Transcript of Email on Ballot Images

NOTE: CONTACT INFORMATION HAS BEEN REDACTED. **All other verbiage is as in original email.**

From: Tom Ryan
Subject: Re: Digital Ballot Images
Date: November 30, 2016 at 11:25:06 AM MST
To: Benny White
Cc: Chuck Huckelberry, Brad Nelson, F. Ann Rodriguez, Chris Roads, Eric Spencer, Dan Jurkowitz

Benny,
These kinds of problems are precisely why the tabulation process needs to be more transparent, and ballot images are a good way to accomplish that goal. I think the threat of unsubstantiated lawsuits is low, for reasons explained below.

The ES&S DS850 ballot images are indeed binary, and ClearBallot has said that this is not good enough for the kind of processing they do. But ES&S thinks they can get away with it.

With open ballot images, I don't think there will be lawsuits as you suggest, but there could be formal challenges filed in court if the tabulation system is really bad. In Pima County, the election system produces a Cast Vote Record (CVR), a spreadsheet that shows how each ballot was interpreted by the scanner. Given a ballot image, it is easy to see how the image was interpreted. Anyone with access to the images would have access to the CVR.

If someone wishes to make a claim about inaccurate tabulation, they would need to specify exactly which ballots were interpreted incorrectly and that evidence would have to go before a court in order to challenge the election. The claimant would probably have to show that the number of incorrectly interpreted ballots could cause a change in the outcome.

If the system is accurate enough (and especially if we did meaningful audits) there would be no such claims. If the system is seriously problematic, then a court challenge might succeed, as well it should. But I suspect we're somewhere in the middle, where a few ballots will be misinterpreted, but not enough to affect outcomes except perhaps in an extremely low margin contest (a few votes).

No one expects the tabulation process to be perfect. We know that by looking at recount results (which are public). But the idea that our election tabulation system should be hidden from analysis because it might be inaccurate is exactly why people don't trust the election process.

Tom

P.S. I can't cc the members of the EIC due to Open Meetings Law.

On Nov 30, 2016, at 4:39 AM, Benny White wrote:

Chuck,

I read the memo you sent to the Board of Supervisors recommending that digital ballot images should be available to the public. I support the public knowing what is going in in the election processes and machinery but you are recommending a change in public policy that is premature and will expose the various jurisdictions in the state to increased election litigation.

The state of Maryland is undergoing a statewide audit of the ballots cast in the 2016 General Election. There will be a published report but the audit is not fully complete at this point and the report is not yet available. Maryland is using the ClearAudit system to conduct the audit of the results produced by the ES&S DS200 polling place machines and the DS850 central count tabulations. The DS850 machines are the same model as used in Pima County.

Here are a couple of the early lessons learned:

1. The ES&S equipment captures the ballot image in 200 dpi black and white, as opposed to gray scale.
    a. There are a number of design reasons ES&S chose to do this but it was done in large part due to the speed of the conveyor system on the DS850 and the short time to evaluate the ballot image because of the speed of the ballot throughput. Processor capability and memory capacity were additional factors involved in this design decision.
    b. The ES&S equipment (in general) fails to discover a significant percentage of the vote marks because it uses black and white versus gray scale imaging.
        i. These losses are discovered by the ClearAudit system due to its ability to assess the reliability of every vote mark oval and any pixelization that occurs in that vote mark region and then graphically present those vote mark images in reliability order to a human evaluator.
        ii. The non-detection of vote marks is more significant in mail ballots than in polling place ballots. Initial analysis appears to indicate that this is related to the fact that polling place ballots are marked with a definite marking device, i.e., a black felt tip marker while mail ballots are marked with a variety of marking devices including various colors of ink, different line width, different marking pressure, pencils, pens, etc.
        iii. This vote loss problem would be impossible to detect unless a system of vote mark reliability like that used in the ClearAudit system was utilized.
2. There were instances of high numbers of overvoted ballots discovered in the results analysis.
    a. The overvotes were caused by a line that was input onto the ballot image by a scratch on the camera or ccd lens on one or more ES&S machines. Election officials are currently trying to discover, if possible, which machines were involved so that those ballots can be recounted and the results adjusted.
    b. This additional line(s) across an oval was enough to cause an overvote determination if the voter had marked another voter mark oval in that same race.
        i. This problem would be extremely difficult to detect looking at one ballot or a limited number of ballot images at once. However, when you look at 100 or more vote mark images in the same display this problem jumps off the screen at you.
    c The marks were primarily in mail ballots and affected the President and U.S. Senate races, or at least that is what the early analysis appears to show.

i. It is speculated at this time that the reason this scratch mark predominately affected the President and U.S. Senate races is that this showed up in the results of the mail ballots and those ballots were probably fed through the ES&S machines in the same orientation for all ballots.

A member of the public looking at these images on their home computer screen or laptop would never discover these problems or understand why what they were looking at was different than the reported results. As a result they might decide to institute a lawsuit and then the jurisdiction would have to spend a lot of money and resources trying to explain why the results were reported as they were.

I appreciate that the Election Integrity Commission is attempting to improve the integrity of our elections but I don't think the members are adequately informed concerning many issues involved with digital images. Due to what is being discovered in the Maryland statewide audit I believe it is premature to adopt a policy of releasing the ballot images to the public at this time.

My recommendation is that you and/or the county attorney representing the county in the pending court hearing contact Larry Moore at ClearBallot to get additional information about what they are learning about digital images produced by the ES&S equipment. Larry can be reached at 857-250-4961. Their website is http://www.clearballot.com/. The court needs to be fully informed on this issue prior to issuing a ruling in the pending lawsuit. You should consider having Mr. Moore testify telephonically during the upcoming hearing.

Benny White
Tucson, AZ 85719