Post Election Outcome Audit Definitions

Below is a list of audits with accompanying definitions. Multiple definitions exist for some terms. Let's identify what types of audits need to be supported in the next-generation VVSG.

Risk Limiting Audit: An audit is risk-limiting if it has a pre-specified minimum chance of requiring a full hand count whenever the apparent outcome of the contest is wrong.

Source: http://bcn.boulder.co.us/~neal/eml/auditing.html

Risk Limiting Audit: A procedure for checking a sample of ballots (or voter-verifiable records) that is guaranteed to have a large, pre-specified chance of correcting the reported outcome if the reported outcome is wrong (i.e., if a full hand count would reveal an outcome different from the reported outcome).

Source: http://collaborate.nist.gov/voting/bin/view/Voting/RiskLimitingAudit

Batch Comparison Audit: Uses similar or identical math to the ballot level comparison audit, and ...

Ballot-polling Risk Limiting Audit: Ballot-polling audits examine a random sample of ballots. When the vote shares in the sample give sufficiently strong evidence that the reported winner really won, the audit stops.

Source: https://www.stat.berkeley.edu/~stark/Preprints/gentle12.pdf

Ballot-level Comparison Audit: Comparison audits check outcomes by comparing hand counts to voting system counts for clusters of ballots. In ballot level comparison audits, each cluster is one ballot.

Source: https://www.stat.berkeley.edu/~stark/Preprints/gentle12.pdf

Ballot-level Comparison Audit: An audit in which individual ballots are sampled and the audit interpretation of each sampled ballot is compared with the voting system interpretation (Cast Vote Record) of the ballot.

Source: http://collaborate.nist.gov/voting/bin/view/Voting/BallotLevelComparisonAudit

Ballot-level Risk Limiting Comparison Audit:

Source:

Comparison Audit: An audit in which the voting system count of a batch (or the voting system interpretation of a ballot) is compared with the audit's count/interpretation of the same batch or ballot.

Source: http://collaborate.nist.gov/voting/bin/view/Voting/ComparisonAudit

Image Interpretation Audit: automatically checking Cast Vote Records against images of the ballots, and looking for issues with non-standard ways of marking ballots, etc.

Source: Neal

Pollbook Audit: Verify that the total number of ballots recorded by the voting system in some location is the same as the total number of voters who have cast ballots. Also verifies that the total number of ballots recorded for each ballot configuration, and for each reporting context, is the same as the number of such voters authorized to vote with that ballot configuration, in those reporting contexts.

Source: 2007 VVSG
http://collaborate.nist.gov/voting/pub/Voting/CyberSecurity/2007-VVSG.pdf

Note: Look to Neal's 3/24 email for additional information

Hand Audit of IVVR Records: The hand audit of verifies that the IVVRs and reported totals from a tabulator are in agreement. The hand audit addresses the threats that the voting device might record and report results electronically that disagree with the choices indicated by the voter.

Source: 2007 VVSG
http://collaborate.nist.gov/voting/pub/Voting/CyberSecurity/2007-VVSG.pdf

Ballot count and vote total audits: The purpose of this process is to verify that the ballot counts and vote totals reported by EMSs are correct. This guards against the threat that the EMS used to produce the final results might be compromised.

Source: 2007 VVSG
http://collaborate.nist.gov/voting/pub/Voting/CyberSecurity/2007-VVSG.pdf

Fixed Percentage Audit (may be counties, precincts, or machines - audited in some manner)

Process Audit Definitions

Miscellaneous - other audit types that may need to be defined.

- Tiered Audits
- Forensic Machine Audits

Procedures Audit - Reviewing the policies and procedures used by the election officials

Chain of Custody Audit - Security checks on seals