

innovation

Information mobility on the road – the next highway challenge for OEMs.

# The next generation of **M2M** networking

By: Nick Palmen

**Vehicle designers are faced with a range of connectivity challenges – including speed, reliability of signal, and ruggedness of the equipment – and all from a moving vehicle that may well be driven in areas with low signal strength. Over the next five years we will see significant change in applications.**

Automotive applications will evolve to take advantage of next generation 4G networks. Applications will range from safety applications that will become a standard in each vehicle sold, diagnosis and energy management for electric vehicles to bandwidth intensive entertainment applications.

Adding to the challenge is the fact that manufacturers serving the automotive industry need to design effective communications into their products years in advance. And then they need the communications equipment to be available

**Didier Dutronc, senior vice president and general manager, M2M Embedded Solutions, Sierra Wireless.**



many years after they are introduced. This means automotive manufacturers need partners who can invest in their business in the early stages, long before products ship, and partners who can stay the course.

Solutions are being offered by Sierra Wireless, which since its founding in 1993, has established itself as a market leader in new wireless technologies and solutions for the automotive market. With headquarters in Canada, the company has sales, engineering, and research and development teams located in offices around the world, offering a network of experts in mobile broadband and M2M integration to support customers worldwide.

**Automotive Industries spoke to Didier Dutronc, senior vice president and general manager, M2M Embedded**

**Solutions, Sierra Wireless and asked him how Sierra helps manufacturers to minimize total cost of ownership from production to customer service.**

**Dutronc:** We've learnt from our customers that total cost of ownership is a critical consideration when deploying new products on the market, and it is tightly linked to the reliability and performance of the modules. Automotive systems present a challenging environment for wireless technologies. In-vehicle devices require solutions that can withstand extreme temperatures, thermal shocks, constant vibration and humidity. These solutions must last over the lifetime of the vehicle, perhaps 15 or more

years. At Sierra Wireless, we've been working with automotive manufacturers for more than 15 years.

We understand these requirements, and we've learnt how to design embedded wireless modules to meet their needs.

Last year, we introduced the AirPrime AR Series of modules, which was developed from the ground up to adhere to stringent automotive industry manufacturing specifications. With modules designed for in-vehicle use and long lifetimes, manufacturers can easily integrate wireless connections into their vehicles, and ensure the lowest cost of ownership.

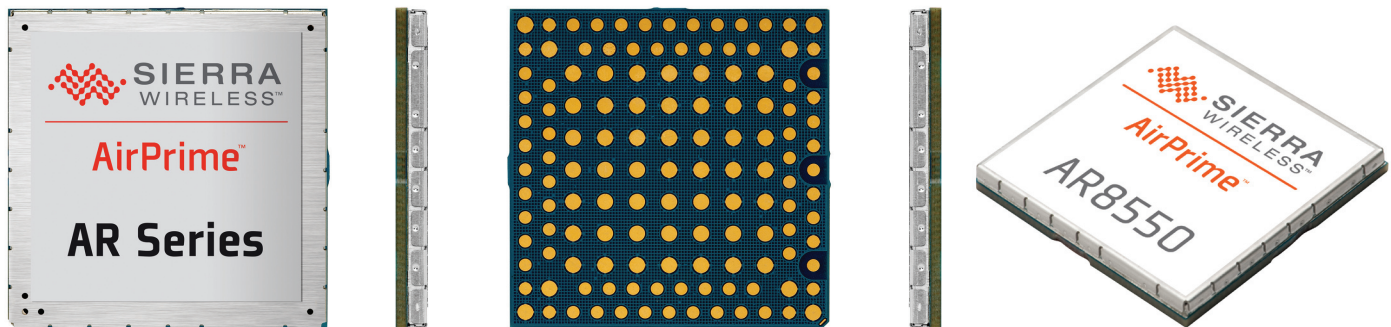
**AI: Telematics, infotainment and location-aware applications are becoming standard in new vehicles. How do you ensure reliable wireless connectivity from vehicles to cellular networks to enable these applications?**

**Dutronc:** Sierra Wireless engineers have experience in both the automotive and telecommunications sectors and understand that wireless functionality involves more than just adding a modem to a vehicle. It's also more than just selecting the fastest available airlink technology. When manufacturers are looking for cellular wireless devices for their vehicles, they need to take into



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The AirPrime™ AR series launched in 2010.

consideration where the vehicles will be driven. This dictates what cellular wireless technologies will be needed.

For new infotainment applications, customers will be looking for the fastest speeds available, but they will also want seamless coverage, so manufacturers will need to select multi-mode, multi-frequency devices that stay connected as the driver moves between 3G and 4G coverage areas.

**AI: At the end of 2010, Sierra Wireless introduced the AirPrime AR Series intelligent modules. What does the new product series offer?**

**Dutronic:** The Sierra Wireless AirPrime AR Series offers manufacturers the only cellular wireless embedded modules designed from the ground up for automotive applications.

The series supports telematics applications and features include; tolerance for up to 1,000 thermal shock cycles, full certification with ISO 9001:2000 quality standards and ISO/TS 16949:2002 manufacturing processes, extended operating temperature range from -40 to +85 degrees Celsius and compliance with multiple automotive manufacturing and quality processes including AQPQ, PPAP, PCN, and 8D. It also includes solder-down form factor and optional Embedded SIM to create a more reliable and less expensive solution. The AirPrime AR Series modules are available in four interchangeable versions, minimizing the design effort for automotive manufacturers operating globally.

**AI: How has the product been received by vehicle manufacturers?**

**Dutronic:** Our customers have been very receptive. Sierra Wireless already has multiple global design awards for the AirPrime AR Series with leading automotive manufacturers.

**AI: In January 2011, you announced your intention to collaborate with Harman to bring automotive customers the first 4G broadband connectivity. How will this collaboration work?**

**Dutronic:** Consumers are adapting to lifestyles where multi-featured smart-phones and handsets are the norm. Harman

is working to address vehicle-centric demand for wireless-enabled, mobile broadband solutions and will integrate Sierra Wireless LTE modules into their in-vehicle solutions, bringing automotive customers 4G telematics, navigation and online infotainment applications.

**AI: What are the benefits to the OEMs and the end users?**

**Dutronic:** The collaboration will ensure quality, cutting edge technology is integrated into vehicles. The technology will meet all of the required automotive specifications and work for the lifetime of the vehicle. We will also support OEMs in the reduction of the total cost of ownership and provide cost-effective wireless functionality for vehicles of all price ranges.

Automotive customers will experience download speeds of up to 100mbps, making it possible to provide a true multi-faced media, office and online experience within the vehicle, including real-time mapping and traffic updates. New services such as dynamic loaded applications and content, gaming, streaming video and high speed internet access will be fully integrated into the vehicle.

**AI: How is Sierra Wireless positioned globally to meet the demand for the new automotive technology?**

**Dutronic:** From ruggedized embedded modules, gateways and routers, software suites, and development tools to services platforms, Sierra Wireless is the only company that can offer all the wireless broadband technology for building end-to-end automotive applications. It has the credibility and long-standing relationships with leading wireless carriers to facilitate network certification and connections.

**AI: What new developments can we expect in the field of telematics, infotainment and navigation in the next few years?**

**Dutronic:** Long Term Evolution (LTE) deployments are currently only in urban areas. As LTE networks roll out, it will be possible to connect vehicles to the cloud so users can download applications seamlessly. As network coverage expands, users will also experience high bandwidth access to applications in rural areas.

AirPrime™ is a trademark of Sierra Wireless. **AI**



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