

# **Accessible Voting with Voter Verifiable Paper Records in DRE Voting Systems**

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The 2002 Help America Vote Act (HAVA) is by far the most important improvement in providing the accessibility in independent and private voting for voters with disabilities. As a member of manufacturers and solution providers for electronic voting, the management of AVANTE has placed special emphasis in ensuring 100% accessibility to voters with disabilities. In particular, AVANTE has made special effort to ensure that every single requirement of HAVA is met and that none will cause the denial of accessibility to voters with disabilities.

We have witnessed the joy and have seen the smile shown by voters with visual disabilities and voters with limited mobility voting independently on AVANTE VOTE-TRAKKER™ during the 2002 General Election in Sacramento County, California. As a solution provider to the election industry, AVANTE has even developed an online voter registration system with voice assistance for voters. Many members in the visually impaired communities consider VOTE-TRAKKER™ to have the most comprehensive and effective solutions for private and independent voting.

AVANTE has engineered many innovative features and functions that have proven to be effective solutions in ensuring 100% accessibility. The following are some of the features and functions that assure true accessibilities.

## **1. First and foremost, all DRE voting systems should provide equal accessibility to voters with disabilities and have the same rights for positive confirmation when voter verifiable paper audit trails are printed for the sighted voters.**

- AVANTE believes that visually impaired voters not only should be provided with means to vote independently and privately, they should be afforded with positive feedback during the selection process as well as when they cast their vote. This can only be achieved when visually impaired voters are read back with their choices made as stored in the electronic system and printed as paper record. This positive confirmation of how their votes are recorded is equivalent to sighted voters having the opportunity to verify their selections on the paper record.
- The management of AVANTE is aware of the concern of some visually impaired and voters with other disabilities requiring the voter verifiable paper record for every vote cast. This may slow down the implementation of the accessible voting systems. We certainly understand and share the concern and trepidation.

- We believe the members of disabled communities may have not been presented with the complete picture of the “voter verifiable paper record” proposal by the computer scientists concerned with the security of electronic voting system. These distinguished scientists are equally concerned with the accessibility to the disabled communities. We believe they are requiring accessibility and true reflection of voter intents for both sighted and visually impaired voters.
- Like voice assistance provided to the voters, the paper record once printed can of course be read back to the visually impaired voters. This is a simple provision that every one of the current electronic voting systems can do. Yet they are not willing to offer that to the disabled voters.
- As you may know, HAVA actually has a clause requiring printing of every vote cast with a paper record for audit and recount purpose. Logically and logistically speaking, it should be printed while the voter is still around for audit purpose so that these paper records have the meaning of verified ORIGINAL records. Printing of paper records at the end of election is just a paper copy of what may have been mistakenly recorded in the electronic memory.
- Almost all DRE voting system today can be retrofitted with all of the functions and features that we have outlined in the previous discussion. But very few of the manufacturers bother to add functions and features to ensure 100% accessibility and confidence with positive feedback. The same complacency is believed to be the root of their resistance to provide voter verifiable paper records for every vote cast. The argument of adding costs to the jurisdiction is more of a red herring than truth. Nothing cost more than lawsuits after lawsuits as shown in Counties that use DRE systems without voter verifiable paper records. Besides, printing the paper records at the end may actually cost more than printing in real-time for voter to verify.
- The sighted voters can review what was recorded with a printed paper record before the leave. For the visually impaired voters, they should be read back their vote on the paper record before they leave.
- The reading back of the HAVA required paper record is not only easily achievable by every voting system manufacturers, we believe it helps to ensure the visually impaired voters as well as sighted voters to know for sure that their votes are cast correctly and recorded correctly.

## **2. Provide voice assistance in all languages besides English.**

- AVANTE VOTE-TRAKKER™ was the first voting system to provide voice-assistance in all languages used in United States.

- That is, besides English; Spanish, Chinese, Japanese, Korean, Vietnamese, French, Russian, etc. are also available for those visually impaired voters that are not comfortable with the use of the English language.
- VOTE-TRAKKER™ is the only voting system that directly imports the alternate language translation into the voting system to avoid human placement errors. Imagine the havoc that it brings if translated candidates have been misplaced into the voting positions. We have seen this happen and many go undetected.

