OEMs Gear Up for U.S. Telematics Market

Next Generation Telematics Protocol Makes Headway

For the last ten years or so, General Motors, Mercedes and BMW have had the U.S. telematics market to themselves. Now every other major carmaker in the U.S. wants in on telematics, and everyone except for Ford and Hyundai has been out shopping for a telematics service provider. All major carmakers selling vehicles in the U.S. are expected to be up and running with telematics services by 2012 or sooner.

First launched on 1997 model year Cadillacs, OnStar is today installed in 95% of GM models. With more than four million subscribers, it is by far the world's largest telematics operation. Mercedes and BMW introduced OnStar-like services with automatic collision notification in the U.S. in 2000.

In November 2009, Ford began offering telematics services as part of its Ford Sync offering. Chrysler has a long-term agreement with Hughes Telematics to bring telematics services to 100% of Chrysler models. Last month, Toyota announced a deal with ATX, a division of Cross Country Automotive Services, to provide services through Lexus Enform and Safety Connect for Toyota models, beginning in late summer 2009.

Rather than contract with a service provider, Hyundai will use the Microsoft Auto software platform, as Ford does, to deliver infotainment solutions including telematics. Hyundai's product debuts in 2010.

OnStar Is Looking Beyond GM

In the past, OnStar provided telematics services to other carmakers including Audi, Volkswagen, Suzuki, Isuzu and Acura. But with OnStar's transition from analog to digital technology in 2008 and its decision three years ago to make OnStar exclusively a differentiator for GM vehicles, those business relationships went away. Since carmakers are demonstrating a new interest in offering telematics services, GM decided some months ago to again market OnStar to other carmakers. "We don't have to make a big investment to provide services to other carmakers; our capabilities already exist," noted Nick Pudar, OnStar vice president for planning and business development. "We have been going back to folks and saying 'we have the know-how and the experience; if you are interested...

### Telematics Service Provider Status in the U.S.

<table>
<thead>
<tr>
<th>Telematics Service Provider</th>
<th>Status</th>
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<tbody>
<tr>
<td>General Motors</td>
<td>OnStar, a GM subsidiary operating since 1995</td>
</tr>
<tr>
<td>Toyota Motor USA</td>
<td>ATX will be the provider to Lexus and Toyota</td>
</tr>
<tr>
<td>Ford Motor</td>
<td>Provides telematics services based on the Microsoft Auto software platform (Ford Sync)</td>
</tr>
<tr>
<td>Chrysler</td>
<td>Hughes Telematics is scheduled to start in June 2009</td>
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<tr>
<td>American Honda</td>
<td>Will soon make a sourcing decision</td>
</tr>
<tr>
<td>Nissan North America</td>
<td>Will soon issue a request for proposals to telematics service providers</td>
</tr>
<tr>
<td>Hyundai Kia Automotive</td>
<td>Will provide Ford Sync-like services based on the Microsoft Auto platform starting in 2010</td>
</tr>
<tr>
<td>Volkswagen Group</td>
<td>In the market for a telematics service provider</td>
</tr>
<tr>
<td>BMW</td>
<td>Currently served by ATX; considering proposals from ATX, Connexis and WirelessCar for an NGTP compatible system</td>
</tr>
<tr>
<td>Mercedes</td>
<td>Currently served by ATX; Hughes Telematics begins service in November 2009</td>
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Aftermarket Connectivity Disconnect

Every year it gets harder and harder for mobile electronics companies serving the aftermarket with replacement parts and accessories to do what they do. "It's gotten almost impossible to replace some radios," said Joe Gross, OEM sales and design manager for Kicker Audio. A's electrical/electronics complexity grows, the aftermarket finds itself increasingly locked out of the vehicle.

"Coming from aftermarket roots and having worked in the installation bay, I understand their frustrations," noted Mr. Gross. "You've got heating and air conditioning controls all part of the radio controls. If you take this radio out you now lose multiple other features. An aftermarket head-unit sales are way down."

Data from the Consumer Electronics Association backs up Mr. Gross' observations. Unit demand for aftermarket head units in the U.S. declined by 23% in 2008 alone.

