this law applies to new motor vehicles intended for sale to the public, and by implication, by companies that make and sell cars, not companies like Apple that may or may not intend to sell cars. Further, FAST Act<sup>2</sup> specifically allows car makers, but not non-car makers, to test on public roads without requiring exemptions from FMVSS.

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**GIMME SHELTER**

*What are those little green structures dotting the sidewalks of London, I wondered when I first caught sight of them in 1971.*



<http://www.bbc.com/autos/gallery/20161123-londons-cabmens-shelters-for-taxi-drivers>

*Those of you who grew up in the Great City, or who came to visit from the Counties and were led around by an aunt or uncle, learned their purpose as a youngster. They must be garden sheds, I thought. Well, as I came to learn, they are Cabmen's Shelters, built to solve one the pressing needs of the drivers of handsome cabs (horse-drawn vehicles for hire) and later taxicabs, namely, to serve the drivers a hot meal. Probably for a good reason, London lawmakers decided that cab drivers should not leave their vehicles out of their sight while they were on duty. A charity was set up around 1875, the Cabmen's Shelter Fund, to which those of means donated money to build and operate the shelters. Thirteen of these shelters still exist and function as cafes. Anyone can order food at the window, but only those with **The Knowledge**<sup>3</sup> are allowed inside where they can enjoy a meal, a cup of coffee or tea (no alcoholic beverages and no swearing) and conversation with fellow cabbies and the men and women who run the Shelters. Uber drivers need not apply.*

## What the Car Companies Are Doing

KEEP YOUR EYES on the ball. That is rule number one for any game involving a sphere, whether it's baseball or cricket, golf or tennis. If you don't see it, you can't hit it or catch it. This rule applies equally to running companies. The ball in this case is how the company makes money. WALMART makes its money by getting lots of people into its stores to buy products they need at their 'everyday-prices', and selling them products they probably could do without at higher-than-everyday prices. Are the antics of Uber, Apple and Google distracting some automotive company leaders and causing them to lose sight of what they really need to do to continue making money in the age of the more connected car?

VOLVO HAS BEEN doing extremely well on the sales front the past two years. New products finally hit the showrooms and both the motor press and consumers have been positive. The company's direction under Håkan Samuelsson has been rock solid. So I was surprised when I heard that Volvo would be partnering with Uber on the development of its driverless cars. Why? Well, for one thing, Volvo was synonymous with taxi in Sweden for decades. It was only until diesels began to be the choice for taxi companies that Volvo started to lose ground to Mercedes-Benz, since Volvo was slow to develop diesel motors. It is back in favor again. Uber is not exactly 'besties' with taxi companies around the world. So Uber must have made Volvo a pretty sweet offer when it gets rid of all the drivers with their own cars and has its own fleet of driverless cars.

Then there is the reputation Uber has as a company that pushes the boundaries of the legal envelope when it comes to laws governing the provision of rides to people who pay for the privilege. Volvo did not have to read foreign newspapers to learn about the company's practices. After repeated warnings from the Swedish authorities and heavy fines of *UberPOP* drivers for driving without the necessary licenses, Uber suspended its service. Similar stories have played out in many other countries. I was therefore not surprised to read that the San Francisco general counsel ordered Uber to cease and desist from using specially equipped Volvos to offer rides to paying customers in its new fleet of XC90s on the 16<sup>th</sup> of December, two days after it started. "We don't need a special permit," Uber claimed, "because we have a driver at the wheel." So do Google, GM and Tesla for their test cars, retorted the authorities. On the 22<sup>nd</sup> it was shut down by Uber. This is not the kind of story that puts a shine on a brand image, Volvo.

Finally, there is the Volvo *DriveMe* project that puts non-Volvo employees behind the steering wheels of cars that will be tested in normal traffic on the streets of Göteborg beginning in 2017. Readers of **THE DISPATCHER** know

*Continued on P.5*

**R&D MUSICAL CHAIRS**

Volvo Cars lost two executives to Audi during the past six months. In the early summer, Thomas Müller left his position as VP of Electrics and Electronics. At the end of August it was announced by Audi that it had hired Müller to succeed Ricky Hudi as head of electrics/electronics. Hudi is setting up his own consulting business, principally to work with HERE, we learned. Volvo backfilled with Ögdärd Andersson, a non-auto person from Ericsson. In late November, Peter Mertens, Volvo's Sr. VP of R&D, to whom Müller had reported, accepted the same position at rival Audi. His two predecessors got caught up in VW's diesel fumes. I guess Thomas and Peter got homesick.

