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**Abstract:**

Until recently, truck drivers and their dispatchers have relied on public telephones and voice radio systems to communicate with each other. Today, however, vendors are beginning to offer new technologies for determining the positions of trucks and communications to and from trucks. Eighteen systems and their implications for the industry and intelligent vehicle highway systems (IVHS) activities are reviewed in this paper. Some of the newer communications and/or positioning systems are in the proposal stage. Others are available with not yet fully developed capability or only in limited markets. Some other systems, such as cellular telephones or modern voice radio, represent recent improvements of existing systems. New satellite based systems offer the most comprehensive coverage, but they are relatively expensive and tend to be favored by large, irregular route truckload carriers which have reported significant increases in productivity from system use. Regardless of the technology used, the challenge for truck fleet operators is the full integration of the information provided by the systems with their operations. In the transition to a high degree of information integration, three distinct steps or levels can be identified. First, the dispatcher's work is eased and made more efficient. The communications system plays a key role because the basic source of information is the moving vehicle. Then, information is shared between different departments within the trucking firm. Finally, interorganizational links between the trucking firm and its customers are established. Firms in the industry have always strived for information integration at these levels. What is new is the possibility of a much higher level of information automation and integration. The implications of trucking industry trends for IVHS



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programs may be summed up in two observations. Managers of trucking firms are interested in improved productivity, service improvements, and cost reductions. Highway agency professionals are interested in improved facility operations. But the mutual interests of firms and IVHS-interested agencies appear to fall through the cracks, so to speak. Trucking firms are achieving higher and higher levels of information-enabled integration. The potential for integration of information from the trucking industry has not yet been considered by the IVHS community.



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## **Communications and Positioning Systems in the Motor Carrier Industry**

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**William L. Garrison**

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COMMUNICATIONS AND POSITIONING SYSTEMS IN THE  
MOTOR CARRIER  
INDUSTRY

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