### U.S. Factory Sales of Aftermarket Head Units

<table>
<thead>
<tr>
<th>Units in millions</th>
<th>$ millions</th>
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<tbody>
<tr>
<td>2007</td>
<td>8.8</td>
</tr>
<tr>
<td>2008</td>
<td>6.8</td>
</tr>
<tr>
<td>2012</td>
<td>4.5</td>
</tr>
<tr>
<td>2007 to 2012 CAGR:</td>
<td>-12.6%</td>
</tr>
</tbody>
</table>

Data: Consumer Electronics Association

"If you are an aftermarket performance supplier and you don't have access to the requirements, the specifications, the bus systems, it could be extremely intimidating if not impossible for you to manufacture a performance upgrade product to sell," he cautioned.

Mr. Gross has been participating in the Automotive Electronics Connectivity

Turn to Aftermarket, page 2
AFTERMARKET...

Committee (A ECC), sponsored by SEMA (Specialty Equipment Market Association) and the Consumer Electronics Association. The A ECC so far has 60 members trying to address these integration and installation concerns. They hope to somehow get carmakers interested in open architectures and making their vehicles more accessory-friendly. The committee has no permanent members from the carmakers at this time.

The A ECC was organized by John Waraniak, SEMA's vice president for vehicle technology who brought SEMA's efforts together with the Consumer Electronics Association's connectivity committee. With 7,500 members, SEMA companies do a total of $42 billion worth of business annually, about one-third of which is electronics.

What’s in It for the Carmakers?

Mr. Waraniak would love to see the automotive industry adopt standards, including the equivalent of a USB connector. "Then you could put in any audio system you want," he said. "If you really want to innovate and develop new products fast, you have to have open standards. We did a study with the Center for Automotive Research. In one of the interviews with the OEMs, a chief electronics architecture engineer posed the question, 'Why would I want to open up our vehicle to the aftermarket?' We didn't answer that one, because one of the members of his staff answered it for us: 'Because we may not be able sell our vehicles'."

"The point is the consumer wants the innovation, and that is a differentiator to help sell your vehicle. If you become what we call accessory-friendly, you will sell more vehicles," declared Mr. Waraniak.

Perhaps the best example of an accessory-friendly vehicle, according to Mr. Waraniak, is the Scion from Toyota. "Five years ago, before the Scion first came to the States, SEMA worked with Toyota to get five Scions so we could develop accessories for those vehicles. It's what I call designing for customization—you try and move upstream [in the design process] as far as you can. We worked with Scion's chief engineer to help make the mechanical and electronic architecture more robust. When that vehicle was introduced we had 15 suppliers with accessories ready to go."

Many of those accessories, which can be installed by Scion dealers, are listed at www.optomizescion.com, which SEMA set up with Toyota. When it comes to infotainment system options, though, there isn't a great deal of choice. Scion's OEM supplier, Pioneer, lists a couple of tuners, a navigation unit and an audio amplifier on the site. And Alpine has a single mobile navigation unit.

Ted Lopez is an interface product manager for Scosche Industries, a company that makes installation hardware for aftermarket retailers and distributors. Mr. Lopez described how the aftermarket has been dealing with car lines that aren't accessory-friendly: "We invest hundreds of hours reverse engineering for each vehicle line, sometimes spending $100,000 to do it," he told us. "Several years ago to build an installation kit for a navigation radio we would simply have to locate the speed sensor wire, the reverse/park wire and the e-brake wire and tap into those. But now you have to simulate all these different actions in the car to make sure you identify each piece of code coming through the data bus."

When factory radios out of warranty fail, consumers can buy an OE replacement radio at the dealer for anywhere from $600 to $1,300. Or they can buy a radio in the aftermarket for $149, plus $140 to $200 for a Scosche interface box and another $49 for a Scosche trim kit to fit the replacement radio into the dash.

Dave Acton is also on the A ECC. Until 2004, Mr. Acton was a top electrical engineer at GM, where he last served as director of global telematics. While at GM he was one of the founders of the Automotive Multimedia Interface Collaboration, A M I-C, which at its peak involved almost all of the world's major carmakers. One key A M I-C objective was to develop specifications for a standard gateway through which suppliers could plug and play their products. But carmakers pulled out of the collaboration without reaching agreement, and A M I-C standards were never implemented.

Since Mr. Acton was also responsible for getting GM vehicles ready for OnStar, he can relate to both sides of the problem. "As an aftermarket supplier, if you don't get cooperation from a car company you must reverse engineer the vehicle, a task that is monumental because you have to handle all of the variations from vehicle to vehicle. I know that from when we had to update OnStar systems from analog to digital. That's one side of the question."

