MACCON
MOTION UNDER CONTROL

AUTOMOBILE

Application: Rear-wheel Steering

MAGNA STEYR

Electrically assisted steering is now common in premium cars. These steering assistance systems act on the wheels of the front axle.

However it is also beneficial to be able to steer the wheels of the rear-axle over a limited range. This can greatly improve vehicle maneuverability and stability at high speed.

Project: Rear-wheel Steering

Rear-wheel steering is implemented by integrating an electric motor and ball-screw actuator parallel to the rear-axle assembly.
In order to achieve the stability benefits it is not required to steer the rear-wheels of a car over a range of more than a few degrees. The control must be automatic; the driver is not able to direct the system well without computational assistance.

MACCON contribution

For this project MACCON supplied special motors, resolvers and linear sensors. The rotary to linear reduction requires only 3 motor rotations for the full positioning range of the rear-axle steering mechanism.
The SWM controller is used to drive and position the motor; commands are sent to the actuator system via CANbus.

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