

I have been asked to provide some detailed illustrations of problems with the current draft of Rules.

1. System – Almost none of the functions of an election system are included in the draft rule. Following are examples of functional elements that are missing from the rule, and hence will not be certified. If they remain uncertified they must not be permitted to be used.
 - a. Verify that an elector is the person that they purport to be.
 - b. Verify that an elector is currently eligible to vote in the election.
 - c. Comprehensive paper ballot production, management and tracking.
 - d. Ballot chain of custody
 - e. Mail ballot voting methods
 - f. Signature verification
 - g. Mail Ballot elections
 - h. Early voting methods
 - i. Vote center voting methods
 - j. Electronic (FAX) voting methods
 - k. Polling place voting methods
 - l. Provisional ballot voting method
 - m. Ranked choice voting method
 - n. Paper vote recording equipment - AUTOMARK
 - o. Detailed list of materials to be retained in ballot box for 25 months.
 - p. Detailed list of other election materials to be retained for 25 months
 - q. Auditable accounting
 - r. Method to verify that a particular vote is correctly interpreted
 - s. Method to verify that votes are correctly counted
 - t. Recount method
 - u. Verify that poll watchers can verify every step of the election – with the single exception of determining an individual voter's votes.
 - v. Method used to canvass elections

- w. Method used to audit elections
 - x. Verify that each residence is correctly included in the sets of jurisdictions.
 - y. Inventory of all election locations (including ballot printer, mail house, drop boxes, storage, etc.)
 - z. Inventory of all equipment being used for the election
 - aa. Means to independently verify that all system elements are for the correct trusted build
 - bb. Poll book showing who voted and which ballot they were issued
 - cc. Batch tracking apparatus
 - dd. Results by contest/contestant, by precinct, by voting method, by ballot media type
 - ee. All election data and reports exportable to industry-standard-format files
 - ff. Incident tracking and resolution
 - gg. Backup and recovery
 - hh. Poll watcher compliance
 - ii. Open records compliance
 - jj. Compliance with Colorado and US statutes
 - kk. Compliance with Colorado and US Constitution
 - ll. Compliance with Colorado Election rules
 - mm. Challenge processing
2. Testing – Certification of a system for use requires that all elements of the system, working together, must meet the requirements of the system. This of course requires that the system requirements be explicit and measureable, and that the pass-fail criteria be explicit. The draft rule fails to meet this standard. Each test needs to (a) describe its purpose, (b) define entry criteria including test inputs, (c) define exit criteria including expected results, (d) record actual results, and (e) mark the test as PASS-FAIL. Each test must be independently reproducible. The rule authors erringly attempt to restrict system testing to what has changed, which is known in testing theory to be a flawed approach. Further, they attempt to limit test data to what is convenient and cheap, which will clearly result in future disaster. The proposed test approach does not satisfy Colorado’s needs, and fails to achieve the Department of State’s obligations under the law.

3. Requirements – System requirements include functional requirements and performance requirements. Each requirement must be specified in a way that can be precisely measured, and the criteria for meeting the requirement must be specified. In addition, there are system-level requirements that must also be verified. These include security, transparency, private, auditable, public, and independently verifiable. None are included in the proposed rule.
4. Definitions – the proposed definitions do not comply with industry standard definitions when appropriate, and do not include major terms (such as a term for the scanned digital image of a paper ballot) specifically needed for elections. In addition, the rule relies on terms of art that have no meaning in the testing environment – for example “substantial compliant” cannot be measured and must be defined or stricken from the rule.

Comments tied to specific sections:

35.2 The term “substantially compliant” is not measurable and should be stricken. We have evidence showing that the SOS has in the past falsely claimed substantial compliance when there has been no effort at all to comply with the law.

35.2.6(A) include explicit requirements for voter privacy for off premise voters

37.1.2(a) is unclear. Does verification mean that the voter can verify how the equipment will interpret their vote? If so, how is this done for mail in voting? If not, what is the requirement and how is it to be measured?