**BELT AND SUSPENDERS**

I thought my daily *Automotive News* reporter, Jennifer Vuong, had gotten her company names mixed up. She announced that Microsoft had chosen TomTom as its partner to provide high definition maps to guide self-driving vehicles. Microsoft has been a NAVTEQ/HERE customer since the late 90s. A few minutes later I received a news release from HERE stating that 'Microsoft has selected HERE as its largest global provider of map data and services as part of a strategic commercial agreement between the two companies. It was not a mistake; it seems that Microsoft is simply spreading its money around to keep everyone in the game.

## Reurbanizing or Spreading the Sprawl

GE, OFFICIALLY GENERAL ELECTRIC COMPANY, will move its headquarters from Fairfield, CT (pop. 60,000) to the City of Boston, MA (pop. 667,000). Its Fairfield campus facility, to which it moved in 1974 from NYC, will be emptied by the middle of 2017. In 2018, GE will move into a new facility located close to the city center on a reclaimed former dockland site at *Seaport*, a no-man's land when I worked in Boston in the 70s and 80s, but now the center of a major building frenzy. It will occupy temporary quarters in the meantime. Fairfield will lose 800 jobs. Only 200 of the current employees will move to Boston; the remainder will melt into other facilities that GE has in the vicinity. So it will be a net gain of 600 jobs for Boston—out of a total 360,000 employees GE has worldwide. What's the big deal, you might ask.

The big deal is symbolic. GE, like many big companies, moved out of their center-city locations starting in the 60s and 70s to places where the executives could live closer to work, have an easy drive to the golf course and where the company could pay lower taxes. IBM moved from NYC to Armonk in 1964; AT&T moved out of the Big Apple to Basking Ridge, NJ in 1992.

In 1973 when I moved to Cambridge and worked in Boston, you could park anywhere at any time in

downtown Boston, either on the street or in many of the open lots, for a small fee, and drive in and out of the city without experiencing anything approaching rush hour traffic. On week-ends if I worked overtime, I usually parked in front of the Park Square building (peaking above Trinity Church in the photo below).



That is a bygone era. It started changing in 1976 with the renovations of the Quincy Markets. Once the economic downturn of the early 1980s passed, Boston never looked back. Even the bust of 'Black Monday' in 1987 was only a four-year blip. That was when Boston's darling, Digital Equipment Corporation, which had passed IBM in market capitalization and was second to it in total sales, began its downward spiral taking the rest of the region's minicomputer industry down with it. Wang, Prime, Data General, Apollo, Scitex, Xyvision, Applicon and Computervision were mini-computer-based powerhouses when Boston's **128 Area** was the center of the computer industry and Silicon Valley was a backwater (truly).

Unfortunately for the City of Boston (and Cambridge), those companies set up

shop out in the suburbs, along routes 128 and 495, the two ring roads. Train and bus services could not keep pace, and the roads got more and more congested. Trains work best when they collect riders along spines and deliver them to a central location. Buses function best in high density areas. Offices and residences in low density areas are difficult to serve with collective transit, and the likelihood of someone living and working in the same suburb is extremely low.

Companies like GE and New Balance are trying to make up for the sins of their predecessors by locating downtown or close to it, and Kendall Square around MIT is chock full of new corporate offices. But growth is still occurring out in the 'burbs. This is great for the overall economy, but horrendous for the state of traffic congestion.

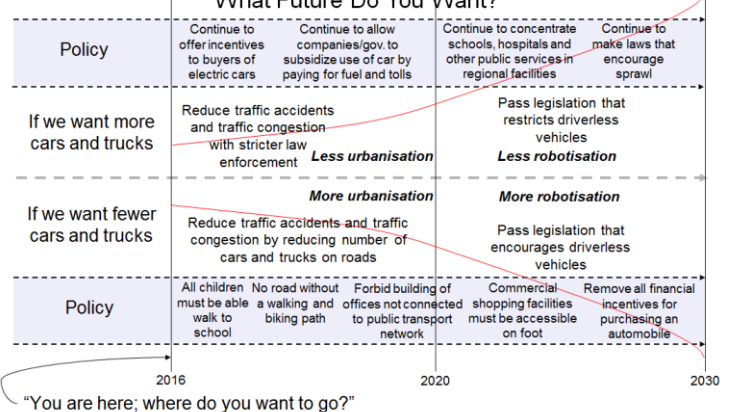
I was back in Boston and Cambridge for a visit in mid-November. A 33-kilometer trip from a town just

north of Boston to a town to the west, just outside Rt.128, that started at 3 P.M on a Friday afternoon took almost three hours. Par for the course, said my friend who was driving. He was still only half way home. On Monday morning, the friends I was visiting decided to pick up their Thanksgiving Day turkey during rush hour. Luckily, we were heading away from Boston. We drove along a two-lane country road that was bumper-to-bumper in the other direction.

