Governance of the Fantom Network

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Contents

Definitions and acronyms

A/F: in LRC, a vote that uses the language $\{0, 1, 2, 3, 5\}$.

ARC: Average Resistance Count, as used in the context of LRC.

DW: Dissenting Weight, used in the context of LRC, represents the percentage of voters who strongly oppose a given option, rebased to [0, 100]. Unless specified otherwise, strong opposition is taken to be a resistance rating of $r \in [0.75, 1]$.

FTM: native token of the Fantom Network.

MV: Majority Vote.

MV(65, 50): a majority vote requiring a simple majority of 65% and a quorum of 50%.

LRC: Least-Resistance Consensus, a cardinal voting system designed to identify the candidate or option encountering the least resistance overall from the voters (described in section 9).

LRC(35, 30, 20): specifications for an LRC vote, in which the option chosen must have an ARC (average resistance count) of at most 35 and a DW (dissenting weight) at the 75% level of at most 30%, with the quorum for the entire vote being 20%.

Quorum: in the context of an on-chain vote, the minimum amount of voting power necessary to make the vote valid.

SoH: Show-of-hands vote in LRC, with the language $\{0, 1, 2\}$.

SPV: Special Purpose Vehicle, an integral part of the Fantom software that collects part of the transaction fees generated by the network.

Voting power: the weight carried by the vote of an account, which depends on the FTM tokens held by that account as well as on its past activity.

1 Introduction

This document presents the overall principles, bodies and rules on which the governance of the Fantom blockchain is based, in application of the general principles set out in the Constitution of the Fantom Network.

Reading recommendation

Readers may find it useful to familiarise themselves with the Constitution of the Fantom Network, as this document makes several references to it.

Before delving into Section [7], readers are also advised to read about Least-Resistance Consensus in the Appendix, Section [9].

Structure of this document

This document starts with an overview of some distributed system governance principles in Section [2].

The three hierarchies of Fantom Network governance are introduced in Section [3].

Section [4] then describes the roles, composition and tenure of Fantom's decision-making bodies: the Fantom Foundation, the Technical Committee, Moderators, the Assembly of Token Holders and the Review Board.

Section [5] briefly deals with how members of these bodies are rewarded and, if necessary, removed.

Section [6] explains how issues are added to the Voting Agenda and provides guidelines for Moderators.

The types of decisions are described in Section [7], which details the types of voting and the voting parameters applying to these decisions.

Finally, the concept of voting power is succinctly introduced in Section [8].

The Appendix (Section [9]) provides an introduction to the Least-Resistance Consensus method.

Future changes to this document

The Fantom Foundation has the right to make changes to this document at any time before mainnet launch and for 6 months thereafter. See Section [4.1] for details.

2 Principles of distributed system governance

Most issues relating to the governance of groups of humans at any level are quite similar. We will focus on three areas relevant to distributed ledgers.

2.1 Consensus and minimising the risk of forks

In the parliaments of democratic countries, decisions are usually made based on a majority vote. Occasionally, the vote will be on some controversial topic, where the losing side will be strongly against the decision taken. But whatever the level of opposition, the losing side generally does not have the option to secede and form a new country with a new parliament.

In a distributed ledger, this is different: a strong enough minority can attempt to fork the ledger. The decision-making process is not just about majorities, but about the structure of opinions. For example, if 65% of voters are in favour of some change, while 35% are very strongly against, this may lead to contention. An alternative proposal may have only slightly less support, say 60% in favour, but with the other 40% either neutral or only slightly opposed, making it less controversial.

What this means is that governance in distributed systems must focus on building a wide consensus among all stakeholders. We should speak of "on-chain consensus" rather than "on-chain voting".

2.2 Implications of anonymity

In a permissionless ledger, with anonymous or pseudonymous accounts, voting rights will naturally depend on the number of native tokens held. This is akin to corporate governance, where the weight of a shareholder's vote is usually proportional to the holding of ordinary shares.

