

# Secretariat Policy #2A: Voting Implementation Addendum

The following is intended to augment the official policy by setting forth implementation details, primarily to demonstrate that electronic voting is feasible. The Voting Custodians have the liberty to make technical changes to these details as technology and cost options change, provided that the spirit of the policy itself and these implementation details are upheld.

## 1. *Voting Custodians Defined*

Each electronic vote shall be overseen by the Secretary and the Chair of the Communications Committee, unless one or the other (or both) of these has a material interest in the outcome of the vote. In this case, the Lay Director shall appoint a disinterested member of the Community to oversee the vote. Note: A “material interest” does not occur if the individual is running unopposed for an office.

## 2. *Voting Tokens*

All ballots (including paper ones) shall be authenticated with a unique and secure “voting token.” Although the Voting Custodians are charged with determining the precise nature of the token, it is expected that it will consist of at least 8 random characters and also ensure a reasonable balance between security and ease of use. The purpose of the voting token is to (i) allow ballots of various types to be combined into a single vote, (ii) ensure the reality of “one member, one vote,” and (iii) preclude counting votes cast by anyone not active in the Community.

## 3. *Preferred Method of Voting*

Each active member of the Community may specify how he or she prefers to vote – either by paper ballot or by electronic means. The Voting Custodians will keep track of each active member’s preference, and will make reasonable efforts to accommodate changes to a member’s preferred method in a timely manner. Members are encouraged to understand the voting options and, if desired, to opt for a paper ballot well before a vote.

## 4. *Types of Votes*

Three types of votes are allowed: web ballot, email ballot and paper ballot. To be counted, all ballots must have a valid token. The rule is: one token, one vote; no token, no vote; multiple tokens,

- For an **electronic ballot**, the Custodians send an email to each active member who did not opt to cast a paper ballot. The email contains the member’s unique token<sup>1</sup> with instructions on how to vote, as well as the details of the vote (e.g., the amendment or the slate of officers). At this time, the member may elect to cast a web ballot, cast an email ballot, or even cast a paper ballot. However, the member should choose only one method in order to keep the vote counting process simple and fair. (Procedures are described below for handling the situations when the member fails to heed this request.)
  - To cast a **web ballot**, the member accesses the on-line voting tool as instructed in the email, and enters his/her token in the designated place.<sup>2</sup> The member records his/her selections in the online ballot. The system will “remember” the voting token and corresponding votes, but will not have a record of the member’s name, email address or other identifier.<sup>3</sup> Cookies are not set on the member’s computer.
  - To cast an **email ballot**, the member will make his/her selections in the body of the email, and then return it to the Custodians as his/her ballot. The Custodians will print the email without header or signature blocks to create a paper ballot that can be authenticated by the token, and which contains the member’s vote. Using the paper ballot, the Custodians will enter the member’s selections into the web balloting site, mark the paper ballot as “voted,” and move the

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<sup>1</sup> The token is different for every election and every member. That is, tokens are never duplicated or re-used.

<sup>2</sup> This may be a password field, a text entry field, etc. The exact mechanism will be determined by the Voting Custodians.

<sup>3</sup> If the procedures defined in this policy are followed, it will not be possible to reconnect the token to the member name.

email from the “in” mailbox to a “vote counted” mailbox. Note: Printing the email is not necessary for simple “yes/no” votes, where the probability of making a data entry error is very low.

➤ There are two ways to case a **paper ballot**.

- **Option 1:** The member must have told the Voting Custodians ahead of time of their desire to cast a paper ballot. The Custodians will prepare the same number of paper ballots as there are members desiring to cast one. Each ballot will have a unique voting token pre-printed on it. Members voting by paper ballot simply fill out the ballot and give it back to the Custodians at the ratification meeting.

Members who specified voting by paper ballot will not receive a token by email. Therefore it is not possible to spoof the voting system by casting both a paper and an electronic ballot.

**Option 2:** A member who received notification of an electronic ballot may unilaterally convert his/her electronic ballot to paper by not voting electronically. Instead, the member must print the notification email and bring it to the ratification meeting. After validating the voting token, the Custodians will treat the ballot as if it were a paper ballot.

5. *Process Outline – Detailed Step-by-Step on How the Vote Will Work*

The Voting Custodians are responsible for the implementation details. In general, it is expected that the following process will be observed for each vote.

