CHASSIS AUTONOMY

PROJECT BREAKDOWN

ABOUT US

Chassis Autonomy is a deep technology start-up, setting the new state-of-the-art for safety-critical vehicle actuation systems. Our mission is to enable true autonomous mobility with our ground-breaking, patent-pending steer-by-wire systems. We are now rapidly scaling to ensure we can meet the demands of the market for both fully automated (L4/L5) and partially automated (L2/L3) applications.

ABSOLUTE POSITION SENSING INNOVATION

Description

This research project focuses on the critical objective of identifying the optimal absolute position sensor for our steer-by-wire products. To achieve this, the successful student will take a multi-faceted approach, relying on information that can be found in either Chassis Autonomy's pending patents, or taking advantage of the knowledge and experience that the Chassis Autonomy team have on this topic. In addition to these areas, Chassis Autonomy is looking forward to seeing fresh perspectives and is inviting students to submit new proposals and research on this topic therefore boosting the creativity and vision of the next generation of engineers. The project will undergo a pre-planning phase where the focus will be to define the detailed project scope, its budget, schedule, and boundaries.

Objective

The successful student will conduct comprehensive research, evaluation, and selection of the most suitable absolute position sensor available for use in our steer-by-wire products. Following on, the student will design a prototype for rigorous testing and validation of the performance and accuracy of the absolute position sensor. In short, this project will consider Chassis Autonomy's current sensor concept; new and undeveloped patent pending concepts and any new concepts derived by the chosen student during this project.

Justification

The need for this project comes from a series of challenges that Chassis Autonomy has identified during our product development. The primary problems and targets that form the basis of this project are as follows:

- Space requirements/efficiency: The existing solution that Chassis Autonomy is using to determine the absolute position of our steer-by-wire solution is space-consuming, therefore constraining our product design flexibility and limiting integration possibilities.

- Accuracy in determining the absolute position of our actuator: Achieving a high level of precision is essential to our product. Determining the best and most accurate position sensing is a fundamental objective of this project. The current sensor selection and concept may not be the best solution on the market.

- Cost-effectiveness: Striking a balance between performance/accuracy and price/affordability is something that we consider crucial. A thorough investigation is needed to identify the most cost-efficient option on the market regarding absolute position sensors.

- Packaging: The physical form and packaging of sensors can significantly impact their suitability for specific applications. Developing a sensor with improved packaging options can enhance its versatility and applicability.

- NVH (Noise, Vibration, and Harshness): As our application is applicable to the automotive industry, we require sensors that are resilient to noise, vibration, and harsh operating conditions. Addressing NVH concerns is integral to ensuring the sensor's effectiveness in these environments.