A "one person, one vote" governance system could be implemented by requiring every account that wishes to participate in voting to undergo a KYC process. This would, for obvious reasons, be impractical, unfair to most token holders and go against the fundamental philosophy of open and permissionless blockchains.

What does make sense is to weigh the votes of token holders by their activity. This not only gives more say to the most active members of the ecosystem but also provides some security against attacks: an attacker wishing to disrupt the governance process would not only have to purchase a significant amount of tokens but would also have to generate (and pay for) a sufficient number of transactions over a certain period of time.

Finally, accounts that are linked to an existing sovereign identity system could also receive higher weights in the future.

2.3 On-chain versus off-chain

Actions registered on-chain, such as a voting record, will be the visible and permanent record of governance actions on a distributed ledger system. It is important to note that this will only be the tip of the iceberg. Any meaningful vote will most likely be preceded by off-chain discussions and debates, which should be as open and fair as possible. The methods of achieving this should be part of the governance rules, as much as parliamentary debating rules are part of representative democracy. Also, the process by which motions can be introduced for an on-chain vote must be specified.

3 Hierarchies of governance

In most democratic systems, there is a hierarchy of acts or documents that define how it functions. A typical example is:

- The constitution, which describes the general principles of the organisation;
- Institutional acts, or organic laws, which describe the system's governance: its various decision-making bodies and the rules applying to the decision-making;
- Ordinary acts, or laws, which define the general rules of the system other than governance;
- Executive orders, used when urgent action is required;
- Regulations – when necessary, these define more precisely how general rules will be applied in specific situations.

Because this is a logical and time-tested hierarchy, the Fantom Network governance system will use some of these concepts.

3.1 Level 1: Constitution

The Fantom Constitution, published as a separate document, describes the basic principles of the Fantom Network. Fantom Network software, as well as the Fantom Network's rules and regulations, including governance rules, must comply with the Constitution.

Note that only one parameter, namely the number of FTM tokens, is defined at the Constitutional level.

3.2 Level 2: Governance

The Fantom governance rules, of which the present document constitutes the first version, define how decisions are taken in the Fantom network, including how changes to the decision-making process are made.

Some of these governance rules will be implemented in the governance functions of the Fantom Network software itself, while others will serve to rule off-chain interactions and operations.

3.3 Level 3: Core system

The Fantom Core System represents most of the system software, with the exception of governance functions. It also includes the Special Purpose Vehicle (SPV), which will hold Fantom tokens (FTM) that can be used to pay for system development, reward members of decision-making bodies or fund projects that are considered useful to the Fantom ecosystem.

Its specifications are described in documents labelled "Fantom Improvement Proposals (FIPs)" available here: [`https://github.com/Fantom-foundation/FIPs`]

4 Decision-making bodies

In this section, we describe the Fantom decision-making bodies. Their general roles are summarised in the table below.

Body	Type
Fantom Foundation	Temporary Caretaker
Technical Committee	Executive
Moderators	Legislative (organising)
Assembly	Legislative (voting)
Review Board	Judicial

Table 1: Decision-making bodies

4.1 Fantom Foundation

The Fantom Foundation will initially have a key role to play, as it will nominate the first Technical Committee, the first team of Moderators and the first Review Board.

As specified in Article 5 Section 2 of the Fantom Constitution, the Fantom Foundation will also have the right to make changes to Fantom Network Rules, which include governance rules, for 6 months after mainnet launch:

> ***Article 5 - Fantom Network Rules and Publication Channels***
>
> 2. The Fantom Foundation will publish a first version of the Fantom Network Rules applicable at mainnet launch, and will have the right to make adjustment to the rules during six subsequent months. Later changes will be made in accordance with governance rules.

