CONTROLLED AXLE SUSPENSION FOR COMMERCIAL VEHICLES

Fact Sheet

Project Information

CASCOV

Grant agreement ID: BRE20308

Project closed

Start date
1 December 1992

End date
30 November 1996

Funded under
Specific programme (EEC) of research and technological development in the field of industrial and materials technologies, 1990-1994

Total cost
No data

EU contribution
€ 1 700 000,00

Coordinated by
VAN DOORNERS
Netherlands

Objective

In this project new technologies were developed for designing rear axle suspensions of commercial vehicles. These technologies can be applied for either reducing the vibration levels for occupants, cargo and vehicle components or reducing the dynamic loads exerted by the tyres to the road or reducing the working space between axle and chassis.

The project started with a theoretical investigation into the feasibility of various design concepts ranging from alternative passive systems to controlled active and

semi-active suspensions which detect road unevennesses in front of the rear axle. On the basis of numerical simulations the performance of a broad range of suspension systems with various control strategies was predicted and optimised. The most promising systems have been built as prototypes and were installed in a truck.
The objective of this project is acquiring new technologies to be applied in the design of axle suspensions of commercial vehicles and by means of these technologies giving a substantial improvement to the dynamic behaviour of the axle suspensions. The usefulness and feasibility will be demonstrated by applying these technologies on the rear-axle suspension of a heavy truck. The benefits will be shown by measuring the following quantities and by comparing these with the state-of-the-art suspensions:

- the dynamic loads exerted by the tyres to the road

- vibration level for occupants, cargo and vehicle components

- the working space between axle and chassis

The technology is also applicable to bus, car aircraft and train industry. Hydro-elastic-mount technology will be used instead of conventional hydraulic dampers to prevent road induced vibrations to generate high dynamic loads on the vehicle chassis or on the road pavement . Also new control methods and control strategies will be developed to make the suspension controllable and adaptable to all kind of circumstances and requirements of occupants and cargo. Fast semi-active or fast active shockabsorders have to take care of severe incidental road excitations . Advanced sensoring techniques will "preview" these excitations and determine vehicle momentary states. The application of above mentioned technologies by truck and by truck component industry among others can lead to:

- reduced costs for maintenance of roads

- improved transportefficiency for commercial vehicles

- less vibration exposure to driver and freight.

Fields of science (EuroSciVoc)

engineering and technology > mechanical engineering > vehicle engineering > aerospace engineering > **aircraft**

engineering and technology > civil engineering > transportation engineering > **highway engineering**

Programme(s)

FP3-BRITE/EURAM 2 - Specific programme (EEC) of research and technological development in the field of industrial and materials technologies, 1990-1994

Topic(s)

2.1.1 - Innovative design tools and techniques

Call for proposal

Data not available

Funding Scheme

CSC - Cost-sharing contracts

Coordinator

VAN DOORNERS

EU contribution

No data

Total cost

No data

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Participants (3)

CONTITECH HOLDING GMBH

Germany

EU contribution

No data

Address

BUTTNERSTRAßE 25
3000 HANNOVER

Total cost

No data

MONROE BELGIUM

Belgium

EU contribution

No data

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INDUSTRIEZONE NOORD-WEST
3800 SINT-TRUIDEN

Total cost

No data

TU EINDHOVEN

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EU contribution

No data

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Total cost

No data

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