

A Manufacturer's View Point On the Voter Verifiable Paper Record and Audit Trail

(Rev. B November 26, 2003)

AVANTE International Technology, Inc.
70 Washington Road, Princeton Junction, New Jersey, 08550
www.vote-trakker.com

As the pioneer in the use of voter verifiable paper records, AVANTE would like to clarify some of the confusion and misunderstanding that is being discussed on electronic bulletin boards and in the news media.

VOTE-TRAKKER™ made by AVANTE is certainly voter verifiable in any sense of the word and of course in practice. In fact, there are two options to achieve the voter verification function by the system.*

TWO OPTIONS FOR PAPER RECORDS IN AVANTE VOTE-TRAKKER™:

There are two basic choices on how AVANTE VOTE-TRAKKER™ paper records can be used. The choices are available to the local jurisdiction when they create the ballot.

1. ***Print a FINAL CONFIRMATION PAPER RECORD for the voter to review and verify.***
AVANTE VOTE-TRAKKER™ presents the summary of choices to the voter on the screen upon completion of all contests. The voter can make changes by simply pressing on the box containing the choice that needs to be changed. The system will return to that particular contest for the voter to make changes. Again, the review screen appears and the process can continue until the voter is satisfied with his/her selections.

Once the voter presses the "Cast Ballot" button, the system informs the voter that "CASTING YOUR BALLOT IS IRREVOCABLE, Please confirm by pressing on the "Cast Ballot" button again if you are sure of your selections." The paper record is produced when the voter presses the "Cast Ballot" button for the second consecutive time. Only upon pressing on the "Cast Ballot" button a second time will the paper record be printed. In this case, the paper record is FINAL and will serve as a confirmation establishing the accuracy of the cast ballot.

We anticipate that someone invariably would claim that the paper record is not the same as that of the review screen. This issue will be discussed below.

2. ***Print a "trial" or "temporary" paper record for the voter to review and verify prior to pressing the final "CAST BALLOT" button.*** Once the voter confirms his/her choices on screen, the voter presses the "CAST BALLOT" button. A paper record is printed with the choices listed on paper. If the voter is not satisfied with the first "temporary" paper

* Definition of the word verify 1: to confirm or substantiate in law by oath

2: to establish the truth, accuracy, or reality of (from the Miriam-Webster 11th edition © 2003)

record for any reason, he/she can again press a contest box on the review screen to make changes. Once a change is made, another “temporary” paper record will be presented for review and verification. There is NO limit to how many times a voter can make changes.

Once the voter is finished making changes, the “CAST BALLOT” button is pressed two consecutive times and the FINAL and OFFICIAL paper record is printed. This final and official paper record is also presented to the voter to verify.

We STILL anticipate that someone invariably would claim that the FINAL AND OFFICIAL paper record is not the same as that of the review screen or the first “temporary” paper record. This issue will be discussed below.

AVANTE has always made an effort to describe both methods employed by VOTE-TRAKKER™ to every one interested in our system.

WHY DID AVANTE CREATE THE FIRST DRE* THAT PRODUCES A VOTER VERIFIABLE PAPER RECORD?

When AVANTE created the paper record as part of voting system back in November 2000, we were trying to answer the question “How can we let voters know that their vote is counted and counted correctly?” A review of the current voting systems revealed several key features that must be included to answer this question.

- In the “marksense” system, voters mark the paper ballot themselves and submit them for counting. According to CALTECH/MIT studies, the voter error rate can be as high as 10%. This error rate includes incompletely filled ballots (under-votes), marking too many choices (over-votes) and writing on the paper ballots. All typical human errors!
- The punch-card system is of course similar to that of “marksense” system and became notorious since November 2000. Voter intent is the biggest question asked during the recount of that election.
- Lever machines are a faster method for casting a ballot. However, voters can be confused by the full-face format and there is no positive feedback to the voter. The machines are difficult to maintain. In November 2003, the machines were set up incorrectly causing an entire Connecticut town to vote on emergency paper ballots. The system also produces more “under-voting” than other systems.
- DRE systems induce voter errors by the way the ballots are presented or by the system wrongly interpreting the ballot style presented to the voter. They may be tampered DURING and AFTER the voter finishes his/her ballot.

In every example, the common theme is that the voter does not know whether his/her vote was counted and counted correctly.

