

The Dispatcher

Special interest features covered in each issue:

- Autonomous and Self-driving Cars
- Big Data
- DSRC versus Wireless Communication
- Connected Vehicles – V2V and V2I
- Third party services for eCall

Individual Highlights:

CES Las Vegas 2015	1
Uber's Valuation	1
Self-driving Test Sites	3
European eCall	4
ERA-GLONASS	6
The Newsletter	6

In the next issue:

- More on self-driving test sites.
- Cars and trucks as robots

Telematics Industry Insights by Michael L. Sena

CES 2015: Connected Cars in Las Vegas

THE INTERNATIONAL CONSUMER ELECTRONICS SHOW is just what it says it is: a show. But there are no auditions needed. If you think you are in the consumer electronics business, you are, and you are welcome to exhibit as long as you are able to pay the stiff fees that go along with it. The car companies started feeling the temperature of the water in the CES pool seven or eight years ago and jumped in head first in 2010. Car company execs have even been given prime time speaking spots when the major US television networks report on the show.

Either you go there to work or you go there to look and see. You cannot do both. Those who have been there to work know it comprises eighteen-hour days at a minimum and you count yourself lucky if you get to visit adjoining booths. First-time look-and-see visitors should try to go with a guide, someone who has been there a few times and knows how to get the most out of it. Plan your route based on the exhibitors you want to visit. If you just wander around you will miss most of what you should have seen. Once you are at the exhibits, stay there for the day unless you can get on and off the monorail within a few minutes. One more word of advice: If you go there, take your mittens. Las Vegas can be cold in early January.

Continued on P.2

Übererwartung: Uber's valuation is over the top

WHY IS EVERYONE SO MAD ABOUT UBER—in all senses of the word 'mad'? Taxi companies and their drivers, and the licensing agencies in cities around the world, are fighting mad (incensed) about Uber waltzing into their markets and setting up shop without shedding an ounce of blood to get the prized medallions that are needed to run a normal taxi service. Investors are wildly mad (ecstatic) about the potential profit they will take home with an eventual Uber Initial Public Offering. They have driven up the valuation of the company to an incredible \$40 billion as Uber itself makes a mad (wild) dash toward that IPO before all the stuff that causes non-investors, competitors and even some customers to be mad (angry) makes that valuation tumble to zero. All of this is the result of what I have called the

CES Automotive Keynote Speakers

On Monday, January 5th, Dieter Zetsche, Daimler AG Board of Management Chairman and Head of Mercedes-Benz Cars, gave a preview of the latest research car showcasing how to design a car once driving autonomously becomes possible.

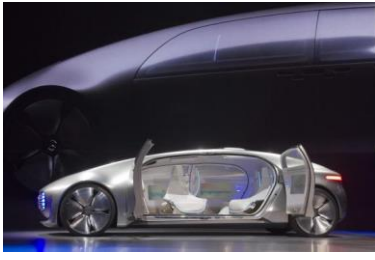
Mark Fields, Ford Motor Company President and CEO made his debut at CES in 2007 along with Microsoft. This year he was there to speak on Tuesday the 6th in his new executive role.

Audi, BMW, Volvo (in Ericsson booth), Hyundai, GM, Mazda, Toyota, VW and FCA (Fiat/Chrysler) were there as well.



'Chauffeured Generation'. I have written and spoken about it to you on a number of occasions, but you have not been very responsive. Now it is time that you listen because this is getting serious. Uber's valuation is in the neighbourhood of Ford's and Federal Express'. You might think that is excessive, but there it is. Uber will be having an effect on your businesses.

Continued on P.5



"With the very first autonomous vehicles being put on the road today, autonomy is really just an add-on to the car as we know it. The true destination is where this technology will lead us. The car we are showing at CES is not so much about how to drive autonomously, but how to design a car once autonomous driving becomes possible."