The Fantom Foundation will also, for some time, have a significant influence on votes, as it will be holding a large block of FTM tokens. The Foundation will particularly use this voting power during the first year after mainnet launch to effect changes in voting parameters so that they correspond better to the actual voting and participation patterns of the Fantom network. The Foundation will then gradually refrain from exerting influence.

4.2 Technical Committee

Role The Technical Committee will provide advice on the technical feasibility and costs of change proposals.

The Technical Committee will also be in charge of urgent bug fixes and for responding to emergencies. It will initiate emergency change requests and coordinate the implementation of such changes with core developers.

Composition The Technical Committee will be composed of 5 persons with deep technical knowledge of the Fantom Network, some of whom are expected to be Fantom core developers. All 5 will be elected by the Assembly.

Tenure Technical Committee members will have one-year renewable tenure.

First 6 months exception The members of the first Technical Committee will be designated by the Fantom Foundation, and their tenure will last for 6 months after mainnet launch.

4.3 Moderators

Role Moderators will be in charge of introducing proposals for on-chain voting. Their role will also be to observe and moderate off-chain discussions about system changes and improvements and gauge support for various proposals under discussion. For proposals that have sufficient traction, the Moderators will ask for the Technical Committee's feedback as to the feasibility and, if necessary, cost of the proposed changes. Depending on the feedback received, Moderators will decide whether to submit proposals to on-chain voting. Any Moderator, acting alone, will be able to submit such proposals.

Moderators will jointly decide where off-chain discussions will take place. This could, for example, be an existing discussion platform.

Composition There will be 5 Moderators, all chosen via sortition [3] (random choice) from a pool of candidates. The sortition will occur on-chain. In order to be considered, a token holder must identify him/herself, receive the backing of two other human token holders and deposit 500,000 FTM, which will remain locked during his or her tenure.

Tenure Moderators will have a one-year tenure.

First 6 months exception The first team of Moderators will be designated by the Fantom Foundation, and their tenure will last for 6 months after mainnet launch.

4.4 Assembly of Token Holders

With the exception of emergency changes, decisions will always be taken by a vote of the entire community of all token holders: the Assembly of Token Holders. Voting procedures will depend on the type of decision being taken, as described below.

Delegation of votes will not be possible. Such delegation could be introduced later, as its possibility is foreseen by the Constitution.

In the case of emergency changes, the Assembly will have the right of veto.

4.5 Review Board

Role The role of the Review Board is to review decisions voted on by the Assembly. The Review Board has final veto power, should it find, for example, that a decision cannot realistically be implemented or conflicts with the Constitution.

Composition The Review board will be composed of 12 persons:

- 5 members of the Technical Committee;
- 7 members chosen from among token holders by sortition.

Candidates who wish to become members of the Review Board must make a 100,000 FTM deposit, which will be returned if the candidate is not selected. If he or she is selected, the deposit will remain locked during the time of tenure.

Tenure Members of the Review Board who are not also members of the Technical Committee will have a tenure of one year.

First 6 months exception The first members of the Review Board will be designated by the Fantom Foundation, and their tenure will last for 6 months after mainnet launch.

5 Rewards and removal procedures

5.1 Rewards

Technical Committee members, Moderators and Review Board members will receive a reward for their work, which will be decided by the Assembly subject to a performance review. Such rewards will be expressed in FTM and paid out from the SPV.

5.2 Removal procedures

Members of the Technical Committee, Moderators and Members of the Review Board can be removed by the Assembly for inactivity or for any other reason, with the exception of those nominated by the Fantom Foundation. Such a decision cannot be vetoed by the Review Board. The Assembly may also decide to not return all or part of the deposit made by that member, if such deposit was made, in which case the unreturned portion of the deposit will be transferred to the SPV. Moderators will then organise another sortition or vote to replace that individual for the remainder of his or her tenure if that period exceeds 3 months. If the remaining tenure is less than 3 months, the Moderators and Review Board, acting jointly, can nominate a replacement.