The advantages of using a touch screen DRE system are well known. We believe the basic need for the paper record is to provide an INDEPENDENT and AUDITABLE paper record besides

* DRE – Direct Recording Electronic (including touch screen systems)

the electronic records. A touch-screen system without a REAL-TIME paper record that have been reviewed and verified by the voters lacks the authenticity to provide any meaningful INDEPENDENT AUDIT. We believe that the requirement for an auditable system as well as a system that provides all of the ease of use features desired has lead to the creation of VOTE-TRAKKER™.

THREE MODELS FOR IMPLEMENTING PAPER RECORDS IN AN ELECTION:

Paper records must be printed for each vote cast with an electronic voting system. This is a HAVA requirement. In our opinion, there are many different ways that a “paper record” can be used to help the voter to know his/her votes are counted and counted correctly. We believe that as long as these paper records have been “reviewed”, “touched” or “verified”, they bear the mark of authenticity for use as an independent audit trail.

The following are some of “methods” that have been proposed:

1. The New Hampshire Model:

In this model, the voters use the touch-screen voting units to indicate their choices. The use of touch-screen units is to ensure accessibility to visually impaired and other disabled voters. The electronic records on the touch-screen units are not recorded nor are they used for counting votes. Instead the voting machine prints out a paper record that will be “touched” and “reviewed” by the voter before dropping it into the ballot box for counting.

In this model, the voters can accept or reject the paper ballots as many times as the jurisdiction permits. For example, the voter submits the paper ballot to be spoiled in order to request another turn at the voting machine.

In this model, if the voter does not submit his/her paper ballot then the vote will not be counted. AVANTE DRE VOTE-TRAKKER™ and OPTICAL VOTE-TRAKKER™ can be adopted to follow this model. An official paper ballot is printed with both human readable format as well as machine-readable barcodes for ease of tabulation.

2. The Real-Time Verifiable Model:

The touch-screen units are used by voters to make their selections. Voting records are stored on the voting machine. Paper records will be printed in REAL-TIME for the voters to “review” or “confirm”. The paper records are independently verified by the voters and thus bears the mark of authenticity and should be used for recounts. There are at least several variations in the presentation of paper record for voter to verify:

- The two variations of paper records currently used by VOTE-TRAKKER™. The voters are presented with the paper record for confirmation and review. The voters never physically touch the paper records. The paper records are stored in a sealed compartment in the system so as to ensure complete and tamper-proof records of the election. In the first approach presented by VOTE-TRAKKER™, voters confirmed their vote as printed to be the same as in the review screen.

The second approach provides for an opportunity for the voters to change their mind upon reviewing the “temporary” paper record. The second approach essentially provides a chance for the voter to “accept” or “reject” the paper record.

- A paper record is printed with machine-readable barcodes and is in a human readable format. The voter is presented with the paper ballot to submit for auditing the election. This version allows the voter to not submit a paper ballot, thus making the election records incomplete.

3. The TRUST-ME Model:

In this model, the touch-screen units are used by the voters to make their selections and used to store their voting records. Paper records are printed POST ELECTION. We do not believe this model actually meet the spirit of the HAVA requirements of paper records for audit trail.

In this model, the voters are not provided a chance to “review” or “confirm”. It is claimed by others that the printer will faithfully print out the electronic records in paper form the same way every time.

The problem is that any error made by the voter while voting, by the system DURING the selection process, by the system while STORING the electronic records and by the system AFTER the voter is gone will never be “discovered” or “recovered”.

Worse, it can never be proven or in most cases detected again. Once the “vote” is record in the electronic media, short of direct tampering, the system is going to print out the same electronic file every time you ask them to print again. Thus, all of the errors if made by the voters and by the system **during** the selection process, while **being transmitted and stored** into the electronic records, and any potential errors in the system **before any tallying** happened will also be faithfully printed as well.

Another variation of such a model is to provide another electronic verification by a third vendor to ensure that whatever the voter sees on the screen are recorded faithfully in a different media and system as part of the audit trail.

AVANTE believes electronic verification is a must have feature and is a good practice for any electronic voting system. This basic good practice is currently built-in the AVANTE DRE VOTE-TRAKKER™ system. Each paper record is tied to the electronic ballot images with a randomly generated tracking number. Each of the electronic ballot images is bound to the randomly generated tracking number with a relational check code that is also printed on the paper record. Each of electronic ballot images is sent simultaneously into at least two different electronic media (magnetic hard drive and electronic flash memory). At the end of the election, before the tally can be generated, the ballot images and event logs stored in the hard drive and flash memory are copied onto a write-once CD-R.

