

Title of Nomination: Web Developers Accessibility Tools

Project/System Manager: Dell Pinkston

Title: Systems Development Manager

Agency: Management Information Systems

Department: Department of Administration

Address: 1325 Mail Service Center -

City: Raleigh

State: NC

Zip: 27699-1325

Phone: 919-807-2302

Fax: 919-807-2499

Email: dell.pinkston@ncmail.net

CATEGORY: Accessibility

Person Nominating (if different): Smitty Locklear

Title: Information Systems Director

Address: 1325 Mail Service Center

City: Raleigh

State: NC

Zip: 27699-1325

Phone: 919-807-2301

Fax: 919-807-2499

Email: smitty.locklear@ncmail.net

NASCIO Awards – Executive Summary

The North Carolina Department of Administration created subroutines that allow Microsoft Active Server pages to generate HTML. This HTML is compliant with the W3C/WAI guidelines for accessibility and North Carolina statewide accessibility architecture. Web developers use these subroutines to create systems that are consistently W3C/WAI compliant. No additional programmer training is required to develop accessible HTML. Also any updates in the W3C/WAI guidelines are easily incorporated into all HTML by modifying the applicable subroutine. Furthermore these subroutines allow web developers in all agencies to concentrate on generating efficient systems.

a) Description of project including length of time in operation

The State of North Carolina Department of Administration developed a State Surplus Property system beginning March, 2000. This system is utilized by over 150 agencies within state and local government and by the general public. This system was designed and written using Microsoft Active Server pages that generate HTML that is fully compliant with W3C/WAI guidelines for accessibility. It was necessary that all public pages and all internal data entry pages be fully accessible. After reviewing the W3C/WAI guidelines, it was determined that the best way to implement and incorporate W3C/WAI guidelines was to create subroutines that would generate compliant HTML. It was necessary to create these subroutines because Microsoft Active Server pages did not automatically generate compliant HTML. Without these subroutines each web developer would have to be trained to create compliant HTML. Development of these subroutines meant that very little HTML had to be included in the Active Server pages, instead variables were passed to subroutines and the HTML was generated. The State Surplus System became operational January, 2002 and since that time these subroutines are utilized in new system development and are available to all other agencies.

b) Significance to the improvement of the operation of government

All pages within the State Surplus Property system are consistently W3C/WAI compliant without having to train each web developer on the development of accessible HTML. Also any updates in the W3C/WAI guidelines are easily incorporated into all HTML by modifying the applicable subroutine.

For example the following code would be sent to the subroutine:

```
formText "lname", "Last Name", sAcct_last_name, "25", "35", bEdit, " "
```

would generate the Last name field on the following screen.

...

Deleted Payments | eAuction | Inquiry | Negotiated Sale | Payments | Store Sale | Void |

Bid Number:

Enter Account

Account:

or Enter an Account Name

Last Name: First Name:

An employee who was blind or had low vision who accessed the Last Name field using assistive technology would hear the name of the field “Last Name” and the field content “Smith”. To compensate for the lack of visual cues, extended descriptions are given in the narrative description for employees with varying levels of visual ability. In the example below, the assistive would narrate “Edit A&T State University”.

Agency Description	Action...
	Add...
A & T STATE UNIVERSITY	Edit... Security...
ADMINISTRATIVE OFFICE OF THE COURTS	Edit... Security...
Agency of Valeria	Edit... Security...

When the next system was developed by the Department of Administration the same subroutines were reused. This allowed the department to again create a system that was compliant with W3C/WAI accessibility guidelines and significantly decreased the time required to create W3C/WAI compliant HTML.

c) Benefits Realized by service recipients, taxpayers, agency or state

The most significant benefit to the Department of Administration is the substantial reduction of programming hours needed to generate usable and accessible web systems.

Other benefits of this implementation are:

- Creates user friendly web sites for local and state employees and the general public who are visually impaired.
- Simplifies the creation of accessible automated web systems.
- Modifications to the W3C/WAI guidelines are easily incorporated.
- Standardized the creation of HTML.

- Eliminates the need for each web developer to interpret and apply the W3C/WAI guidelines.
- HTML created using these subroutines does not have to be retested/revalidated for accessibility.

d) Return on investment, short-term/long-term payback (include summary calculations) Projects must exhibit measurable operational benefit.

After the initial creation of the subroutines, the time required to create accessible systems is significantly reduced. During the creation of new systems, web developers need not spend time testing for accessibility; instead the web developer can concentrate on the creation of efficient code. Creation of these subroutines allows for shared programming. This enables a unified approach to creating accessible code and does not require that the web developer have extensive knowledge of the W3C/WAI accessibility guidelines. This further enforces the North Carolina Statewide Accessibility standards which were implemented in 2000.