

Wipro Drive-By-Wire Solutions



**Accelerating Your
Autonomous Vehicles
Development Journey**



Wipro's drive-by-wire system implementation extends from navigation controls to robotics controls, thus making it a comprehensive solution.



Introduction

Wipro's drive-by-wire solutions enable electronic control of braking, throttle, steering, and shifting in vehicles. We understand that the intricacies of drive-by-wire solutions differ between prototype and production-grade vehicles. We implement customized and apt drive-by-wire solutions together with our trusted technology partners for any vehicle type. The system implementation extends from navigation controls to robotics controls, thus making it a comprehensive solution. Compliance to safety regulations is ensured in all implementations.

Key Takeaways

Prototype and one-off vehicles

A less invasive approach of installing fully electrically operated servo actuators for functions

Production vehicles

Replacing existing systems such as power-assisted rack and pinion assembly with EPS and EPAS for steer-by-wire systems

Supplementary / Auxiliary control options

Direct electronic actuation with solenoid and servo proportional valves for material handling equipment such as hydraulically operated forklifts and cranes



All our drive-by-wire designs meet regulatory requirements like ISO26262, ASIL-D, FMVSS and AUTOSAR



Key benefits and features of Wipro drive-by-wire systems

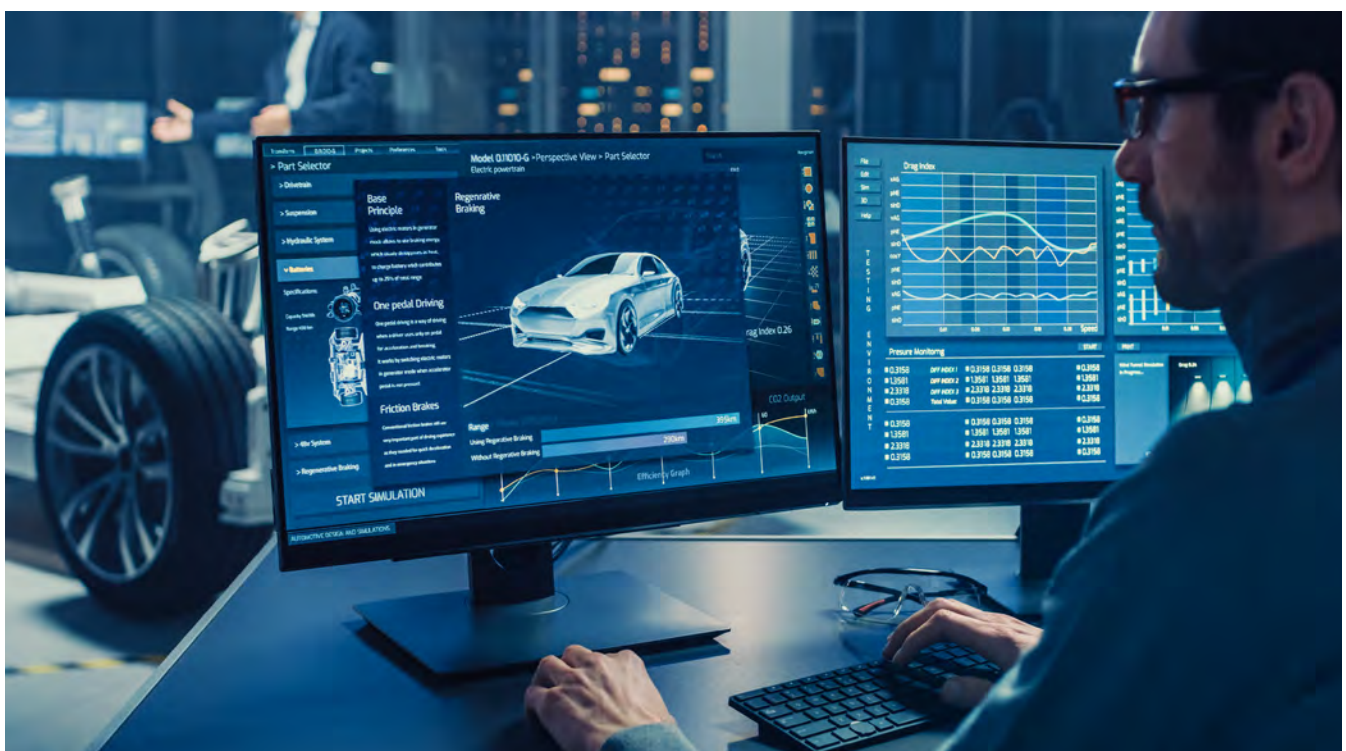
To provide the appropriate solution to the vehicle type, we place the use case-specific sensors, electronic controllers and central computing platform on top of drive-by-wire enabled system and this is integrated with Wipro's autonomous navigation AI algorithm software stack. The autonomous navigation stack together with our range of robotic arm movement capabilities, make the end-to-end solution appropriate for any moving machine. Robotic arm movement in a forklift, used for material pick and place and movements in warehouses, can also be converted to electronic actuation systems.

Safety aspects – The drive-by-wire system design has a safety factor of 1.5 to 2 for high reliability and mean time between failure (MTBF). We assist you through the ISO26262 and other safety certifications.

Redundancy aspects – Triple layer redundancy for all input signals, re-validation, dual sensor feedback, and power electronics is ensured in our designs

The following are the features of drive by wire systems:

- Joystick, hand operated, and electronically controlled actuations for all mechanical movement systems in machines
- After-sales automation in manually driven vehicles or machines





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strong commitment to sustainability and good corporate citizenship, we have over 180,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information,
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