As good a practice as it may be, AVANTE does not believe that it can replace the printing of real-time paper records for voters to verify. Any electronic verification method cannot effectively bear the mark of authenticity as paper records that have been “viewed”, “touched”, or “verified” by the voters.

Any electronic media can be tampered with and does not have the mark of authenticity as a TRUE INDEPENDENT AUDIT TRAIL.

WHAT AVANTE BELIEVES A PAPER RECORD SHOULD CONTAIN:

One of the typical questions raised is: what if the paper record is not the same as the electronic record?

The answer is simple. That is exactly the reason why we must have a voter verifiable paper record. It certainly is not the American way to hide our heads and pretend that electronic records cannot be tampered with or programming cannot be wrong or malicious. If they are wrong or tampered with, we must be given a chance to discover and correct them. That is exactly why a real-time paper record must be printed and reviewed by the voters.

Being the pioneer in Voter Verifiable Elections Systems, AVANTE attempted to resolve all of the various problems and issues in producing a paper record. The following are some of the requirements that must be addressed:

1. The paper record must maintain voter’s privacy.
 - There should not be a time-stamp like some proposed systems produce.
 - There should not be serial number attached to the paper record.
 - The paper record must be individualized (i.e. cut). It must not be produced in a roll.
 - There should not be any printer ribbons or other means that can be used to reconstruct the sequence of votes.
2. The paper record must not be easily tampered.
 - No one should be able to produce another paper record post election.
 - Each paper record must bear a special check-code that cannot be tampered with even by the election officials or by the company that produces such system.
3. The paper record must not be defeated by forgery.
 - How would we know if a paper record is authentic or forgery? What if someone stuffed with other paper records after the election?
 - What if some one presents a paper record that they claim to be authentic?
 - AVANTE paper records are each incorporated with an encrypted printing specific to the selections.
4. The paper record must allow for authentication and traceable to the electronic records.
 - That is, there should be one-to-one correspondence with the paper records and the electronic records.
 - How do we know the same electronic records have not been printed twice?

5. Should the voters be given a paper record besides what are stored for audit and recount?
 - Some people are afraid that people can sell or buy votes.
 - Some people are worried that people will coerce others to vote a certain way.
 - Whether a voter should be given a paper record as part of their record of voting is a social and political decision to be decided by the political process and not by the vendors. Of course, there are both federal and state laws that can be enforced to protect such tampering as well.
6. Visually impaired voters should also have the benefits of voter verification similar to that of the paper records for the sighted voters.
 - Contrary to the common belief of the critics, AVANTE believes that visually impaired voters should receive the same benefit of the voter verification in knowing their votes are cast and recorded as they intended.
 - The paper records that are used for voter verification must also be read back after the paper record is printed.
 - The paper record should be deposited quickly once printed while the paper record is being read to voter in order to keep the vote private.
 - AVANTE believes that it is even more critical that visually impaired voters be read back their vote on paper so that they too can be assured that the vote is cast and recorded as he/she intended.

We hope the above list will help those having problems in making a viable voter verifiable paper record system to work. We have seen many of the more established voting system manufacturers purposely make voter verifiable paper records fail in order to prove that it is not practical.

We believe that having a voter verifiable paper record is such a “no-brainer” that it really defies common sense for anyone to object to its use. Like Professor David Dill of Stanford University once said in exasperation, printing a receipt or paper record is not rocket science. People have been doing this for all kinds of business transactions.

WHAT IF SOMEONE CLAIMS THAT THE PAPER RECORD DOES NOT REFLECT HOW HE/SHE INTENDED TO VOTE?

There are two different scenarios that voters may voice such a complaint.

1. The first scenario is that the paper record is the same as that of the review screen. The voter simply changed their mind after the paper record is printed upon their confirmation of touching on the “CAST BALLOT” button.
 - This type of complaint is administrative in nature. That is, how many times the voters are given the right to change their mind? Typically, most state laws for paper voting allows spoiling of three paper ballots. In the case of electronic voting, the voters are given unlimited chances in changing their choices during the selection and at the review screen.