6 Voting Agenda and Moderator guidelines

6.1 The Voting Agenda

Moderators are in charge of introducing issues and proposals for on-chain voting, and they thus set the Voting Agenda. This is an important role: admitting too many issues to voting is likely to result in a lack of focus and thus lead to poor decision-making by the Assembly.

6.2 Token holder proposals

If the Moderators refuse to consider an issue, a token holder can directly submit a proposal for on-chain voting. There will be a deposit per proposal of 100,000 FTM funded by any number of accounts. Once this is done, the Moderators will be obliged to add this proposal to the Voting Agenda and treat it like any other issue or proposal. If the proposal is accepted by the Assembly, the deposit will be returned. If the proposal is denied, the deposit will be forfeit unless the Assembly decides otherwise - this might be the case where a proposal, although voted down, is still considered *bona fide*.

Note that proposals submitted directly by token holders should be the exception rather than the rule.

6.3 Guidelines for Moderators

The role of Moderators has already been described in 4.3 and 6.1 above.

Moderators should recognise the importance of providing a structured process for making changes to the shared resources of the Fantom Network. They shall document their activity and, based on accumulated operational experience, create and then maintain a set of non-binding moderator guidelines, some of which could then be made an integral part of Fantom governance. The first team of Moderators after mainnet launch will have an especially important role to play in this regard.

Moderators will use their judgement to decide what issues shall be submitted to a vote. They will have to find a balance between refusing some requests by token holders in order to keep the Voting Agenda manageable while at the same time being careful not to deny legitimate requests that have a wide backing within the Assembly.

Any proposals that are not consistent with the Fantom Constitution or that do not have sufficient traction should be rejected by Moderators. Moderators should also be careful to strictly limit the number of constitutional changes.

Issues should be categorised based on their importance and urgency, both of which will impact how long and involved the discussion process should be before an issue is submitted to a vote. Moderators should strive to make the decision process as fast and efficient as is practical, keeping in mind that an efficient governance system is one of the key competitive advantages of the Fantom Network.

To prepare for on-chain voting, Moderators will closely follow, and contribute to, off-chain

discussions. They can organise indicative votes to help assess which choices have the most traction among the community. These votes should be carried out using a simplified LRC voting method, with the goal of reducing the number of choices submitted for final voting.

7 Types of decisions

There are four types of actions that can modify either the rules of the Fantom Network or its software.

- **Changes to the Fantom Constitution**;
- **Standard changes**: these are decisions whose implementation requires a change to software and is therefore subject to technical uncertainty and potential costs;
- **Simple changes (Parameter changes and SPV Disbursements)**: these are decisions that can be implemented without changes to Fantom Network software;
- **Emergency changes**: these require a simpler approach but should not affect governance rules.

The decision and voting procedures for each of these are different.

7.1 Changes to the Fantom Constitution

The rules applying to constitutional changes are clearly described in Article 6 of the Constitution.

> ***Article 6 - Constitutional Changes***
>
> 1. The Fantom Constitution itself can only be changed by a majority vote of the Assembly, with at least 65% voting power in favour and a quorum of 50% voting power.

Any vote for a constitutional change should be preceded by substantial off-chain discussions demonstrating sufficient traction within the Assembly.

7.2 Standard changes

Standard changes are those that require a modification to Fantom Network software. Moderators will communicate with the Technical Committee and developers to evaluate the technical feasibility and cost of such proposed changes so as to avoid an unrealistic proposal being voted upon.

The Assembly will vote on these changes using the Least-Resistance Consensus (LRC) method, which is described in Section 9 of this document. The LRC decision parameters depend on whether the change relates to governance or to the core system.

7.2.1 Changes to governance

For changes to governance rules, any Assembly vote result must meet the following criteria:

- **ARC (Average Resistance Count)**: must be < 30
- **DW (Dissenting Weight)**: must be < 25
- **Quorum**: must be $> 25\%$

If none of the options under consideration meets these criteria, the vote is invalid, and no changes to the system are made. If more than one choice meets the criteria, the choice with the lowest ARC is selected.

