

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF TRAFFIC ENGINEERING

RESEARCH IMPLEMENTATION PLAN



Title: Smart Sign Ordering System

State Job Number: 14785

PID Number: 76094

Research Agency: University of Akron

Researcher(s): Ping Yi

Technical Liaison(s): Jim Roth

Research Manager: Monique Evans

Sponsor(s): Tony Vogel, Dave Holstein

Study Start Date: 3/13/2001

Study Completion Date: 5/31/2004

Study Duration: 39 months

Study Cost: \$68,841.88

Study Funding Type: 80 Federal / 20 State from ODOT SPR (2)

STATEMENT OF NEED:

ODOT operates a Sign Shop to fabricate traffic and information signs. The Districts prepare and submit orders for signs to the Central Office, where each order is checked against design specifications and standards. The Sign Shop fabricates the signs based on the approved orders from Central Office, and ships the signs to the individual District. This entire process is currently fragmented without an integrated data flow. Delays occur due to order backlogs or material shortage at the Sign Shop.

RESEARCH OBJECTIVES:

The objective of SSOS is to increase the efficiency of the sign ordering process by:

- Reducing labor costs due to extended review time.
- Organizing submitted orders on-line so that production schedule can be adjusted and material usage estimated.
- Enabling on-line cost Estimation.
- Providing a means of data management for summary of orders and production.

RESEARCH TASKS:

To help achieve the above objectives, SSOS is constructed as a Web-based and N-tier on-line software and utilizes the latest Internet and database technologies including Java, Object-Oriented Design, JDBC and Servlet for back end, JSP, custom tag library and JavaScript for front-end representation. These technologies provide the foundations for the development of SSOS in information utilization locally and data flow between the districts, Central Office, and the Sign Shop, thus to ensure design uniformity and consistency of traffic signs.

RESEARCH DELIVERABLES:

- The Final report documenting all research activities, conclusions, and recommendations.

RESEARCH RECOMMENDATIONS:

SSOS has created automated functions for data entry during preparation of sign orders, and provided on-line data review and modification capabilities. In addition, it enables querying and sorting, and helps tracking the orders in the production and delivery phases. This system improves the work efficiency in the sign ordering process by reducing human errors and speeding up the entire order-filling process. Preliminary results of the testing have shown that use of SSOS for sign ordering is feasible, convenient, and efficient.

PROJECT PANEL COMMENTS:

None

IMPLEMENTATION STEPS & TIME FRAME:

N/A, this project has been continued with a new title "Smart Sign Enhancement - Phase 2" State Job Number: 134218. The anticipated end date is 8/1/2006.

EXPECTED BENEFITS:

When Phase II is completed, sign ordering from central office sign shop will be stream lined.

EXPECTED RISKS, OBSTACLES, & STRATEGIES TO OVERCOME THEM:

None

OTHER ODOT OFFICES AFFECTED BY THE CHANGE:

- District Highway Management.

PROGRESS REPORTING & TIME FRAME:

N/A

TECHNOLOGY TRANSFER METHODS TO BE USED:

- The final report of this research will be available online at ODOT website.
- The final report was also distributed to all other state departments of transportation in addition to national libraries and repositories.

IMPLEMENTATION COST & SOURCE OF FUNDING:

The budget for Phase II is \$59,693.00 which comes from ODOT SPR (2).

Approved By: (attached additional sheets if necessary)

Office Administrator(s):

Signature: Dave Holstein Office: OTE Date: 4/25/2006

Division Deputy Director(s):

Signature: Tony Vogel Division: DHO Date: 4/26/2006