37.1.2(c) how does this section relate to ranked choice voting?

37.1.2(d) what is meant by confidentiality of the ballot? The Colorado Constitution absolutely requires that votes must not be attributable to a specific voter, but the both ballot and the votes must not be private in order that votes can be interpreted and both ballots and votes be counted. What it means for a ballot to be confidential is unclear.

37.1.4(b) is not possible. The voter cannot verify the permanent paper record until it has been printed.

37.1.4(C) it must be specified what is to happen if the votes on an electronic record and the corresponding paper record differ. We believe that the paper record should be the official record.

37.2.1 are municipalities covered by Title 37.2.1 are municipalities covered by Title 31 “political subdivisions” under this rule?

37.3,2 does this rule mean to say that any defects in the 2002 VSS must not be corrected?

37.4 the details of the “certification criteria” are missing. Also, the retention of all test materials must be assigned to a person or entity.

45.1.2 The definition makes an attempt to specify the requirements but is incomplete. A separate specification for the audit log requirements is required. It must provide sufficient detail to enable the

tester to determine precisely what must be logged, and in what formats. Does it include operating system events, security events, hardware events, vote interpretation events, records of decisions made outside of the platform (such as the rejection of a ballot), etc? All records must be electronic. Printed records must be via both searchable PDF and exportable tables. Electronic records must be exportable in TIF (for scanned ballot images), CSV, or EXCEL tables as specified. The specification must include direction on what authorized users can do with the data from the audit log.

41.5.3 an expansion of this definition or a new term is required for the scanned image of a paper ballot.

41.1.5 and 6 and 7 is it permitted to use such communications devices in Colorado?

45.1.7 must include VVPAT as a place where votes are recorded.

45.1.9 this definition is not helpful. It is imprecise and hence not useful

45.1.10 are not the paper ballots "election media"? also, the interpreted votes corresponding to each paper ballot? The files containing scanned ballot images?

45.1.11 the definition of EQUIPMENT as SYSTEM is ambiguous and confusing. The election system is far larger than the physical equipment.

45.1.12 does not remote site include ballot drop locations? By restricting the definition to places where "ballots are cast" two problems are introduced: (1) when is a ballot considered to have been cast, (this is an important question in the context of canvassing), and, (2) what about other remote places where the election is taking place, such as off premise printing, ballot packet assembly, and mail rooms (all of which are to be accessible to poll watchers)?

45.1.4 the use of the term "secretary of state" is not consistent with Colorado law. The proper term is Colorado Department of State.

45.1.15 security as defined fails to cover paper ballots and other key election elements. The definition should refer to a mandatory "threat profile" and this threat profile must be specified in order to provide a basis for testing the election system.

45.1.16 there is missing a specification of how political jurisdictions are defined and managed and how they are to be implemented and verified. (Which residences are in which political jurisdictions?)

45.1.17 there are multiple problems with this definition. It fails to meet the requirements of the court *Conroy v Dennis*. It attempts to pass itself off as a specification, but is totally inadequate. It attempts to eliminate the testing best practice requirement that tests be independently reproducible. A detailed specification of this log is mandatory in order to test whether or not the system complies. The specification must require that the log be electronic, searchable, non-proprietary, and include for each test the purpose, entry conditions (including inputs), expected results, and actual results (output).

45.1.17 terminology and specific requirements are needed for the independent verification that the trusted build is precisely what is installed in the election system. This will likely involve multiple vendors and non-equipment procedures for manual processes.

45.3.1 public hearing must be incorporated into this decision-making process.

45.3.2 “substantial compliance” is not specified. Also, the decision to accept substantial compliance must be open to public hearing.