- In all touch-screen voting systems, the review screen must be presented to the voters so that they can make last minute changes. The voters must be able to change their mind as often as they wish before they press on the “CAST BALLOT” button.
 - VOTE-TRAKKER™ provides the capability for voters to change their selections anytime during the voting process by simply pressing on the “Review Choices” button or choices made on the summary screen.
 - Some systems may allow accidental “CAST BALLOT”. For example, some systems have such button available on the screen at all times which can confuse the voter into pressing it before he/she finishes their vote. This potential error should be corrected.
 - VOTE-TRAKKER™ requires two consecutive touches on the “CAST BALLOT” button before the vote is finally cast. Immediate after the first “CAST BALLOT” button is pressed, the voter is reminded with a reminder screen: “CASTING YOUR BALLOT IS IRREVOCABLE. Please confirm by pressing on the “Cast Ballot” button again if you are sure of your selection.” The voter can still touch on any of the selections to make their changes at this point. Only upon touching on the “Cast Ballot” button twice consecutively will the vote be cast as final.
 - If the “temporary” paper record option is selected, VOTE-TRAKKER™ will print out a copy of a “temporary” paper record for voter to confirm upon the first touch on the “CAST BALLOT” button. The second touch on the “CAST BALLOT” button is when the final and official paper record will be printed. The final and official paper record is signified with a barcode of choices, a randomly generated tracking number, a relational check code and encrypted printing style.
2. The second scenario is that the voter complains that what is printed on the paper record is not the same as selections shown on the review screen.
- This is a serious matter. If true, the system is now proven to be inaccurate or it has been tampered with. Voting must not be allowed to continue.
 - However, it can also be simply an error on the voter’s part as well. In a long ballot, voters may not remember exactly how they voted on each and every contest even though they are displayed in the review screen.
 - **It can also be due to the fact that some of the systems available today induce the voters to make excessive unintentional under-votes. Such voices of complaints may help the jurisdictions to correct such system errors.**
 - Any reporting of such serious errors should be in writing. The voter should sign an official complaint. Such complaint should indicate that he or she has observed the discrepancy on the specific machine number and preferably including the specific contest. The voter must not be asked to indicate what was the specific error because this question could affect the privacy of the voter’s choices.
 - AVANTE has always suggested such administrative procedure that if any complaint is raised on any specific voting unit, all of the paper records will be compared with the electronic ballot images that are used to tally the vote. This is why it is critical that each paper record must have a unique random generated tracking number.
 - AVANTE has always suggested such administrative procedure that **if more than one complaint is raised on any specific voting unit**, the specific unit should be shut down for investigation. Again, every paper record must be recounted to compare with the electronic ballot images.

- In the total of more than 1600 votes cast in the 2002 General Election in Sacramento California, there was not a single complaint of such discrepancy.
- In the close to 4000 votes cast in the 2003 November Election in four different municipalities in Connecticut, there was not a single official complaint filed of such discrepancy.
- There was a single reported voicing of error by a voter when a reporter was present. When asked to file an official complaint in writing, the voter declined to do so.
- However, if any one is interested in such direct verification of paper records on that particular location, AVANTE will make the request to that particular precinct to “recount” and “compare” all of the paper records against the electronic ballot images in public. We believe public confidence in our election process is of utmost importance to the democratic process.
- AVANTE proved that almost all voters are earnest in exercising their voting rights. A slight additional amount of work is well worth the confidence that we gained through the use of voter verifiable paper records.

IS THERE A MORE VOTER-VERIFIABLE PAPER RECORD THAT IS IMMUNE TO ANY COMPLAINT EVEN IF THE COMPLAINT IS FALSE?

As we discussed above, there was all but one person out of six thousand ballots cast on VOTE-TRAKKER™ units that unofficially complained about the discrepancy of the paper record and the review screen. In fact, we do not even know if that particular complaint was made in earnest. However, one may still ask what if there is really a difference? This is one of the more quotable concerns made by the critics.

AVANTE believes that this kind of question is exactly why we should have a real-time paper record for the voter to review and confirm. Any discrepancy voiced should be addressed and recounted in public.

While there may be other modes of operation and presentation of such paper records, because of privacy issues, none is exempt from such complaints. For example, the following sequence has been suggested:

1. The voter selects their choices on the touch-screen.
2. The voter reviews their choices on the review screen and makes changes if needed.
3. The voter cast their vote to print out a paper record for verification.
4. The voter accepts or rejects the paper record. If rejected, the voter can make new choices again until they are satisfied.

This sequence is a variation of the “trial” paper record process and can be easily instituted in VOTE-TRAKKER™ as one of the additional options. However, this sequence like any others is by no means immune to the same complaints.

For example, what if there is a voter that keeps saying that what is printed is not the same as what is shown on the review screen? What is one to do?