7.2.2 Changes to the core system

For core system changes, the parameters are slightly more relaxed than for governance changes:

- **ARC (Average Resistance Count)**: must be < 35
- **DW (Dissenting Weight)**: must be < 30
- **Quorum**: must be $> 20\%$

7.2.3 Review Board approval or veto of standard changes

After a vote by the Assembly to introduce a standard change, the Review Board has two weeks to approve or veto that vote. Decisions of the Review Board require a strict majority ($> 50\%$) and a quorum of 75%. Absent a Review Board decision, the Assembly's vote is deemed to be final after two weeks.

7.3 Simple changes: parameter changes and SPV disbursements

There will be some parameters that can be changed without modifying Fantom Network software itself. Such changes will not require any in-depth analysis by the Technical Committee, nor will they require a cost estimate. These parameters will include, but will not be limited to, the following:

- FTG price: the internal accounting unit of the Fantom system
- Minimum number of FTM to run a validator node
- Percentage of mining fees received by the Special Purpose Vehicle (SPV)
- Fee paid to delegators by validator (initially set at 15% of validator earnings)

- "Proof of Importance" parameters: the parameters that affect a validator's Proof of Importance score, which has an impact on FTM rewards received

Some of these parameters, such as the percentage of mining fees received by the SPV, are expected to change rarely. Others, for example, the price of FTG, are expected to change over time.

Another type of decision that does not have an impact on Fantom Network software is on SPV Disbursements. These can, for example, be used for:

- Rewards for Moderators, Technical Committee Members and Review Board Members after a successful tenure;
- Rewards for successful grant proposals.

All of these simple changes are voted on by the Assembly, with the following minimal decision criteria applying:

7.3.1 Simple changes to governance

For simple changes to governance, the same LRC decision criteria apply as to standard changes to governance.

7.3.2 Simple changes to the core system, SPV disbursements

The LRC decision parameters are set as follows:

- **ARC (Average Resistance Count)**: must be < 40
- **DW (Dissenting Weight)**: must be < 35
- **Quorum**: must be $> 15\%$

7.3.3 Review Board approval or veto of simple changes

After a vote by the Assembly to introduce a simple change, the Review Board has one week to approve or veto that vote. Such Review Board decisions require a majority of 60% and a quorum of 75%. Absent a Review Board decision, the Assembly's vote is deemed to be final after one week.

7.4 Emergencies

In case of emergency, or when serious bugs are identified, the ability to respond quickly is critical. There may be no time for a protracted discussion and voting process. In such situations, the Technical Committee can work with core developers and network validators to propose emergency updates. Examples where this may become necessary include:

dealing with critical bugs, retroactively making changes to the state of the blockchain in case of evident fraud and other emergency situations such as DoS attacks.

Proposals for emergency changes can be decided upon by the Technical Committee with a simple majority, subject to a quorum of 50%.

The Assembly will be able to veto any emergency decision via a majority vote organised by the Moderators immediately after a positive emergency vote by the Technical Committee. A veto can be obtained with a simple majority of voting power, subject to a quorum of 10% of voting power.

7.5 Summary of Voting

The following table summarises the main voting processes in the Fantom Network[1].

Decision type	Tech Committee	Assembly	Review Board (veto)
Constitution change		MV(65, 50)	
Standard - Governance	Advice	LRC(30, 25, 25)	MV(50, 75)
Standard - Core System	Advice	LRC(35, 30, 20)	MV(50, 75)
Simple - Governance		LRC(35, 25, 25)	MV(60, 75)
Simple - Core System		LRC(40, 35, 15)	MV(60, 75)
Emergency change	MV(50)	MV(50, 10)	

Table 2: Overview of the voting process

The notation $MV(65, 50)$ refers to a majority vote requiring a simple majority of 65% and a quorum of 50%.