- The Lay Director provides to the Custodians the specific wording for the ballot. Multiple votes (e.g., an election) may be taken on one ballot (although technical limitations may force a long ballot to be split into smaller parts).
- The appropriate person will provide to the Custodians the current member list (which must include member’s opt-in / opt-out choice for voting a valid email address for those opting “in.” Alternatively, the Custodians may maintain this list.
- The Custodians will create a special, dedicated mailbox to receive email ballots.
- The Custodians will assign a unique and secure voting token to each member. A complete list of all assigned tokens will be created, minus member’s names and email address, in order to allow later validation of paper ballots received at the ratification meeting.
- Those members opting in will receive an email containing their unique token, the starting and ending dates for voting, balloting instructions, and an email “return ballot” in case they prefer to return an email ballot instead of casting a web ballot.
- The Custodians will delete the association between member name, email and valid token.<sup>4</sup>
- The Custodians will set up and “open” the web balloting system to receive web votes on the starting date, as specified in the notification email.
- Members who wish use a web ballot may do so any time between the opening and closing times specified in the notification email. Members should vote only once. However, if a member votes multiple times, only one vote will be counted. *There is no guarantee that the “last” vote cast will be the vote counted, although the Custodians will make good faith efforts to make this happen.*<sup>5</sup>

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<sup>4</sup> This part of the policy may be changed, allowing the Custodians to keep this list. This will allow fixing various problems “downstream” in the voting process, but will make it much more difficult to achieve “secret” balloting.

<sup>5</sup> Options that prevent multiple votes have various negatives, such as preventing two people to share one computer for voting, or requiring complex and costly voting software. At the present state of technology, the present wording is seen as the best compromise. However, future technology may well allow us to restate this part of the policy.

- Members who wish to vote by casting an email ballot may do so by returning their ballot any time between the opening and closing times specified in the notification email. A member should send only one email ballot. However, if a member votes multiple times by email, only one vote will be counted. *There is no guarantee that the “last” email ballot cast will be the ballot counted, as deleting previous emails is a manual process. However, the Custodians will make good faith efforts in this regard.*
- Members who state they want to vote electronically may change their mind during the voting period and instead cast a paper ballot at the ratification meeting. To accomplish this, they need to print the email ballot and bring it to the ratification meeting, where it will be validated. If the token passes the validation check it will be accepted as a paper ballot. Note that casting an electronic ballot precludes the possibility of casting a paper ballot for the specific vote. Stated more formally, an electronic ballot cannot be rescinded.
- If a notification email is returned as undeliverable, the Custodians shall make reasonable attempts to find out the correct email address and resend the notification. If this fails, the Custodians shall (i) automatically convert the member to paper ballot status, (ii) attempt to contact the member to alert him/her to the situation, and (iii) print a paper ballot for the member to use at the ratification meeting.
- The Custodians will “close” electronic balloting at the specified time.
- Custodians will tally the results of the web ballots made during the voting window. The “used” tokens will be preserved in a list in order to resolve issues that might rise about the validity of email or paper ballots. If multiple web ballots are found with the same valid token, the Custodians will make good faith efforts to count only the last web ballot cast.
- The Custodians then will tally the results of the email ballots received during the voting window. Tokens found in the email ballots will be compared to the “used” token list obtained in the previous step (web ballots). Custodians will discard any email ballot which contains a token already used in a web ballot. If multiple email ballots are received with the same valid token, the Custodians will make good faith efforts to count only the last email ballot received.
- Tokens for valid email ballots will be added to the list of “used” tokens.
- The Custodians will bring to the ratification meeting the composite totals from the web and email balloting, the original list of valid tokens, the list of “used” tokens, and the pre-printed paper ballots (for those who have elected to receive them).
- Custodians will distribute paper ballots to the appropriate active members. After a time set by the Lay Director, all paper ballots will be collected. This includes both the paper ballots cast by members who have opted out of electronic voting and the paper ballots created by printing and validating what were originally intended to be email ballots. Custodians will validate all paper ballots by using the tokens. A “valid” ballot will have a token that appears on the list of unused tokens and does not appear on the list of used tokens.
- Custodians will add the results of the paper ballots to the composite partial total in order to develop the grand total of all ballots – the outcome of the vote. These results will be presented to the Secretariat for ratification as a normal motion. The motion shall be considered as one arising from a committee, and thus does not require a second in order to allow a vote.
- The Secretariat may discuss the specifics of the current voting process prior to voting to ratify.
- The Secretariat will vote to ratify. The results of the vote will be entered into the minutes.

#### 6. *Duplicate Votes*

Multiple votes by one active member may occur. For example, the member may vote electronically and

then send an email ballot. If the dates for such votes can be determined without recourse to revealing the voter's name, then the last vote cast shall be deemed the member's vote. If the date cannot be thusly determined, then the priority for consideration shall be (i) paper ballot, (ii) email ballot, and (iii) at lowest priority, the electronic vote. A vote is considered to be "multiple" if it is cast using a token already used.