- First and foremost, the election official cannot look at the screen to verify such complaint. By doing so, we will have violated the privacy of the voter and secrecy of the vote.
- Secondly we must be able distinguish between the “accepted” and “rejected” paper records that have been printed as stored together. The hardware requirements may pose a little challenge. (AVANTE has a solution to such technical difficulty none-the-less).

The same administrative protocol must now be instituted much the same way as we discussed earlier:

- The voter complaint must be made in writing.
- A one-to-one paper record comparison to the electronic ballot image must be made in public.
- For the one-to-one paper record to electronic ballot image to be compared, there must be a unique identifier for each record.

We actually end up with the same administrative protocol for handling any real or erroneous complaints. For that matter, this sequence is no more voter-verifiable than any others.

AVANTE believes that there are two important values afforded with the use of voter verifiable paper records in the election process.

- Ensure the integrity of the voting process through the direct verification of the voters.
- Help the jurisdictions to monitor and correct system errors if they exist.

AVANTE does not believe any one process is more voter-verifiable than any other process. We believe that any form of paper records that have been reviewed and verified by the voters before they left the polling place is voter verifiable. These paper records should be considered carrying the authenticity marks for use as independent audit trail.

DISCUSSIONS ON SOME OF THE VIEWPOINTS MADE BY CRITICS OF VOTER VERIFIABLE PAPER RECORD?

AVANTE has been outspoken on the lack of truth and validity of these complaints. However, these make-believe viewpoints continue to fester in the media. We would like to address them here again as part of the discussion. This discussion is much more pertinent today than any other time in view of the voter verifiable paper requirement for California made by the Secretary of State Mr. Kevin Shelley.

1. Voter-Verifiable Paper Records Cost More Money for the Jurisdiction to Run an Election

There are several costs in running an election:

- *The initial hardware and software cost of the voting system.*
In our market survey, typical systems without voter verifiable paper record capability cost approximately \$3200 per unit while those with voter verifiable paper records may cost \$3600 per unit (inclusive of training and implementation onsite assistance). There may be some differences in the initial start up cost.

▪ *The running cost of the hardware and software.*

The cost of running an election with the voter verifiable paper record approach may actually be lower.

- Most of the opponents to the voter verifiable paper record tend to not mention the fact that they must print the paper record either in real-time or post election at the polling places (some may argue they can do it at the County office). The paper record is a HAVA requirement for DRE systems. Now the jurisdiction must add some printers to each polling place to print the paper records. This increases the initial cost of capital. Depending on the printing speed requirement, they can easily add a few hundreds to thousands of dollar capital cost to each polling place.
- To print each ballot image takes 4-10 seconds each and thus can add 30 minutes to an hour to each poll closing. The jurisdiction must pay for the poll workers and other staff on the job longer. This labor and management cost may easily add a few hundred to one thousand dollars to each polling place for each election.
- Depending on the systems chosen, some actually cost more to run. For example, if there is a lack of automation in ballot generation and proofing, the cost of running such systems will dramatically increase for each election. If the system is not provided with an automated logic and accuracy testing, there is another additional cost of hundreds of staff-hours, etc. So far, most jurisdictions simply ignored the state laws by not doing logic and accuracy testing on each voting unit at all.
- In the end, the tally of costs using system voter verifiable paper records in the end are actually much lower than those systems that print the non-voter verifiable paper records post election.
- Anyone interested in the real costs should talk to the staff of those jurisdictions that have implemented the older touch-screen voting systems.
- With the lack of voter verifiable paper records, more legal challenges may be posted in close races. Again, this may add to the cost of the jurisdictions or to the contestants depending on the local election laws. This can easily added thousands and tens of thousands to the running cost of each election.
- Better yet, try to estimate the costs of errors and cost of potential retrofits at Broward and Miami-Dade County in Florida, State of Georgia and Maryland, etc.

2. Voter-Verifiable Paper Record Systems Are Unproven and Pose Technical Problems

AVANTE being the only company that has successfully run live government elections using voter verifiable paper records, we feel obligated to answer some of these issues raised. We would like to clarify some of those rumors that have been spread by those that were not there. Anyone really interested to know from those with the first hand knowledge are welcome to call both the staff and management of the jurisdictions involved.

- In the 2002 Sacramento California General Election, there were six polling locations used for early voting. Each polling place was open for approximately 10 days.
 - The decision to allow the use of the voter verifiable paper record system by then SOS Bill Jones were literally postponed to the proverbial “eleventh” hour. No outreach or advertisement for such voting opportunity was possible.

