7th Automotive STEERING SYSTEMS USA 2023

STEER-BY-WIRE | FUNCTIONAL SAFETY | AUTONOMY | GOING BEYOND STEERING

June 6, 7, 8, 2023 | Detroit, Michigan

Co-located with 7th Automotive Braking Systems USA 2023

Automotive IQ speaks with:

Ramakrishna Kamath Vijayakumar,
Product Owner- Steering,
General Motors

Learn from a steering industry expert on the current and future requirements for steering systems and how steer-by-wire can increase functionality and the customer experience.

Join Ramakrishna at the 7th Automotive Steering Systems USA 2023, Detroit, USA, June 6 - 8, 2023.

Ramakrishna's sessions:

- **OEM REQUIREMENTS FOR CURRENT & FUTURE STEERING SYSTEMS**
  WHAT IS THE REAL VALUE OF STEER-BY-WIRE TO INCREASE FUNCTIONALITY
- **OEM EXPECTATIONS FOR STEERING SYSTEMS FOR THE NEXT 3 YEARS**
  CRITICAL INSIGHT TO DESIGN & DEVELOP THE NEXT WAVE OF STEERING TECHNOLOGY

Q: From an OEM perspective, what are the requirements for current and future steering systems?

Steering systems for automobiles are going through a shift in development, and it's critical to always be on top of the requirements for both current and future steering systems. Requirements are constantly evolving based on the system learnings. As the technology is changing, for example the development of steer-by-wire, there becomes new requirements for factors like cybersecurity and ADAS integration.

Q: You mention steer-by-wire, in your opinion, with the aim of increasing steering functionality in mind, what is the real value of it?

We are seeing several benefits of steer-by-wire. Sure, it is a complex system, but it helps with adding new steering features, which in my opinion, makes the customer experience better. To mention a few, there is no road input, so it helps with some of the Noise Vibration Harshness (NVH) concerns, there is a reduced packaging issue in some cases, and it also reduces complexity when you can use the same system in multiple vehicles/variants e.g.: LHD/RHD.

Q: How does steer-by-wire compete with mechanical steering systems?

We must look at things from an investment point of view; steer-by-wire initially might be expensive compared to traditional EPS, but the scale factor can eventually reduce the cost. Compared to mechanical steering systems, steer-by-wire can add more steering features and continue to enhance the driver experience.

Q: How do you think steering systems will develop in terms of design in the next three years?

As more and more OEMs are adopting steer-by-wire, we're likely to see more steering features being added to the vehicles to continue the progression. With more features, comes more design and V&V; therefore, safety cases will have to be very carefully studied and worked upon.

Q: When implementing new steering designs, we need to address issues of recalls and customer requirements. How do you navigate managing both customer needs and the safety requirements?

Safety should be the first priority when developing the system. All automakers should have redundancies in place to address the single point failure concerns. Prioritizing safety is key to avoiding recalls, which is part of managing the customer needs and satisfaction. With standards such as ISO 26262 in place, FTA/HARA techniques should be used in the designs.

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