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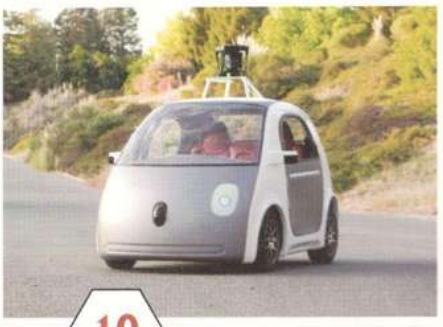

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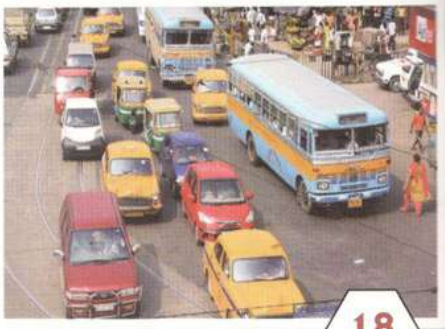

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Vehicle Healthonomic

Maneesh Prasad

Last August in Telematics India 2014, Kumar Pushkar, IFS Director (IT) of BMTC gave a presentation on how vehicle telematics is helping BMTC, with specific reference to an outcome of a three months pilot project which focussed on vehicle health monitoring system. The project focussed on engine health and driving habit which in turn affect the mileage and vehicle downtime. He shared the findings where 'harsh brake' was followed by 'harsh acceleration', causing extra fuel usage and stress on engine. Further, 66% of time vehicles were in appropriate gear usage. The remaining 34% of the time where the gear use was not correct could be improved through live input, or the in-cab coaching. Similarly 18% of the engine idling was in bad zone. While it is a much anticipated fact that fuel consumed is one of the major concern in public and goods transport, that the driving behaviour could have a positive change in the fuel consumed and also on the vehicle upkeep/maintenance was well received by the delegates. Not that those in the logistics and supply chain or state transport corporation will find this as a new discovery, but an empirical evidence always gives much credence to notional beliefs. BMTC, which is one of the first public transport company to adopt vehicle tracking is now looking at moving up the value chain in vehicle telematics. It is estimated that an improvement of 1% in mileage through vehicle telematics will lead to organisational (BMTC) savings of about 9-10 crores (USD1.5M). This should be of interest to other state transport corporations and goods transporters.

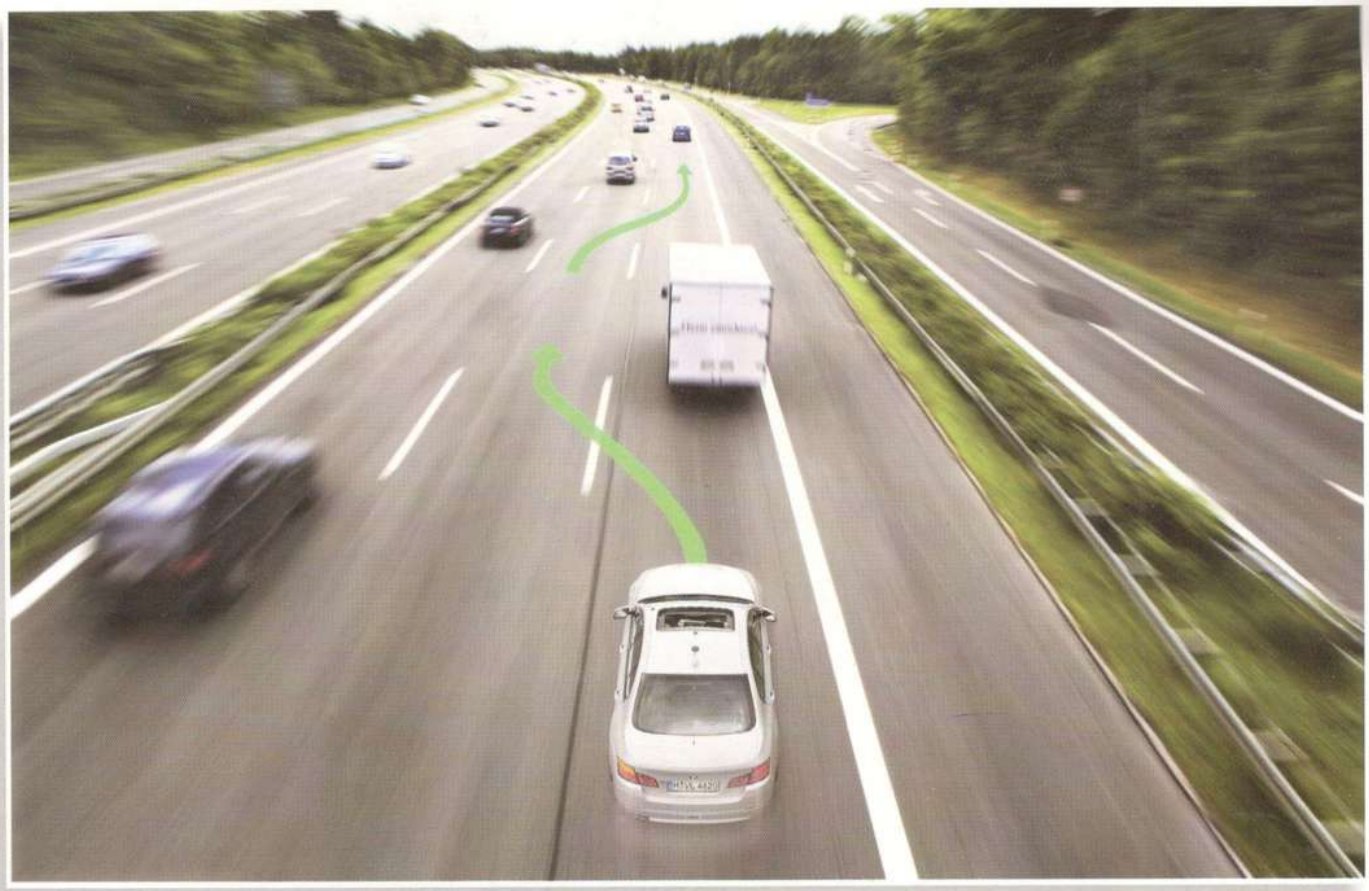
In-vehicle infotainment is now making inroads into the volume segment of passenger vehicles in India with its introduction in small and entry level cars. It marks the beginning of new era, where customized services and apps would be made available to the vehicle users as factory-fitted 'embedded' solutions, including those which would help driver improve on driving habits.

In this issue we have an article from Christiano Blume, Volvo do Brasil, where he has written about the challenges and market response in vehicle telematics in Latin America along with some specific reference to Brazilian CONTRAN 245 (legislation for Stolen Vehicle Tracking). Its an interesting article knowing that India and Brazil have quite a bit in common in terms of market behaviour and opportunity.

Editorial

CREATING A SAFER DRIVING EXPERIENCE

ADVANCED DRIVER ASSISTANCE SYSTEMS (ADAS)



The automotive industry has seen a tremendous amount of innovation in recent years. Autonomous vehicle research has made its way into vehicles through Advanced Driver Assistance Systems (ADAS) and the introduction of connected applications make for a rich in-vehicle experience for consumers.

Great potential in cross-domain integration

A recent January 2014 report by Strategy Analytics indicates that ADAS, in-vehicle infotainment (IVI), and Instrument Cluster systems will continue to see continued investment and growth. And while these areas contribute value on their own, cross-domain integration presents developers with the greatest opportunity to deliver differentiated experiences. Advances in hardware, software, and development tools are ensuring that these systems can be designed and delivered in a cost effective manner.

Strategy Analytics projects ADAS and Driver Information systems

will see their combined electronics systems demand increase from approximately $35 billion in 2013 to $50 billion in 2018. The same report predicts the Compound Annual Growth Rate (CAGR) for ADAS during this period will be 20 percent. On the surface it may appear that these two areas are disconnected and separate but it is the combination of ADAS, IVI, and Instrument Cluster systems that present some of the most compelling experiences and value to consumers.

In isolation modern connected IVI systems perform a number of functions that include controlling the air-conditioning, providing maps and navigation, connecting to mobile phones, and integrating applications such as Facebook®, Pandora® or Aha™ Radio. Instrument Cluster systems on the other hand perform the functions of providing information on vehicle speed, engine temperature, and fuel levels. When ADAS applications such as Surround View or Collision Detection are introduced into the vehicle both the IVI system and instrument clusters play a key role in the overall experience provided to the driver.

A Surround View system displays the real-time feed from as many as six cameras. Before being displayed on the infotainment head-unit, the video feeds must be processed, integrated, and transferred. At the same time other functions in the IVI unit such as integrated Android™ applications connecting to the cloud must behave in an appropriate manner, especially when the more safety sensitive Surround View system is activated. In this scenario priority must be given to the Surround View system; Android applications or cloud-connected subsystems such as telematics applications must be prevented from interfering with the operation of ADAS applications.

New developments in automotive hardware and software – to ensure vehicle safety

Today's advanced multicore processors enable developers to meet the performance needs when these separate ADAS and Driver Information domains are integrated.

Collision detection and warning ADAS functionality may benefit from integration not only with the IVI head-unit, but also with the instrument cluster in the vehicle. Strategy Analytics predicts that high-end clusters that mix analogue instruments and solid-state displays as well as solid-state only displays will see over a 30 percent CAGR between 2013 and 2018. As aesthetically appealing as customizing the color of the instrument cluster display and dynamically updating settings based on a driver's individual preference may be, improving driver safety through tighter integration with ADAS functionality may prove to be of greater benefit.

In a collision detection and avoidance system, once an object or issue is detected the driver must be informed. It is imperative the information is provided in a timely and actionable manner without distracting the driver from performing critical driving actions. Through a combination of processing images obtained from multiple cameras and that information obtained from radar sensors the issue must first be detected. Following this, audible and visual warnings must be provided to the driver. In this scenario the infotainment system must ensure the audio system issues an audible warning and mutes any application such as Internet radio. The IVI system can also display a warning indicator to the driver. The field of view of most drivers is focused forward, making the instrument cluster an ideal location to present a collision warning. As solid-state displays are introduced into vehicles it becomes possible

Kamran Shah
Director-Marketing
Mentor Graphics

Kamran has held multiple technical roles that span product marketing, product management and research and development. Throughout his career he has led innovation in the areas of development of embedded systems with heterogeneous targets, software defined radio systems, and cloud-based development tools and services. Kamran has been awarded over 15 patents and graduated from Texas A&M University in 1999 with a bachelor's degree in computer engineering.

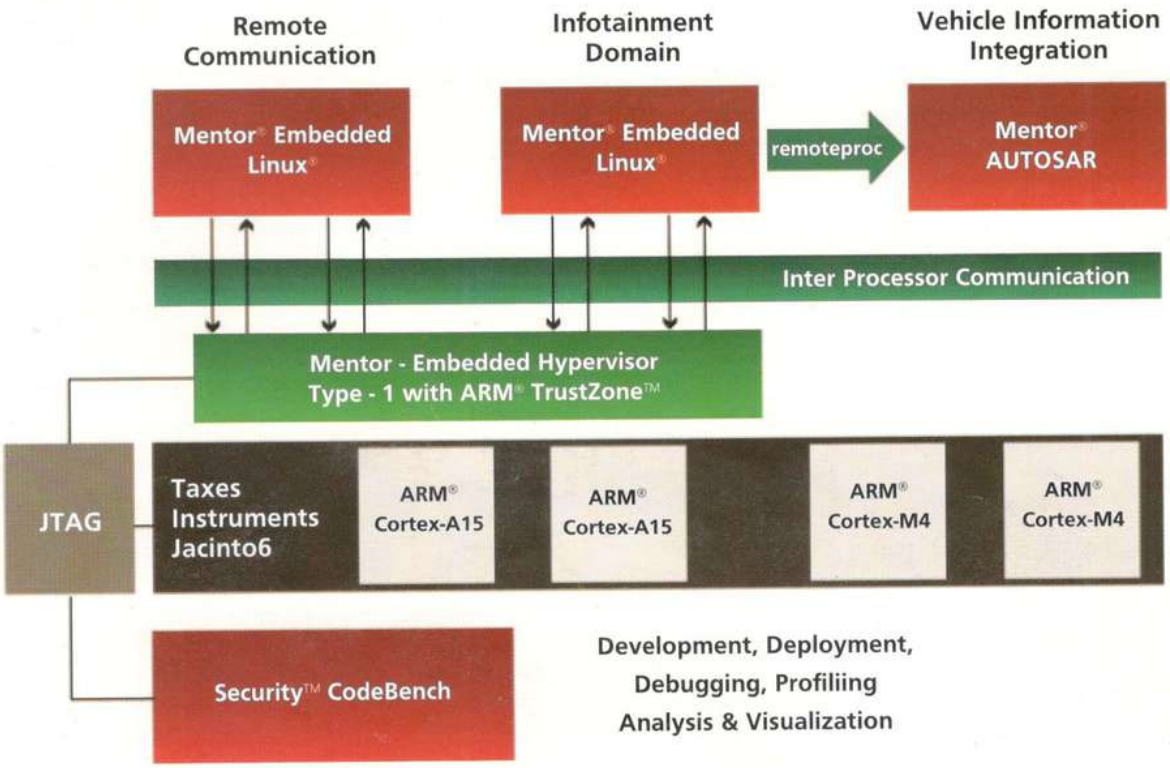


Figure: *Heterogeneous Multicore SoC*

to adjust the layout and sizing of the display to give prominence to the warning. Information about imminent collisions can also be communicated to service providers or emergency personnel with the connectivity options present in many vehicles.

Heterogeneous multicore SoCs

The domains described so far involve multiple electronics components and communication between them. As greater processing capacity and tighter integration is needed, advanced hardware design and software development techniques will be required. Recently semiconductor manufacturers introduced system-on-chips (SoCs) that combine multicore microprocessors with microcontrollers and graphics processing engines.