### **3. Provide immediate and positive feedback whenever the voters make a selection.**

- Many electronic voting systems provide a simple and vague feedback after visually impaired voters make a selection. They simply acknowledge the choice made saying “check” or other similar words. Such vague feedback is not positive and certainly did not have the same effect as the checkmark on the displayed screen to the sighted voters.
- VOTE-TRAKKER™ is the first and may be the only system that immediately reads back the choice that is made by the voter for positive confirmation. This is the case even when the voter starts to type in their write-in candidates. Every alphabet and notation is immediately read back when entered.
- AVANTE believes the positive feedback created by reading back the choices made is the true accessibility, equivalent to the highlighting of choices made that is provided to the sighted voters.
- More importantly, VOTE-TRAKKER™ instructs and trains the voters from the beginning without the need for prior training or instructions by the polling officials. The same instructions are repeated whenever needed for positive reinforcement.

### **4. Provide the voter the ability to ask for re-reading of any contest if they get distracted.**

- Every voting system today provides a simple flow by reading from the top all of the contests of the ballot for the visually impaired voters to make their selections. However, they do not provide the same accessibility to the sighted voters with the ability to read the ballot again when they are distracted.

- When a visually impaired voter is distracted for whatever reason, by simply pressing on upper right hand corner “raised - key” on the keyboard, VOTE-TRAKKER™ will start reading of the ballot from the top of the contest at hand.
- For those voters with knowledge of the keyboard, they can even use the “navigation” up and down keys to go forward or backward on the contest being read.
- For those that do not know keyboard well, they can also use the physically “raised ESC” key on the left upper corner to skip over any choice or instruction.

**5. Provide voters the chance to quickly skip through those candidates or choices that they are not interested in. VOTE-TRAKKER™™ also provides easy navigation during the reading of ballots in both backward and forward direction if the voters know how to use the standard computer keyboard.**

- As mentioned, for those voters with knowledge of the keyboard, they can use the “navigation” up and down keys to go forward or backward on the contest being read. That is, they can accelerate their selection process if they are familiar with the ballot.
- For those that do not know keyboard well, they can also use the physically “raised ESC” key on the left upper corner to skip over any choice or instruction.
- This accessibility equivalent for “overview” of the choices available is the first and may be the only ever provided to the visually impaired voters.

**6. Provide the visually impaired voters the same rights to write-in their candidates as the sighted voters even if they do not know how to type.**

- To really provide 100% accessibility equivalent of voting, blind and visually impaired voters must be able to write-in their candidates just like the sighted voters. This is not normally provided by electronic voting systems today.
- VOTE-TRAKKER™ provides the easiest means for voters that know how to type with keyboard to enter their write-in candidates for every available contest.
- For those voters that do not know keyboard, they can use the “raise” upper right hand corner “-” key to scroll through the alphabets in spelling out the write-in candidates.

- AVANTE management believes 100% accessibility is provided only if all of the voting rights of the sighted voters are also available to the visually impaired voters. That includes the ease of voting for write-in candidates.

**7. Provide visually impaired voters without the use of fingers and other disabilities to vote easily and independently.**

- For those visually impaired voters with other physical disabilities such as without the use of fingers or lack of dexterity such as those with arthritis, most electronic voting systems will make independent and private voting very difficult if not impossible.
- VOTE-TRAKKER™ designed its system with the functional selections and voting keys spaced as wide as possible to make their use easy.
- More importantly, these spatially separated functional keys are physically raised from the rest of the keys on the keyboard to make the finding and use of them easy even if they have never touch a keyboard before. By simply pressing on the raised ENTER key with their elbow or chin or stylus when the selection is read, voter can make their selection. The ESC key for skipping over choices and accelerate the voting process is also raised for ease of use. The “CTRL” key on the lower left-hand corner is also raised for “CASTING” of the ballot when the voter is finished with their selections.

**8. Visually impaired voters not only can review their choices before they cast their ballot like the sighted voters; they must also be able to make changes easily during that review process. This function is not always available in most systems.**

- VOTE-TRAKKER™ not only enables the visually impaired voters to make changes at the final review of their ballot, it also provides the ability for them to make changes anytime by simply requesting “REVIEW” when the “REVIEW” choice is presented at every contest.
- By simply pressing on the “ENTER” key while the selection is read during the review cycle, the system will automatically return to that particular contest. Voter can make any other choices they wish to make again for that contest. When that change has been made, the system returns to finish the reviewing of the balance of the choices made on the rest of the contests.
- This ease of change and confirmation of choices made on the completed ballot is also the first and only system with such function.