The notation $MV(50)$ refers to a majority vote requiring a simple majority of $> 50\%$ without requiring a quorum.

The notation $LRC(35, 30, 20)$ refers to a Least-Resistance Consensus vote, in which the option chosen must have an ARC (average resistance count) of at most 35 and a DW (dissenting weight) at the 75% level of at most 30%, with the quorum for the entire vote being 20%.

[1]Note that, with the exception of the voting parameters for constitutional changes, all voting parameters will be subject to review and may be changed based on voting patterns observed during the first 6 months after mainnnet launch

8 Voting power

The voting power of an account will depend both on tokens held and on that user's activity, with voting itself constituting one type of activity. Therefore, actively participating in the voting process will increase a user's share of block rewards for delegated tokens. The exact parameters of how voting power is computed will be determined later.

In the future, the Fantom Network is expected to integrate with one or more SSI (Self-Sovereign Identity) platforms. Accounts that become linked to a real person via SSI will then be given a higher weight than unidentified accounts.

9 Appendix: Least-Resistance Consensus (LRC)

In most cases, on-chain voting by the Assembly will be done using the Least-Resistance Count method.

9.1 LRC overview

LRC, as introduced in Kampa [1], is a cardinal voting system [2] designed to identify the candidate of least resistance.

In the context of a choice between several candidates or options, cardinal voting means that every voter is asked to rate each option independently. In Least-Resistance Consensus, voters are asked to express the resistance they feel for each individual option rather than indicating their approval. The candidate with the lowest resistance count wins, but additional conditions may be added to prevent minority dissent.

9.2 Model

This subsection is taken from Kampa [1].

LRC can be modelled as follows:

- a *language* that is a strictly ordered set of at least two natural numbers $\Lambda = \{\lambda_1, ..., \lambda_M\}$ such that $\lambda_1 = 0$ and $\lambda_1 < ... < \lambda_M$. These numbers represent a resistance measure.
- a set of *ratings* $R = \{r_i \mid i \in [1..M]\} \in [0, 1]$ with $r_i = \frac{\lambda_i}{\lambda_M}$. This corresponds to a "renormalisation" of the language to the interval $[0, 1]$ and includes both 0 and 1.
- a set of n *voters* $V = \{v_i \mid i \in [1..n]\}$.
- a set of n *weights*, $W = \{w_i \mid i \in [1..n]\}$. If weights are not necessary, we can simply assume that they are equal to 1, in which case $W = n$.
- a set of m *candidates* or *choices* $C = \{c_j \mid j \in [1..m]\}$.
- a *profile* $\Phi = \{g_{i,j} \mid g_{i,j} \in R, i \in [1..n], j \in [1..m]\}$, which can be represented as a $m \times n$ matrix in which $g_{i,j}$ represents the rating corresponding to the grade given by voter i to candidate j. In the case of abstention, $g_{i,j}$ is set to -1.
- in the context of a round of voting, a set $A \subset [1..M]$ represents the indices of the "active" voters who did actually vote. The set $I = [1..M] - A$ represents the "inactive" voters who have abstained from voting. We assume that a voter must vote for all choices or for none.

We first define the sum of weights of all voters, as well as the sum of weights of those who actually voted in a round:

$$\mathcal{W} = \sum_{i \in [1..n]} w_i \qquad \mathcal{W}^a = \sum_{i \in A} w_i \tag{1}$$

This can be used to express the **Turnout**, rebased to [0,100]:

$$Turnout = 100 * \frac{\mathcal{W}^a}{\mathcal{W}} \tag{2}$$

We can now define an "average resistance count" **ARC** of option j, rebased to [0, 100]:

$$ARC(j) = \frac{100}{\mathcal{W}^a} * \sum_{i \in A} w_i r_{i,j} \tag{3}$$

In order to reduce the impact of strategic manipulation, it may be useful to remove a proportion of the highest and lowest ratings. We call this measure the "truncated average resistance count" **TARC(j, c)** of option j for some $c \in [0, 0.5)$. Note that as c approaches 0.5, the value of TARC will tend towards the median.