The microcontroller in a heterogeneous multicore SoC (see Fig.) is capable of handling interrupt driven information from the rest of the vehicle. This information can then be provided efficiently to the infotainment system executing on the microprocessor, which is capable of executing graphics intensive and rich applications. Use of these SoCs can help meet the demands of the greater integration between domains, but require designers to perform a number of key operations including:

- Configuring and deploying multiple operating systems
- Booting multiple operating systems efficiently and in a coordinated manner
- Communicating between isolated applications on a multicore processor and between heterogeneous processors
- Debugging and optimizing interactions between multiple operating systems and applications across multiple processors

Conclusion

The latest luxury vehicles can have over one hundred electronic control units (ECUs) and more than twenty million lines of code. With significant growth projected in highly demanding systems such as ADAS it is safe to assume that the number of computational subsystems and the amount of software in vehicles will continue to grow. This along with the integration across automotive domains makes heterogeneous architecture based devices a welcome architecture for developers who are looking to successfully leverage ADAS, vehicle infotainment, and Instrument Cluster systems into a single vehicle.

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THREE TECHNOLOGIES THAT WILL CHANGE THE WORLD

The world is on the brink of major changes in transportation; similar to what was experienced over 100 years ago when automobiles started to dominate our streets. Looking back, we can see the huge impact that cars have had on society, the global economy, urban planning, government, industry and our daily lives.

Currently, there are three parallel developments that are expected to converge in the near future and change everything once again. These technologies are automated vehicles (AVs), connected vehicles (CVs) and electric vehicles (EVs). Individually, these technologies will trigger major changes but together, they will change how and where we live and work.

We know that the rate of technological change is ever increasing, with each successful new change in technology reaching more people more quickly. Therefore, we shouldn't be surprised if the introduction and impact of AVs, CVs and EVs is even more rapid than this.

Automated Vehicles

Today, the first generation of automated vehicles (also known as autonomous vehicles, self-driving cars, etc.) are in use. To mention some:

- Semi-autonomous cars, such as the Mercedes Benz S-class and the Infiniti Q50 already have lane-keeping, adaptive cruise control and autonomous braking that simplify freeway driving
- Suncor is operating a fully-automated large dump truck in the Alberta oil sands. Mining companies have been operating such trucks in other countries since 2008.
- Induct has launched the Navia, a fully-automated low-speed electric shuttle for campuses, pedestrian areas, etc.
- The City of Milton Keynes, UK will receive its first driverless taxi "Pod" in late 2014. Testing will start in the pedestrian-friendly city centre in 2015.

Most car manufacturers and some technology companies are actively developing and testing AVs. It is

probable that the technology will be deployed incrementally, although there are two visions of "incremental":

- Google, RDM Group (in the UK) and others will likely start with a low-speed (typically <25 mph / 40 kph), electric, fully-automated, 2-seater vehicles. Public pilot projects using this type of vehicle are planned for 2015 in California, Singapore and Europe.
- The car manufacturers are also planning to deploy AVs incrementally, but by gradually adding "Advanced Driver Assistance Systems" (ADAS) to familiar vehicle models. Current ADAS systems include lane-keeping, intelligent cruise control (including braking), and automated parking. These features will start with the high end models and will be enhanced until the cars are fully self-driving.

Many predictions are that the penetration of AVs will be relatively small during the final years of this decade. The period 2020-2030 will see substantial growth in the population of AVs.

Connected Vehicles

Connected vehicles are defined as vehicles that interact with each other (V2V), the roadside infrastructure (V2I), and beyond (V2X) via wireless communications. The Table A depicts the range of current and future applications for connected vehicles:

Technologies that are generally used for connected vehicles are 3G/4G/LTE mobile, Wi-Fi, and the custom-designed 5.9 GHz Dedicated Short Range Communication (DSRC) that allows vehicles to communicate with each other and thereby avoid collisions.

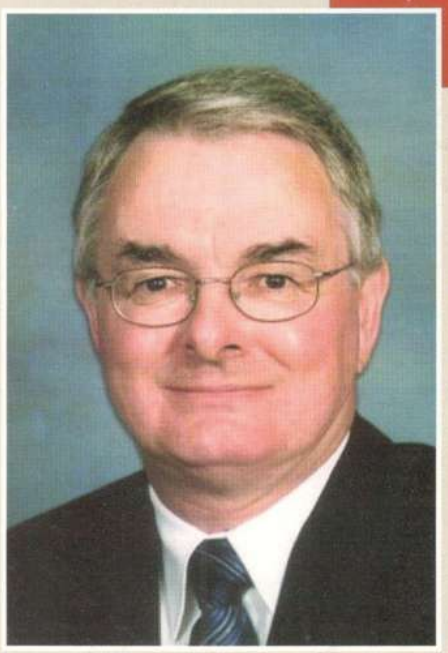
By the end of this decade, 5G mobile technology will be commercially available. 5G will be substantially different from previous generations of mobile technology. It will support much higher transfer rates and have direct device-to-device connectivity as well as the traditional device-to-tower links. 5G will support a wider range of connected vehicle services.

Electric Vehicles

EVs are commercially available now, although the market penetration is low. Currently, a range of production, highway-capable all-electric cars are available in various countries including the Mitsubishi i MiEV, Nissan Leaf, Renault Fluence Z.E., Ford Focus Electric, Tesla Model S, Honda Fit EV, RAV4 EV, Renault Zoe, Mahindra e2o, Chevrolet Spark EV, Fiat 500, and Volkswagen e-Up!
In addition, two prototype versions of AVs are also all-electric: the Google 2-seater, self-driving car that was

Table: A

Current Applications	Future Applications
Infotainment for the driver and passengers, including:	Safety / collision avoidance
• Trip-related information: navigation assistance, traffic information, restaurants, hotels.	Fleet management for Transportation-as-a-Service
• Non-trip information: weather, stock market, news, and	Enhanced integration of smartphones into vehicles systems
• Entertainment services: music, movies, videos, games, social networking Vehicle remote access Vehicle health reports for dealers and service departments	Continual and automatic scanning of the web for information on the road, traffic and weather ahead and border wait times. The system can alert the driver if there is a problem and recommend an alternative route.
Usage Based Insurance (UBI) Fleet management for trucks	"Road-trains" or "platooning" in which a single vehicle leads a convoy of other vehicles with wireless connectivity between them, instead of a physical tow-bar. The lead car could be driven by a human or a computer.



Barrie Kirk
Executive Director
Canadian Automated Vehicles Centre of Excellence (CAVCoE)

Barrie has been a consultant since 1982 specializing in the management and engineering aspects of information and communications technologies (ICT), especially ITS, transportation, telematics, telecommunications and satellite communications. He is a co-inventor of a system, patented in the U.S., for using cell-phones as traffic probes. Currently he is serving to many expert forums related to connected vehicles.

announced earlier this year and the version from the RDM Group that will be used in the 2015 project in Milton Keynes, UK.

Other companies are working on the same synergies. Nissan, for example, has added self-driving technology to a Nissan Leaf all-electric car. The car has been demonstrated on private and public roads in Japan.

The key benefits of EVs are well-known: they are energy efficient and environmentally friendly. In addition, there are performance benefits because electric motors provide quiet, smooth operation, better acceleration and require less maintenance than internal combustion engines.

On the negative side, there are battery-related challenges: driving range, recharge time, battery cost (initial cost and replacement cost), and battery packs are heavy and take up considerable vehicle space.

Prototype 2-seater electric, RDM Group

Synergies between AVs, CVs and EVs

There are various synergies between these technologies with the associated benefits. A key one is the development of the Transportation-as-a-Service (TaaS) model, i.e. the use of cars on a short-term rental basis as an alternative to ownership; this also promotes ride-sharing and low-cost, automated taxis (A-taxi). Users will be able to call an A-taxi which will pick them up, take them to their office, home or wherever they are going, drop them off at the front door, and then continue to other customers.

With this trend, we can expect that the existing taxi, car-rental and car/ride-share business models will converge.

Automated taxis need CV technology so that passengers can summon one using their smartphone and use e-payments. Fleet owners will use CV technology to know where the cars are and receive vehicle health reports, including battery status. EV technology will benefit the TaaS business model because of the low energy and maintenance costs inherent with all-electric operation, thus reducing operating costs.

These combination of technologies will allow-taxis to be competitive with transit as well as regular taxis. This model is sometimes called personalized mass transit.

Other key benefits of TaaS are:

- An 80% or more reduction in traffic collisions, fatalities and injuries based on two technologies. First, computer-drivers will be much safer than human drivers, and second, real-time communications between cars will help them avoid collisions. These synergies between AVs and CVs will result in tremendous benefits to society.
- Electric vehicles used for TaaS and automated taxis will be used mainly for urban trips – which is most of the trips people make. This will result in changes in the design and appearance of our cities. There will be less pollution and greener cities. Because an AV can relocate itself to an area of free parking or simply go to pick up its next ride, cities can reclaim excessively paved areas, such as parking lots and garages which can lead to more green/community spaces - if policy-makers steer decisions in that direction. Substantial changes in land values are expected as these changes can be argued to both increase sprawl and increase urban intensification (densification) at the same time.
- A-taxis will provide easily accessible transportation for the disabled, seniors, those that cannot afford to drive, and those that for whatever reason do not have a driving licence – including children. The freedom and liberty for these groups could be transformational.
- Looking farther ahead, there is the possibility of AV-only zones in cities. These will be controversial, but so was the London Congestion Charging Zone.

These trends will be very disruptive and there will be impacts both within the transportation industry and outside of it. Industries that will have to adapt to new business models include transit, trucking, car manufacturers, health care, policing, the oil industry, and electricity generation and distribution. In addition, departments in all levels of government will have to develop new strategic plans, policies and regulations. There will also be changes in the urban planning strategy known as transit-oriented development.

Conclusions

The development and convergence of three separate technologies, automated, connected and electric vehicles, will lead to significant transformative changes. A major development will be Transportation-as-a-Service using low-cost, all-electric automated taxis. This will directly lead to few traffic collisions, deaths and fatalities, greater mobility for people who are unable to drive themselves, lower-cost transportation and personalized mass-transit.

TaaS will also lead to reduced pollution, greener cities, a reduced need for parking lots and garages, changes in where people live and work, as well as changes in the approach to urban planning. It is clear that our cities and therefore our world will look very different in 2030 compared to today.

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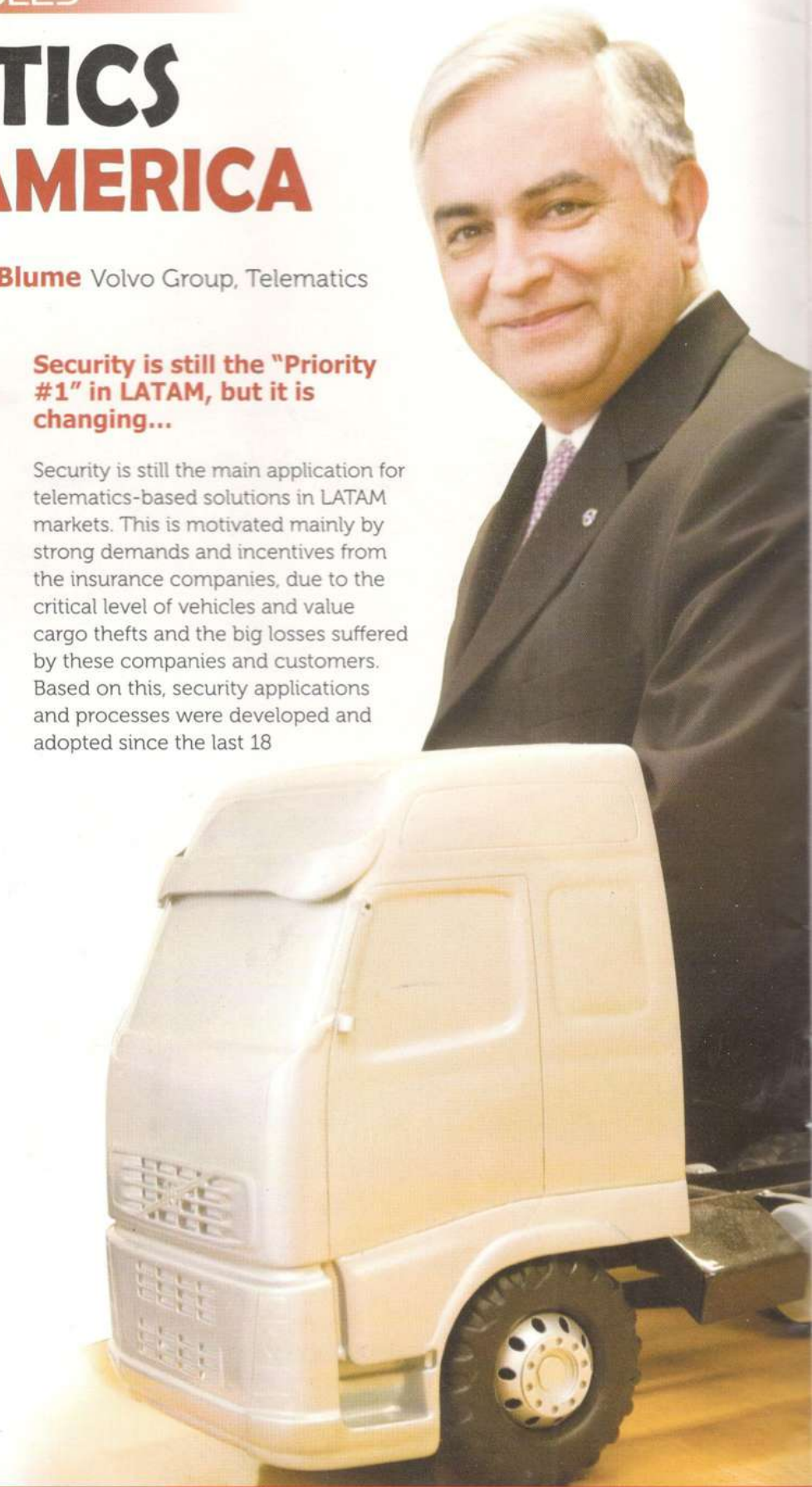
TELEMATICS IN LATIN AMERICA

- by **Christiano Blume** Volvo Group, Telematics



Latin America is a huge continent. Its vehicles park totals over 85 million, including consumer cars and commercial vehicles. Most of traditional truck brands are present in all the transport segments in Latin American countries and several new incomers are planning to enter in short term, mainly coming from the Asiatic countries.