Dr. Ralf Herrtwich

*Daimler AG
Director Driver Assistance and
Chassis Systems
Group Research and Advanced
Engineering*

"We've had a connected car now for 15 years through our OnStar service, so it's only logical that we extend its offerings based on what our customers have shown they want most

John McFarland

*General Motors
Director of Global Marketing*

CES 2015: Connected Cars in Las Vegas (Continued from P.1)

"Anyone who focuses solely on the technology has not yet grasped how autonomous driving will change our society," said Daimler CEO Dieter Zetsche. "The car is growing beyond its role as a mere means of transport and will ultimately become a mobile living space."

Daimler AG has devoted considerable human and financial capital, as well as a lot of thinking time, to the development of self-driving vehicles. At CES, Dr. Zetsche presented the company's latest ideas on what a self-driving car could look like if the driver could, at times, join with the passengers in non-driving activities. Without taking anything away from all the other companies working on this topic, the Daimler team has shown real forward thinking with its concept vehicle.

GM/OnStar announced *AtYourService* in the U.S and Canada. It has teamed up with a number of companies that will offer specials to OnStar customers who are in the vicinity. Companies mentioned are Dunkin'Donuts (one of my regular stops when I am in the U.S.), Parkopedia, Audiobooks and Priceline. GM had its new Chevy Volt on the floor for a 'sneak preview'. It will be officially launched at the Detroit Auto Show in a week. Is CES upstaging the auto shows?

BMW demonstrated a specially equipped i3 that drops its driver at the entrance to a parking garage, navigates to an open space, parks and locks itself, then repeats the process in reverse when the driver remotely summons the car with a smart watch. (*The Lone Ranger's* horse Silver came when he whistled, but he had to be within earshot.) This is a partial tick on *My Personal Wish List* (See **The Dispatcher**, 21 Nov. 2014; p.6). While many companies focus on the car driving the driver, BMW is spending resources on the car driving itself, figuring that anyone who buys a BMW is someone who likes to drive him- or herself.

Volvo Cars introduced Sensus Connect with Volvo On Call as standard on all new cars sold in the U.S. and Canada starting in early July, 2014. This is the second year it has space in the Ericsson booth. Ericsson is its connectivity provider for infotainment, while WirelessCar¹ is its connectivity provider for Volvo On Call. Ericsson and Volvo Cars showcased a bicycle detection and collision warning system developed in conjunction with a Swedish sports gear manufacturer. Hopefully, next year it will join the crowd with its own exhibition space.

There were no large truck or bus companies demonstrating at CES, so some of you may be feeling a bit left out. Worry not. Ford was on its own in 2007 according to the new CEO, Mark Fields, and now it has plenty of company. Maybe 2016 will be a debut for a big vehicle maker.

Twenty-two years ago, when the first ITS World Congress was held in Paris, the automobile industry thought it had found the perfect venue to show off what it was doing with electronics in its vehicles. In 1993, the first navigation system had not yet been brought to market in Europe or the US; the first truly mobile phones had not yet been delivered to customers; the first digital, navigation-quality maps were still on the digitizing board; GPS was still not open to the public. For a number of reasons which I have written about in previous issues of The Dispatcher, the ITS WC has not become the car industry's connected vehicle showcase. Neither have any of the many annual car shows held in Detroit, Paris, Frankfurt, Geneva or Tokyo. These shows are for the visceral side of the car business, displaying the new lines and design direction of the companies. CES has achieved its position as the place where car companies demonstrate the best that they have in just electronics because it is the one show that has that as its main purpose. It is perfectly natural that the car companies have gradually—and it has not been a mad rush; it has taken half a dozen years or more—gravitated to Las Vegas in January. It is unlikely that the 'early adopters', like Audi, Mercedes-Benz, BMW, GM and Ford, are going to be allowed to keep one of the best-kept secrets for very long. A car company that does not show up at THE SHOW in the coming years is not going to be seriously considered as a player in connectivity. One more thing. Apple may finally decide it has to show up as well.

