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7. Author(s) Carol A. Flannagan and Michael J. Flannagan		8. Performing Organization Report No. UMTRI-2007-22	
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16. Abstract

   This report describes a software tool that is being developed at UMTRI to represent the effects of nonindependent safety measures (the Unified Tool for Mapping Opportunities for Safety Technology, UTMOST). The tool has as its core a model representing crashes in terms of precrash conditions, occupant characteristics, crash type, and outcome. Overlaid on this is a model of the effect of implementing each of a number of safety measures, including public policy and technological measures. This portion of the model allows for visualization of the potential benefits of various approaches and combinations of approaches to safety. UTMOST is being developed and validated using existing U.S. crash databases for the purpose of understanding future safety trends in the U.S., as well as current differences between the U.S. and selected other countries, and future trends in those countries. Our goal is to be able to use this model to: 1) predict the benefit of specific changes in policy or technology in the context of other safety measures; 2) describe the largest remaining problems after a policy or technology has been implemented; and 3) assess the overall safety performance of individual vehicles, both in general and with respect to particular demographic groups.

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