- There were a total of more than 1600 ballots cast.
 - AVANTE was required to performed survey of the voters with the County of Sacramento. More than 86% indicated that they were able to cast their votes with outstanding confidence. In combination more than 96.5% indicated they were able to cast their votes with confidence. In contrast, reported only 70% of the voters in Georgia in 2002 election expressed confidence in voting on touch-screen systems without voter verifiable paper record.
 - Among all the more than 1600 votes cast, there was not a single complaint that the voter verifiable paper record was not the same as what was chosen.
 - There was not a single “unintentional” under-vote.
 - There were 65% less under-votes in comparison to all other DRE systems in use in that particular election in California.
 - There was an un-foreseen static problem for a small percentage of the paper records clinging to the viewing screen during the election. This problem was corrected immediately by shielding the screen and removing the paper record to place inside the storage compartment. This static cling problem has since been addressed and correctly completely.
 - There were no paper jams of the printer units. The rumor that tools were used to un-jam printers is false. Instead, there were attempts made by voters from a competitive company trying to knock down the shield of review window.
- In the 2003 Minnesota Election, there were total of two polling locations using AVANTE VOTE-TRAKKER™ for mock election. Each polling place was open for approximately 12 hours.
 - Close to a thousand votes were cast on two voting units.
 - Every paper record was printed and retrieved successfully.
 - Not a single voter complained that the paper record did not agree with the selections made by the voters on the screen.
 - Again 0% residual vote was achieved. There is 0% error in reflecting voter intent.
 - Not a single “unintentional” under-vote was recorded.
 - In the 2003 Connecticut Election, there were total of five polling locations used. Each polling place was open for approximately 14 hours.
 - The decision to use the voter verifiable paper record system by Connecticut SOS was made early. Good outreach and advertisement for such voting opportunity was made.
 - There were a total of close to 4000 ballots cast.
 - Based on the outreach survey, more than 90% of the voters feel confident in casting their votes.
 - Every single voting unit ran a full logic and accuracy test where every voting position was “touched” to cast specific votes based on the ITA certified script.
 - Among all the votes cast, there was one single voter feeling that the voter verifiable paper record did not match what she believed she chose. However, she did not agree to sign an official complaint. The name of this voter is not known or was recorded.

- Again 0% residual vote was recorded. There was not a single “unintentional” under-vote.
- There was not a single voter verified paper record clinging to the viewing window. Every paper record was printed and deposited perfectly.
- There was not a single voter verified paper record jammed in any voting unit. Every paper record was printed perfectly and retrieved for audit trail perfectly.

3. Voter-Verifiable Paper Record Systems Cannot Provide the Same Accessibility to the Visually Impaired Voter

This is one aspect of the issue that is widely misunderstood. By stating that the sighted voters have the privilege to know that their votes are counted correctly will disenfranchise the visually impaired implies that visually impaired voters will not wish to know their votes are counted and counted correctly!

AVANTE believes otherwise. We think the visually impaired voters, like most of us would appreciate to know that their votes are recorded correctly as well.

AVANTE has developed and proven that not only sighted voters can feel confident of their votes with the voter verifiable paper record, but visually impaired voters can also be assured of their votes being recorded correctly in just the same way.

- Visually impaired voters will be verifying their votes with the reading back of the voter verifiable paper records just as if the sighted voters are reviewing their paper records.
- In fact, some of the visually impaired groups have tried AVANTE VOTE-TRAKKER™ read back process and acknowledge the accessibility of the paper record.
- This capability is not inherent in AVANTE VOTE-TRAKKER™ only. All of the current DRE systems on the market are also capable to provide such read back facilities to the visually impaired voters.
- AVANTE believes all of us delivering services in public sector should make the provision of equivalency in voice assistance to disabled citizens a basic rule. It should be a level of service we should provide regardless of whether it is required by law or not.
- Again, there is no rocket science here either!

CONCLUSION:

YES. A good solution of voter verifiable paper record as part of the audit trails does require detailed and careful engineering. But technical requirement in printing paper records in real-time is not much different from printing the same paper records after the election at the polling places.

However, the effect in voter confidence and in our democratic process in using and not using voter verifiable paper record is dramatic. It should be obvious to all of us involved in the election process by now that the cost to society in using voter verifiable paper record is by far lower than the cost of not using them.

AVANTE has pioneered voter verifiable paper record voting solution and has proven that it can be done successfully and flawlessly.