"On the other side is the car company asking, 'What's in it for me if I help you?' The only thing in it for them is protecting the vehicle. From a cost benefit standpoint, they can't make a business case out of providing access."

Mr. Acton, who recently left Connexis to start his own company, still wants to help. "I am going to do my part to get people like SAE and IEEE or whoever it takes to step up and facilitate this merger of consumer electronics and automotive requirements." He sees some scope for developing OBD II further to make that an interface point or for an automotive USB-type spec.

"Eventually consumers will demand access to the vehicle, and some carmaker will decide that it wants to be the game changer by offering that access. Then all the carmakers will do it," he predicted. Mr. Acton can be contacted by email at dacton@chartermi.net.

THE HANSEN REPORT
ON AUTOMOTIVE ELECTRONICS
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Telematics...

in moving in the telematics space, come talk to us. So far, a lot have.”

**Embedded vs. Portable Phones**

OnStar delivers its Automatic Crash Response by means of a cell phone embedded in the vehicle. Ford delivers its connected services, including 911 Assist, using the driver’s own portable phone that is wirelessly connected to the vehicle via Bluetooth.

In an OnStar television spot called “Flying Phone,” OnStar questions that approach by asking, “Are you counting on your cell phone to be your lifeline in a crash?” It then shows a vehicle in a slow-motion simulated crash during which the cell phone goes flying. The ad closes with the graphic, “OnStar A utomatic Crash Response.”

Before introducing 911 Assist, Ford seriously considered the probability of the driver’s phone not being available during a crash and concluded that its liability in that event was no worse than OnStar’s. Given the number of owners who never activate their OnStar service, or who fail to keep their subscriptions current, insiders estimate that perhaps 50% to 60% of OnStar-equipped vehicles could actually make the emergency call in the event of a serious accident. Theoretically, GM might be liable for not installing software that automatically calls 911 through its Bluetooth connection to the driver’s mobile phone. In this model year, GM is expected to have nearly one million vehicles on the road with Bluetooth connectivity.

**Ford Sync**

Telematics was a hot topic at the 2009 Consumer Electronics Show. Ford made a big splash with a multimedia-assisted keynote address by president and CEO Alan Mulally. M r. M ulally, along with several top Ford officials, used the big stage to introduce the newest Ford Sync features.

Starting with select 2010 model year vehicles due later this year, Ford will make traffic information, turn-by-turn directions and personal news updates available to Sync users for three years, for no more than the $395 one-time activation fee that most Sync users pay. On some upscale Ford vehicles where Sync is standard, there is no activation fee.

Late in 2008, Ford added 911 emergency calling and vehicle diagnostics features to the original Sync platform, which lets Ford drivers use voice commands to control their portable media players as well as make calls or text, hands free, using their own Bluetooth connected mobile phones. Once the activation fee is paid, these features are free for life, no subscription fee is required.

According to the carmaker, Sync-equipped Ford, Lincoln and Mercury vehicles sell off the lot nearly twice as fast as those without Sync. Ford expects to have one million Sync-activated vehicles on the road by the third quarter of 2009.

Using Microsoft software, Ford can seamlessly deliver services to its customers from a network of partners such as TelIme, a Microsoft company that provides off-board voice services; Inrix, which provides traffic, directions and maps; TeleNaV, a wireless navigation services provider; and Airbiquity, which developed data over voice technology.

**Hughes Telematics**

Hughes Telematics invested nearly $100 million to establish itself as a telematics service provider and has long-term agreements with Chrysler and Mercedes. Also in Las Vegas during CES, but at an offsite facility, Hughes demonstrated to several visiting carmakers an impressive array of features implemented on real vehicles, as well as what a working call center might look like and what the operators see when an automatic crash notification comes in.

According to Tom Taylor, a Hughes engineering vice president who ran the car demos, carmakers were most impressed with the fluidity of the speech recognition function and the ability of the device to read text messages aloud and let the driver text replies by speaking. The conversational voice search platform is from VoiceBox Technologies and the speech recognition engine is from Nuance. “In other systems, speech recognition is usually one of the biggest complaints—people get stuck in the menu and can’t get out,” noted M r. Taylor, whose engineers helped customize the way the speech system handles text messaging. M r. Taylor demonstrated concepts of how email messages or the driver’s calendar might be displayed, as well as various Wi-Fi and WiMAX applications.