As far as the telematics market in LATAM is concerned, it is estimated more than 4.6 million vehicles in total equipped with telematics tracking devices, including around 1.2 million commercial vehicles - fleet management and 3.4 million consumer cars, which has been growing at an annual rate of over 10%. More than 500 companies are offering telematics solutions in LATAM, most of them developed and produced (HW & SW) outside the region. Companies from Europe, North America, Israel and Asia are finding opportunities to sell telematics solutions directly or through partners with local suppliers at LATAM.

The LATAM yearly revenues for both, fleet management and consumers cars, including hardware and service sales, are estimated over $1.8 billion, and expected to reach around $3.0 billion at 2017, if Brazil's CONTRAN 245 regulation goes into effect at the end of 2015 as planned. The largest LATAM telematics markets are Brazil and Mexico, totalizing estimated 400, 000 devices in service each, followed by Argentina and Colombia, with respectively estimated 120, 000 and 90,000.

Security is still the "Priority #1" in LATAM, but it is changing...

Security is still the main application for telematics-based solutions in LATAM markets. This is motivated mainly by strong demands and incentives from the insurance companies, due to the critical level of vehicles and value cargo thefts and the big losses suffered by these companies and customers. Based on this, security applications and processes were developed and adopted since the last 18

to 20 years, achieving nowadays a "state of art" in this area. This is a result of a long learning curve and adaptation demands, imposed by M2M technology limitations and development during this period. Brazilian security telematics-based solutions are currently considered a "benchmarking" in the transport industry worldwide, what we can be deeper explore in another opportunity.

On the other hand, Latin America is fast growing from a lower degree of maturity in the utilization of telematics-based solutions to the adoption of a broader and advanced range of connected services in the next few years. Customers are becoming more and more mature, demanding wider offerings, what has resulted in important changes in their way-of-working.

A remarkable one is the improved professionalization level in the transport management, which is generating a demand for such solutions towards higher logistic efficiency and productivity.

Drivers leveraging the growth

The main drivers behind it are in the connected eco-system, which is fast growing and pushing for more and more connected services and conveniences:

Truck OEMs are one of them, offering global vehicle platforms with sophisticated electronic architectures, which allow an advanced bundled offer of connected services. In this sense, connected services figure as an important driver for expanding and strengthening the offer of their products in Latin America. Fleet management solutions and preventive/predictive maintenance management solutions, like Uptime Services, shall increase customer loyalty by offering services that will bust the competition between OEMs and third-party suppliers.

OEMs are also increasingly offering standard factory-fitted proprietary telematics solutions, focused mainly on vehicle performance and operation monitoring.

Another one is the growing interest of fleet owners in lowering fuel consumption, the most important item in the operational cost composition for LATAM, and in increasing of vehicle availability and productivity, motivated by a better value added of the telematics solutions to their operations and a more tangible return of their investments in the platforms and technology.

Getting more added value from telematics technology in LATAM

However, an educational process is still needed, in order to increase the awareness among them about the potential that connected services have beyond mere security related features.

Data communication is still a concern

Despite of the big improvements observed last years in LATAM regarding GSM/GPRS M2M technology and networks, GPRS coverage is still poor in some regions.

Considering the huge dimensions of the continent and of some countries, like Brazil and Argentina for example, there is no motivation and financial return for the telecom operators to implement a better RBS and antennas infrastructure in remote sites (low traffic consume), creating communication gaps and shadow zones.

In the urban centres and surrounds, as well as along the main roads, the coverage is reasonable good and considered as OK for most of the applications (city distribution, regional and long distance haulage).

The off-road and construction applications in remote sites, as well as operations in the country side roads, are specially affected and demand other telecommunication solutions, like satellite or radio.

This is particularly a big obstacle for operations that demand real time communication, like security, safety or intensive logistics operations. Due to this reason, satellite communication & hybrid modems are demanded to mitigate the communication shadow zones. Some players have also developed double SIM card modems to improve the coverage.

GSM/GPRS "jammer" has been also a headache for the fleet owners and is another big risk for security operations, what has been extensively practiced by the criminals. It is mitigated with the adoption of the hybrid modems or by some "intelligent" solution on board with "prompt response" (vehicle shutdown, for example). 3G is deployed along the continent in all countries and 4G is starting, supporting more data-intensive applications.

Brazil, the biggest and most important market in LATAM for telematics

Brazil is the fourth largest automotive market in the world and one of the fastest growing, amounting a yearly sales volume of around 5.5 million of units, including passenger cars, commercial vehicles and motorcycles.

The Brazilian road network totals 1.7 million kilometers. Due to the poor railway network, most of the goods transportation is done by highways, amounting 60% of the total transport matrix. This has created an industry of around 63.000 transport companies.

Regarding telematics market, it is estimated more than 2 million vehicles in total equipped with telematics tracking devices, including around 1.6 million of consumer cars and 400,000 cargo

vehicles, which have been growing at an annual rate over 12%. The Brazilian yearly revenues for both, fleet management and consumers cars, including hardware and service sales, are estimated over $1.1B, and expected to reach around $ 2.1B at 2017, if Brazil's CONTRAN 245 regulation goes into effect at the end of 2015 as planned.

More than 300 companies are offering telematics solutions for commercial vehicles in Brazil, including also some OEMs proprietary ones like Dynafleet, FleetBoard, VolksNet and others. In spite of it, the telematics market in Brazil is still dominated by around 4 to 5 main after-market players, due to their pioneering presence in the market in the last 20 years, building up a strong customer base during this period.

This reality is fast changing, considering the strategic importance of "connected vehicle" concept for the OEMs and the trend of factory-installed telematics devices. As a consequence, it is growing the moving towards partnerships between OEMs & AM companies.

As in the rest of the LATAM countries and due to the same reasons, security is the priority #1 for Brazil. On the other hand, insurance companies further noted that losses associated with accidents were 10X bigger than the losses from cargo thefts. This has motivated the development of telematics applications capable of mitigating these losses, including awareness and operation infringements and drivers behavior monitoring in real time. They have been very successful and adopted by the bigger transport companies in Brazil, as a kind of "complement" to the security applications, with very good results.

CONTRAN 245 / SIMRAV Project – A government mandate for Brazil

Brazil's CONTRAN 245 Resolution mandating vehicle tracking and immobilization technology as a stolen vehicle and cargo mitigation measure, is set to be started implementation at the end of 2015, in a ramp-up process up to beginning of 2017. After a new delay occurred, which was the tenth, 2016 is seen as the year that vehicle makers will begin installing factory-fitted tracking modules in 100% of their productions and switching on the service. Brazil's rising auto and fleet industries are expected to attract both investment and development activity.

In spite of the skepticism due to the several postponing, there are still hopes that the mandated technology might one day mitigate the worsening environment for vehicle and cargo theft while also generating enthusiasm for Brazilian telematics leadership.

The current scenario for mandate adoption is below presented:

The yearly losses attributed to auto theft are estimated at about $2.5B-$3B. Cargo thefts contributed another $0.5B in losses. The size and growing impact of vehicle theft helped spur the Brazilian government to pass Resolution 245 in 2007 calling for the creation of the so-called SIMRAV module above mentioned.

This module has a special configuration and a flex SIM card, which are well detailed in the law, as well as the service provider's infrastructure and responsibilities for vehicles location and immobilization. Both of them must be certified by the Brazilian traffic authorities. The service activation is optional by the vehicle owner, but the government and other stakeholders are confident in a high activation penetration, due to the opportunity of value added services bundled in the offer.

With the adoption of CONTRAN 245 mandate and more than 5 million units installed per year, Brazil will become an important telematics market, with a forecasted income estimated in more than $ 1billion just in the first year. This will rank Brazilian market in around 2017 as the third largest telematics market in the world, behind only North America and Europe.

The added-value opportunities for commercial vehicles are clear; leveraging telematics to reduce operating costs and, perhaps, accidents represents a sound connectivity value proposition for Brazil.

Table: CONTRAN 245 Deployment Schedule

Class of Vehicle	Dec-15	Mar-16	Jun-16	Aug-16	Dec-16	Feb-17
Car, Vans, Pickups, Utilities	20%			50%	100%	
Trucks, Buses, Minibus	20%			50%	100%	
Tractors, Trailers, Semitrailers						
Mopeds, Scooters, Motorbikes, ATVs		5%		15%	50%	100%

Source: Brazilian National Road Transport Department

About the author

Christiano has over 33 years of experience in the automotive & transportation industry working with Volvo do Brasil occupying different positions in different business areas, like Strategic Planning, Product Planning, Quality, production and after-market. In his prolonged career, he spent 16 years in telematics developing and introducing different telematics solutions in Latin America markets. He is a regular contributor in various expert forums.

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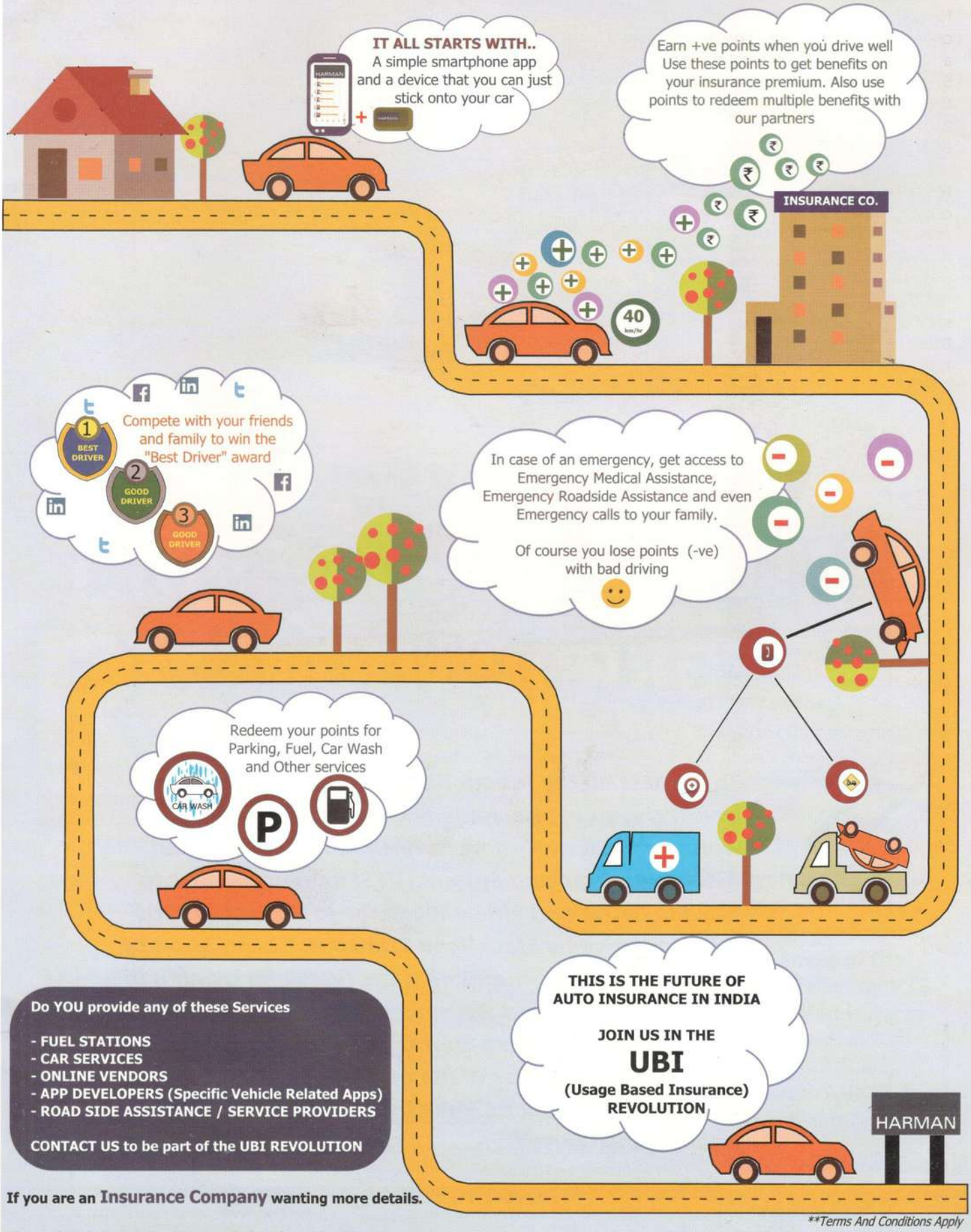

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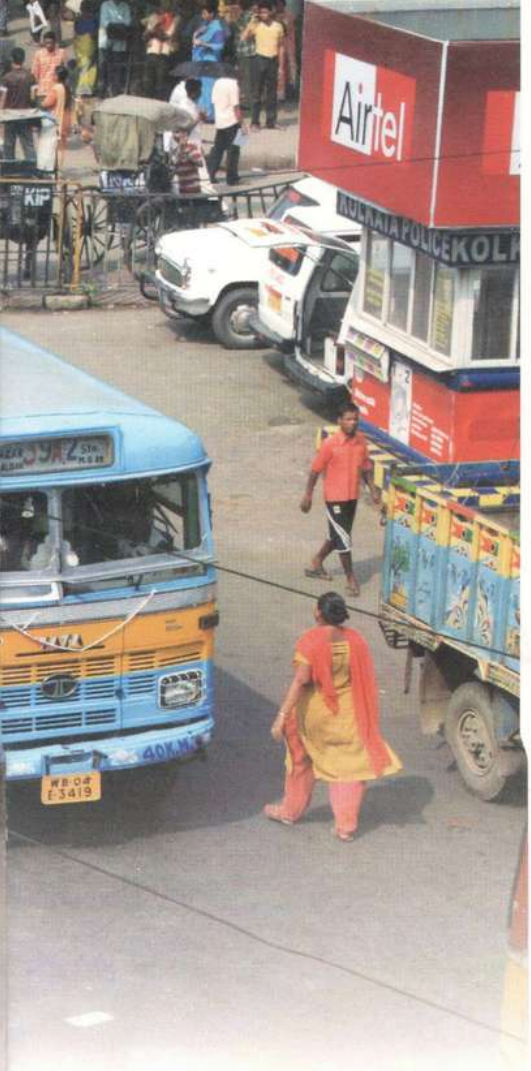
Vehicle Tracking Systems in STATE ROAD TRANSPORT CORPORATIONS

To harness all the functionality that modern vehicle tracking system offers, many government bodies are working proactively, few have already implemented the Vehicle Tracking System (VTS) in various ways to provide better and efficient service to its people. One such initiative by State Road Transport Corporation by procuring vehicle-mounted units (VMU) for using it in Vehicle Tracking and Passenger Information System (PIS) in different states. In this article, we will talk about real-time case studies of major 'State Road Transport Corporation' installing Vehicle Tracking System in their public transit buses.