7. *False Votes*

It is possible that someone may try to vote without being an active member of the Community. In this case, it is extremely likely that the voting token used will not match a valid token. (This is the reason for using an 8-character or longer token.) Such votes will be discarded.

8. *Proxy Votes*

Proxy votes are handled exactly like other votes. Each active member receives a unique token, whether by email or on a paper ballot. To enable a proxy direct electronic or email vote, the active member need only give his/her token to another active member. For a paper ballot, the member needs to tell the Custodian the name of the person acting as proxy.

9. *Scenarios*

Here are some scenarios for how the system might work in "unusual" circumstances.

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- **Scenario 1:** John has opted for an electronic vote. He arrives at the ratification meeting and says, "I'm sorry, but I could not vote electronically. Please give me a paper ballot now so that I may vote." At this point the scenario branches with varying outcomes.

**Branch 1:** John knows his token, having written it down in his Day Runner. In this case, the Voting Custodians check to see if John's token has been used. If it is unused, they issue a properly-coded ballot to John, who may then vote by paper ballot.

**Branch 2:** John knows his token, but the token has been used. In this case, the Custodians do *not* issue a paper ballot because they have no way to "undo" John's previous vote.<sup>6</sup>

**Branch 3:** John does not know his token, but the voting procedures allow the Custodians to keep the original matchup between member name and voting token. In this case, the Custodians look up John's token, then continue processing according to Branches 1 and 2.

**Branch 4:** John does not know his token, and the voting procedures specify that the Custodians delete the matchup as soon as the emails have been sent. In this case, the Custodians have no way to know if John voted or not, and they do *not* issue a paper ballot.

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- **Scenario 2:** Mary originally opted for an electronic ballot, but changed her mind midway through the voting process, deciding she'd like to cast a paper ballot at the ratification meeting. At this point the scenario branches with varying outcomes.

**Branch 1:** Mary did not vote electronically and did not return an email ballot before she changed her mind. In this case, she need only print out the notification email, which contains her unique token, and bring it to the ratification meeting. After the Custodians verify that the token has not been used, the ballot will be counted.

**Branch 2:** Mary changed her mind after voting electronically or after sending in an email ballot. If she notifies the Custodians in time for them to delete her electronic ballot or email ballot, then she may print the notification email and cast it as a paper ballot, just as if she had not voted electronically.

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<sup>6</sup> This assumes that the procedures outlined in this Policy for vote counting are followed. These procedures are designed to maximize the secrecy of vote casting (balanced against cost).

**Branch 3:** Mary changed her mind after voting electronically or after sending in an email ballot, but fails to notify the Custodians in time. In this case, her electronic or email vote stands, and she may not cast a paper ballot at the ratification meeting.<sup>7</sup>

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- **Scenario 3:** For whatever reason, Mark does not have an email address or cannot use a computer. In this case, Mark opts out of electronic voting, which tells the Custodians that he wants to vote using a paper ballot.

Mark does not receive the notification email sent to most members. The Custodians prepare a paper ballot, marked with a valid token, and give it to Mark when he arrives at the ratification meeting. Mark votes using the paper ballot.

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- **Scenario 4:** Jack and Jill, both active members, share an email account and both want to vote.

Since both members are active, the Custodians send out two emails, one to Jack (at jackandjill@yahoo.com) and one to Jill (also at jackandjill@yahoo.com). Jack's email contains a unique token (AADD4455) and Jill's email contains a different token (9876JHGF).

There's no way to prevent Jack from voting with Jill's token, or vice versa, nor to prevent Jack (or Jill) from voting twice, once with each token. If this is a potential issue, then Jack and Jill should opt out of the electronic system and cast paper ballots.

Assuming harmony between Jack and Jill, then each person casts his/her ballot in accordance with the other provisions of this policy. This is possible because the voting procedures do not rely on email address (or computer I.P. addresses). Both Jack and Jill can and may vote.

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- **Scenario 5:** Jane received an electronic notification of the vote, and then voted both electronically and by email, each time using the same (valid) voting token.

When the Custodians count the ballots, they will discard the email ballot, regardless of the order in which the ballots are received.<sup>8</sup>

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### **Certification:**

I hereby certify that PAC duly ratified this policy addendum 20 March 2010 and the Secretariat ratified this policy addendum on 2 April 2010.

*Respectfully submitted,*  
Todd Sprister, Secretary

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<sup>7</sup> In general, the Custodians do not know how each member voted. Essentially, they know how the *token* voted.

<sup>8</sup> Currently there is no easy and inexpensive way to allow the latest ballot to be counted regardless of whether it is the email or the electronic ballot. The decision to discard the email ballot is based on the notion that more people will vote electronically than will vote by email, thus suggesting that in case of conflict, the electronic ballot should prevail.