

Consilience

The word “**Consilience**” has been adapted to refer to a specific process of checks and balances in election methods that satisfy the following conditions:

- 1) At least two different ballot tabulation methods shall be relied upon to achieve the official election tally;
- 2) Each tabulation method employed shall have separate and distinct oversight;
- 3) Neither tabulation method, nor its oversight and personnel involved, shall communicate with one another during this checking process to prevent cheating;
- 4) Tallies derived from each ballot method must agree within a margin of discrepancy that would not overturn the outcome of the election;
- 5) There must be physical paper evidence of the ballots, i.e., at least one of the two methods employed must rely on hand-counted paper ballots or hand-counted voter verified paper trails;
- 6) At least two of the tabulation methods must occur at the location where the votes are cast, e.g. the precinct, the poll site; and
- 7) The process shall commence immediately upon the close of polls and preferably shall conclude without severing the chain of custody of the participants conducting the process.

If the official election tally through consilience cannot be confirmed upon the first exercise of the election’s checks and balances process described above (i.e., the margin of discrepancy of the ballot tallies is unacceptable), then an investigation including more tabulation shall immediately ensue until Consilience can be achieved.

Prerequisite Conditions

This specific method of “checks and balances” commences at the precinct, or poll site, upon close of polls. This practice affords public witnesses with the highest possible observable verification that the ballots tabulated are the same ballots that were cast, in their entirety and without manipulation. This practice also affords public witnesses’ confidence that the precinct tally is tabulated accurately before there is any opportunity for contamination (i.e., before the ballots are surrendered and sent on their ostensibly secure journey, to a centralized, government-controlled, vote tabulation site).

How to Achieve Election “Consilience”

Examples of four precinct tabulation methods that can be used to achieve Consilience with the election tallies:

- 1) **Hand + Hand:** Two full hand count tabulation methods, if they are achieved by separate and distinct oversight, such as New Hampshire’s proposed sort and stack method.

- **Handbook:** http://www.electiondefensealliance.org/HCPB_election_admin_handbook

- **Videos:** <http://www.democracyfornewhampshire.com/node/view/2648>

- **Kit:** <http://www.democracyfornewhampshire.com/node/view/2606>

CAUTION: *Problems arise when, despite regulations to ensure their independence, communication between independent groups of hand count participants occurs prior to declaring their final tallies. Problems also occur when the chain of custody is broken i.e. in other countries, hand counted elections have been subverted during cross-checking that occurs post-election night.*

- 2) **10% Sample of Ballots + Optiscan:** 10% sample of paper ballots (randomly selected from each and every voting site) and optiscan-type electronic voting machines.

CAUTION: *The 10% sample must be drawn from a pool in excess of 400,000 ballots cast in order to ensure 99% statistical accuracy. (A larger percentage sample, or full hand count must be performed in elections in which a small number of ballots have been cast.)*

- 3) **100% Hand + Optiscan:** Hand count ALL voter-verified optiscan paper and optiscan-type voting machines. (While transitioning to this method, surprise implementation at as many precincts as possible would be beneficial.)

- 4) **Machine + Machine + 10% Hand:** Three cross-checks boost performance: (1) Voter physically inspects and confirms that the choices on their ballot printout are just as they appeared on the touch screen, before depositing it in the ballot box (and before their “electronic” vote is “officially” recorded); (2) All ballots are optically scanned at the end of the day in each precinct to provide a cross-check of the electronic tally; and, (3) In each precinct, a 10% sampling of the paper ballots are selected at random and hand-counted to provide a crosscheck with the machine tallies and achieve consilience.

CAUTION: *Any electronic voting system must provide a human-readable paper ballot that has been verified by the voter.*

Also, the 10% sample must be drawn from a pool in excess of 400,000 ballots cast in order to ensure 99% statistical accuracy. (A larger percentage sample, or full hand count must be performed in elections in which a small number of ballots have been cast.)

For the math supporting a 10% sample, see: www.electiondefensealliance.org/files/New_UBS_811Update_061707.pdf -and- pp. 9-14 of www.velvetrevolution.us/titanium.pdf