Rapidly increasing vehicle population in India spurred by the population boom and economic upturn lays a critical burden on traffic management in the metropolitan cities and towns of the country. Also the cumulative growth of passenger vehicles in India is at a high rise and so the technology transformation and implementation to standardize the passenger vehicles.

as a technology is gaining popularity in automotive and transport sector in Indian context and so telematics industry has become one of the fastest growing sectors in automotive accomplice market. Also, Vehicle tracking industry has expanded very well in short span of time and offers a lot more than customary GPS navigation and tracking to point a vehicle location. The gamut of vehicle tracking system includes the support features to track the load, temperature, riders, movement and much more related vehicle information.

Therefore, GPS based vehicle tracking system is being largely adopted by the State Road Transport Departments for tracking vehicles and passenger information. The proposed VTMS & PIS Project implementation includes core components such as: Vehicle Tracking System, Real Time Passenger Information System and Data center. Core technologies include GPS and Information & Communication Technologies.

VTS systems offer an array of services to manage large existing fleets. Some of the services offered by VTS units installed in large fleets includes: two way communication between driver and control center. It also supports live tracking of vehicle with meters of accuracy and vehicle immobilization. Control center can also monitor how fast vehicle is moving along with the stoppage time and fuel tank information. It also provides live update on road condition and traffic jams and many more.

To harness all the functionality that modern vehicle tracking system offers, many governments are working proactively and few has already implemented the VTS in various ways to provide better and efficient service to its people. One such initiative by State Road Transport Corporation is procuring vehicle-mounted units (VMU) for using it in Vehicle Tracking and Passenger Information System in different states. In this article, we will talk about real-time case studies of major 'State Road Transport Corporation' installing Vehicle Tracking System in their public transit buses.

Andhra Pradesh State Road Transport Corporation (APSRTC)

[Andhra + Telangana]

Andhra Pradesh State Road Transport Corporation (APSRTC) has implemented VT & PIS project to address the critical issue of road congestion by adopting state-of-art technologies and attractive, convenient, comfortable, value added services to encourage the usage of bus services instead of individual personal vehicles. APSRTC aims to bring about this modal shift by improving the perceived image of its services.

The project was awarded to M/s CMC Ltd., Hyderabad. The overall scope of the implementation consists of design, development, testing, installation, commissioning, training, operations, and management of facilities for a period of five years.

VT & PIS will cover core systems such as Vehicle Tracking System, Real Time Passenger Information System and Central Control Centers. Core technologies include GPRS, GSM, Geographical Positioning System (GPS), Display units and Information & Communication Technologies.

Project Coverage

The project is planned to cover about 3,502 buses, the details of which are given here under:

a) 1347 Metro buses operating in and around Hyderabad.

b) 239 Metro buses operating in and around Vijayawada.

c) 250 Metro buses operating in and

VTS systems offer an array of services to manage large existing fleets. Some of the services offered by VTS units installed in large fleets includes: two way communication between driver and control center.

around Visakhapatnam.

d) 50 Metro buses operating in and around Tirupathi.

e) 806 buses operating in Hyderabad-Bengaluru route.

f) 512 buses operating in Vijayawada-Tirupathi/Chennai route.

g) 298 buses operating in - Karimnagar – Hyderabad route.

The scope of work consists of VTS for about 3,502 buses, establishment of Data Center, two Control Centers in Hyderabad (one for City operations and the other for long distance services) and one control centre each in Vijayawada, Viskhapatnam & Tirupathi. Passenger Information System (LCD/LED Displays in Bus Stations/Shelters) on board cameras & in bus destination boards along with voice announcement for 1,476 metro buses of Hyderabad, Vijayawada, Vishakapatnam and Tirupathi and maintenance of the entire system for a period of 5 years.

Delhi Transport Corporation (DTC)

Delhi Transport Corporation (DTC) is also not behind in implementing IT solutions in its city transport buses. With the initiative taken by Transport Department in 2010 to provide GPS in all public transportation systems in the national capital, 3,775 DTC buses out of the total fleet of 5000 buses has been GPS-equipped till now. The 1225 old DTC buses do not have GPS as they soon have to be replaced by low-floor buses.

The project is yet not stabilized and is under the process of stabilization. The project was initiated by DIMTS (Delhi integrated multi-modal transit system Ltd.) appointed by Transport Department.

GPS is a proven technology used worldwide for a variety of purposes, including tracking of public transportation services. The software for tracking buses through GPS has been developed by DIMTS and has been deployed on DTC buses with its control room at the Millennium bus depot. Under its automatic vehicle locater (AVL) system the software collects information such as the precise location of a bus on its route, speed and its in-shedding and out-shedding time at depots.

Once the GPS system is stabilized the project can further be undertaken for Public Information System (PIS) where various applications can be used which can provide real time information to the commuters.

Uttar Pradesh State Road Transport Corporation (UPSRTC)

UPSRTC has initiated the implementation of the Intelligent Transport Management System (ITMS) Project for the benefit of the passengers. The project includes IT enablement of its Ticketing & Passenger Information Systems at bus stations through display boards, automatic announcement systems, IVRS & SMS enquiry. In the passenger information system UPSRTC is getting the LED displays and automatic announcement systems installed at bus stations. VT & PIS part is covering the core systems such as Vehicle Tracking, Real Time Passenger Information System and Central Control Centers. Core technologies include GPRS, GSM, GPS, Display units and Information & Communication Technologies.

The project contemplates the setting up of a data center (with 23 servers and associated infrastructure), a disaster recovery center (with 18 servers and associated infrastructure), field level infrastructure – computers, printers, UPS, ETMs for each bus and reserve, VTS for each bus and reserve, SIM cards, LCDs at bus stations, automatic announcement systems and applications software. Owing to its scale and comprehensiveness the capital cost of the project is Rs. 38.25 crores of which 50% (Rs. 19.125 crores) is being funded as a grant under ACA from Government of India (GoI). GPS Vehicle Tracking System has been installed on more than 8000 buses of the 20 regions of UPSRTC of which close to 7500 are reporting on servers. Application software developed and commissioned. The information forms a feed for Passenger information system & Control rooms.

Rajasthan State Road Transport Corporation (RSRTC)

RSRTC has always been a front runner in adoption of technical innovation. Keeping in view of the present scenario, RSRTC has started the use of VTS/PIS from September 2012. RSRTC

has installed VTS devices on 1000 buses and has already issued work order for installation of VTS devices on its remaining buses. In addition to the VTS devices, RSRTC has also installed LED screens on its major stands as a measure for Passenger Information System (PIS). Passenger can get information about the arrival, departure of buses, late/early running status of buses and present status of the buses.

RSRTC has always maintained a future centric approach. It is no wonder that on innovation front RSRTC is way ahead of other STUs across the country. For the second phase of VTS project , RSRTC has included the following components apart from the normal VTS/PIS System:

- CCTV solution inside buses
- Fuel Monitoring System (FMS)

The initial project report for the second phase was drafted in January 2013. The step taken by RSRTC was proven right when Ministry of Road Transport and Highways (MoRTH) mandated installation of CCTV inside the buses in January 2014. In fact, during the recent Union budget declaration a separate fund of 500 million INR has been set aside for a pilot project.

Road Transport Corporation believe that the presence of CCTV and FMS would solve dual purpose by keeping a watch on both the technological and humane aspects involved in the operation.

RSRTC intends to implement VTS in all its services. RSRTC has also instructed various private players who operates rural buses with RSRTC to incorporate VTS in their buses. It is also planned to incorporate VTS in checking vehicles of the corporation.

Karnataka State Road Transport Corporation (KSRTC)

KSRTC in its effort to support the overall public transport strategy has implemented the intelligent transport system, to deliver a public transport network capable of delivering high quality services in pursuit of providing a sustainable public transport network to meet the aspirations of the travelling public.

Two of the long-talked-about plans of the Karnataka State Road Transport Corporation (KSRTC) — online tracking of long-distance buses and real-time passenger information system at wayside bus stations have become a reality. The KSRTC's proposal was cleared at a meeting of the Appraisal-cum-Sanctioning Committee of the Union Ministry of Road Transport and Highways.

The ministry has shared half the cost of the proposed Vehicle Tracking and Monitoring System (VTMS) for 4,000 KSRTC buses under the Central Assistance for Strengthening Public Transport System scheme. The total project cost is 129 million INR half of which, i.e. 64.5 million is funded by the Union government.

At present, the GPS-enabled VTMS covers almost all premium, luxury, and express services of the corporation, besides 73 depots and 45 out of the 142 bus stations. Besides helping the corporation to monitor the movement of buses, the system enables it to provide the information to passengers about the arrival of buses at a particular bus station and the number of vacant seats available.

Other Road Transport Corporations

Gujarat, Kerala and Bihar have also initiated telematics and GPS services but it is not fully operational and working. The service has commenced in the Volvos and the transport department is eager to initiate it in the public transit buses as well.

Therefore, vehicle tracking systems are being increasingly adopted by different State Road Transport Corporation in India to address the critical problems faced by passengers. Also, as public transportation systems are increasingly using GPS to track buses and plan routes, they are beginning to offer the same information to passengers for planning purposes. With the introduction of VT&PIS Project, the RTC is now able to manage the entire fleet operations more efficiently through on-line remote access to vehicle positions, speed, breakdown, accident, incident etc and make appropriate decisions using the MIS reports that support all levels of management in decision making.

Managing emergency situations has become better by monitoring emergency incident, accident management in real-time. Performance of the bus fleet has improved by monitoring adherence to schedule, route, missed trips, late trips on different routes, break downs and its duration, vehicles offline, accidents – types, impact, losses etc, improper stops at bus stops, driver behavior, deviation in routes, speed violations at different locations and at different points of time. Hence, use of vehicle tracking system in transit buses has drastically improved the quality of travel and convenience offered.

Simmi Sinha
Editorial Team
Telematics Wire

Simmi has over 5 years of industrial experience in GIS and Telematics. She is a regular contributor in Telematics Wire.

Vehicle Tracking in Solid Waste Management

Could you share with our readers about the current status of the use of Vehicle Tracking Systems (VTS) for solid waste management at AMC?

Ahmedabad Municipal Corporation (AMC) follows two methods for waste collection viz. Door to door waste collection and Bins placed at fixed location

AMC has in total 6 Zones and 64 Wards. In each ward, there are fixed number of routes for waste collection covering all the societies, apartments and areas of the Ward. As vehicles traverses through the route, it collects garbage from pre-defined points (POI) in the route. The volume of work and complexity in solid waste management is overwhelming. Following are some of the key statistics:-

Total Routes: 600
Total Door to Door vehicles: 600 plus
Total POIs (Point Of Interest): 25,000

The GPS device is installed in each vehicle and ward wise route details and POIs are provided to the computer system. The pilot run for two wards in live environment was carried out and results were found to be satisfactory. At present, the trial run for all routes is going on.

In addition to this, more than 1000 bins are placed at 1000 fixed locations and a total of 100 lifter vehicles lift the bins, travel to transfer station / dump site, and transfer garbage to big truck or dispose off at dump site. To make the process efficient, AMC is also using RFID technology for effective monitoring of solid waste management activities.

RFID tag is mounted on each vehicle as well as on each bin and an RFID reader is placed at selected locations (i.e. Transfer station weighbridges, dump sites, Ward offices)

As in the door-to-door case, a GPS device is installed in each Bin Lifter vehicle. The zone wise Bin Lifter vehicle details and Bin locations is provided to the computer system. Considering the success of two pilot trials, the project idea is being replicated in all the zones.

What were the various outcomes/learnings of AMC during the pilot trial? Were there any technological hurdles faced?

We found that routes and POI data is critical for the success of this system. All further reports and monitoring depend on the correct data of POI. We have verified Route /POI data before entering in the system and also in the system after entry is over. Our team has physically verified the correctness of system generated reports. During pilot run, we have re-worked on following to improve the system.

- Geo-fence definition of POIs.
- Educate and train drivers about locations of RFID readers so that vehicle attendance can be recorded automatically.
- Sometimes it was difficult to determine whether POI is served or not. (Number of minutes stay at specific POI varies, sometimes vehicle stops little far due to narrow road but manually lift the garbage from inside of the society, some time some other route's vehicle serve the POI, some Bins are not served for 2 – 3 days because people have parked vehicles around it.)

Technological hurdles were not faced as such however before starting this initiative, we have assured capacities, sustainability and robustness of the device for functioning in such environment.

What parameters does AMC take into consideration before selecting the device vendor or technology partner?

We have specified device specifications in tender itself as per industry standards and AMC requirements. Some of the parameters of our interest were the positional accuracy of these devices. The devices should be heat resistant, vibration proof, tamper proof, dust resistant and water resistant so that it can sustain in waste environment.

One important feature that these device require to serve is sending an alert message if it is disconnected (by any reason or intentionally)

For selecting technology partner, we kept very tough eligibility criteria. The company must have experience of successfully implementing system of few hundred GPS devices in Govt. / PSU. Also for evaluating technical capabilities, we have observed prototype pilot run in live environment for two weeks.