The standard Hughes telematics control unit (TCU) going into future Chrysler and Mercedes vehicles can’t yet receive WiMAX, but it is equipped for 3G (CDMA and GSM) cellular, Wi-Fi and Bluetooth communications. The TCU has an ARM processor running Linux—because it is less expensive than Microsoft A uto—and sits on the vehicle’s CAN bus so it can drive the vehicle’s displays and speakers, and pick up signals from the vehicle’s microphone and sensors.

“The platform allows us to quickly develop applications and download them over the air, or even allow customers to pick an application through a Web portal and essentially drag and drop it onto their car,” noted Hughes Telematics CEO, Erik Goldman, who spoke to us at the Las Vegas demonstrations. “We see tremendous opportunities from the companies we are in discussion with for interesting apps that can be downloaded to the vehicle.”

Under the terms of its agreements with Chrysler and Mercedes, Hughes will subsidize the cost of each onboard telematics control unit. Starting in June 2009, Chrysler will install the units in new vehicles, reaching 100% of its models in three years. Similarly, starting in November 2009, Mercedes has agreed to install the unit in its new U.S. vehicles, reaching 100% in two years.

**Business Models Vary**

Hughes’ business model is a little different from the OnStar business model. OnStar, a GM subsidiary operating since 1995, provides free service to new car buyers for the first year. If at the end of the period the customer chooses not to continue the minimum safety and security package for $18.95 per month or $189 per year, the service is turned off.

The Hughes product is also built on a package of safety and security services, but if at the end of 12 months a customer doesn’t subscribe, the system is not turned off, unless the customer specifically requests that it be disabled.

continued on page 8
The Company Profile...

Xilinx

Headquarters: 2100 Logic Drive, San Jose, California 95124, USA; www.xilinx.com
FY 2008 Sales: $1,841 million
R&D: 19% of sales
Net Margin: 20.3%
Net Cash Provided by Operating Activities: $581 million
Employees: 3,500
Sales per Employee: $526,000
Working Capital: $526,000
Stockholders’ Equity: $1.475 billion as of December 27, 2008
Market Capitalization: $5.12 billion as of February 6, 2009

Automotive
FY 2008 Sales Estimate: $60 million (Hansen Report estimate)
Main Product: Field programmable gate arrays
Leading Applications: Infotainment, driver information, driver assistance
Leading Solutions: Image processing and recognition, video and graphics, vehicle networking and connectivity
The 2008 fiscal year ended March 29, 2008

Background

Xilinx was founded and incorporated in 1984 as a fabless manufacturer, outsourcing all aspects of chip production including wafer fabrication, sorting, assembly and test. Xilinx is a world leader in the design and development of programmable logic devices (PLDs). Also included in Xilinx’s portfolio are software design tools to program the PLDs, predefined system functions (IP cores), design services, customer training, field engineering and tech support.

The largest end market for Xilinx PLDs is the communications industry. Automotive accounts for just 3% of total sales today, according to our estimate, but the business has been growing by more than 20% per year since 2004, when Xilinx created a team to focus on the automotive market. Even with the drastic downturn automotive production has taken in the last several quarters, Xilinx expects automotive sales for its fiscal year ending March 31, 2009, will be flat or down just 5%. The company expects sales to rebound in fiscal 2010, aided by a number of new 2010 model year programs scheduled to launch this summer. Xilinx’s top automotive applications are infotainment, navigation and rear seat entertainment systems.

Xilinx’s automotive team is made up of automotive industry veterans, each with many years of OEM, tier-one or automotive semiconductor supplier experience. These applications experts work directly with customers in North America, Europe and Japan, supported by teams of field application engineers, quality specialists, sales engineers and manufacturer’s reps.

Harvey Steele is vice president of Xilinx’s Automotive, Consumer and ISM (Industrial Scientific and Medical) business. He is responsible for automotive strategy and directs marketing, product planning and the development of targeted design platforms. Mr. Steele has been involved in the auto industry for more than 25 years. Before coming to Xilinx he worked for On Semiconductor, Analog Devices, ST Microelectronics and Ford Electronics.

Kevin Tanaka, senior manager of worldwide automotive marketing and product planning, is responsible for leading the development of Xilinx’s automotive product line of FPGAs and CPLDs. Mr. Tanaka joined Xilinx in 2004 from NEC Electronics.