Politicians and business leaders can talk until they are blue in the face about all the environmental and safety benefits of driverless cars, but unless we develop consistent land use and built form policies that reinforce the objectives we are trying to satisfy, the result will be status quo at best, or, as is the case in Greater Boston, more congestion both in and outside of the city.

Where do you want to go? My chart below has two opposing scenarios. In the top scenario, we keep doing what we have been doing. In the bottom scenario, we try to match policies with desired results. You choose.

The Cone of Uncertainty for the Future of Driverless Vehicles  
What Future Do You Want?





## AND THE WINNER OF THE 2025 NOBEL PRIZE IN PHYSICS GOES TO...IBM'S WATSON!

Bob Dylan won the 2016 Nobel Prize in Literature. He chose not to come to Stockholm to receive his medal and his one million dollar check from the hands of the King of Sweden. At the awards ceremony, Patti Smith sang his song, *A Hard Rain's A-Gonna Fall*. She decided to forego using a teleprompter, forgot the words in the third verse and asked for forgiveness because she was so nervous. She finished the song to a standing ovation—from the King and everyone else. One of the waitpersons at the Nobel dinner, held as usual in the Stockholm City Hall, dropped her dessert dishes descending the long staircase to the guests seated below. It seems to happen at least once every few years. There were extra desserts, so everyone got fed. Humans--*Homo Sapiens Sapiens* to be more precise--have been making errors of omission and commission for a few hundred thousand years. We ask for forgiveness, help others in need and do the best we can to get through life.

Won't it be nice when *Robo Sapiens* relieve us of our burden of being responsible for the negative effects of our actions, like driving head on into another vehicle?

That's a question. It would be good to hear your views.

## The Future of Automotive Navigation

ROUTE GUIDANCE WITHOUT traffic information is useless if a road along the route is closed or there are major construction or accident-related delays. VICS in Japan and RDS-TMC over FM have been the mainstay of traffic information services since navigation systems were introduced in 1996. I first experienced TMC in 1993 when I joined Volvo, but by then it had been under development for more than a half-dozen years with Bosch, Philips, Castel Rock Consultants and Volvo Technology Development being among the standard bearers. The *TMC Forum* was established in the mid-1990s and assumed the joint tasks of promoting the use of RDS-TMC and the ALERT-C protocol for delivering event-oriented road driver information messages, and guiding efforts to standardize the coding protocol in ISO/TC 204. The standard, ISO 14819-1:2003, was finally published in 2003, but the

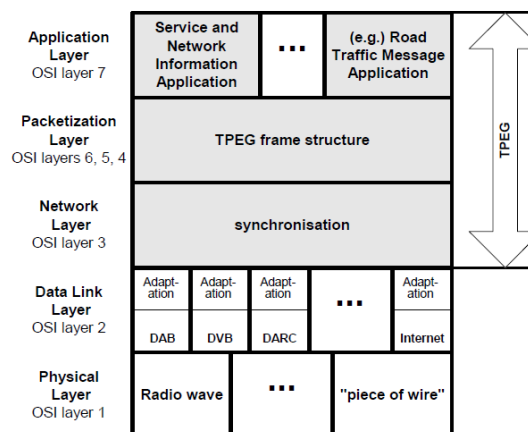
European Broadcasting Union had already started to work on the next generation of traffic information. It set up the Transport Protocol Experts Group in 1997 with the objective to create a more content-rich standard and one that would be capable of supporting multi-modal applications than RDS-TMC was capable of because of the 1.2 kbps limitations on message size. The main advantages of TPEG over RDS-TMC are: there are no TMC Location Code Tables to maintain; detailed coverage can extend to urban areas; and, messages are more comprehensive, not just traffic.

EBU managed TPEG standards activities until 2007. On 11 November 2007, the TMC Forum, the TPEG Forum and the mobile.info Project merged into the **Traveller Information Services Association (TISA)**. TISA has taken over all of TMC-Forum's activities and responsibilities. TISA was

established as a non-profit organization. The executive office of TISA is hosted by ERTICO. It currently has more than 100 members.