What are some of the realized benefits after installing VTS in municipal vehicles?

We perceive that through VTS devices we can have a deeper visibility of the entire Solid Waste Management process by tracking the movement of both the vehicles and bins. The citizen complaints can be handled with actual details and based upon those details, analytical reports can be made available for operation monitoring and decision making

Besides this, these devices can also be helpful in monitoring various parameters of the fleet like vehicle productivity and performance, health, driver behavior, traffic rule violations etc. It will help us in take timely actions. This also enables us in performing effective assessment and evaluation of the contractor performance

Moreover, this will ensure an overall improvement in the solid waste collection resulting in improvement in cleanliness of the city.

Is AMC also considering manage the bins across the city by combining GPS data with GIS through 'geo-coding'?

AMC has already done Bin management in this system using RFID technology. The RFID Tag mounted on Bin will be read by RFID Reader at weighbridge / transfer station / dump site. And all Bin locations are geo-coded on GIS platform. With this system we will be able to know how many or which bins are served / unserved in a day. This also gives us an overview as to which bins is not coming at transfer station regularly.

Do you believe that the installation of VTS devices can prove as a foundation for AMC's long-term plan for achieving the status of 'zero-waste' city?

Yes, the technology will help in identifying the gaps in Solid Waste Management. Although this system is first version, we can improve by experience and by providing solutions to the system. Modern Technology provides solutions, but after all it's the people who make any system successful.

I am sure, with the co-operation of citizens, civic body and technology, Ahmedabad will become 'Zero-Waste' city in coming years.

C R Kharsan
Dy. Municipal Commissioner
Ahmedabad Municipal
Corporation (AMC)

Shri Kharsan has been working for Govt. of Gujarat since 1989 and held various pivotal positions in various regions of Gujarat. He attended various in-job training and seminars at Australia, Thailand, Canada, South Africa, Singapore, Manila- Philippines etc. He also participated in "Capacity Building for Sustainable Waste Management in the Asia-Pacific Region to Promote Eco-Town Model and Integrated Solid Waste Management (ISWM)" training workshop in Korea.

WHEN CARS TALK, BUSINESSES LISTEN

Cars of today are increasingly being connected and the connectivity feature itself is becoming ubiquitous. Internet of things (IoT) being the buzzword of today, there is an increasing focus to connect all things and objects and extract data to derive actionable intelligence out of it. Cars are also not being left behind and today's cars do come with a lot of in-built connectivity features.

Earlier, connectivity inside the car was limited to Bluetooth providing Hands-free calling (HFP, HSP) and audio streaming (A2DP, AVRCP) in infotainment devices. These features continue to enjoy patronage among users, but however, Wi-Fi is also slowly making an entry. 3G and 4G SIMs are also making an entry in the dashboard. Wi-Fi and 3G/4G open up a new paradigm shift and introduce a scenario wherein the car is connected to the internet. The car of today, with these new connectivity technologies can talk to the external world. This opens up the possibilities of a whole new set of business use cases that were not previously thought of or were not possible.

A 4G connection will afford very high-speed internet connectivity to the drivers. Wi-Fi combined with 4G allows the possibility of having a wireless hotspot inside the vehicle for consumption of internet by multiple static devices like infotainment systems and user handheld devices like tablets and smartphones. There is always an on-the-go, real-time updates available for everything from latest maps for the navigation system to making an online booking for the latest movie.

The telematics systems have been long used in commercial vehicles for fleet management and have started to now make an entry to passenger cars. The data from the telematics box provides valuable information such as – the speed at which the vehicle is driven, sharp braking or acceleration, time of day the vehicle is driven, lengths of the journeys taken, mileage, etc. The driver can easily access these data in a mobile app and analyze the key areas of his driving profile and also make the necessary changes if needed. The telematics setup is offered as a box which can be retrofitted, by many companies nowadays and also these features are also being introduced as standard feature by the some of the OEMs.

The data thus extracted through a telematics setup, as described above, holds great value to the driver. The

vehicle insurance industry has started understanding the potential of this data and is now using this for its own advantage. Traditionally, insurance agencies used to look at the driver's age, vehicle type and the location to derive the insurance premium. The agency would have no means to access & quantify the risk involved and derive the right premium amount that would be justified for the quantum of risk. But with the telematics data, the insurance agency gets a direct insight into the driver's driving patterns and driving behavior and with this information; the agency would derive a driving score. The agency can then derive the insurance premiums based on these driving scores. The drivers may also adopt safer driving options to obtain a better score and thereby reduce their premiums. This type of insurance is popularly known as Telematics Insurance or Usage Based Insurance (UBI). Some insurance providers may also specify that one do not drive between certain hours and at certain stretches when serious accidents are most likely to happen - usually late night or early morning. Also in case of accidents, the telematics data can provide an objective analysis of the fault of the involved parties. Liability allocation can then become easier and more efficient.

Telematics data, thus, provides a new power to the drivers as well as the insurance agency, to gain more insights that can be translated to competitive advantage and operational efficiency.

Telematics also does open up other avenues that benefits the vehicle owners like the roadside assistance, remote unlocking of the vehicle, etc. Let's say that a driver forgot his car keys inside the car and a mere phone call could get the car unlocked. GM's OnStar is a very good example which provides these features. Telematics also does help in case of a theft. The exact location, speed and the direction of travel of the vehicle can be tracked online and can be used by the police for vehicle retrieval. There can also be an option to monitor remotely and trigger a speed control that makes sure that the car cannot travel beyond a certain speed.

Smartphone Connectivity

Smartphone integration into the in-vehicle infotainment (IVI) systems is the new buzzword and is intended to attract a new generation of younger and tech-savvy buyers. Many of the OEMs were already allowing the drivers to connect their smartphones through USB ports and get limited access to utilities like iTunes, streaming music service like Pandora. Car Connectivity Consortium (CCC), a group of automobile and mobile phones makers developed MirrorLink, a standard for integration of Smartphones into the IVI systems. This allows the duplication of quite a few of the Smartphone features onto the car dashboard. Apple also unveiled the CarPlay interface for iPhone which was first seen in some of the latest models of Mercedes Benz. The promise of Smartphone integration is that the modern day driver need not worry about handling data or configuring the user experience in multiple devices but can access the data as well as the experience stored in his smartphone or tablet from the car dashboard as well.

V2V connectivity

The V2V connectivity is about the technology which allows cars to talk to each other. This is a new dimension of the M2M communication which has the potential to avoid crashes and save lives. A radio signal would be continuously transmitted providing the vehicle's speed and position and thus the vehicles in the front, behind and over a couple of hundred meters radius would use this information to take intelligent decisions. Going ahead, the traffic lights, toll booths, the cameras and stretches of road themselves can be part of the network and start talking to the cars and to each other. The future highways can be envisioned as a mesh of connected devices which are continuously talking to each other and taking autonomous decisions.

Harsha Bagur
Group Head-IVI Systems
Robert Bosch

Harsha is a technology evangelist who holds special interest in Telecom, Mobile, automotive telematics & infotainment domain areas. Currently, at Robert Bosch GmbH, he is handling the delivery responsibilities for In-vehicle Infotainment systems.

TESTING AND Homologation of VTS devices in India

What was the vision behind establishment of ICAT? What are the milestones covered so far?

ICAT has been established with the vision "To be a world class R & D centre assisting the automotive sector and to render services in the field of automotive design, test & validation." ICAT is moving fast in this direction. With a slated investment of about 930 Cr., ICAT is also in the process of establishing itself as the Centre of Excellence (CoE) in the fields of Component Development and Noise, Vibration & Harshness (NVH). ICAT Site-1 (Area: 8 acres), which currently houses the Powertrain Lab, Component & Material Evaluation Lab, Vehicle Evaluation Lab, Rapid Prototyping Lab, some new test facilities such as Certification Lab, Fatigue lab, CVTC, New Powertrain lab and CAD/CAE lab have been added. ICAT Site-2 (Area: 46 acres), houses test tracks, NVH Lab, Passive safety lab and EMC Lab. The major chunk of these new facilities is expected to be completed by December 2014.

Could you share your views about the Government of India's Automation Plan (AMP) 2006-2016?

Government of India's vision for the AMP 2006-2016 is "To emerge as the destination of choice in the world for design and manufacture of automobiles and auto components with output reaching a level of US$ 145 billion accounting for more than 10% of the GDP and providing additional employment to 25 million people by 2016." India is emerging as one of the world's fastest growing passenger car markets and second largest two wheeler manufacturer. It is home for the largest motor cycle manufacturer and fifth largest commercial vehicle manufacturer. The idea is to further improve the automobiles in the Indian domestic market, to provide world class facilities of automotive testing and certification and to ensure a healthy competition among the manufacturers at a level playing field.

ICAT is catering to the Northern India's automotive hub with its R&D and homologation activities. What is the level of participation you are getting from the automotive OEMs?

We have an R&D team looking after some major R&D projects being undertaken at ICAT. The homologation & R&D teams work in tandem to serve the Indian automotive industry. In this endeavor, apart from homologation activities, we have signed MoUs with OEMs for developmental activities. At times, we even utilize the test facilities of OEMs for some customer specific tests. We also do joint projects with OEMs for component & vehicle development. Apart from OEMs, we have signed MOUs with International Labs & Universities for developing state-of-the-art facilities in the field of NVH (Ohio State University, USA) and Powertrain (Argonne National Laboratory, Chicago, USA). Having said this, I would also like to mention that our customer base is not confined to Northern India. All major players from Automotive Industry in India are our direct or indirect customers.

Recently ICAT has started validation & testing of 'Vehicle Tracking Systems (VTS)'. What has been the response of the industry in this regard? Can ICAT extend advisory or consultancy services to vendors for improvement of VTS devices?

Yes, we have received good response from the VTS manufacturers. In fact many of them have already visited ICAT and have been discussing about testing and validation procedures with the concerned laboratory at ICAT. Few of them have already taken approvals and some of them are in the process of getting the same. As far as the rendering of advisory and consulting services to VTS manufacturers are concerned, we are quite open to the idea.

The WG11 of Transport Engineering Department (TEDC) of BIS is working on formulations of standards for VTS and navigation devices. How is ICAT involved in the same?

ICAT is a part of different committees in BIS including the one for formulation of standards for VTS and navigation devices (TED 28). The committee consists of OEMs, VTS manufacturers, Government Representatives and homologation agencies. ICAT presents the perspective from the regulatory angle wherein we ensures that the test standards are performance oriented rather than being product / technology oriented.

Do you think the testing of vehicle interiors i.e. head unit, multimedia, vehicle tracking device should be mandatory in compliance to the Central Motor Vehicle Rule-126?

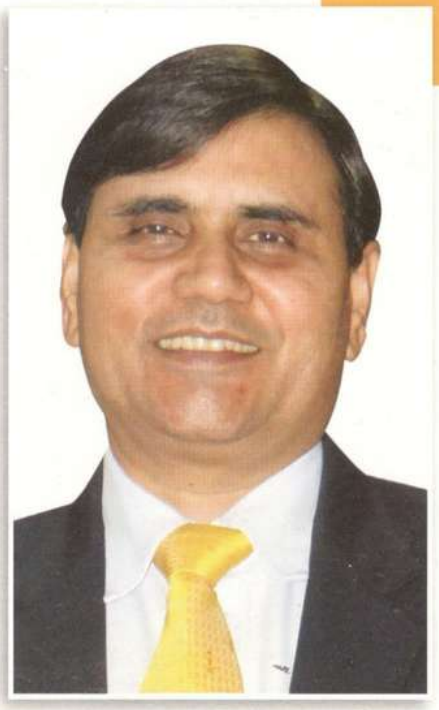
Central Motor Vehicle Rule (CMVR) mandates the compliance testing of all components which in some way or the other are relevant for the safety of the passengers. Until and unless, head unit, multimedia and vehicle tracking device fall under this category, these components are unlikely to come under the list of tests which are mandatory under CMVR. But with the increase of electronics products, sensors and ECUs in the automobiles which utilize radio frequencies, there is an ever-increasing requirement for such products to comply with existing automotive EMC test standards. These interferences can sometime lead to the malfunction of some critical electronic functions leading to the safety concerns.

Some emerging technologies like in-car connectivity and V2X communications are slowly but steadily entering into the Indian automotive space. How do you think the local R&D and testing infrastructure would provide assistance for the rapid adoption of such technologies in the Indian automotive space?

We plan our R&D & testing infrastructure well in advance after considering the latest & emerging technologies. Every year we keep on adding test facilities in our labs depending on the latest requirements in the automotive industry. Technologies such as in-car connectivity and especially V2X communications need to overcome the privacy & safety concerns before being deployed in India. I am sure that before deployment of such technologies, ICAT would be well equipped to cater to the testing requirements related to these technologies.

