

## Decision Fusion via Integrated Sensing System for a Smart Airbag Deployment Scheme

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In this paper, we address the development of an integrated sensing system for the airbag deployment decision in an intelligent vehicle with focus on passenger and driver airbags in vehicles. The innovation provides a cost-effective system for deploying an airbag whilst maintaining precise, reliable and effective operation; in addition, it can be easily retrofitted into any vehicle with built-in airbag control. A number of sensing systems such as weight, vision and vehicle crash have been developed. The decision of several sensing systems are fused together to provide an exact airbag deployment decision. A LabWindow/CVI in the C interface program is developed for prototype implementation. The sensing systems are developed and integrated into a prototype platform. The performance of the prototype system is evaluated through several test runs. The results prove that the airbag deployment decision is unique, robust and intelligent for vehicle application.

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