A steer-by-wire system replaces the conventional mechanical connection between the steering wheel and the road wheel actuator ,consequently, it reduces the mass of the vehicle .

The steer-by-wire system consists of two basic parts:

The steering section is composed of the steering wheel, the feedback actuator, the feedback actuator angle sensor

The wheel section contains the wheels, a steering actuator, and the pinion angle sensor.

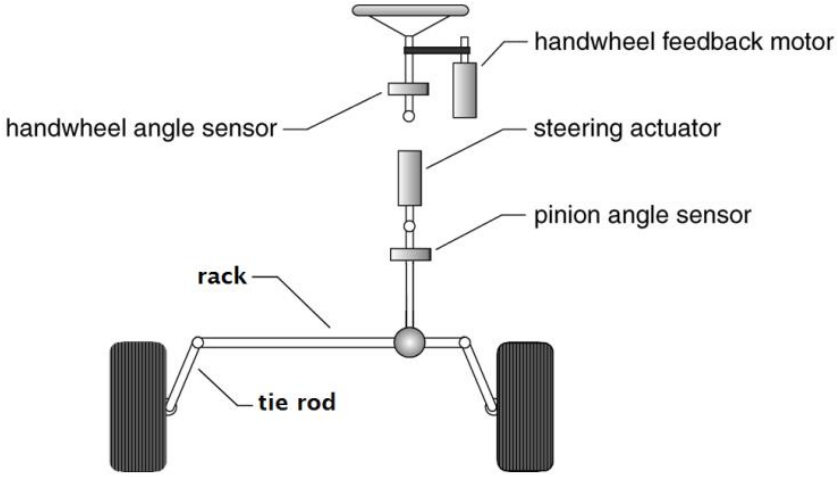

Figure : Components of a steer-by-wire system

For the steering actuator in our car , we chose to use a powerful brushless DC motor In order to Minimize the effects of unwanted disturbances.

The feedback actuator does not have to be as powerful as the steering actuator to be turned easily by a driver .

The feedback angle sensor provides the steering actuator with its primary input signal and the pinion angle sensor provides the feedback actuator primary signal .