


Victorian Electoral Commission

AUDIT OF UPDATED BALLOT COUNTING SOFTWARE

Issued Date	05-September-2024	
Issued To	Victorian Electoral Commission (VEC) ABN 46 583 749 552.	
BMM Reference	VEC.1010.01	
System:	Count Software	Version: v1.0.2.45
Signed		
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Executive Summary

VEC has migrated the Calculation Engine software of the Counting module from the legacy Windows service to the Azure Application Service to enhance performance and scalability. VEC has engaged BMM to perform source code review to confirm that the migration has not adversely affected the Counting module that BMM has previously certified.

The scope of this review includes auditing the source code and test cases against the following regulations:

- Local Government Act 2020
 - Part 8: Division 6-Single Vacancy,
 - Part 8: Division 7-Elections other than Single Vacancy,
 - Part 8: Division 8-Countback procedures

- Electoral Act 2002
 - Part 7: Section 113-Procedure to ascertain number of votes when 2 candidates only for Assembly election
 - Part 7: Section 114-Procedure to ascertain the number of votes where more than 2 candidates for Assembly election
 - Part 7: Section 114A-Procedure for ascertaining number of votes for Council candidates

BMM's findings were as follows:

- a) The quality assurance methodology and software quality control were both rigorous and well documented.
- b) The test cases used in software development and integration testing were adequate to ensure the changes comply with relevant legislation
- c) The system was tested to confirm that previous election counts could be accurately reproduced, with the same candidates being elected at the same stages of the count, and
- d) No malicious code was present in the software changes

BMM concludes that the Counting module functions correctly and complies with relevant legislation following its migration to the Azure platform.

1 Methodology

VEC supplied the documentation listed in Appendix A for BMM's review during the audit. BMM examined these documents and conducted the audit using the provided source code and test results. Additionally, VEC facilitated access to personnel from the software development and quality assurance teams.

2 Software Change Description

The software changes involve the following area:

- Enhancement of the Data Access Layer logic to interface with the new cloud-based Azure platform

3 Quality Assurance

VEC utilizes an Agile approach for development and testing, which incorporates iterative cycles and quality gates to ensure that the software:

- Accurately implements the business requirements;
- Undergoes comprehensive multi-level testing; and
- Receives formal acceptance prior to final deployment.

Additionally, the system provides sufficient documentation to facilitate an audit of the process.

4 Test Results

BMM queried a test case result for an unlikely tie exclusion scenario which VEC has addressed by code change. BMM has since reviewed the updated source code and test cases and confirmed the following:

- The business logic of the Counting module remains consistent after its migration to the Azure platform;
- No fraudulent code was detected in the source code; and
- The Counting module complies with the provisions of the Local Government Act 2020 and the Electoral Act 2002.

Appendix A – Document Registry

<p>Source Codes</p> <ul style="list-style-type: none"> - DComputerCount.cs FA396B7B 093A7F47 1E8C402A D2338B76 7E50F51D B4C83572 46529A8D 6FF7F2C6 - CalculationEngine.cs C7E81271 F36C48D2 01D80927 1BF030F9 095C0A57 447D7235 A9E7740D 96822874 - CalculateWorkflow.cs A220A88C C59FF1D8 D78A467A 06136952 E6AD87D3 0E4EC09A 94594587 B8CA5F7E - Calculate.cs 0E11C814 E4197A82 15736EF9 9EA2E292 B4958723 438BA99D AE513ACC 70064C07
Results-CountbackDistribution-LG2020-1719385668912.xls
Results-DistributionPreferential-1719189978118.xls
Results-DistributionPreferential-1719298109299.xls
Results-DistributionPreferential-1719299028047.xls
Results-DistributionPreferential-1719299328351.xls
Results-PRDistribution-1719189868357.xls
Results-PRDistribution-1719295915322.xls
Results-PRDistribution-1719296023997.xls
Results-PRDistribution-1719296494978.xls
Results-PRDistribution-1719297419619.xls
Results-PRDistribution-1719298082018.xls
Results-PRDistribution-1719298243855.xls
Results-PRDistribution-1719298810601.xls
Results-PRDistribution-1719298836325.xls
Results-PRDistribution-1719371740979.xls
Results-PRDistribution-1719372124753.xls
Results-PRDistribution-1719372600081.xls
Results-PRDistribution-1719372904487.xls
Results-PRDistribution-1719378016699.xls

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