PRESS INFORMATION

Mobil Elektronik steers innovative vehicles

One step towards avoiding emissions and traffic pollution in inner-city areas is the switch from private transport to public transport that is fully electrically powered.
As a rule, however, the buses currently in use are very large, poorly manoeuvrable and, above all, only half or even less occupied by passengers.
The innovative company TRIBUS in the Netherlands has recognized this and has created a remedy with the newly developed MOVITAS. This is a small, agile, fully electric city bus which will be presented at Busworld 2019 in Brussels.

(Sketch 1: MOVITAS from Tribus)

The manoeuvrability of this already short vehicle is further enhanced by the electrohydraulic steering of the rear axle.

The trend towards electrification and high manoeuvrability is also noticeable in other sectors.

The Dutch crane manufacturer SPIERINGS KRANEN, for example, launched the Cityboy last year, a 3-axle, hybrid-powered All Terrain Crane on the market. All 3 axles are steered for the best possible manoeuvring on the construction site, the crane can travel the last 20 km in urban areas electrically to be emission-free in the city centres.

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Steering rear axles are common on 3-axle coaches and city buses and are absolutely necessary in order to comply with the prescribed turning circle.

The situation is different with 2-axle vehicles, where the rear axle steers along for better manoeuvrability.

In the Movitas, the family-owned company Mobil Elektronik ensures this by using the EHLA OPTIMAL steering system.

Bus manufacturers have high safety requirements for the electronic components to be installed, as they travel in areas with high passenger frequency and in the meantime follow ISO 26262.

This is reflected in the creation of the so-called HARA (Hazard and Risk Analysis). - Here the vehicle manufacturer inevitably encounters a safety level of ASIL C or even ASIL D.

These high security levels can be mapped by the supplier MOBIL ELEKTRONIK, but not only thanks to a new software and hardware architecture of the safety steering computer. - Another important point is the ISO 26262-compliant development process of the medium-sized company.

EHLA OPTIMAL

In the event of a fault or even failure, each auxiliary steering system must be designed in such a way that the vehicle remains controllable.
This is particularly important for two-axle vehicles as there is no rigid axle left to absorb lateral forces.
MOBIL ELEKTRONIK has been using the EHLA OPTIMAL system on the market for many years precisely for this area of application, and here too the steering system represents a closed control loop.
A core component is the safety steering computer, which can map the highest level of safety up to ASIL D. The steering system is also a closed control loop. A hydraulic accumulator and a special steering cylinder ensure that in the event of a malfunction the rear axle is immediately centred and hydraulically locked so that it behaves like a rigid axle.

Bus Stop Automatic offers additional protection

In addition to pure steering, Mobil Elektronik has integrated many other features for the bus industry into the steering systems.
For the Movitas from Tribus, the Bus Stop Automatic from Mobil Elektronik provides additional protection for people.

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When a bus leaves the bus stop with a big steering angle of the front axle, the rear of the vehicle always swings into the passenger waiting area. This effect is even intensified by a rear axle steering and represents a danger for the passengers.
In order to avoid this, the rear axle of the Movitas turns in a little later when the Bus Stop Automatic is activated and the rear does not swing out that much. - The function is automatically recognised when the door is opened and closed.
MOBIL ELEKTRONIK also uses a similar function for mobile cranes such as the Cityboy mentioned above. Here the so-called "automatic rear swing suppression" is used to manoeuvre the rear of the vehicle past narrow buildings.
Mobil Elektronik presents its solutions for the bus industry at Busworld 2019 in Brussels.
The family-owned company is the world market leader for electro-hydraulic auxiliary steering systems and Steer By Wire systems.

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About MOBIL ELEKTRONIK
MOBIL ELEKTRONIK develops and produces complex steering systems for well-known manufacturers of mobile machines, commercial and special-purpose vehicles worldwide for over 45 years now. The expanding family-owned high-tech company has meanwhile more than 130 highly qualified employees.
Through a passion for innovation, commitment and creativity the system provider from Germany sets standards. As regards diversity and know-how MOBIL ELEKTRONIK is pioneer and global market leader for electronic steering systems (Steer-by-Wire).

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