On the Road to Where? Public test sites for self-driving cars

ONE OF SWEDEN'S favourite TV quiz shows is called *På Spåret*, 'On the Track'. Two pairs of celebrity contestants compete to correctly and in the least amount of time answer the question: *Where are we going?* What they and we, the TV audience, see is a view out the front or side windows of a train or car moving at super high speed in order to blur any visible signs. Abstruse clues are read by the program leader. With each clue, the points given for a correct answer fall by two.



The program is popular because we watchers can measure our own skills, both geographic and observational, and there is a correct answer that can be answered by a non-rocket scientist or trivia expert. What folks struggle with are questions without answers, or ones that they just simply do not understand, like 'Why do we need cars that drive themselves?' or 'If ever we do have cars that drive themselves, when will that happen?'

There is a growing body of knowledge that confirms the desirability of self-driving cars. It is still mostly anecdotal and theoretical since we cannot yet perform full-scale scientific tests. Some testers, such as Google, are trying to

convince road authorities and law makers to allow autonomous vehicle testing on public roads. This is dangerous and risks an eventual mishap that will set back the entire industry. It is also unnecessary.

By using test sites that simulate real driving conditions, we can move from theory to practice and gain the empirical evidence needed to get the entire car-related industry, governments and car buyers engaged. Four public test sites are preparing to make this possible.²

Sweden



60 kilometres to the east of Volvo Cars' and AB Volvo's headquarters in Göteborg is the city of Borås. It is an old mill town which was suffering the same fate as most pre-globalization industrial cities. The citizens and their politicians refused to capitulate, and have been doing all they can to keep the businesses they have and to attract new ones. AstaZero is one of the new companies that has established itself in Borås, and they have constructed a full-scale active safety test area for advanced driver assistance systems, including self-driving cars. Besides the facilities for testing, it provides engineers and technicians to assist in the testing and evaluations.



The Chairman of the Board is Anders Brännström, the former CEO of Volvo Technology Transfer AB, the original owners of WirelessCar. AstaZero is jointly owned by SP Technical Research Institute of Sweden and Chalmers University of Technology, both owned by the Swedish State.

Michigan

The University of Michigan and the Michigan Dept. of Transportation have teamed up to develop an autonomous vehicle test track in Ann Arbor, MI. It has been given the name *Mobility Transformation Center* (MTC), and work began on it in mid-2014. Partners in the effort, contributing \$1 million each for the privilege are Ford, GM, Toyota, Xerox, Bosch and Econolite³. When completed, the 32-acre facility will include a 5-mile twisting and curving test track, urban streets with signalized intersections, roundabouts, different road surfaces, building facades, simulated cyclists and pedestrians, street furniture, parked cars and buses. Designers of MTC are the architectural firm of Mannik Smith Group, who won the award in a design competition.

California

Mercedes-Benz is the first company to reach an agreement with the US Navy and the city of Concord, CA to use the decommissioned inland portion of the Concord Naval Weapons Station. The 2,100-acre (853 hectares) site has over thirty kilometres of paved roads that will be at the disposal of Mercedes-Benz and other companies. The public will not have access to the site. It is currently the largest secure test site for self-driving cars in the U.S. Here is a view of a MB interior concept for an autonomous vehicle.

New Jersey

On December 18th, the NJ Senate passed a bill that is aimed at making the state a hub for development, testing and implementation of self-driving cars. The bill, sponsored by Rep. Senator Tom Kean, has been sent to the State Assembly for consideration. Professor Alain L. Kornhauser testified in favour of the bill at the Senate Transportation Committee hearing in October, citing facilities at Fort Monmouth as ideal for testing. The Committee approved the proposed bill by a vote of 35-0! Although it appears that Daimler is moving its North America headquarters to Atlanta, BMW, Jaguar Land Rover and Volvo are there, and VW is just down the road in Virginia. The main testing performed by these companies will be close to their own headquarters, but there will still need to be on road testing in the major markets to prepare for type approval, and a New Jersey location would fit this purpose well.

