

From: Singer, William
Sent: Friday, December 13, 2002 9:42 PM
To: Herod, Linda; Harrell, Travis
Cc: Singer, William; Gonzalez, Steve
Subject: Arapahoe Recount After Action Report And An Analysis Regarding All Required Application Activities As Are Recounting Related (ARAARAAARARAAAARR)

Importance: Low

Please note this email describes both the recount, and 20 Ballot Now suggestions re: recount functionality at the bottom. I would have split the email up, but clearly the title would have been more confusing in that case.

WS

The Recount :

Arapahoe staff were constrained by the election judge and observer hours and worked only 8 hours a day in the accumulation room. They spent several days hand sorting ballots to identify only those involved in the 7th district recount based on spreadsheet data Cynthia had provided (data source unknown, but Linda had provided some similar information). Arapahoe's delay in getting recount results was directly related to the slow, careful, hand sorting of these ballots.

The only significant issue to arise during the sort and ballot number verification process was a request late one afternoon by the state observer to prove that 4 ballots marked on a ballot batch report as page out of orders were actually scanned. This incident is covered in a separate, prior email. We were able to confirm an answer for them early the next day. Observers were not at all concerned about the mix up and failure to rescan given the small number of ballots involved.

I spent more than a day working on the computers moving and backing up files. A considerable amount of time had to be spent analyzing file and directory names and judging what belonged to the last election versus other backups, tests, and other files. The problem arose because our backup procedures don't current have published naming conventions, and those procedures we have discussed with field staff were unreliable in this case as some of the backups were done by Colorado staff.

The backup process was complicated by the need to create additional cd's for Congressional observers and judge what was necessary for them. The Arapahoe staff was able to provide state guidelines which I used to determine what files were required for the state, and provide the same files on the cd's for Congress, Arapahoe, and us.

Ballot Now backups to cd on the Absentee machines was not feasible due to the large file sizes, so instead backups were made to spare drives present in the machines as a temporary solution. All other backups were also duplicated on the either the D or F hard drives for availability, even when already backed up to cd.

The pc's were cleaned per customer request and our recount requirements. (Tally and Ballot Now)

The customer failed to burn enough cards for the recount due the need to rerun the LAT testing on all machines, but we were able to provide additional mbb's by using the images previously burned for our use in ballot generation. We had additional images available and could account for each image for card as necessary. I provided several additional election cards from my personal emergency stock in the event something odd happened to a card, as they had only exactly the number they needed.

I returned several days later to find the recount/sort finishing up trying to find several misfiled ballots. Absentee scanning was complete. Because of Cynthia's lack of familiarity with the system, and Woodrow's reluctance to be involved, I assisted Leesa with several stages of the recount process including EV Tally, and some absentee and provisional ballot resolution, taking the focus off the Arapahoe staff while they looked for some misfiled provisional ballots. We experienced some minor problems with the scanner cabling as well as Tally audit printer jams, but these were resolved quickly.

Observers, state and federal, were very impressed with the Ballot Now resolution process and commented on it several times. The only noticeable problem with the process was the lack of a Ballot Now report summarizing the resolutions by serial number. Having to rely on hand notes copied to batch reports and incompletely summarized on a separate (customer) form forced us to stop several times to track down these scan batch reports, which were stored by precinct number under batches from the general election. After several severe slowdowns we elected to simply have judges re-resolve the ballots and note the new resolutions. Because the issues were very clear the resolutions turned out to be identical. Questionable situations would have been referred to the original ballot. We also randomly resolved overvotes in other contests, greatly accelerating the recount process, and we marked all writeins as uncertified since they could not impact the race in a significant way.

We had only one other issue that actually impacted the ballot and recount. One of the provisional ballots which had previously autoresolved as an undervote was "autoresolved" by Ballot Now as a vote for Feeley. (that contest did not come up for resolution) We are researching this issue but it's likely a mark on the edge of the detection range that BNIP scanned "properly" the second time.

With only 4 ballots that had to be counted for the first time, and 1 minor anomaly, the customer reported being greatly pleased with the results, and observers had positive comments for the Arapahoe staff and their processing. News reports were unremarkable and didn't comment on our system. Most after election reports focused on another county that had actually misplaced electronic ballot cartridges with over 500 votes, despite certifying results to the Secretary of State. This shockingly poor performance kept the media's attention for some time and made Arapahoe's careful recount look like a model effort by comparison.

Our survival of the recount can be most directly attributed to Linda and Leesa.

They were the only necessary components of our success.

Re: the political situation, things were generally quiet during the recount process. At no time was I given the impression that any of the Arapahoe staff intended to leave, nor do I have that impression now. I believe they will have to be forced out by a recall election, which I expect will occur as soon as possible (6 months from Nov 5). Unless the Republican party abandons Tracy (decision in ~ a week) I think he has a reasonable chance of reelection.