Global Market for FPGAs

The automotive market for FPGAs developed fastest in Europe; about 70% of what Xilinx sells to automotive customers ends up there. That percentage will...
change soon, as design activity has picked up elsewhere, especially in the U.S. and Japan. In Japan alone, the company is working on more than 50 projects involving FPGAs and CPLDs. Xilinx expects well over half of those projects will come to market in the coming years. Five years from now, Xilinx expects that European customers will account for half its automotive business, with U.S. and Asian customers accounting for the rest.

The Japanese automotive industry rarely makes significant purchases of technology from Western suppliers unless the technology is not available from Japanese suppliers. “We are in a unique position in that this is probably the only semiconductor technology of any significance that can’t be supplied by the Japanese,” noted Mr. Tanaka. Xilinx, which often calls on engineers at Honda, Toyota and Nissan, has been working closely with Denso, Panasonic Automotive Systems and has been working closely with Denso, Panasonic Automotive Systems and Honda Elesys, among others.

A Case for FPGAs

Xilinx designs, develops and markets field programmable gate arrays (FPGAs), which are programmable logic devices (PLDs) programmed in the field by the customer. Based on a matrix of configurable logic blocks connected via programmable interconnects, each device is essentially a blank slate. The program bitstream, or code, is stored somewhere in the system, often in flash memory, and each time the power is turned on the bitstream is downloaded to the FPGA, making it a functioning hardware part.

Shorter Development Cycle

The most appealing thing about FPGAs is they can be brought to market much more quickly and less expensively than A SIC s (application specific integrated circuits) or A SSP s (application specific standard products), whose designs are fixed at the foundry and can’t be changed without redoing the chip. No layout, mask or other manufacturing steps are needed in FPGA production.

An automotive OEM’s struggling to close the gap with consumer electronics cycle times can appreciate the benefits of designing FPGAs into their infotainment systems. “We are seeing the demands of the industry changing very quickly. The cycle times are shortening, and FPGA is really a technology that allows our customers to be able to keep up with those demands,” noted Mr. Tanaka.

In some typical automotive infotainment and driver assistance applications, FPGAs can speed up time to market by six to 12 months compared with similar systems that use ASIC s. Infotainment applications using FPGAs typically take 18 to 24 months to develop; driver assistance applications take two and a half to three years.

Reduced System Costs

FPGA chips are larger compared to A SIC or A SSP chips, so at a pure silicon level, in high volumes, FPGAs are always more expensive per unit. But when development costs are taken into account, FPGAs are often a less expensive solution, particularly when unit volumes are in the hundreds of thousands to low millions. And since FPGAs can take on various logic, processor and DSP functions, a single device can substitute for a number of components, further reducing system cost.

The case for FPGAs improves as chip geometries shrink with each new generation. “Over the last 8 to ten years, process capability has yielded a 10-times reduction in cost,” said M r. Steele.

“We have been moving faster than Moore’s Law,” pointed out Mr. Tanaka, “because of the process nodes and because we can use the same silicon, since it’s blank silicon, across so many different applications and different markets. We get terrific economies of scale.” A utomotive FPGAs from Xilinx range in cost from about $2 at 90nm up to $30 each. continued on following page
Most of the Xilinx FPGAs used today in automotive applications are made using 90nm processes, but in February 2009 Xilinx introduced its next generation flagship, high-performance Virtex product family and low-cost Spartan FPGAs. These devices are built on 45nm process technology, which will further improve the economic case for FPGAs. Built for connectivity and low power, the Spartan-6 family will let automotive developers meet demand for new features while reducing system costs by up to half for lower power products.

◆ Reprogrammability

A further advantage of FPGAs is their reprogrammability. “Because the program is stored in flash memory or in the memory on a micro, if a carmaker finds a bug or wants to add a feature after the vehicle is built, a new bitstream can be downloaded, perhaps at the dealership,” explained Mr. Tanaka. “With new consumer electronics features coming out so quickly, some tier ones are actually leaving 10% to 25% of the FPGA density unused so more functions can be added during the life of the vehicle.”

◆ Platform Scalability

One feature of Xilinx’s product line that makes it especially suitable to automotive applications and further distinguishes FPGAs from ASICs is the way FPGA solutions can be scaled to meet different vehicle platform requirements for an OEM or tier one. Mr. Steele noted, “There are issues with changing standards and interfaces, and there is a drive to platform-based designs. A tier one needs to be able to do one hardware implementation that they could scale to, for example, a low-line, mid-line and high-line vehicle platform within an OEM, or one they could differentiate for several OEMs.”