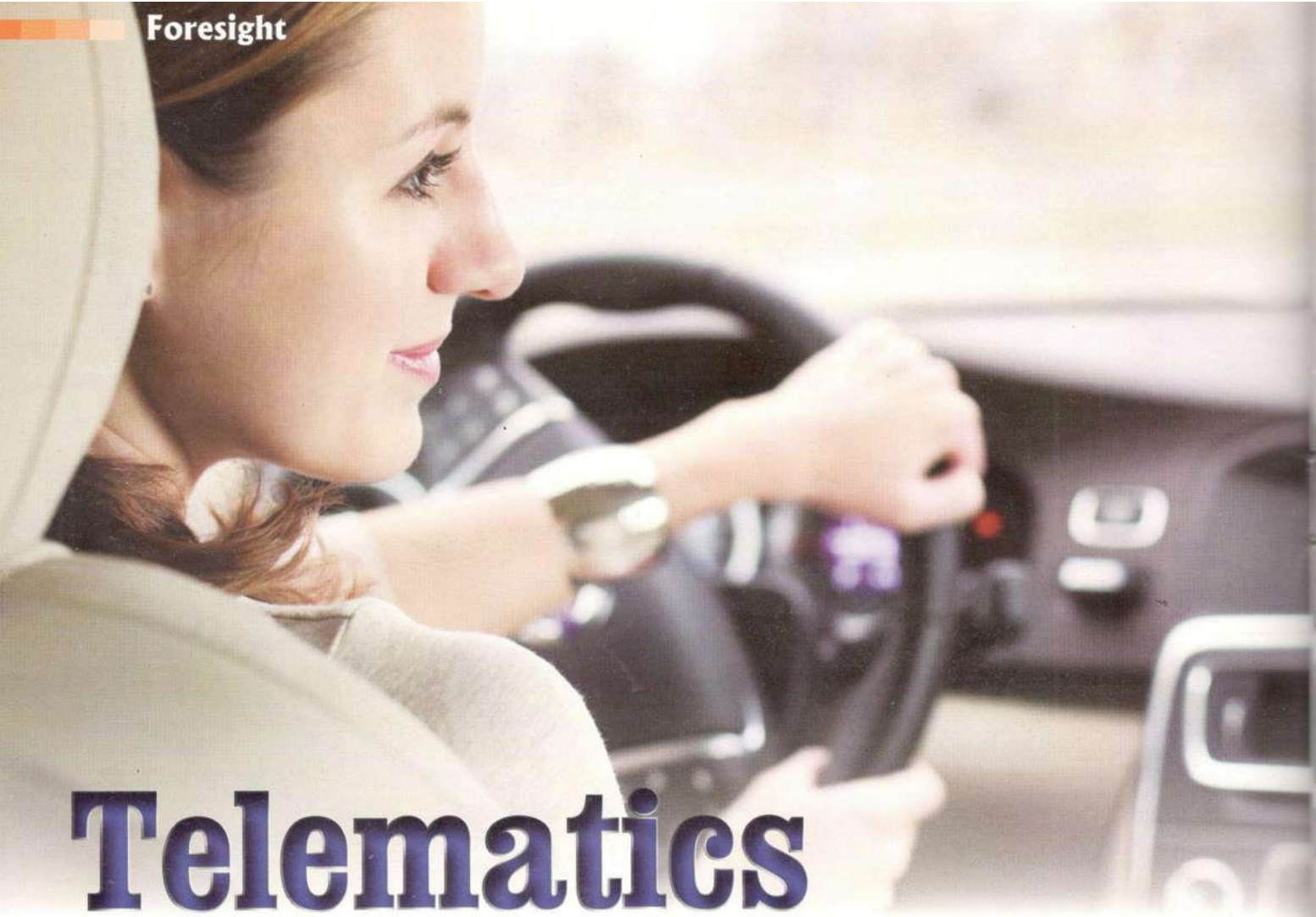
How do you see the future of Indian automotive industry shaping up in days to come?

The Indian automotive industry is witnessing a phase of rapid transformation and growth. The Indian automobile industry has emerged as the seventh largest in the world and the auto components industry is gearing up to compliment the vehicle industry's growth. In the coming decade, the main focus would be on enhancing efficiency and productivity and on innovation, both process and product, driven by changing customer demands. Price sensitivity of the Indian consumer, cost optimization needs of manufacturers and increasing focus on environmental concerns will drive critical changes in the market. ICAT is geared up to support the Indian automotive Industry and is expanding its test facilities as well as constantly innovating & experimenting to face all the challenges that come our way.



Dinesh Tyagi
Director
International Centre for Automotive Technology (iCAT)
Manesar, NCR of Delhi

Shri Tyagi holds a Bachelor of Engineering degree from BITS, Pilani of 1983 batch , has over 28 years of experience in the Automotive industry and has worked with organizations like DCM Toyota, Daewoo Motors, Piaggio 2W project, Rico Auto, General Motors India and is currently having dual responsibilities as Director -ICAT and Director (Technical), NATRIP. In last five years of his tenure, ICAT, Manesar has transformed in to a highly process oriented and customer focused organization.



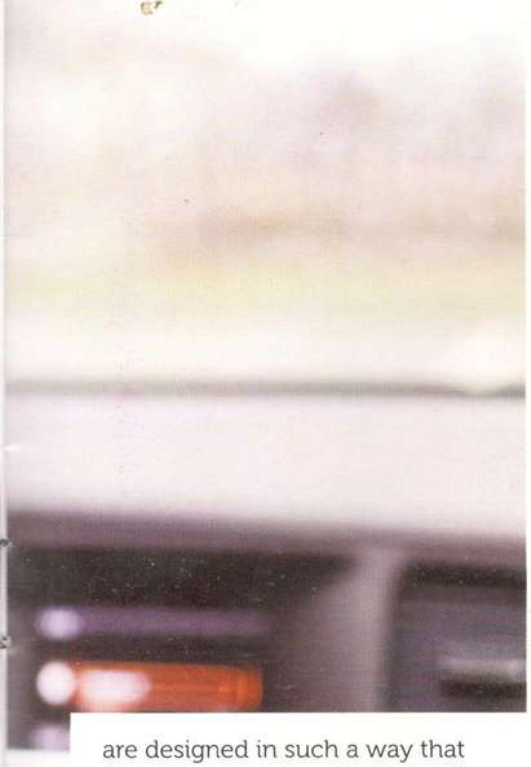
Telematics

Redefining Automotive Industry

Telematics diligence is one of the highest emerging sectors in the world and progresses in mobile communication industry have made it possible to detect and determine any variable in real-time. The industry has undergone a paradigm shift especially when we see the rising number of accidents and thefts in automobile segment. Indian telematics market is gaining momentum and proposes elevated expansion opportunities to the merchants and market vendor. Automobile industry is implanting more and more telematics in the vehicles to monitor the performance and to detect any flaws in the vehicles, simultaneously meeting the demands of users for wireless connectivity. According to iSuppli, BRIC region has the fastest growing auto industry when compared to the western countries and the percentages of vehicles embedded with telematics technology are expected to reach 46% globally by the end of 2018, yet the telematics development is still at a nascent stage in the BRIC economies.

India has a huge growth potential in the auto industry considering the rising sale of vehicles, GLONASS deal between Indian and Russia in 2010 also projects the future expansion and deployment of OEM embedded telematics. Transportation is the backbone for fast moving lifestyle of the present generation; people are heavily dependent on better transit facilities and always strive for new innovations in the auto sector. Telematics is improving the quality of lifestyle by adding functionality and value to automotive, tracking and transport solutions.

India being a vast nation, the adoption of M2M technology in the telematics segment has a massive potential and Machine-to-Machine (M2M) resolution is the elucidation to make these things possible and affordable. M2M devices



are designed in such a way that it could be incorporated into all transportation segments like cars, trucks, aircraft, trains, trailers, ships and containers. GNSS, Short Range, 2G, 3G and even 4G communication modules etc are the technologies that facilitate M2M communication; this would lead to enhanced quality of life in the developing world. There are several telematics devices that are the part of the transportation segment like navigation, stolen vehicle recovery, infotainment systems, electronic toll systems and vehicle diagnostics. This would help in getting real-time update, vehicle information, toll, parking and other relevant information.

M2M is also gaining impetus in various subsidiary industries like automobile leasing business, fleet management and related sectors. The rising demands of telematics embedded vehicles are expected to drive down the prices of devices and make it affordable for the companies to incorporate these devices. However, the lack of awareness and cost sensitivity could pose a challenge in this sector.

Globally, automobile industry is broadly working on the consumption of M2M technologies. Deployment of M2M telematics applications in automotive industry can help to decrease the number of road accidents and damages. The focus of telematics industry in deploying similar products will lead the automotive sector to increase the digitization in vehicles. This initiative of telematics industry will bring the resolution in automotive sector and commence the system of intelligent traffic in the developing countries like India and would also help in live traffic updated, real time positioning, tracking, parking management and also reduce the road accidents. The economically and technologically far most superior nations like USA, Japan and Germany have already implemented this technology and India is on the verge to largely deploy this expertise in its automotive industry.

With modern cars coming up with integrated computer system and other electronic gadgets which help in the essential controls on vehicle, M2M modules today provide vehicles with fully loaded sensor technology which gives all the information about the performance on engine, temperature, fuel, breaks, etc. M2M data modules are extremely sophisticated and come with an array of features and capabilities such as onboard Global Navigation Satellite System (GNSS) technology, flexible land grid array surface mounting, embedded M2M optimized smart cards (like phone SIMs) known as MIMs or M2M identification modules, and embedded Java, a significant facilitating technology to step up the Internet of Things (IoT).

Despite of certain challenges like awareness and adoption of M2M technology, Asia and in particular India has marvelous break in the Telematics space. India as a country faces issues regarding consumer awareness. Most of the high-end consumers are not aware how telematics can make their life simple and how full utilization would reap benefits for them. This is one of the greatest challenges, which India has to conquer to attain absolute utilization of immense market opportunities.

Ashish Gulati
Country Manager-India
Telit Wireless Solutions

Ashish has rich sales & marketing experience of more than 15 years in the semiconductor industry and has been actively involved in M2M market for the past 6 years handling wireless communication products. He has been instrumental for developing some of the key accounts in M2M during his tenure so far and has been the active member of this fast emerging M2M industry in India.

Poised for a Revolution

Gearing up for unprecedented insights into whereabouts of your assets

Renowned security expert Bruce Schneier once quoted, "If you think technology can solve your security problems, then you don't understand the problems and you don't understand the technology". What entails security, has changed over the years based on the perceived risk. However another aspect of it is ensuring operational efficiency. Not only do I want to know my valuable assets (equipment, vehicles, goods) are secure at all times, I also need to know where they are, what state they are in and who is in charge of it at the moment. So the problem has evolved, now boasting multiple dimensions to it.

With the economic growth and expansion India is witnessing, all sectors are looking to derive maximum leverage from their operations and streamline it. Apart from transportation and logistics which tend to be the obvious areas where GPS/RFID technologies would apply however several other sectors are discovering their use as beneficial to their business.

Sectors like large construction sites are looking to determine most use of their trucks and equipment in operation. Knowing number of trips my truck has completed in a given day against the tonnage it has carried and comparing that to other trucks in my fleet is an insight that every stakeholder would like to have. Traditional methods of monitoring high risk assets with help of security personnel is now being helped by GPS trackers that provides for a single screen view of possible un-monitored and vulnerable areas on any given day.

With the availability of so many options and a known technology the challenge then is how to apply this technology to solve the problem you are faced with? This is where understanding the problem as well as the technology becomes critical. Ultimately these technologies help you measure something that you hope will bring value to the organization. As Seth Godin said "Don't measure anything unless the data helps you make a better decision or change your actions." Figuring out what to measure is then the key to how technology gets applied.

In case of vehicle tracking for example, if I am transporting something I need to know location at all times however in case of heavy earth moving equipment knowing how long it has been running is more critical than where it has been. Time sensitive deliveries involving perishable items (like dairy, mid-day meals) are moved in refrigerated containers. Maintaining the cold chain is critical in such a case. An immediate alert when temperature exceeds a certain threshold or if a door is left open for longer than prescribed time limit provides actionable information back to control room that can take corrective action.

Data collected through GPS and sensors however tell you only part of the story. In order to help improve optimize delivery timings and improve overall operational efficiency real time input is required by personnel on the ground. Ability to report unexpected delays, know how long it took to load or unload goods, get an acceptance of delivery from the receiver or ability to message back to the stakeholder are some examples where an on board interface mounted on the vehicle dashboard will come into play. Integrated with GPS these interactive interfaces will provide some valuable information to the organization on how their fleet is operating. In addition not only will they help collect data they will also serve as a helpful guide to the drivers and operators of the fleet. From ability to seek help during emergency to providing navigational help will become integral part of its function.

With the ever present security concerns, yet another aspect that would need to be tied into a compelling vehicle tracking solution is the aspect of identity management. Who are currently responsible for my goods, is as important as where and what state they are in. From warehouse to the door-step, from mined location to processing unit, from batching plant to construction site transported goods may change hands several times. Ability to seek and verify identity with the help of RFID or biometric solution can help ensure goods are in trusted hands. It also helps discourage using substitutes or incorrect reporting.

A basic GPS system alone cannot meet all the above requirements. With the need to get as granular as one can in understanding the weak links in a supply chain, use of sensor, identity verification methods, interactivity in real time has gained increasing significance and will play a critical role in transport logistics in India. For an IT solution provider enabling to collect this information in a cohesive manner and storing it is just the first step.

From sensors monitoring temperature, pressure, fuel, opening and closing of doors and lids, live visuals to identify devices based on RFID and biometrics to live interactive data combined with your traditional GPS parameters all ends up generating huge amount of data. This machine generated and machine analyzed data also categorized under the broad term called Internet of Things (IoT) will demand rules that help slice and dice the received information and come up to some meaningful conclusion for the stakeholder. Moreover interfaces built for smartphone and tablet will be crucial in presenting this intelligence so that it is available, accessible and actionable to the interested stakeholder when needed.

No single out of the box solution will apply in this case. Vendors would have to provide for custom solutions that addresses unique needs of each client. One of the head winds IT vendors would likely face is dealing with existing broken or partly implemented solutions that were put in place early on when someone told them "Trust me". That trust would have to be regained with a compelling solution that includes seamless integration with their existing business processes and systems.

Western markets have matured up to these solutions over the years. However its only now with increase in perceived security risk, corporates looking to reach out to newer markets, growth in e-commerce, improving internet connectivity, growingcontract workforce that have come together to form a perfect storm which looks to change the security and asset tracking landscape in India. This would be true with markets in East Asia as well.

To support this growth, related technology needs to be poised to measure parameters at the right time and right place, monitor precisely, and ultimately help monetize it for the organization.

Rahul Joshi
Managing Partner
Synthesys Technologies

Rahul works on building hardware and software solutions in the asset tracking and security space and has been in the business of providing technology solutions for more than 15 years. He holds a Masters degree in Industrial engineering and Bachelor's in Mechanical engineering. An occasional blogger he also regularly shares his experiences and learned skills in project management, enterprise application and communication through workshops and seminars.