This group is not resting on its laurels. I saw this first-hand in mid-December when I was invited by Alessandro Tadai, chair of the *TISA Content & Service Provision Committee*, to attend one of their meetings and give a presentation on my views of the future of traffic information in the age of driverless vehicles. There were plenty of new proposals submitted for standardized, so the Association members will busy well into the future.

My talk focused on the **not-so-near future**, when cars are driven by neural network machines that simulate the actions and thinking of humans. These robotic drivers will be able to combine data that has been processed off-board on big data analytics platforms with data that is being received in real time by all of the various on-board sensors. It will know where all of the other connected devices (vehicles, pedestrians, animals(?)) are located, what devices have Pre-determined Priority when a potential meeting is imminent, and when it should proceed and when it should give way. In the **not-too-distant future**, I suggest getting yourself a Personal Periscope.<sup>4</sup>



ISO/OSI Layer Model for TISA – From the TISA Specifications

## Autonomous Driving News (continued from p.1)

Kenner says: "Treat us all equally, please change the FAST Act and Vehicle Safety Act and amend the Federal Automation Vehicle Policy so all can test on public roads provided the vehicles will not be sold to the public."

The phrasing of this request leads directly to the next point, which is a dig at Tesla. Apple says it "totally supports NHTSA's request that companies document their compliance with all 15 guidelines in the FAVP, and that it does so with 'Human Body Models', not humans!" Further it says that it supports using a range of hazard and threat analysis methods "to identify and mitigate potential safety and cybersecurity issues in early development".

Apple's third major point was that there should be a separate Safety Assessment process for deployment, including testing with members of the public. Tesla claims that its software is in beta testing, but customers are paying for it and they obviously do not feel they are being used as testing dummies. Uber and Delphi are already testing with the public but with Uber and Delphi drivers at the helm. However, Volvo Cars has stated that it will be delivering cars equipped with driverless technology to the public. As a closing remark, Mr. Kenner says the following: "Apple looks forward to collaborating with NHTSA and other stakeholders so that the significant societal

benefits of automated vehicles can be realized safely, responsibly and expeditiously." I guess in the absence of anything more concrete, we can interpret this statement however we like.

WAYMO (LIKE WAY MORE, MAYBE?) is the name of what is now a stand-alone business inside ALPHABET, Google's parent company. It's been seven years since the ad brokering company started to dabble in the car industry. Time flies. After the formation of ALPHABET, the program was nestled inside Google X. Waymo's CEO is John Krafcik, who has worked for Ford and Hyundai. He says that the reason for setting it up as a business is that the technology will soon be production ready. Since we are a long way to the point of being able to sell driverless vehicles, it looks like Waymo is targeting Delphi and other system developers as competitors, rather than car manufacturers.

WILL ANTHONY FOXX and Mark Rosekind leave DOT and NHTSA respectively without making a determination on whether Tesla bears the responsibility for the death of one of the drivers of its cars while it was under the control of Tesla's 'AutoPilot' software? Whether it was software or sensors is really not relevant. I am definitely not alone in believing that AutoPilot should be recalled (e.g. Consumer Reports) while investigations are ongoing, and if it is allowed back on the market, it should not function without hands on wheel and eyes ahead.

## What the Car Companies Are Doing (continued from p. 2)

that I have been very critical of Tesla for releasing AutoPilot software to owners of its vehicles, rather than testing it only with professionals. There have been numerous accidents with Tesla drivers taking risks that they should not have been allowed to take. Volvo's informational material on *DriveMe* shows drivers busy with other activities with their hands off the steering wheel. Even if the cars will be constantly monitored by staff back at its labs, and the cars will only be allowed into driverless mode when conditions are totally suitable, is it truly worth the risk to have non-pro drivers? I am doubtful. What's your opinion?



NO UNSIGHTLY GEAR ON THE TOP OF THE VOLVO XC90 *DRIVE ME* VEHICLE

VOLKSWAGEN ANNOUNCED in December that it would use magic to ensure that it would still be in business after 2025. 'Magic' in Sanskrit is *Moia*, and that is the name it gave to its new company. I guess someone thought that using the sacred language of Hinduism would help to ensure longevity. According to VW, this new company is totally independent with a

mission to become one of the world's leading mobility service providers by 2025. In its news release on the company founding, VW covered all the buzz-word bases: "Services for future urban citizens."

The good news just before the holidays that VW is finalizing its agreement with U.S. government agencies for compensating owners of affected vehicles will help to put the sad saga of the emissions scandal behind it. The Group makes great cars that compete in all markets and at all levels. Waving a magic wand is not going to turn this industrial power into a service dynamo. Keep focused.