For example, the Xilinx Spartan-3E FPGA comes in five different logic densities. Three of the variants—250K, 500K and 1.2 million system gates—use the same package. “That lets the custom develop one board and if it is for a high-end car, you put in a 1.2 million system gate device because you need all the features. If it is a mid-tier car, you can put in a 500K device and only apply the functions you need,” explained Mr. Tanaka.

A applications

Infotainment systems including head units and rear-seat entertainment account for half of Xilinx’s automotive applications. Not only is the infotainment market fragmented, which limits production volumes, but because it is subject to quickly changing consumer tastes, product lifecycles are relatively short. A need that makes FPGAs, which are relatively inexpensive to develop, a good fit. FPGAs are well suited to high-resolution video. They have also been especially useful in driver assistance systems which process raw video images in real time.

A Tipping Point

With each generational step in semiconductor densities, the case for FPGAs replacing ASICs and ASSPs improves. Not only does the cost of each FPGA chip decline, but because the fixed costs to develop ASICs and ASSPs dramatically goes up with each new generation, larger and larger markets are needed to make the investments in ASIC and ASSP development pay off. Each year there are fewer and fewer ASIC starts.

“We are getting close to a tipping point in some automotive applications, and past it in others, where it makes sense to use FPGAs in place of ASICs and ASSPs,” declared Mr. Tanaka. “ASICs and ASSPs will always have some segments of the market, especially where volumes are high (such as in powertrain controllers and basic radios). But in the infotainment and driver assistance applications we have targeted, we are seeing more and more market fragmentation. Those lower volumes definitely favor FPGAs.”

“We already have DSP capability in the FPGA and we have 32-bit soft microprocessors,” added Mr. Steele. “And in our high-end FPGAs we have hard microprocessors. There are many automotive applications where FPGAs can be the central chip.”

High Development Costs Driving ASSPs to Ultra High Volume Markets

A nother promising application of FPGAs is in hybrid instrument clusters, which combine analog instruments with multifunction displays. A ISO promising are driver assistance applications such as lane departure warning, and sign and pedestrian recognition that benefit from the parallel processing power available from Xilinx’s DSP48a MACs. Xilinx low-end Spartan-3A DSP FPGAs can achieve some of the highest DSP performance, calculating more than 350 billion multiply-accumulate operations per second.
problems that come up from time to time with A S I C s.

**Targeted Design Platforms**

The fact that F P G A s start out as blanks has made it difficult for some customers to embrace what is so special about them: their remarkable flexibility. So the company has picked out three automotive applications—driver assistance, driver information and infotainment—where F P G A s are especially worthwhile and developed targeted design platforms for each of them. These targeted design platforms put on the table much of what is required to bring the application to market, while leaving room for the customer to innovate.

Working together with third parties, who are part of the Xilinx Ecosystem, and Xilinx's own internal IP groups, each design platform contains FPGA silicon, blocks of IP, demonstration boards, development platforms, tools and more, so customers can spend less time developing the infrastructure of an application and more time creating their unique value in the design.

C P L D s

Roughly 10% of Xilinx's automotive sales comes from C P L D s (complex programmable logic devices), which are essentially low cost, less-than-two-dollar versions of F P G A s. C P L D s usually have fewer than 10,000 system gates. A typical automotive application uses C P L D s to complement microprocessors that don't have enough pins to handle LED backlighting in instrument clusters. They are also used for I/O interfacing, bridging various electrical standards for getting signals on and off the chips, and to fix logic problems that come up from time to time with A S I C s.

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Telematics...

“...The car becomes the equivalent of a device that’s a node on the Internet with access to services. We have in the pipeline more than 70 services that we are developing that can be made available to vehicle owners. Even if you don’t subscribe to the safety service, we want you to have access to other services. If you are lost you press a button, go to our service, speak the destination, and for a few dollars we’ll download directions to the car.

“We believe there is great opportunity for transactional services in the vehicle. So we are building into our technology the ability for you to listen to a song in the car and simply say, ‘I like that song. I’d like to buy it’ and you’ve bought it,” said M r. Goldman.

Next Generation Telematics Protocol

Not only must Hughes handle the transactions coming from the newly designed telematics control units that will be installed on new Chrysler and Mercedes vehicles, but it also must handle transactions originating from older Mercedes vehicles. Those transactions from U.S. subscribers are presently being handled by ATX, which will lose exclusive access to those customers once Hughes is up and running.

