

MAGNETI MARELLI'S TECHNOLOGICAL INNOVATION PLAYS A LEADING ROLE AT INNOVATION CUBE

Motorshow - Bologna, December 3rd, 2008 - Magneti Marelli, an international group leader in the design and production of hi-tech systems and components for motor vehicles, is present at *Innovation Cube* with solutions aimed at making innovative technologies accessible to drivers in order to improve all aspects of mobility, through criteria related to environmental-compatibility, safety and quality of life onboard the vehicle, and thanks to the interconnection between vehicle, infrastructures and user.

Innovation Cube displays Magneti Marelli's leading technologies:

POWERTRAIN

Ferrari F430 Scuderia Sequential Automated Transmission.

The road car with the fastest transmission in the world.

Total gear shift time: 60 ms.

The system consists of a hydraulic power unit and an actuator unit connected by means of flexible high-pressure piping.

The power unit includes:

- an electric pump 0.8 l/min @ 70 bar
- six proportional pressure and delivery valves
- a pressure accumulator
- a collection tank for the hydraulic fluid

The power unit supplies (in addition to the transmission actuators) the differential with electronic traction control.

The actuator unit includes:

- a hydraulic actuator for the engagement and disengagement of gears with two stable positions.

ELECTRONIC SYSTEMS

ECO ROUTING

Green route calculation

New route calculation criteria to minimize consumption and pollution.

TECHNOLOGY

The application is based on:

- road features integrated in maps: curves, slopes, speed limits, roundabout number, etc.
- statistical traffic information
- if available, usage of some car parameters that allow the fuel saving evaluation

BENEFITS

- "green" route option before departure

ELECTRONIC SYSTEMSECO ROUTING

Green route calculation

New route calculation criteria to minimize consumption and pollution.

TECHNOLOGY

The application is based on:

- road features integrated in maps: curves, slopes, speed limits, roundabout number, etc.
- statistical traffic information
- if available, usage of some car parameters that allow the fuel saving evaluation

BENEFITS

- “green” route option before departure
- five level ecologic evaluation system (5 stars = most ecological)

ELECTRONIC SYSTEMSTFT Reconfigurable Instrument Cluster

Fully reconfigurable Instrument Cluster

for a transversal re-use and a new conception of the Human Machine Interface

TECHNOLOGY

- Automotive double VGA TFT (12,3”, 1280 X 480 pixels)
- Dedicated Graphic Processor Unit (Capricorn-M) in a double microprocessor architecture
- SW development tool chain concept

BENEFITS

- No constraints by pointers or dials -> New HMI concept
- Information can be adapted to different driving contexts -> Less fatigue
- Possible integration of ADAS (Advanced Driver Assistance Systems) -> More safety
- Higher integration with navigation
- Eco-driving information for optimized fuel consumption (i.e.: dynamic green zone)
- Style customization opportunity

AUTOMOTIVE LIGHTINGFirst Full-LED headlamp

The Audi R8 is the first car worldwide in which all lighting functions are realized with LED technology. These are low and high beam, turn indicator, position light and Daytime Running Light.

More than 20 innovations show future potential in technics and design. Automotive Lighting has successfully transformed the Audi design concept into a product combining new appearance and longlife technology. The headlamp offers high-end Xenon performance in daylight quality and simultaneously consuming 43% less energy and thus CO₂ in comparison to today’s conventional halogen lighting.

SUSPENSION SYSTEMS

Synaptic Damping Control is the real time system developed by Magneti Marelli (*) for vehicle dynamics control. The system is connected via bluetooth to the Magneti Marelli's Personal Interface Device, and it allows to customize and optimize the dynamic behaviour of the vehicle depending on actual driver expectations and road characteristics.

(*) (patent pending)

UNDERSTEER - OVERSTEER CONTROL

Yaw rate control in cornering conditions by modulating the front – rear damping level balance

PERSONAL DYNAMIC TUNING

Fine Tuning functionality by means of customized set-up

DIVE SQUAT CONTROL

Pitch motion control during throttle-on and throttle-off manoeuvres

ROUTE GUIDANCE LINK

Adapts the damping control using information from navigation application embedded in the

Personal INTERFACE DEVICE

Hole and Bump Control

Improves comfort and road holding in case of impacts of wheels against obstacles

DATA LOGGER

It allows to acquire and to store signals characterizing vehicle dynamics.

KERS (KINETIC ENERGY RECOVERY SYSTEM)

Magneti Marelli is currently developing an innovative technology for the F1 in the area of energy recovery. This system, called KERS (Kinetic Energy Recovery System) can actually convert mechanical energy into electrical energy that can be stored in special batteries and that the pilot can decide to use under special conditions, such as on straight stretches, when overtaking other vehicles, or in strategic points of the circuit. The amount of energy and power that can be used is nevertheless limited by regulations, which provide for 400KJoule of maximum energy that can be delivered during each lap, and for maximum power of 60 KWatt. FIA has included in the Formula 1 Technical Regulations the possibility to fit these types of devices as of 2009. All teams have taken part in this initiative due to the advantages that this system may offer during the race in terms of lap times and fuel consumption.

It will also be possible to apply this technology to the development of specific components to be fitted on mass-produced hybrid cars.