

Chapter-4

System Evaluation

The collision warning and avoidance system developed in this research project should be thoroughly evaluated during the system integration, on-site test operation, and full functional operation phases. One important point must always be kept in vision during the evaluation process is that this system is designed to forewarn and to prevent the fatal accidents, therefore, it has closely related to serious liability issues. Any failure or negligence in test and evaluation of this system may result in operational malfunction, which may cause an accident, personal injury, or property damage, and consequently may end up in costly litigation. Another important point is that the system proposed in this research is a unique solution; it is not a derivation from an existing application, nor it has peers, which one can relate or compare its performance.

The establishment of evaluation criteria for this particular system is relatively complicated, and each criterion should be examined before incorporated with overall system evaluation. The criteria that may be used for this evaluation include the following concepts:

1. System functions
2. System reliability
3. Detection and algorithmic accuracy
4. Installation, operation, and maintenance flexibility

5. Adaptability
6. Cost

Besides the above criteria, the system should be tested in terms of “Measures of Effectiveness” (MOE). This test would facilitate the determination of system’s ability of execution of its required functions. In this process, each MOE should be clearly defined and its utility has to be studied. Upon completion of MOE list, overall traffic movement at this particular location, including violations and accidents, has to be cataloged in terms of MOE. This data set then should be used in an extensive “before and after” comparison.

Chapter-5

Conclusion

It is a well-known fact that the traffic accidents kill and injure thousands of people, and cause losses in millions of dollars, every year. The reasons and the types of the accidents vary in a very broad spectrum, which includes the driver behaviors, the vehicle characteristics, the roadway geometry and many other factors. Although the vehicles and the roads that those vehicles travel on become safer and more reliable every passing year, no single measure or improvement will help to eliminate the risk of accidents and deaths on the roads. Traffic safety should be regarded as a multi-dimensional issue, and efforts should be spent in each and every dimension, in order to make it better.

This research targeted a current traffic safety problem, which exist on a local road. The actual purpose of the study was not just to find a solution to this particular location, but to develop a generic measure that can be benefited by many other problem areas. As we are moving into a new millenium, we, the transportation engineers, should be able to provide effective and applicible traffic safety solutions to the society we live in. Even if they are not so significant, it means one less dimension to worry about, and more resources to overcome the others.