45.3.3 no phase should start or end without first publishing all materials – which must be considered public records. It must be a rule that no materials shall be submitted that include proprietary information. Test logs should be published within 24 hours. Any proprietary information must be exchanged between the vendor and the state under a specific non-disclosure agreement that includes the limited purpose for the specific disclosure (no blanket agreements). The summary of each non-disclosure agreement must be published. The role of the public, including their opportunity to observe and influence the testing must be defined. Certification should be considered a public process. Phases “e” and “f” in particular must be public processes that enable the public to raise concerns and requires that the department respond on the record to each concern.

45.4.5 searchable electronic copies must be provided.

45.4.6 It is not appropriate for the vendor to be granted, by rule, the power to override Colorado law. Individual disclosure agreements may be negotiated between vendor and state, but each must be limited in scope and purpose. And the public must be aware of each such agreement.

45.4.7 the rule is written as if the election system were the individual components of the system – which it is not. This discussion of trusted build lacks completeness, since it addresses only part of the system.

45.4.9 The materials produced during the test must also be retained.

45.5.1.3 add a requirement that all materials must first be published online for public access.

45.5.1.3.1 There must be no redactions in the materials.

45.5.1.3.2 It is totally inadequate to confirm that the tests were conducted following appropriate engineering standards and “the extent to which the tests satisfy the requirements ... “ This says about whether or not it has been verified that the tests were complete and reproducible and that they verify that the system meets or exceeds Colorado’s requirements and standards. This is the important point. Not whether the technicians followed procedures.

45.5.2 As illustrated in #1 on page one above, almost none of the requirements of Colorado’s election are included in the standards. There are no criteria for determining whether or not the requirements have been met – which contradicts Judge Manzanares’ finding.

45.5.2.1.7 All election materials should be exported and published on the Internet as public records. The formats of exported data must be acceptable to the public, not just the vendor and SOS. In general,

reports must be in both searchable PDF and EXCEL tabular format. All image files must be in TIF format. All data files must be in EXCEL tabular format, or when not feasible, in CSV format. No exported data that requires proprietary software for reading or importing or that cannot be imported into EXCEL without loss of fidelity does not meet the requirement for export. Paragraph "b" must restrict the transfer of this data to a time after the close of the polls on Election Day.

45.5.2.1.8 must specify requirements for over and under vote counts, batch controls and totals, mail ballot batching controls, etc.

45.5.2.1.11 This is a meaningless standard. It does not ensure that every eligible elector gets to vote once, that no ineligible electors are permitted to vote. That every eligible vote is counted once and only once as the voter intended, and that no ineligible votes are counted, and every vote is anonymous.

45.5.2.2.2 it is not meaningful to state a Colorado requirement as "anything that the vendor offers". This is tantamount to saying that "Colorado has no performance requirements".

45.5.2.2.5 what does this possibly mean?

45.5.2.3 substantial compliance must be specified. The rule does not address paper ballots including their environmental requirements during archive.

45.5.2.3.5 where are the specific requirements? Also, this statement suggests that the list of residences included in the subdivisions are not a part of this specification. They must be, and also they must be public records and exportable. What must be certified during the test?

45.5.2.3.10 How does CRS 1-7-10 relate to this?

45.5.2.3.12 This is inadequate. The calculation of the checksums must be independently calculated and verified by the Canvass board. An internal calculator, provided by the vendor, cannot be trusted.

45.5.2.3.14(c) Add the ability for the voter to verify that the votes recorded on the VVPAT are what the voter intends.

45.5.2.3.16 this suggests an attempt to overturn Article VII section 8 of the Colorado Constitution which prohibits marking ballots in a way that can be used to identify the voter of the votes. If the ballots are not so marked, this requirement for "protecting" is not meaningful. This attempt to overturn the Constitution by rule is a major violation of the Secretary's obligations to protect the Colorado electors and contestants. Paragraph "a" implies that the ballots can be correlated to specific voters and that through locked boxes somehow constitution can be met. This is false. Ballots are not confidential and votes are not confidential. Voters are confidential.

INTERRUPT ...

I have dozens of more specifics, but have run out of time.

Al Kolwicz, for Colorado Voter Group January 11, 2010