TELEMATICS INDIA 2014

INDIA'S LARGEST ANNUAL GATHERING OF VEHICLE TELEMATICS COMMUNITY

Nitin Gokarn, IAS, CEO and Project Director NATRiP speaking in the inaugural session

Telematics India 2014, the 4th national conference & exhibition was held on 20-21 August, 2014 at the WestIn Pune Koregaon Park, Pune. With a presence of over 400 delegates in two days, over 30 exhibition booths and endless networking opportunities, Telematics India 2014 marked the largest annual gathering of the vehicle telematics community in India.

The first day of the conference was dedicated to Automotive Telematics with specific sessions on Connected Vehicles, In-car Infotainment and Usage Based Insurance.

In the inaugural session, Shri Nitin R Gokarn, IAS CEO & Project Director of National Automotive Testing and R&D Infrastructure Project (NATRiP) put forth the national roadmap for the upgradation of R&D and testing facilities in the automotive sector with vehicle telematics being one of the upfront technologies. Then Dr. Praveen Gedam, IAS District Magistrate-Solapur, Govt. of Maharashtra presented a use-case wherein they administration have effectively used vehicle tracking & barcode solutions to curb illegal sand mining. Mr. Govindaraj Avasarala, Head-Enterprise Mobility from Vodafone shared his views on telematics and the role of telecom operators in driving new trends in this space.

Following this, there were speakers from Mahindra Rise, Volkswagen and Scania discussing the future of telematics in the automotive sector taking both passenger and commercial vehicle segment into consideration. They presented a comprehensive picture as to how the major automotive OEMs are working beyond their core competencies to make the best possible services available to their customers. They also shed light on some of the emerging applications, which they feel will soon become the most 'preferred' services amongst the customers.

Some of them were emergency

Norbert Schroeder, Volkswagen with Govindaraj Avasarala, Vodafone at the Vodafone exhibition booth

roadside assistance, remote vehicle diagnostics, and concierge services. The following session in the conference had speakers from Harman, Vodafone, Omnicomm and MapmyIndia who presented their roadmap for the next few years in the telematics market. A key point that came as an outcome of these sessions is to have an 'integrated' approach towards building telematics solutions since most of the players are working in silos.

The first day ended with an exclusive session Vehicle Telematics in Public Transport intended for 'experience sharing' by industry leaders and State Transport Undertakings (STUs) on the issues and challenges faced in inducing the use of vehicle telematics in the public transportation infrastructure. The session started with an insightful presentation by Shri Abhay Damle, IRS, Director, Central Institute of Road Transport. This was followed by a case-study on the usage of vehicle tracking in Bangalore Metropolitan Transport Corporation (BMTC) buses by Shri Kumar Pushkar, IFS, Director (IT). Besides this, the CEO of DeepBiz talked about their solutions in the public transport space. After the session, the first day of Telematics India 2014 finally ended with a networking cocktail.

The second day of Telematics India 2014 had sessions specific to the emerging Vehicle Tracking Systems (VTS) solutions in the commercial vehicle segment. The sessions included speakers from the device manufacturers and IT solution providers such as Pointer India, Infinium, InnoVita, GoodsMover etc. One of the key concerns that was found common in almost all the sessions was 'Driver Behavior Management'. There was a stress upon the usage of telematics to analyze and monitor the driving habits & behavior and also to impart in-cab coaching. Usage Based Insurance (UBI) was low on the agenda, but some experts pointed out that it could be 'game-changer' for the motor insurance industry. It was also realized that there is a need to have a body responsible for standards for VTS devices and telematics data.

The post-lunch session of second day, namely, 'Vehicle Telematics Best Practices' presented some of the successful case studies from the user perspective. The session included speakers from PSUs who talked about the benefits of VTS devices in their operations.

The conferences ended up with a Vote of Thanks to all the partners, sponsors and exhibitors of Telematics India 2014.

Delegate Profile

About 400 delegates attended the conference which includes senior and mid-level officials from PSUs, Automotive OEMs, VTS device vendors, Tier-1 companies, automotive electronics & multimedia and many more.

Speakers Profile

Telematics India 2014 had high level of speakers from both industry and government. As a potential user, eminent speakers from PSUs indicated the requirements in various governance issues. On the other hand, speakers from industry spoke about their products and solutions and their utility in various segments.

Audi of America gets a GREEN signal to test autonomous driving in California

Source: Audi of America

Audi becomes the first company to receive an autonomous driving permit issued by California. In July, with Florida Gov. Rick Scott, Audi was the first automaker to demonstrate the capability of its automated driving technologies on a Tampa expressway newly designated as an autonomous and connected car test bed. In addition to this, the California Department of Motor Vehicles has made official its new regulations according to which, a surety bond coverage of at least $5 million for each vehicle covered by a license. Audi has conducted research over tens of thousands of miles in Europe and various U.S. states, where such testing is permitted. The research is aimed at preparing a highly automated Piloted driving system for freeway traffic conditions. Audi envisions this technology could be ready for consumer introduction within five years.

Tesla over-the-air software update brings traffic avoidance features and remote start


Source: Tesla

Tesla has released details about new software being delivered to Model S customers through an over-the-air update. This is the latest in a series of software updates issued since the company launched its Model S in 2012, enabling new features such as hill start assist, smart suspension controls, and energy saving sleep mode. The Software v6.0 update introduces traffic-based navigation, provides an in-car view of daily schedules, enables location-based air suspension settings, and allows owners to name their Model S and start it remotely using their mobile phone.

With each update, Model S becomes more attuned and responsive to its owner's needs without requiring excessive user input.

Vodafone SIM cards in BMW's connected vehicles fall 2015

The new 2015 BMW vehicles in the New Zealand market will be fitted with a Vodafone Global SIM that connects BMW to its vehicle fleet. The SIM, embedded in the vehicle during manufacture, has a lifespan of more than ten years. It also has special protection against corrosion and was specifically designed for production line manufacturing operations. The SIM allows BMW to offer its online ConnectedDrive services and apps including automatic emergency call in the case of an accident, with the transmission of important information to a dedicated emergency response centre. Vodafone will also offer a smartphone app allowing remote vehicle functionality, including features such as remote locking and unlocking, remote ventilation control and vehicle locator.

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S 101 Ruggedized IP67 Enclosure U 101 V1

Parameters	Description
GSM Module	Quad Band GSM, GPRS: class 10 / 12
GPS Module	66 acquisition-/ 22 tracking channels, Ultra high tracking/navigation sensitivity: -165dBm1
Antennas	GSM-GPS Internal Antenna
Communication Interface	TCP/IP on GPRS.
Record Storage/Buffer	5000 Tracking Records.
Ports/Interface	1-USB Device type, 1 Analog I/O and 2 Digital I/O, 1 Ignition ,1 Voice channel (optional)
Speed Sensor	GPS(default)
Motion Sensor	NA
LED Indication	Processing, GSM, GPS, USB Detection
Connectors	6 Pin power mate connector
Power Supply	Wide DC input voltage range (9V - 32V),
Internal Battery	1500mah, 5 to 8 Hr backup,
Enclosure	ABS Plastic Casing IP67
Temperature	Operating: -10°C to +55°C Storage: -10°C to +85°C
Dimension (mm x mm x mm)	98L x 73.1 W x 25 H in mm
Weight	160 grams

Parameters	Description
GSM Module	Quad Band GSM, GPRS: class 10 / 12
GPS Module	66 acquisition-/ 22 tracking channels, Ultra high tracking/navigation sensitivity: -165dBm1
Antennas	GSM-GPS Internal Antenna
Communication Interface	TCP/IP on GPRS.
Record Storage/Buffer	20000 Tracking Records.
Ports/Interface	1-USB Device type, 1 Analog I/O and 2 Digital I/O 1 Ignition, 1 Voice Channel, Serial Port
Speed Sensor	Real time(optional), GPS(default)
Motion Sensor	Accelerometer
LED Indication	Processing, GSM, GPS, USB Detection
Connectors	8 Pin power mate connector
Power Supply	Wide DC input voltage range (9V - 32V),
Internal Battery	1500mah, 5 to 8 Hr backup,
Enclosure	ABS Plastic Casing IP67
Temperature	Operating: -10°C to +55°C Storage: -10°C to +85°C
Dimension (mm x mm x mm)	115 L x 80 W x 25 H in mm
Weight	165 grams

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Note: We pursue a policy of continuous research product development. Specifications & Features are subjected to change without notice

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Uber expanded its UberX Car-for-Hire services in Chennai, Mumbai and Pune

Uber has now expanded its UberX cab service in India to Chennai, Mumbai and Pune, after launching its cheaper UberX service in Delhi, Bangalore and Hyderabad. The US-based startup launched its India operations in August last year, starting with Bangalore. In July, it also re-launched its Windows Phone app for consumers.

Last year, the official Uber app for Windows Phone was pulled from the Windows Phone Store when users realized that the app offered access to Uber via its mobile site. Notably, Uber is yet to react to Reserve Bank of India's circular mandating two-step verification of all credit card transactions in the country.

The base fare of the UberX service starts from Rs. 50 in Chennai and Mumbai, and Rs. 30 in Pune. UberX would cost Chennai, Mumbai and Pune customers Rs. 14, Rs. 15 and Rs. 12 per KM. Pune appears to be the cheapest out of the three cities, with a Rs. 42 minimum fare, followed by Chennai (Rs. 64) and Mumbai (Rs. 65).

Baidu "The Chinese Google" and BMW to jointly work on driverless car projects

Source: Baidu

BMW has signed a 3-year contract with Baidu, the Chinese Internet giant, to collaborate on the self-driving car development. According to the contract, after the 3-year term, BMW will build a highly-automated self-driving car, which can run on China's public road. The reason why BMW selected Baidu as collaboration partner, is because Baidu has the map data and all related information service which BMW currently does not have. The BMW-Baidu project involves topics such as vehicle usage, driving strategy algorithm and high resolution 3D map, legislation and industry standards. Below is the BMW 3-Series Gran Turismo self-driving prototype. Prior to signing its research pact with BMW, Baidu revealed earlier this year that it was working on its own driverless car. The company is best known as China's largest search engine, but it has ambitions to use data analytics to create smarter hardware.

BYD G5 'internet connected compact car' launches in Beijing

BYD has launched its first internet connected compact sedan, the G5 in Beijing. The sedan comes with a built-in eight-inch tablet computer. This built-in tablet computer, dubbed CarPad, offers in-car WiFi, mobile wireless connections, and an app that functions as a key for the car. With its connectivity technology, the BYD G5 is able to take instructions from a smartphone through the BYD Bluetooth key app. BYD claims that it is even safer than an ordinary key as the Bluetooth key enables only one smartphone as a key and requires a user generated pass code to unlock the vehicle. One of BYD's software partners, Tencent's QQ Music has created a specialized "integrated QQ music app" for the G5. On top of a special QQ music app, BYD claims that the non-removable CarPad is the first built-in Android tablet that can freely download and install apps as well as surf the internet.

Source: BYD

Pioneer Japan sells its DJ equipment business to concentrate on connected car solutions

Japanese Pioneer says it is to sell its disc-jockeying (DJ) audio equipment unit to private equity firm KKR & Co LP for around 59 billion yen ($550 million), as it outlined a growth strategy centered on its automotive electronics business. The company is now concentrating on its automotive electronics business as its best bet for growth, seeing potential for expansion in emerging markets and the trend *toward increasingly connected* cars.

Pioneer will seek to further enhance its corporate value as the world's number-one independent car electronics manufacturer by fundamentally transforming its businesses, including (i) concentrating its management resources on the core Car Electronics business and (ii) utilizing external capital in other businesses.

First ever CarPlay equipped Ferrari FF hits the roads of Italy

The first Ferrari FF equipped with the Apple CarPlay system has been delivered to an Italian client. Deliveries of the Ferraris sporting the innovative integrated Apple technology commenced over the last few days and the cars are now arriving at their final destinations and will hit the road all over the world. In Europe, they are bound for Germany, Great Britain, France and Switzerland while others have been dispatched to the United States and Japan.

Apple CarPlay is also available for the Ferrari California T. for those of us with smaller budgets, a number of car manufacturers plan to integrate Apple CarPlay in future models. These companies include Honda, Hyundai, Jaguar, Mercedes-Benz, and Volvo – some of which plan to introduce such vehicles this year.

Maruti Suzuki will feature SmartPlay infotainment system in 2014 Ciaz

The new Maruti Suzuki Ciaz model will be equipped with a SmartPlay infotainment system. Prior to its official release, the company has already started uploading some images of its much-awaited 2014 Ciaz on the website. The new model is scheduled for release in October 2014. Besides the SmartPlay infotainment system, Ciaz will come with features like smartphone integration, climate control, rear AC vents, keyless entry, projector beam headlamps, steering-mounted audio controls and push-button start.

Source: Maruti Suzuki

The price details are limited for now, but chances sources suggest that Ciaz will be priced in the 7.2 lac-10.5 lac brackets.

Avis Car Rental and Budget Car Rental Partners with TCS on automotive apps

Tata Consultancy Services (TCS) announced significant enhancements to a series of mobile applications developed on behalf of Avis Car Rental and Budget Car Rental. The upgraded mobile applications provide customers of the car rental companies with innovative new functionality, including synchronized pricing across channels (e.g., mobile, social, office location) to reflect customized preferences and insurance options, and more available ancillary products for in-app selection.

Hitachi Data Systems and Clarion to develop data-driven connected cars solutions

Hitachi partner with Clarion, to jointly develop new solutions for deployment in the next generation of Clarion in-vehicle connectivity products. Together, they will further explore this data-driven side of in-vehicle connectivity to bring connected services to existing cars, trucks and fleets. They are looking at ways to innovate by correlating a variety of data streams to bring unique insights to the entire ecosystem. With enhanced infotainment and telematics services, drivers will be able to safely access new in-car services, such as weather and GPS data, to enable continued mobile connectivity even as models evolve. Ultimately these new M2M technologies and capabilities will enable connected cars to interact with their environments, sharing important information with and from connected cities.