Finally, we want to define a function to provide a measure of extreme disagreement. We first define a set of "dissenters" at level $p \in [0, 1]$ as the indices of voters who did vote and whose resistance rating was greater than or equal to p:

$$D(j, p) = \{i \in [1..n] \mid g_{i,j} \geq p\} \tag{4}$$

We can now define the **dissenting weight (DW)** of option j at level $p \in [0, 1]$, again rebased to [0,100], as:

$$DW(j, p) = \frac{100}{\mathcal{W}^a} * \sum_{i \in D(j,p)} w_i r_{i,j} \tag{5}$$

9.3 Resistance measures

Although many sets of resistance measures can be used, we propose two that are also mentioned in the original LRC paper.

SoH (Show-of-hands) vote

Table 3 shows possible meanings for the simple $\{0, 1, 2\}$ language. This grading is equivalent to a show-of-hands: no hand up = 0 (agree/mostly agree), one hand up = 1 (not sure or somewhat disagree), two hands up = 2 (disagree). Note that although simple, this method is still significantly more expressive than majority voting.

$\Lambda = \{0, 1, 2\}$	
0	I have no, or very few, objections
1	I'm not sure, I feel some resistance
2	I feel definite/strong resistance

Table 3: Show-of-Hands (SoH)

A/F vote

Another, more detailed and expressive grading system is 0-1-2-3-5, which is inspired by the A-B-C-D-F grading system and is therefore called A/F. The associated language is shown in Table 4.

Note that 4 is missing to mark the significant difference between 3 "still (barely) acceptable" and 5 "unacceptable". This is similar to ABCD-F grading, where E is missing to mark the difference between D (pass) and F (fail).

$$\Lambda = \{0, 1, 2, 3, 5\}$$

0	I have no objections at all
1	I have some minor objections, but nothing very serious
2	I do have some objections and feel some resistance towards this option but still consider it reasonable
3	I feel definite resistance here but could somewhat reluctantly live with it if that's the group's decision
5	I feel strong resistance and I really don't want this option

Table 4: A/F

In most cases, it will not be necessary to use more complex language.

9.4 Example

Table 5 shows a simple example with three options and 11 voters using the A/F vote.

	0	1	2	3	5	Raw count	ARC	DW
Option X :	1	4	6			16	29.1	0
Option Y :		6			5	31	56.4	45.5
Option Z :	7	1			3	31	29.1	27.3

Table 5: Example of a vote using A/F

We see that 6 voters have given option Y a resistance measure of 1, while 5 voters have given it a resistance measure of 5. The "resistance count" is thus $6 * 1 + 5 * 5 = 31$, which yields an ARC of $100 * 31/(5 * 11) \approx 56.4$. The dissenting weight corresponds to the proportion of "5" votes, rebased to [0,100], thus $100 * 5/11 \approx 45.5$.

Options X and Z have the same ARC, but option X should be preferred as it has a lower DW. In fact, if the voting rules stipulated that the DW must be below 25, option Z would be rejected even if it had a lower ARC.

9.5 The voting process

When Moderators organise indicative votes, a SoH vote on a wide variety of options can be used to get initial feedback from the community and to weed out spurious or clearly unpopular proposals. The options that emerge from the indicative voting process can then be subject to another debate. The final vote should use A/F, as it provides more fine-grained resistance measurement.

References

[1] Aleksander Kampa. Least-resistance consensus: applying via vegativa to decision-making. `http://www.sikoba.com/docs/SKOR_AK_LRC_201907.pdf`, July 2017.

[2] Cardinal voting. `https://en.wikipedia.org/wiki/Cardinal_voting`.

[3] Sortition. `https://en.wikipedia.org/wiki/Sortition`.