

Strategy for Assessing the Safety Impact of Advanced Crash Avoidance

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PURPOSE:

Develop a methodology to validate the effectiveness of future crash avoidance systems.

OBJECTIVES:

- Utilize a standardized Safety Impact Methodology (SIM) to evaluate the ability of advanced technology applications in vehicle safety systems to solve specific motor vehicle safety problems.
- Demonstrate how the results of Objective Tests can be used by the Safety Impact Methodology to establish the safety impact of a deployable safety system.

PROGRAM SCOPE:

- This program is limited to emerging and foreseeable advanced technologies.
- Will not consider those already in production or just barely in the concept phase.
 - A Program/Project such as: “Electronic Stability Control” would NOT be a focus of this program.

SAFETY IMPACT METHODOLOGY:

Will be constructed of modules that can address each of the crash sequence phases leading up to a crash.

- The “non-conflict” phase
- The “conflict” phase
- The “imminent crash” phase
- The “crash” phase
- The “post crash” phase



APPROACHES:

Approach: Safety Impact Methodology (SIM)

An objective, computational tool that provides a link between the performance features of a technology and the relevant crash scenarios of the safety priority area.

Approach: Safety Area and Advanced Technology

Expand on the definition and characterization of the safety problem area and to detail the characteristics and performance of the proposed advanced technology countermeasure.

Approach: Develop Objective Tests for Predicting Safety Benefits

- Define the set of Crash Sequences and associated Objective Tests that appear to account for the highest number of crashes or injuries.

Approach: Objective Tests

- Conduct tests
- Analyze Results

Approach: Develop Safety Benefits Utilizing the Safety Impact Methodology

- Using the results of the Objective Tests, run the Safety Impact Methodology for the complete set of Crash Sequences.
- Safety impacts will be determined based on the results of the Safety Impact Methodology.

TARGET OPPORTUNITIES:

The safety problem areas are “open.” They *must* relate to a safety problem. NHTSA high priorities:

- Reducing rollovers
- Enhancing vehicle compatibility
- Reduce road departures
- Rear-end crash avoidance
- Reducing impaired driving
- Crash prevention
- Crash severity reduction
- Injury mitigation