There is never a last word on European eCall. As soon as you believe a decision has been made, like the one on December 4th, someone on the Commission or in the Parliament, or, in this case, at ERTICO, will have something more, or something else to say. On the 12th of December, ERTICO posted a news release stating that the Committee of Permanent Representatives of the Council of the European Union (COREPER)⁴ has “endorsed an agreement with the European Parliament on type-approval requirements for fitting eCall devices in new motor vehicles.” The COREPER restates the terms of the Internal Market Committee meeting results, including allowance for Third Party Services, but it states that the Council would be expected to formalize its political agreement on the 17th of December and the Parliament to confirm it through a vote “in the second reading” in early 2015. There is no mention of any vote to be taken by the Member States, which is specifically stated in the Council meeting on the 4th. On 17 Dec. an FIA Region 1 newsletter wrote that the EC had formally voted on 17 December and approved the proposed legislation, along with a statement that it “regrets the current delay until 2018.” The Region 1 president took the opportunity to repeat its previous call for “free consumer choice for connected car services by mandating that independent operators may access vehicle telematics.

European eCall: Redux or Return to Sender

ON MONDAY, DECEMBER 4th, the Members of the European Parliament who make up the Internal Market Committee met with the Council of the European Union to finalize their joint agreement on European eCall draft legislation so that it could be put to a vote by the European Parliament. In the spring of 2014, the European Commission adopted a proposal for a **Regulation** concerning requirements for type-approval for eCall system the deployment. However, the delegated and implementing acts to this regulation detailing the technical requirements and test procedures for type-approval did not exist as yet. In May of 2014, the European Parliament and the Council of the European Union adopted a **Decision** on deployment of interoperable, EU-wide eCall services. That decision was the following: *Member States shall deploy on their territory, at least six months before the date of application of the Regulation of the European Parliament and of the Council concerning the type-approval requirements for the deployment of the eCall in-vehicle system and amending Directive 2007/46/EC and in any case no later than 1 October 2017, the eCall PSAP infrastructure required for the proper*

receipt and handling of all eCalls, if necessary purged of non-emergency calls, in accordance with the specifications laid down in Delegated Regulation (EU) No 305/2013, in order to ensure the full functionality, compatibility, interoperability, continuity and conformity of the interoperable EU-wide eCall service.” (That really was a single sentence!)

A ‘final’ meeting was expected to occur in September 2014, but it was delayed until the elections for Members of Parliament was completed and all new Ministers were appointed. The meeting eventually took place on the 4th of December. Possible outcomes from this meeting were, as I reported in **The Dispatcher**, 17 March 2014, the Council could have passed it as it was, or they could have submitted the draft to Parliament with amendments which would then require further discussion with the Parliament. As it turns out, they did neither. They amended it on two counts, which supposedly meant it should go back to the Member States for a new vote, and then and only if it was passed by a majority, might it be submitted to the Parliament. An optimistic view of when all this voting can be completed was March, 2015, which resulted in new type

approved vehicles having to be equipped with the European eCall system at the earliest by March 2018. We shall see.

The two amendments are:

- Preclude tracking of eCall equipped vehicles before an accident actually occurs; and,
- Data gathered by emergency centers or their service partners must not be transferred to third parties without explicit consent of the person concerned, the so-called ‘data subject’.

Manufacturers must ensure that the eCall technology design permits full and permanent deletion of data gathered, and clear information about the processing of eCall data must be included in the owner’s manual.

An important addition to the changes is the explicit allowance for the co-existence of public eCall and eCall-supported third party services (TPS), provided that 112-based eCall is always automatically available should TPS fail, and that vehicle owners may choose public eCall services rather than private ones at any time. The explicit inclusion of TPS is welcomed.

Continued on Sidebar.

