

25<sup>TH</sup> ANNIVERSARY

## Mercedes W140: First car with CAN

25 years ago, Mercedes brought the first car on the roads using CAN networks. The legendary S-class model W140 used just five CAN-connected electronic control units (ECUs).

The CAN protocol was officially introduced at an SAE conference in Detroit in 1986. Five years later, the S-class model W140 was the first car with a CAN-based in-vehicle network connecting five ECUs. The development costs are estimated over US-\$1 billion. Mercedes launched many innovations with this car in 1991 – not just CAN communication. This included for example double-pane window glazing, power-assisted closing for doors and boot lid, electric windows, which lowered back down upon encountering an obstruction, rear-parking markers, etc. Some regard the W140 as an “over-engineered” car.

In the following models, Mercedes introduced the Auto Pilot System (APS) navigation system (1995), the Parktronic parking aid (1995), the Linguatronic voice-operated control system (1996), and the Tele-Aid emergency call system (1997). Most important was the introduction of Bosch’s Electronic Stability Program (ESP) in 1995 and the BAS brake assistant in 1996. These systems were also based on CAN communication.

Nowadays, the S-class luxury cars comprise several CAN networks and sub-networks connecting about 100 and more ECUs. In the early days, the five CAN nodes just exchanged a few messages (less than 100). Today, the Mercedes engineers have specified far more than 6000 different CAN messages. And the next generation is already under development: Mercedes considers introducing CAN FD also in the S-class. The basic research is already finished.



*Cockpit of the W140, the first car equipped with CAN-connected control units  
(Photo: Daimler)*