Research And Markets: Analysis The Technology Of The Chassis Engineering And Systems Area In Detail

Research and Markets (researchandmarkets.com/reports/c11289) has announced the addition of A Global Technical And Manufacturer Review Of Automotive Chassis Systems - 2nd Edition to their offering.

(PRWEB) December 20, 2004 -- Building on the success of our first edition chassis report, this new second edition is by respected and multiple award-winning author and analyst Jeff Daniels.

Jeff's excellent report surveys the technology of the chassis engineering and systems area in detail, concentrating on the history, which has created the present situation, the range of current solutions, and the most likely ways forward at a supplier and OEM level. While the survey is mainly technical, it provides pointers to future system volumes where these are appropriate, and also concludes with brief surveys both of the main Tier-One suppliers and of the policies of the main surviving VMs with regard to chassis engineering.

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The main pressures on vehicle designers and engineers continue to be safety and exhaust emissions, together with fuel economy (except in North America). However, intense competition, especially towards the top of the market, means that comfort and sheer ease of driving are also important considerations. They can make the difference between winning and losing the customer. Consequently, a great deal of engineering effort has lately been devoted to the chassis - in its modern sense of suspension, brakes and steering - in a search for unparalleled levels of ride comfort & quietness, control and dynamic safety.

The following is an extract from this report:
" some observers regard chassis systems and suspension systems as synonymous, but this disregards the interdependence of suspension, steering and braking systems and the fact that they are integrated to an increasing degree, especially at the electronic level. It may also be argued that even in the early days of motoring when complete chassis were delivered to coachbuilders for body installation, the steering and the brakes (such as they were) were already installed.

Current scope
In present-day terms, therefore, the terms Â□chassis engineeringÂ□ or Â□chassis systemsÂ□ embrace a hierarchy of technologies and features that may be outlined as follows:

- Suspension: embracing the choice of basic geometry for optimum wheel location, the mounting of suspension members to the body (including the use of sub-frames), the springing medium and the provision of damping of vertical wheel movement.

- Steering: the optimisation of front suspension geometry for steering, the choice of steering system, the provision of power assistance, the satisfaction of safety requirements, and the provision of Â□augmented stabilityÂ□ through interaction with the braking system.

- Braking: the choice of friction system, the design of the operating linkage, the provision of servo assistance,

the satisfaction of safety requirements, the provision of anti-lock braking and other enhancements such as emergency brake assist.

- Wheels and tyres: choice of wheel and tyre size, choice of wheel material and tyre configuration, choice of spare wheel configuration or Â□run flatÂ□ technology.

Other engineering constraints
As noted in the outline above, chassis engineering is subject to many legislated safety requirements with profound engineering implications. Two examples are provided by the requirement (in almost all markets) to Â□splitÂ□ the braking system in such a way that a single failure will not compromise safety, and the requirement that all steering systems (except in specialised vehicles with a low maximum speed) should consist entirely of mechanical linkages. In this latter respect, revised legislation will be needed, certainly within the EU, if Â□steer by wireÂ□ is ever to be acceptable.

While the main engineering considerations in the area of chassis systems are as outlined above, design is also subject to the Â□universalÂ□ constraints of cost and weight. Reducing chassis engineering cost is especially difficult in the light of consumer demands for ever better refinement and ride comfort, and for higher vehicle performance (placing greater demands on the quality of steering, handling and roadholding). Electronic systems today play an increasing role in chassis systems, and this trend will continue into the foreseeable future. Most electronic systems add new capabilities, but also cost "

The contents of this report are as follows:
Chapter 1 Introduction
Chapter 2 Chassis systems - definitions and significance
Chapter 3 Suspension systems
Chapter 4 Steering systems
Chapter 5 Braking systems
Chapter 6 Tier-1 suppliers
Chapter 7 Manufacturer philosophies

For more information visit http://www.researchandmarkets.com/reports/c11289

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