Übererwartung: Uber's valuation is over the top (continued from p.1)

What has been written about Uber and so-called 'New Power'⁵ companies is that they owe their existence to three principal factors. The first is that they pick a market they can monopolize, as Google did with on-line ad brokering and Amazon did with on-line book sales. Second, they exist because the technology necessary for them exists. The Yellow Pages or AAA's TourBooks served the purpose of searching for everyday and travel services perfectly well until the Internet appeared, and a fixed line phone was sufficient for making the connection before mobile phones and then smart phones changed everything. Thirdly come the network effects, which, in simple terms means the more you have the more you get. Microsoft Windows exemplified this twenty years ago, and still does.

All of these factors exist with Uber. It identified the taxi services market as one ready for disruption. Everyone has their own nightmare story about a ride in a taxi they wish they could forget, or memories of waiting for hours in the rain or snow when there no taxis to be had. Uber's idea is simple. Create an international taxi company that you can use to book a ride and pay for it anywhere with one mobile app. Even if you are satisfied with your home city's taxi service, or with the service in certain cities, like London, you might be much more comfortable knowing that a car will be there when you need it and at a price you have agreed beforehand to pay. Add the fact that the cars used by Uber are generally better than a standard you would find in many US cities, and you have the reason why people use them rather than taxis. It is the network effects that have been the most important for Uber's growth and the reason its sales have reached around \$1 billion. The more people who use it, the more drivers want to get their cars into the mix, which makes the waits shorter.

Uber is not really a taxi company. It is neither a ride sharing organizer either, like Lyft, with which it is often compared. Uber is an international limo service that uses freelance drivers who receive 80% of the fare and pay all car-related costs. Riders pay through the Uber app, so no money changes hands with the driver. Uber pays its drivers once per week, deducting its 20% per ride and transferring the remainder to the driver's bank account. It has different rates based on type of car, country and city and, most importantly, demand (its infamous 'surge' pricing). What makes Uber a 'New Power' company that will attract the chauffeured generation? In my opinion, nothing. The rating system that lets riders grade drivers and drivers grade riders is more of a Big Brother eye-on-the-employee ploy that is not playing well in privacy- and integrity-loving Europe. Uber has also been compared to Ryan Air, the airline that everyone loves to hate, and its CEO, Travis Kalanick, to Ryan Air's Michael O'Leary. Many said that Ryan Air would eventually be bettered by established airlines or by kinder and gentler start-ups. So far, O'Leary has proved them wrong. It's been the same with Uber. In spite of all the missteps by management and enemies Uber has made, people are still riding with its app and companies like Baidu are taking stakes in it.

This is where the chauffeured generation starts to matter. They don't want to drive themselves, but they are still mom's 'Baby on Board'. They will abandon Uber in a flash as soon as an alternative is available that they perceive is open, participatory and peer driven, none of which can be said of Uber. If anything, Uber's success in raising money will only make it more of an Old Power player, assuming it stays in business by winning the growing number of legal challenges and keeping both its driver and customer network in place. Will hiring a former close advisor to President Obama and his 2008 presidential campaign manager, David Plouffe, help on either of those counts? His former boss says Plouffe "works on things about which he cares deeply". I would not have thought that helping Uber dominate the world of taxis would rank high on such a 'care deeply' list.

Venture capitalists are not stupid. They are not throwing money at Uber and Lyft and other taxi/limo substitutes without having a good motive. What is it? These companies are able to get valuable data because of their business model. They know where you live, when and to where you travel. They know how much you are prepared to spend on being chauffeured each day each day and month. You have given them the right to collect this data when you handed over your credit card as the method of payment. They can analyze this data to find patterns, like whether you are using their cars on an occasional basis to get to the airport or as an integral part of your daily life, to get to and from your work, to take your kids to and from school. They can see routines, like whether you make a short stop each day at a place close to a package drop-off location. Maybe they can offer you a service, to pick up the packages for you before they pick you up to take you home, just like Mom would have done. You get the picture. Their biggest problem is their drivers. They want to be paid. Gosh, Mom did it for free.

