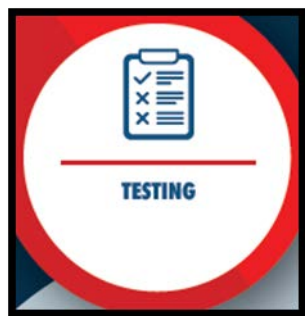# CMS Section 508 Program Tip #1: AUTOMATED AND MANUAL TESTING MARRIAGE

This Monthly Tip Series falls under the Program Pillar of Testing.

THE REALITY OF HOLISTIC ACCESSIBILITY

Automated testing tools can provide an initial/ongoing cursory assessment of a site, but they should never be solely relied upon for verifying a site's level of accessibility. Automated testing tools offer the critical benefits of decreasing the amount of time required to complete an assessment, can quickly analyze code to ascertain many accessibility violations, and often offer built-in best practices to aid remediation efforts. They are very useful in reducing 508 violations during the development stage. Nevertheless, automated testing tools cannot capture user experience, nor identify issues that can only be verified through human interaction. For this reason, a holistic accessibility process must encompass both automated and manual testing.

Manual testing involves testing by a human accessibility expert who investigates a page's structure and content, and analyzes code where appropriate. The tester captures accessibility issues that cannot be found programmatically. Thus, with a human tester comes the ability to fully validate the user experience for all user groups, and provide a more in depth picture of a site's level of accessibility. As development is executed, manual testing should occur alongside the automated assessments.

A manual tester should document issues between the browsers, and learns the subtleties of assistive technology in use with them. The tester is responsible for manually verifying that the page works as expected, and functions for as wide a user group as possible.

ITEMS CAPTURED DURING MANUAL TESTING

Content and intent are very human elements that robots can't legitimately ascertain. Examples of some of the questions that cannot be addressed via automated testing include, but are not limited to:

1. What's the purpose of the application?
2. Does it make sense to put a submit button at the top of the form? How about forms with multiple submit actions?
3. Do my images have meaningful descriptions for blind users?
4. What about my color usage to convey messages?
5. Is my site free of issues for users with a cognitive disadvantage?
6. What happens if I use a carousel?
7. Can all applicable assistive technology interact with my site?
8. For multi-media presentations, are sub-titles synchronized?
9. Are any of the fields required or optional in a form process?
10. When appropriate, do videos include audio descriptions?
11. Can all functions on my site be executed via the keyboard, and can be guaranteed to be without defect?
12. Are my error messages accessible?

THE WINNER

At the end of all this code slinging, defect wrangling, and smoke testing, who (or what) is the victor? The end user is. The customer. The user without a disability wins, as does the visually impaired (low vision or totally blind) user who wishes to have an independent web experience.

When we combine the machine with human interaction, we have then looked at many different aspects of the application and can determine to what degree it is accessible. Automated testing is essential in its use to baseline the work effort, and thus, should be considered a fraction of the conversation. Manual inspection inclusive of assistive technology finalizes the fraction and will ensure compliance is addressed from every angle.