

Title

Accessible Voting Technology: Analysis and Recommendations

Name, Affiliation, & Email Address

Deb Cook

University of Washington

debcook@uw.edu

Mark Harniss

University of Washington

mharniss@uw.edu

Abstract

We conducted a high level review of the usability and accessibility of accessible, electronic voting systems currently in use in the United States. This work is part of a grant to the Information Technology & Innovation Foundation from the U.S. Election Assistance Commission (EAC) to improve the accessibility of elections for voters with disabilities. In this presentation, we describe our findings along with guidance about developing increasingly accessible and useable systems.

Our analysis is based on review of the Voluntary Voting System Guidelines (VVSG Draft 1.1) developed in 2007; review of relevant standards and guidelines (e.g., Section 508 of the Rehabilitation act of 1973 as amended); and observation of past, present and prospective future voting systems. The primary purpose of this review was to inform guideline developers, voting system manufacturers, election officials and consumers with disabilities about successful strategies along with issues and concerns related to accessibility of voting systems in general. It was not meant as a review or rating of any particular system or implementation.

The VVSG requirements are organized by disability. We have chosen instead to organize our discussion using functional feature groupings based on: operability, adjustability, discernibility, understandability, and usability. Our broad findings include the following:

- A functional approach to voting accessibility with established performance benchmarks rather than one focused on disability groups is likely to be more effective in assuring usability of systems for the widest range of people.
- Creating a few solutions that accommodate as many people as possible by the simplest means is most cost effective and efficient rather than a broad variety of solutions that accommodate specific disability groups.
- A broader range of individuals with disabilities and with combinations of disabilities must be considered in usability and accessibility testing.

- Accessible voting systems based on emerging technologies, tablets and lap top PC's are promising, but developers must not rely on features of off-the-shelf systems (e.g., browser settings,) which may work well but may not be known to voters and poll workers. Instead, settings that allow the voter to control the presentation of information must be readily available within the voting system itself.
- Usability of accessible voting systems has improved since passage of HAVA in part due to development of the VVSG requirements and also due to an increased focus on usability by voting system developers. Despite this progress, some recurring issues continue to affect usability of voting systems by people with disabilities including:
 - Inconsistencies in synchronization of multimodal presentation (text and audio output);
 - Lack of implementation of context sensitive help and failure to use plain language;
 - Inconsistent methods for accessible ballot verification;
 - Inconsistency of design and function in the operation of accessible controls and keys;
 - Inconsistent methods for entering write-in choices