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It was when I first learned that in about 4.5 billion years the sun would stop shining as it does today that I understood the meaning of long-term planning. *El sol* will not just turn off the lights; it will turn into a so-called 'red giant', expanding to a diameter reaching almost to earth. It will blaze away for another billion years or so and then collapse into a 'white dwarf', still radiating heat but with little left of our planet to do anything with that heat. Before we reach that literal 'drop dead date', we humans, and any friends we wish to take along with us, need to build a space-hopping equivalent of Noah's Ark and get ourselves to another solar system and to a planet that will accommodate us until its sun suffers the same fate as ours. Anyone reading this who needs a reason for sending up space probes to Mars or Pluto need look no further. And who will be driving the buses for that 100-year or more space journey?

Did ERA-GLONASS happen?

Yes, ERA-GLONASS⁶ did happen. It is the Russian Federation's equivalent to European eCall, and it applies to Russia and its Custom Union members, Belarus and Kazakhstan. It was conceived as a way to promote the latent GLONASS GNSS by making it mandatory for every new, type-approved vehicle sold in the Custom Union countries after a certain date to have a GLONASS receiver, whether the vehicle is a domestic brand or foreign, built in Russia or imported. The vehicle's position would be part of a message sent to an emergency response center for obtaining emergency assistance. The date this went into effect was 1 January 2015.

The idea was given legal status and funding in late 2009, when the entire world was about to enter a severe recession and car sales everywhere, including and especially Russia, were about to collapse. The task of implementing ERA-GLONASS was given to a JSC NIS (Navigation Information Systems), which was jointly owned by Sistema (part owner of and one of Russia's three mobile network operators) and Russian Space Systems. On September 12th, 2012, the Russian

government moved implementation of ERA-GLONASS to GLONASS Union, which had been established earlier that same year with the same CEO who had headed NIS, Alexander Gurko. The system that will be used to process emergency data messages and phone calls from vehicles was operational in December, 2013.

Although there are similarities between European eCall and ERA-GLONASS, the Russian alternative was conceived from the outset as being more than just for a single service for emergencies. It employs the standardized Minimum Set of Data and the eCall network flag, but this is where the comparison ends. An SMS message flow is a compulsory part of the Russian design, and there is a requirement for determining if the system is operating, a so-called state-of-health message, that must be sent to the unit on a regular basis.

As of January 2017, ERA-GLONASS must be installed on any vehicle sold in Russia, Belarus and Kazakhstan, not just type-approved vehicles. Type approval without ERA-GLONASS will expire on 31 December 2016.

Footnotes:

1. WirelessCar is part of Volvo Group Telematics as part of AB Volvo Group IT. AB Volvo comprises Volvo Trucks, Volvo Buses, Volvo Construction Equipment, Volvo Penta and financial services. Subsidiaries include Mack Trucks, Renault Trucks, UD Trucks. Volvo Car Corporation is not part of AB Volvo.
2. Google has been left out of this article because it is not a public test track. Google is operating its own facility at its headquarters in Mountain View, California.
3. Econolite is transportation management systems company based in Anaheim, CA.
4. COREPER (*Comité des représentants permanents*) is made up of the head or deputy head of mission from the EU Member States. Its role is to prepare the agenda for the ministerial Council of the European Union meetings.
5. Jeremy Heimans and Henry Timms, in Harvard Business Review, December 2014, describe *New Power* companies as 'enabled by peer coordination and the agency of the crowd.' *Old Power* companies are 'enabled by what people or organizations own, know or control that nobody else does.'
6. GLONASS *Globalnaya Navigatsionnaya Sputnikovaya Sistema* (Russian): Global Navigation Satellite System; Russia's equivalent to GPS. ERA stands for Emergency Response System.

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. 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 for your organization, are what we do together.