SPR PROJECT DESCRIPTION

PROJECT NUMBER:
01461

PROJECT TITLE:
UTCA Crash Analysis Information Division

PRINCIPAL INVESTIGATORS:
David B. Brown
Computing and Information Division
Engineering Research Laboratory
The University of Alabama
Box 870290
Tuscaloosa, AL 35487-0290
(205) 348-6364
(205) 348-0219
brown@cs.ua.edu

Sibabrata Ray
Department of Computer Science
The University of Alabama
P O Box 205
Tuscaloosa, AL 35487
(205) 348-0194
(205) 348-0219 fax
SIBU@cs.ua.edu

Allen Parrish
Department of Computer Science
The University of Alabama
P O Box 205
Tuscaloosa, AL 35487
(205) 348-3749
(205) 348-0219 fax
parrish@cs.ua.edu

PROJECT OBJECTIVE:
This is the third of a series of projects conducted to upgrade crash data analysis infrastructure that is essential to optimal allocation of hazard elimination resources. There are two tracks of effort: (1) continuing support of the existing safety programs of the Alabama Department of Transportation (ALDOT), and (2) new system development to enhance the speed and capabilities of existing safety analysis systems.

PROJECT ABSTRACT:
Alabama has a several good programs dedicated to making the state’s roads safer; however, there are several issues that need addressing. For example, crash data analysis has been performed by
several agencies since Alabama began maintaining crash records on a uniform basis in the early 1960s, which left gaps and overlaps. Still fatality rates dropped to about one-third of their 1960 value by 1990 (which means the programs were doing something right). Since that time, there has been very little downward movement in the rate (which means that it might be time to intensify efforts or to adopt a more-comprehensive approach). Current data collection techniques are over 20 years old, and the last major overhaul of the data system came in 1983. The software used by ALDOT to select treatment sites and to specify countermeasures is no longer the state-of-the-practice. This project was proposed to address the concerns of the previous paragraph, and to develop improved crash data collection, analysis, and use.

PROJECT TASK DESCRIPTIONS:

• Continuing Support
  1. Continue to maintain and improve software systems that have been converted to CARE
  2. Beta test software that will automate the optimization step of safety resource allocation
  3. Support continued use of the Early-Warning system
  4. Provide CARE Training
  5. Support Intersection Magic
  6. Enhance the capabilities to distinguish truck volumes (AD)

• New System Development
  7. Improve Before-After CARE Interface
  8. Perform a systems analysis of pavement, bridge, friction and roadway inventory files
  9. Design software to extract key information from existing data bases
  10. Develop the new software
  11. Test the new software
  12. Document the system
  13. Provide training

MILESTONES AND DATES:

• June 11, 2001 – Initiate project
• Tasks 1-6 – proceed throughout project
• Tasks 7-8 – initiated June 11, 2001
• Task 9 – Sep 20 - Oct 30
• Task 10 – Oct 30, 2001-Mar 31, 2002
• Task 11 – Mar 1 - Apr 30
• Task 12 – Apr 30 - May 31
• Task 13 – proceed throughout project
• June 10, 2001 – Conclude project

TOTAL BUDGET:
One-year project: Alabama DOT $252,293 (partially funded by SPR funds).

STUDENT INVOLVEMENT:
One graduate research assistant and several undergraduate assistants will be involved in the project.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project is a continuation and expansion of UTCA project 99456, “(CAID) Software Support of the ALDOT Hazard Elimination Program” and project 00474 (same name as 99456). Both of these projects were conducted by Dr. Brown.

TECHNOLOGY TRANSFER ACTIVITIES:
A major component of this project is an on-going training effort, to acquaint potential users with CARE’s capabilities and the improvements thereto, and to offer advanced training to existing users.

POTENTIAL BENEFITS OF THE PROJECT:
This project offers incremental improvements to the capability to conduct safety studies and to select safety countermeasures. In effect, the project allows additional optimization of safety funding, and will consequently decrease crashes, injuries and fatalities.

TRB KEYWORDS:
CARE, safety programs, optimization, information mining, crash reduction.