Millions of automobile accidents occur worldwide each year. Some of the most serious are rear-end crashes, side crashes within intersections, and crashes that occur when cars change lanes or drift into a lane. The holy grail of traffic safety is to avoid automobile accidents altogether. To that end, automakers, governments, and universities are working on systems that allow vehicles to communicate with one another as well as the surrounding infrastructure (V2V/V2I for short). These systems show promise for such functions as intersection assist, left-turn assist, do-not-pass warning, advance warning of a vehicle braking ahead, forward-collision warning, and blind-spot/lane-change warning.

This compendium explores the challenges in developing these systems and provides the latest developments in V2V/V2I technology. It begins with a series of overview news stories and articles from SAE's magazines on the progress in this technology. This is followed by a series of technical papers on V2V/V2I dealing with the many technical aspects of design of these systems as well as discussions of such key issues as the need for extreme reliability assurances and traffic congestion overloads on the systems.

This book has been specially prepared for engineers at automakers and electronic component suppliers; software engineers; computer systems analysts and architects; academics and researchers within the electronics, computing, and automotive industries; legislators, managers and other decision-makers in the government highway sector; traffic safety professionals; and insurance and legal practitioners.

About the editor
After graduating from Rensselaer Polytechnic Institute with a B.E.E., Ronald K. Jurgen held various technical magazine editorial staff positions, including 30 years with IEEE Spectrum. Now retired, he is the editor of the Automotive Electronics Handbook and the Digital Consumer Electronics Handbook, and assistant editor of the Electronics Engineers' Handbook, Fourth Edition. He is also the editor of more than a dozen SAE books on automotive electronics.
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