H Hughes can easily accommodate the old and new M ercedes telematics products, as well as C hrysler’s and other potential O E customers’, because it builds its off-board system based on the Next Generation Telematics Protocol. N G T P is a standard created by B MW , C onnexis and W ireless C ar that lets carmakers choose from a variety of service and content providers.

“First and foremost we are a service provider,” said Hughes’ Mr. Goldman. “We’ve built the world’s most advanced version of N G T P. T he purpose of N G T P is to be able to disaggregate the value chain and allow the customer to swap out suppliers. A n O E may not want AT X all the time. It may want a different service provider, a different call center, a different content provider.” T he architecture provides standard interfaces between the telematics control unit, telematics operations center, call center, W eb portal, data providers and other components.

H onda and B MW are both shopping for telematics service providers in the U nited States who are N G T P-compliant. For more on the standard please visit www.ngtp.org.

Eclipse Accident Recorder

In the Eclipse/Fujitsu Ten booth at the 2009 Consumer Electronics Show this past January in Las Vegas, Suguru O miya, a project manager from the company’s Japanese operation, was showing video captured on an Eclipse Drive Recorder of an actual accident in Japan involving a vehicle collision with a pedestrian. Shot from a C C D camera attached to the rearview mirror, the video showed the pedestrian landing sideways atop the hood with his back against the windshield. In a second viewing of the accident, however, the pedestrian did not appear to be seriously hurt and seemed to have faked the accident by leaping onto the vehicle’s front hood. Presumably, the video was used to avoid a fraudulent insurance claim by the pedestrian.

Last year, according to M r. O miya, Fujitsu Ten sold 60,000 accident recorders in the Japanese aftermarket, 40,000 of which were used in taxi cabs and 20,000 in private vehicles. N ow in its fourth year of production, the Eclipse Drive Recorder has a 15% to 20% share of the Japanese market. M r. O miya is testing to see if there is a market for the product in the U nited States.

T he Drive Recorder including camera, microphone, SD memory card and crash sensor retails for $500. O nce a crash is detected, the unit creates a 20-second visual and audio record of the event, including the crucial 12 seconds prior to the accident and eight seconds after the impact. T he recording function can also be switched on manually. T he recorded event can be played back on the vehicle’s display or on a P C. F ujitsu Ten is partly owned by T oyota. ◆

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Telematics Will Squeeze Embedded Infotainment Suppliers Further

T he infotainment market is already awfully competitive, with embedded navigation suppliers, audio system and head unit suppliers all clamoring for the same turf. A lso in the mix now is M icrosoft, which is carving out a significant piece of the market with infotainment software based on W indows A utomatic and M icrosoft A uto.

Furthermore, there is additional competition coming from suppliers of inexpensive portable navigation devices, portable music players and smart phones, all of which can substitute for embedded infotainment features.

N ow as more telematics service providers move beyond safety and security services to infotainment features such as off-board navigation, off-board speech recognition, music downloads and eventually Internet radio, some embedded infotainment suppliers will likely be forced to change their product portfolio or be crowded out of the picture. T he situation will only worsen as the communications pipeline to the vehicle widens with W i-Fi, W IM AX and L TE wireless broadband coming into play.

Bosch Jettisons Blaupunkt

A Munich, Germany-based holding company, Aurelius, is acquiring the Bosch Group’s aftermarket radio, speakers and antenna business along with the 70-year-old Blaupunkt brand name. Pending regulatory approvals, the deal is expected to be finalized in early February. T he purchase price was not disclosed.

Aurelius’ immediate plans are to run the business as an independent company from the current Blaupunkt headquarters in Hildesheim, Germany. Blaupunkt operates manufacturing facilities in Portugal, Tunisia and Malaysia. A ccording to Aurelius, Blaupunkt’s 2008 sales were roughly 200 million euros.

Blaupunkt’s blue dot logo has for many years stood for progress and quality, but in the last decade, the brand’s reputation for quality has been fading, along with its profitability. In 2001 software glitches in Blaupunkt navigation hardware delayed a Mercedes vehicle launch and led to a loss of some major contracts with Mercedes.

A fter the sale is completed, all Bosch’s O EM navigation and infotainment business will operate through the Bosch Car Multimedia division and will be marketed under the Bosch name. ◆