



Microprocessor Requirements of the 2010 Auto -- Telematics at the Core!

Minneapolis, MN January 7, 2002 --The automobile has used microprocessors for over 20 years and today they use a variety of them for engine, electronics and vehicle management. But in the next 10 years microprocessor usage in autos will proliferate as two new auto application segments—telematics and intelligent vehicle systems—add to microprocessor usage in autos. By the year 2010, a luxury car will use 50-70 microprocessors that cumulatively have 12- to 15-times the computing power of current PCs!

“Over the next decade, microprocessor-based systems will replace electrical/mechanical/hydraulic systems as X-by-wire systems become prevalent,” says Dr. Egil Juliussen, principal technology analyst at Telematics Research Group. “These intelligent vehicle systems are just emerging, but will see strong growth in the next decade.”

Numerous sensor technologies will provide data that will improve the driver’s perception such as head’s-up display (HUD) and night vision systems. Other systems will be used to monitor and identify driving parameters like anti-weaving or adaptive cruise control. These adaptive control systems will improve the driving skills of most drivers, but are processor-intensive due to the vast amount of sensor data they must deal with.

2010 Auto Computing Power		
Segments	Function/Application	Microprocessor Usage
Auto Electronics Replace: <ul style="list-style-type: none"> • Electrical devices • Mechanical devices • Hydraulic devices 	<ul style="list-style-type: none"> • Functional replacement • Improved performance/functionality • New functions/function integration • X-by-wire systems 	<ul style="list-style-type: none"> • 40 to 50 microprocessors • 3X-5X power of today’s PC
Telematics Systems: <ul style="list-style-type: none"> • Communications • Information • Entertainment 	<ul style="list-style-type: none"> • Command and control system • Minimize driver distractions • User interface to telematics services • User interface to intelligent vehicle systems & ITS applications 	<ul style="list-style-type: none"> • 5 to 10 microprocessors • 4X-6X power of today’s PC

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Segments	Function/Application	Microprocessor Usage
Intelligent Vehicle Systems <ul style="list-style-type: none"> • Driving monitoring • Adaptive controls • Collision avoidance • Platoon driving 	<ul style="list-style-type: none"> • Navigation & location tracking • Crash detection & notification • Crash impact minimization • System diagnostics & breakdown prediction 	<ul style="list-style-type: none"> • 5 to 10 microprocessors • 5X-7X power of today's PC

Telematics systems will become the command and control system for many of these capabilities. The telematics control unit will likely include a 32-bit RISC processor (2+ GHz), 2GB of DRAM, and a 30GB hard disk drive (HDD). The system will also include removable media devices (memory cards, DVD), and will use a variety of displays.

The telematics system will control numerous communications links such as satellite, cellular, Bluetooth and IEEE 802.11, and must manage the driver information center, which draws information from the various subsystems. Telematics systems will also handle a multitude of information and multimedia services delivered to the auto's passengers.

"The automobile is in the process of becoming a sophisticated computing center, involving numerous computers and subsystems, all linked via LANs and wireless technologies," says Phil Magney, principal analyst at Telematics Research Group. "Technology advances are making telematics and intelligent vehicles possible through faster and more cost-effective computing platforms."

The information contained in this release comes from the *Telematics Intelligence Service*—a new telematics information service for vendors and OEMs being launched this week at the North American International Auto Show (NAIAS) in Detroit. For more information, or to obtain a prospectus, go to www.telematicsresearch.com.

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