AT&T launches GSMA compliant multi-profile SIM tapping M2M and Connected Cars

AT&T has introduced a global SIM card that meets the new GSMA specifications for the use of multiple operator profiles on a single SIM. The GSMA's Embedded SIM (or eUICC) delivers a technical specification to enable the remote provisioning and management of Embedded SIMs. It also allows the "over the air" provisioning of an initial operator subscription and the subsequent change of subscription from one operator to another.
AT&T has been one of the members of the GSMA'a Embedded SIM project including other members like NTT Docomo, China Unicom, Deutsche Telekom, Gemalto, Giesecke & Devrient, Morpho, NTT DOCOMO, Oberthur, Orange, Telecom Italia, Telefonica, Telenor and Vodafone.

Tata Motors and Microlise join forces to bring commercial fleet telematics solutions

Source: Microlise

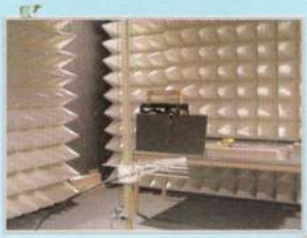
Microlise Indian Delegation: *Matt Hague, Stephen Watson, Simon Bewick, Trevor McGahan and Nadeem Raza (From left)*

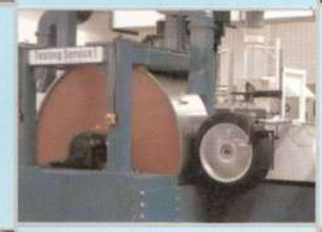
Tata Motors has signed a multi-million pound 5(FIVE) year contract with Microlise to integrate fleet telematics solutions into its entire range of commercial vehicles. Microlise will supply the company with in-vehicle hardware and a web-based portal to allow Tata Motors customers to manage their transport fleets efficiently and safely. Micolise's products enable customers to reduce operating costs and environmental impact by maximizing the efficiency of their transportation. In addition, the partnership with Microlise will also further develop Tata Motors' FleetMan system, addressing future needs of the logistics and transportation industry.
Some of the advanced Fleet Telematics applications and services planned for introduction by the partnership include:
a) Emergency SOS, b) Trip Management, c) Driving Assessment and d) Vehicle Health Management.

UMs 'Mobility Transformation Centre' connected vehicle initiative announces new R&D partners

A diverse group of companies (both from automotive and non-automotive) have joined the University of Michigan's Mobility Transformation Center, a major public-private initiative that aims to revolutionize the connected vehicle industry. With the help of the Michigan Economic Development Corporation, MTC is building on this two-year deployment of approximately 3,000 vehicles to create the world's largest V2V deployment of 9,000 vehicles in Ann Arbor.
Spanning 32 acres on U-M's North Campus Research Complex, the Mobility Transformation Facility is a off-roadway cityscape with the broad range of complexities that vehicles encounter in urban and suburban environments. The center is working with the Michigan Department of Transportation and industrial partners to provide sufficient V2I infrastructure in Southeast Michigan to support an unprecedented deployment of 20,000 connected vehicles. The vehicles will be supported by a connected road network and developmental set of highway corridors.

Source: UMTRI









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The Automotive Research Association of India

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Skoda reveals new Fabia with MirrorLink tech

Skoda revealed the interiors of the new hatchback Fabia with the MirrorLink Technology in its interiors. The hatch features touch screen MirrorLink powered infotainment system. The system allows smartphone to link with the vehicle infotainment system allowing them to use certain apps on the screen just like you use them on your mobile.

2015 Fabia also features SmartGate technology, with the help of this tech; a user can get vehicle's essential data on his smartphone apps, like, fuel consumption, average speed, journey costs, etc for analysis and storage. The data is transmitted wirelessly through WiFi technology.

Source: Skoda

Apart from this everything is in tandem with Skoda territory – simple and elegant cabin, central console reminiscent of Octavia while it gets new steering wheel, larger dials; the dash also features a dual tone finish.

Daimler's self-driving truck may hit the roads in 2025

Source: Daimler

Daimler AG has unveiled the concept of its self-driving truck 'Mercedes-Benz Future Truck 2025 at the 2014 International Commercial Vehicle Show(IAA) that is capable operating without assistance from drivers on highways. This truck is equipped with radar sensors and camera technology is built on Highway Pilot system that resembles the autopilot system on an aircraft.

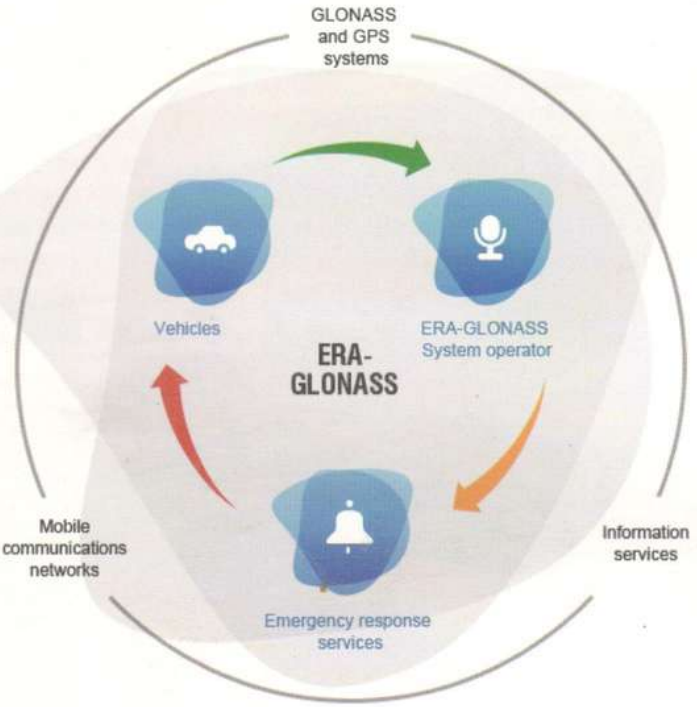
The Mercedes-Benz Future Truck 2025 is not, for instance, part of a platoon. It does not need to be daisy-chained to other vehicles either. Radar sensors and camera technology enable the Future Truck to drive autonomously, independently of other vehicles or central control stations. Its technical features are thus crucial in giving the Mercedes-Benz Future Truck 2025 its outstanding capabilities as an autonomous vehicle. For Mercedes-Benz the culmination of this is the highly intelligent "Highway Pilot" system, which resembles the autopilot on an aircraft. Networking with other trucks or passenger cars extends its abilities further, but is not necessary for autonomous driving. A stereo camera installed above the instrument support behind the windscreen keeps the area ahead of the vehicle in view. This is currently the location of a mono-camera if optional Lane Keeping Assist is ordered. The range of the stereo camera is 100 m, and it scans an area of 45 degrees horizontally and 27 degrees vertically.

The radar sensor modules are arranged in such a way that they cover the area parallel to the truck over the entire length of a tractor/trailer combination or drawbar combination. In addition this strip is extended forwards to two metres in front of the truck. Blind Spot Assist warns the truck driver about other road users not only when turning; it also warns about imminent collisions with stationary obstacles – for example signs or lamps – and serves as an assistance system when changing lane.

The "Highway Pilot" is ideally partnered with V2V and V2I networking. Every vehicle equipped with this in the near future will transmit continuous information to its surroundings. This includes vehicle position and model, dimensions, direction of travel and speed, any acceleration and braking maneuvers and the bend radii negotiated.

Daimler said the Future Truck 2025 should be on roads in 10 years time.

Cesar Satellite surpasses ERA GLONASS (Russian eCall) crash tests



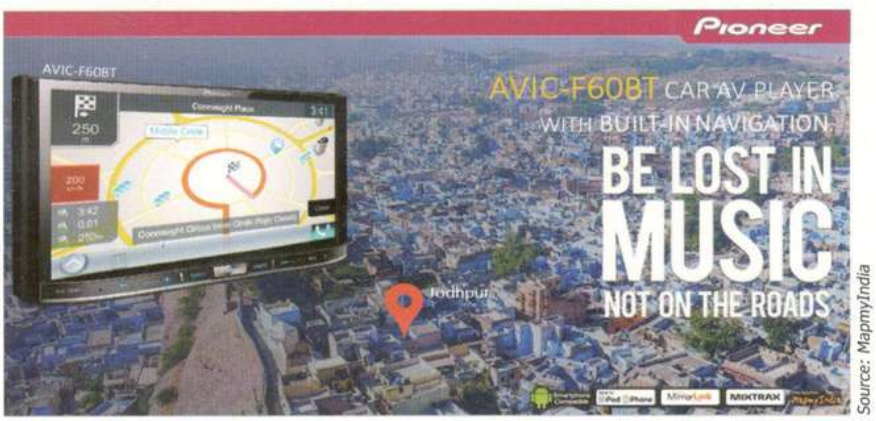
Source: VimpelCom

Cesar satellite performed the first crash test of a vehicle equipped with the Russian eCall accident emergency response system (ERA-GLONASS) using its own terminals in the Scientific Research Automobile & Automotive Engine Institute (NAMI). Cesar Satellite Terminals harmonized technical requirements and standards applicable to the systems "ERA-GLONASS" and eCall, which was practically demonstrated at the 10th European Congress on ITS in Helsinki in June this year

The purpose of the test is to develop methods of certification tests for compliance with the technical regulations of the Customs Union "On the safety of wheeled vehicles" under the automatic triggering of terminals "ERA-GLONASS" in a frontal collision. Upon finding satisfactory results, the company will start mass installation of the terminals for cars.

MapmyIndia's navigation to feature in Pioneer India's new in-car entertainment system

Pioneer's new in-car entertainment system AVIC-F60BT will feature state-of-the-art MapmyIndia navigation system. MapmyIndia has already collaborated with some leading car manufacturers across India to offer MapmyIndia navigation to their customers. As part of the offering car companies have introduced MapmyIndia navigation in their top-selling car models. The Hybrid Navigation solution – CHIPS (Common Hardware for Integrated Positioning System), which is powered by MapmyIndia Maps, is an integral part of this new premium offering. The custom-made UI ensures that travelers are able to seamlessly switch from in-car entertainment to MapmyIndia's navigation featuring – house address level data, 3-D & 2D landmarks, junction view (images of major junctions), advance lane guidance and much more.



Source: MapmyIndia

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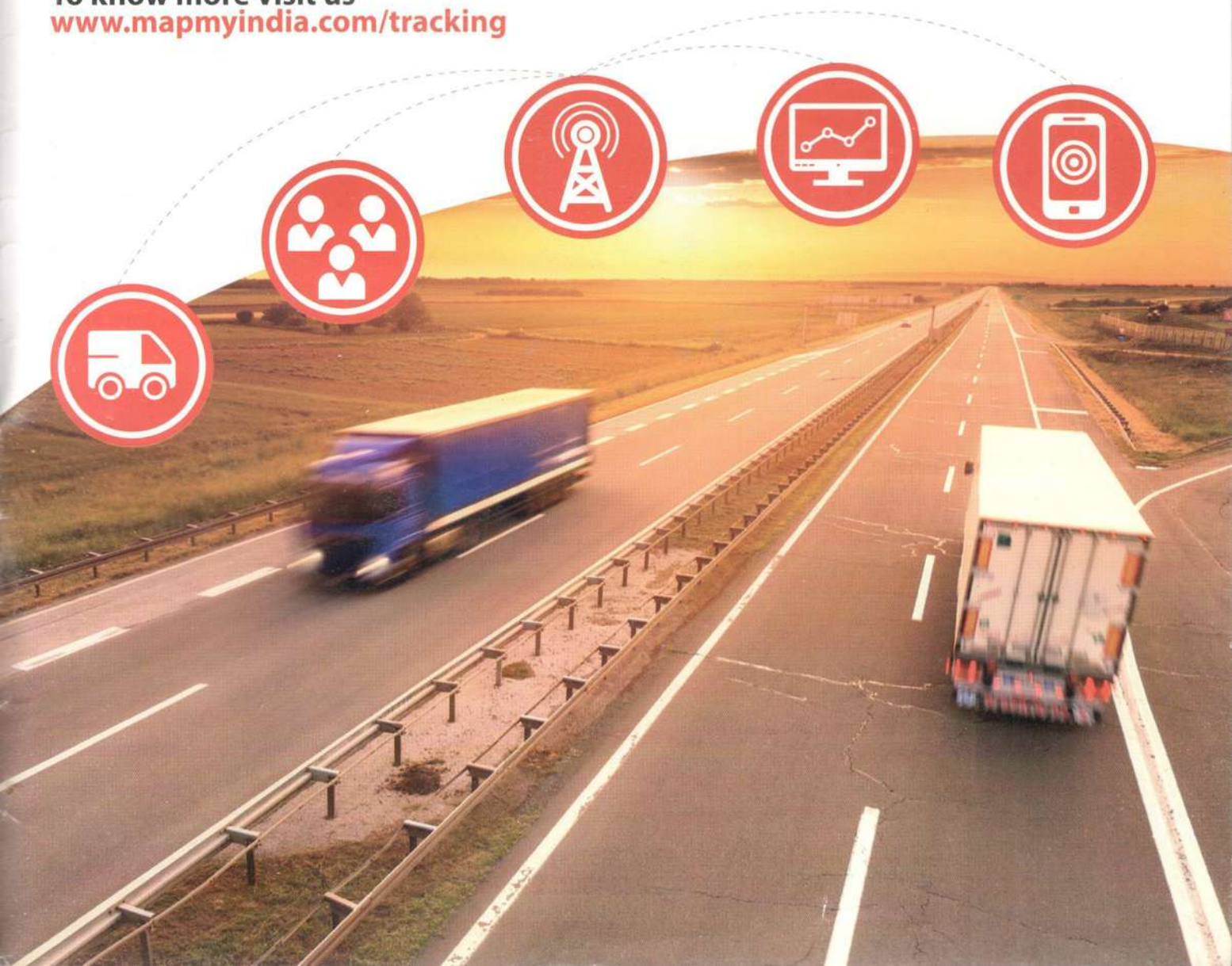

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