



International Association for Information and Data Quality

Method for counting IAIDQ preferential elections

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0 Document control

0.1 Revision history

Version	Date	Prepared By	Reason for Update
1	2008-11-12	Grant Robinson	First version approved by Board

0.2 Distribution

This document has been distributed to:

Name	Position	Version	Date Issued
Board of Directors		1	2008-11-12
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0.3 Contents

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1 Introduction

This document describes the method of counting IAIDQ elections where preferential or choice voting (instant runoff voting) is followed.

Guidelines for counting and for determining formal votes in this document are based on

- *Commonwealth Electoral Act 1918*, Commonwealth of Australia
http://www.austlii.edu.au/au/legis/cth/consol_act/cea1918233
- *Scrutineer's Handbook*, Australian Electoral Commission, September 2007
http://www.aec.gov.au/voting/scrutineers_handbook/
 - Chapter 5. Formality of votes
 - Chapter 6. Allocation of preferences
- *Handbook for scrutineers*, State Election 2007, New South Wales Electoral Commission
http://www.elections.nsw.gov.au/handbooks_and_forms2/handbooks_and_forms

Examples will be based around five candidates A, B, C, D and E and 100 votes cast.

2 Method of voting and rules for formal (valid votes)

- Enter one number for each candidate in each poll. Enter 1 for first preference, 2 for 2nd preference etc. For example if the poll for President consists of 5 candidates, give each candidate a unique preference number 1, 2, 3, 4, and 5'
- The number 1 must appear once only.

3 Method of counting

3.1 Where a ballot is conducted to elect one person:

First, all the number of formal (first preference) votes are counted for each candidate.

- If a candidate gets an absolute majority (more than 50 per cent of the formal first preference votes) they will be elected.
- If no candidate has an absolute majority of first preference votes, counting of votes then proceeds as outlined below under one candidate has an absolute majority.

Table 1. This example shows 100 votes cast, and the distribution of preferences until one candidate has 51 or more votes:

Row	Candidate:	A	B	C	D	E	TOTAL
1	Initial count	24	7	16	8	45	100
2	Candidate B 2nd preferences	2	Excluded	4	1		7
3	1st redistribution of preferences	26		20	9	45	100
4	Candidate D next preferences	1		8	Excluded	0	9
5	2nd redistribution of preferences	27		28		45	100
6	Candidate A next preferences	Excluded		24		3	28
7	3rd redistribution of preferences			52		48	100

Step 1: The candidates are ranked according to how many formal first preference votes they have received in the election: E has 45, A has 24, C has 16, D has 8 and B has 7 votes (Row 1 in Table 1).

Step 2: The candidate who has received the fewest first preference votes (candidate B with 7 votes) is excluded. Transfer the vote to the candidate who received second preference.

Candidate B's second preferences were as follows (line 2 in Table 1): 2 for candidate A, 4 for candidate C, 1 for candidate A (Row 2 Table 1).

Add the Candidate B 2nd preferences to the Initial count to give the 1st distribution (Row 3 Table 1)

Step 3: Repeat Step 2. Find the candidate who has the fewest votes (Candidate D in Row 3 Table 1) and determine the next preference for Candidate D (row 4 Table 1) and distribute these preferences (row 5 Table 1).

Continue this cycle of excluding a candidate and distributing preferences until a single candidate has an absolute majority of the votes.

Step 4: When a candidate has an absolute majority of votes, that candidate is elected.

3.2 Where a single ballot is conducted to elect several people

3.2.1 The number of votes required to be elected

A **Quota** is the number of votes a candidate needs to be declared elected. The quota is worked out by dividing the total number of formal ballot papers by one more than the number of vacancies, and then adding one to the result (ignoring any remainder).

- Example: 3 vacancies: 100 formal ballots, quota = $\frac{100}{3+1} + 1 = 26$

3.2.2 Counting the votes

- To be elected, candidates must secure a quota of votes.
- Should a candidate gain an exact quota, they are declared elected and their ballot papers are set aside as finally dealt with. A candidate who receives more than a quota is said to have **surplus** votes.
- Should more than one candidate be elected at the same count, the candidate with the largest surplus is said to be elected first, the candidate with the second largest surplus is said to be elected second, and so on.
- For each candidate elected with a surplus, commencing with the candidate elected first, a transfer value is calculated on all their ballot papers.

The transfer value is determined by dividing the number of surplus votes received by the candidate by the total number of ballot papers received by the candidate. The result will be a number between 0 and 1.

All the candidate's ballot papers are then re-examined, and the number showing a next available preference for each continuing candidate is determined. For each continuing candidate, the number of ballot papers is multiplied by the transfer value. The resulting numbers, ignoring any fractional remainders, are added to the continuing candidates' respective progressive totals of votes.

- Where a transfer of ballot papers raises the number of votes obtained by a candidate up to the quota, that candidate is elected. No more ballot papers are transferred to that elected candidate at any subsequent count.
- When all surpluses have been distributed, and vacancies remain to be filled, and the number of continuing candidates exceeds the number of unfilled vacancies, exclusion of

candidates commences. Bulk exclusions are proceeded with if possible; otherwise exclusions of single candidates take place.

3.3 Where a candidate withdraws from a poll after voting has commenced or completed

A candidate may withdraw from a poll for any reason. We conduct a recount ignoring all votes cast for the candidate who has withdrawn. If the withdrawn candidate has received 1st preference, the 2nd preference will be counted as first preference in the recount, and so on.

If a candidate is elected to more than one position, the candidate must choose which position to accept. The candidate then withdraws from the other polls that nominated for and the ballots are recounted.

For example: A candidate is elected to both President and Secretary. If the candidate accepts the President position, the votes for Secretary must be recounted. During the recount, all references and preferences to the candidate who has accepted the President position will be ignored. If there were originally three candidates for the Secretary position, only the two candidates who were not elected as President will be considered in the recount.

3.4 Tied results

3.4.1 Tied for exclusion

This clause applies if two candidates tie with the least number of votes.

- If one candidate was in front of the other at a previous count, the candidate that was behind at the previous count shall be excluded;
- If there is no other way to differentiate between the candidates, cast lots to determine which candidate to exclude.

3.4.2 Tied for election

In the event that there is a tie after distribution of preferences, the chair of the elections committee has a casting vote.

4 References

[Animation on counting choice voting](#) (published by fairvote.org)

Wikipedia descriptions:

- [Instant runoff voting](#) (for single winner elections)
- [Single transferable voting](#) (for multiple winner elections)