RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER:
01463

PROJECT TITLE:
Maintenance & Extensions of the Critical Analysis Reporting Environment (CARE) for North Carolina

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

Allen Parrish
Department of Computer Science
The University of Alabama
Box 870290
Tuscaloosa, Alabama 35487-0290
(205) 348-3749
(205) 348-0219 (fax)
parrish@cs.ua.edu

Brandon Dixon
Department of Computer Science
The University of Alabama
Box 870290
Tuscaloosa, Alabama 35487-0290
(205) 348-0597
(205) 348-0219 (fax)
dixon@cs.ua.edu

PROJECT OBJECTIVE:
The long-range objective is to have all traffic safety professionals able to obtain crash information that they need from a desktop PC, or from the web-based system. The purpose of this particular project is to extend the current CARE implementation to take advantage of all its features.

PROJECT ABSTRACT:
Vehicle crashes cost the people of North Carolina multiple billions of dollars per year. To address this problem, each year the State expends millions of dollars to collect, enter and
maintain records on traffic crashes. These data constitute the most critical component in producing useful information for countermeasure-development. North Carolina has been a leader in such use of crash data. However, recent advances in microcomputer and World Wide Web technologies have provided opportunities to improve the use of this data.

Effective problem identification and evaluation necessitate that traffic safety professionals have virtually instantaneous access to all of the data in the database with a full capability to easily retrieve the information that it contains. Modifying the State’s existing CARE software to fully implement its information mining (IMPACT) and other capabilities will allow the desired instantaneous data retrieval and analysis, and will enhance safety study capabilities.

PROJECT TASK DESCRIPTIONS:
1. Train selected State personnel.
2. Maintain web-hosting functions at UA, but a project stem will be used to begin the transition to a web site within North Carolina.
3. Conduct a systems analysis to determine feasibility and programming requirements to convert mile-posted crash data to other data structures that will accommodate the CARE Hot-Spot and Early Warning modules.
4. Modify the BASE program to accommodate any ongoing anticipated changes in data elements.
5. Analyze the BASE procedure to streamline it, to automate any manual steps, and to make it more user-friendly.

MILESTONES AND DATES:
• Oct-Dec 2000 – Initiate training, initiate systems analysis on extensions of NC CARE modules, and determine requirements for BASE modification.
• Jan-Mar 2001 – Continue training, continue systems analyses, initiate development of BASE modification, and design Base streamlining software.
• Apr-Jun 2001 – Continue training, design module extensions, and continue development of BASE modifications.
• Jul-Sep 2001 – Continue training, complete development of extensions to CARE modules, and complete development of streamlining software.

TOTAL BUDGET:
One-year project: NC DOT $52,516.

STUDENT INVOLVEMENT:
No direct involvement of students is anticipated.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project is a continuation and expansion of UTCA project 99464, “A CARE Interpreter for North Carolina,” also conducted by Dr. Brown. It is also similar to several other efforts conducted by the PI for other state and local transportation agencies.

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