AUDI'S GENERAL MANAGER of Connectivity, Anuparm Malhotra, explained what problem the company's so-called 'red light countdown' application is intended to solve: "If you've got 45 seconds, you can take care of the kid in the back seat. It's a more relaxed form of driving." Thank you for that, Anuparm. How much time for a peek at e-mails or to fire off a tweet? RLC is great for engine management and powertrain efficiency. Also, the word is not positive on green light countdown. Seems it doubles accidents while RLC halves them.<sup>5</sup>



Does anyone else think it is ironic that China has the most democratic position on the provision of traffic light countdown: no expensive hardware in the car and no subscription for the service? It's free for all to see.

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### Footnotes

1. Definition of 'disconnect' according to Merriam-Webster.
2. FAST Act – Fixing America's Surface Transportation Act, signed into law on 4 December 2015, is the first U.S. Federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment.
3. The Knowledge - All London taxi drivers are required to have a detailed knowledge of London within a 6 mile radius of Charing Cross. In order to obtain this candidates have to pass through the test called "Knowledge of London".
4. I am not planning on patenting my idea of Pre-determined Priority, just as I have not patented my Personal Periscope idea, but a credit would be nice when someone does patent them (Ford?).
5. Studies show that while timers at red lights have helped to reduce the number of traffic accidents by half, twice as many accidents have occurred when timers were installed at green lights.
6. During my first visit to Beijing in 2007 to attend the ITS World Congress we learned that China's large cities were trying to clear the roads of bicycles and scooters to make room for more cars. Calcutta followed suit in 2013.

## Musings of a Dispatcher

IT IS TEMPTING to romanticize the days when everyone who could not afford a car walked, cycled or took the bus or tram to work. I took the photo below in one of Sweden's former powerhouse industrial cities, Västerås, where the ASEA portion of the Asea Brown Boveri (or ABB, as it is known today) had its headquarters before it was merged with its Swiss counterpart in 1988. The impressive sculpture by BG Broström is called *ASEAströmmen* (The ASEA Stream or Power) showing ASEA workers—streaming to their jobs. It was unveiled in 1989, ironically when what had been the center of ASEA's universe experienced the first of the cutbacks of staff and the transfer of operations to Zurich.

At the time of the merger, ASEA employed 160,000

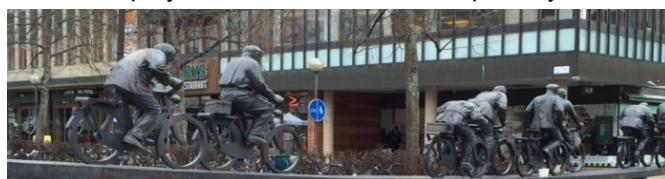
people, most of them in Sweden and many of them in Västerås. Today, when you visit the ABB web site what you see first is "125 years of ABB in Switzerland!" Many of my friends in the U.S. will say, half-jokingly: Aren't they the same country? Just like my friends over here think that Canada is part of the U.S. But if you live in Västerås you know that it is not spelled Z-u-r-i-c-h.

I did not see a lot of people cycling to their jobs when I was in Västerås in the early autumn of this year. Like most places in Europe and the U.S., when cars became affordable for people with even modest incomes—starting in the 50s in the U.S. and in the 60s in Europe—it was a delight for workers to get out of the rain and snow and into their own car. It's the same today in emerging markets, especially China,

where car ownership has exploded during the past ten years. Today, cities in China and India ban bicycles in order to allow vehicular traffic to flow unimpeded.<sup>6</sup>

Perhaps, with different land use policies that would encourage companies to locate in city centers rather than in the suburbs and with more consideration given to the effects of cross-country mergers on the lives of the individual workers, jobs might one day return to places like Västerås. Maybe people will one day have work to which they would cycle with pleasure because they will live close enough to their job and enjoy the exercise they get—rain or shine. It's a nice thought, and I suggest we all work on it.

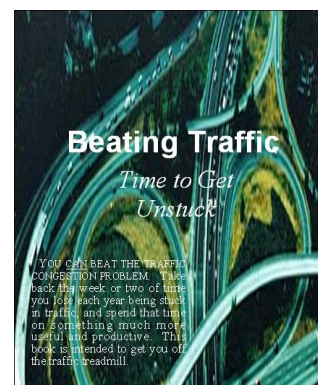
In the meantime, I would like to propose that we all remind our politicians not to make life more difficult than it has to be for people who depend on their cars to do what they need to do on a daily basis, which is to get where they need to go.



### About Michael L. Sena Consulting AB

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.



Michael L. Sena

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