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## **Advancing Vehicle Safety Through Smart Systems**

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### **ABSTRACT**

The development, testing, and integration of smart systems for improving vehicle safety are addressed. Particular emphasis is placed on the use of active safety systems, such as electronic stability control, adaptive cruise control, and automatic emergency braking in commercial vehicles. The working principle, common control approaches, and some of the challenges of the systems are discussed, along with their benefits in reducing accidents. The role of these systems in advancing future vehicles toward the various levels of autonomous driving is also presented. It is argued that although the advances in active safety systems have paved the way for semi- or fully-autonomous vehicles, the same has not been achieved with the roadway infrastructure that is needed in support of driving autonomy.