We should be prepared to field staff at that time do perform that election on a contract basis, forming an experienced core group that be used in the future for these sales opportunities.

If Tracy leaves I expect that his entire staff (Leesa, Cynthia, Woodrow) will leave with him. Tracy, Leesa, and Cynthia have discussed, idly, the possibility of forming their own contract election company or finding some other way to work together. Rather than face competition in this arena I suggest we hire them contingent on their willingness to leave Colorado and travel, given that Leesa and Cynthia both have children.

If the current Arapahoe staff leaves we will have significant training, management, and support hurdles to overcome. Fortunately their election schedule is such that I believe we can manage without additional staff and a minimum number of sushi dinners. Rather than retraining staff throughout the year we may want to consider simply contracting their next few elections (through 2004).

Ballot Now Recount Functionality Analysis:

Rather than get into an extended by-line justification at this time, I'm just going to list the things I believe we need to add to Ballot Now to assist with recount processing. The first few items in red are those things we need to change/observe immediately until such time as we have tools to compensate. Items in blue are regarded as necessary, others listed below would seem to be helpful. All items will be numbered to facilitate comments and questions. KEEP IN MIND THAT WE MAY FACE MULTIPLE RECOUNTS OF THE SAME ELECTION, SO THE ABILITY TO COMPARE RESOLUTIONS, RESULTS, AND SCAN BALLOT INFORMATION BY SERIAL NUMBER NEEDS TO BE A FOCUS IN FUTURE SOFTWARE VERSIONS. Also note the only non-Ballot Now-or-process suggestion here is the need to emphasize the use of Acrobat Distiller over PDF writer or other tools to produce report files, due to read/open reliability issues in the resulting PDF file.

1) All Scan Batch and ballot resolution notes should be tracked in Excel by serial number and batch.

2) Print screens of zoomed resolution pages should be captured and printed for the first few resolutions of each type, so that the judges have a ready means to compare and better establish consistent standards for resolving votes. These printed pages should be annotated and kept as part of the official election record, and copied for future election judges or replacements to follow for future elections. (Hit print screen key on keyboard, open the MS Paint software (start button-run-"mspaint"-enter key), Paste (CTRL-V), Print)

3) All problem ballots regardless of type should be scanned together in 1 batch where possible for ease of tracking.

4) We need to seriously question and closely examine the customer's ballot handling practices to verify they are both necessary, appropriate to Ballot Now, and provide the necessary advance work to make a recount a manageable process. Most paper ballot handling seems driven by prior habit rather than legal or Ballot Now necessity. Arapahoe's work in this area seemed exemplary despite some minor errors.

5) Ballot resolution should not take place until such time as all ballots have been scanned to insure that no duplicate ballots are found, forcing batch rescan as well as re-resolution, and then running into problems tracking down multiple resolutions of the same ballot in the general election which may then carry forward.

6) Audit logs for Ballot Now should be produced as Excel or Text files, rather than PDF's as field personnel have done in the past.

7) We need the ability to remove a scanned ballot by serial number, even if resolved. Ideally, removal from the mbb as well.

8) Ballot Now for resolution needs the ability to print out zoomed ballot images and apply notes so board members can take notes on what they considered acceptable and try to apply the same standard

9) We need recount resolution functionality that allows for autovoting everything except for a contest or contests, and then the option to autoresolve unders, etc. for that contest.

10) We need the ability to re-resolve a ballot by cycling through previous resolutions by time, or by selecting a serial number.

11) We need a report listing all scanned serial numbers, in order by time scanned or by serial number, and listing batch.

12) We need recount functionality with the same election database and the ability to compare the ballot resolution and either duplicate those resolution, or report

on differences by serial number.

13) We need a cvr report from Ballot Now available post election to determine whether vote changes may have occurred on the BN or Tally side, this may also help with partial reporting throughout the evening without having to officially Tally.

14) The ability to zoom on precinct number, etc without having to close the resolution box would be nice.

15) The ability to view previous resolution results from another election while viewing new resolve during recounts, as well as the ability to view other resolutions of a similar type so board members can apply the same criteria/judgment to the same situation.

16) We need a report detailing on resolutions from all batches, listed by serial number, and a separate similar report for any autovoted ballots.

17) We need a report listing all problem ballots by serial number, batch, with notes, and noting the batch they were rescanned on.

18) Account managers should verify that customers have checklists for card burning that includes not only test cards, but provides for extra cards for recounts, including multiple recounts, and considers the need to LAT testing as well.

19) We could make a fortune with a scanner-copier that had the ability to sort ballots by serial number and precinct.

20) Electronic imaging only makes sense to save ballots, however the resulting database becomes difficult to move and analyze. I suggest storing ballot images apart from the Ballot Now DB file in the future and simply compacting them as a separate compressed file. The ability to break this up into 4 GB files will greatly facilitate DVD backups in the future, as these will become default backup drives and not every customer will justify the expense and handling+storage issues with Tape.