

Elections ACT

Enhancement of eVACS® for the 2024 ACT Legislative Assembly Election

System Specification - Part 1 Requirements

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eVACS® 2024 Upgraded Document Tree

—	Contract with 2024 Upgrade requirements
—	Operational Concept Description
—	System Specification - Part 1 including 2024 upgrade requirements
—	Interface Specification - Setup election
—	Installation Manual
—	User Manual - Election server
—	User Manual - Ballot Viewer
—	User Manual - Polling Place server
—	User Manual - Telephone Voting server
—	Multi Factor Authentication

Document Control Information

The controlled version of this document is in electronic form.
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Modifications

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Distribution

Name and Appointment	Document Name	Date of Issue	Version
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Contents

COPYRIGHT NOTICE.....	2
Disclaimer	2
eVACS®	2
eVACS® 2024 Upgraded Document Tree	2
DOCUMENT CONTROL INFORMATION.....	3
Modifications.....	3
Distribution.....	3
CONTENTS.....	4
1 SCOPE	6
1.1 Document overview.....	6
1.1.1 Definitions, requirements and actions	6
1.2 Reference Documents.....	7
1.3 Acronyms	7
2 REQUIREMENTS	8
2.1 Introduction.....	8
2.2 Sections from [1] with requirement changes	8
2.2.1 System capability requirements (3.2)	8
2.2.1.1 Overview of components (3.2.1).....	8
2.2.2 Election setup (3.2.5)	9
2.2.3 Electronic voting (3.2.6).....	10
2.2.3.1 Ballot flexibility (3.2.6.3).....	10
2.2.3.2 Requirements specific to the voting client (3.2.6.4).....	10
2.2.3.2.1 Welcome screen (3.2.6.4.2)	10
2.2.3.2.2 Main Voting Screen (3.2.6.4.3).....	10
2.2.3.3 Requirements specific to the polling place server (3.2.6.5).....	10
2.2.4 Telephone voting (3.2.7).....	11
2.2.5 Electronic voting counting and reporting (3.2.10)	11
2.2.6 System internal data requirements (3.4)	12
2.2.7 Security and privacy requirements (3.6).....	12
2.2.7.1 Requirement to be satisfied by a system component (3.6.1).....	12
2.2.8 Computer resource requirements (3.7).....	12
2.2.8.1 Voting server (3.7.1.3).....	13
3 VOTING PROCESS RELATED CHANGES	14
3.1 Screens in voting process	14
3.2 Actions possible from each screen	14

ATTACHMENT A – COMPLETE LIST OF CHANGES TO BE IMPLEMENTED IN EVACS® 2024 AND WHERE ADDRESSED IN THE REQUIREMENTS..... 18

LIST OF FIGURES AND TABLES

Figure 1 – Screens in voting process.....	15
Table 1 - Possible actions from each screen and progress bar indications.....	16
Table 2 – Wording of messages and instructions on each screen.....	17

1 Scope

The System Specification (SS) specifies the system structure and requirements for eVACS® and the methods to be used to ensure each requirement has been met.

There are two parts to the SS:

Part 1- Requirements, including election nomenclature definitions, and

Part 2 - Scenario Analyses, in the form of Event-Action lists reflecting those requirements.

[1] and [2] are comprehensive versions of the two documents describing the SS for eVACS® 2020.

To avoid future confusion, only Part 1 – Requirements has been updated to reflect the enhancements for eVACS® 2024 [3]. This is primarily because Part 2 – Scenario Analyses focuses on the voting process which is basically unchanged, notwithstanding the separation of the Welcome screen operations across two screens. Similarly the event/action lists are basically unchanged. Required changes are reflected in the Operational Concept Description [4], .

1.1 Document overview

Section 2 details the requirements that are different to those for eVACS® 2020 as in [1]. For ease of reference, section references in Section 2 herein are those used in section 3 of [1].

An update of Appendix B – Screens in voting process in [1] is provided herein as Section 3.

Attachment A is a list of all changes for 2024 together with an indication as to which section in section 2 herein they refer.

1.1.1 Definitions, requirements and actions

In Section 2, changed requirements are interspersed with explanatory text. Although there are no changed Definitions, for completeness the following is reproduced in full from [1].

The content of definitions and requirements is easily identifiable, as each begins with a heading in boldface and includes a unique identifier with the following forms:

Applicable	Identifier	Definition of identifier elements
For definitions:	SSS-D-C-N	SSS = System Specification, D = Definition, C = Major Section within this document, i.e. 3, and N = a sequential number commencing with 1
For requirements	SSS-R-C.X-Y	SSS = System Specification, R = Requirement, C = Major Section within this document, i.e. 3, C.X = a number being a subsection of section 3, where X is a the subsection identifier, and Y = a sequential number, commencing with 1, within C.X

1.2 Reference Documents

In this SSS-1-R-24, a citation of the form [1] is a reference to that document e.g.1 in the following list.

1. Software Improvements Pty Ltd, eVACS® System Specification - Part 1 Requirements, 2020;
2. Software Improvements Pty Ltd, eVACS® System Specification - Part 2 Scenario Analyses, 2020;
3. Variation of the Contract in relation to the Electronic Voting and Counting System (eVACS) Enhancements, Services and Support, dated 6 July 2022;
4. Software Improvements Pty Ltd, eVACS® Operational Concept Description,2023.

1.3 Acronyms

Abbreviation or Term	Meaning
ACT	Australian Electoral Commission
ACT EC	ACT Electoral Commission
CJB	Carol Boughton
CVB	Clive Boughton
EACT	Elections ACT
eVACS / eVACS®	electronic Voting and Counting System
LAPPERDS	Legislative Assembly Polling Place and Election Results Display System
OCD	Operational Concept Description
SIPL	Software Improvements Pty Ltd
SRS	Software requirements Specification
SS/SSS	System Specification
SSS-1-R-20	System Specification – Part 1 Requirements for 2020
SSS-2-SA-20	System Specification – Part 2 Scenario Analyses for 2020
USB	Universal Serial Bus
USB-FD	USB Flash Drive

2 Requirements

2.1 Introduction

eVACS® 2024 is based on the functionality described for eVACS® 2020 ([1] and [2]) together with additional enhancements as described in [3]) and listed in Appendix A of [4]. The requirements for eVACS® 2024 are therefore a combination of existing and new requirements.

The comprehensive requirements for 2020 [1] are not repeated here. The descriptions and requirement identifiers included in this Section 2 relate only to changes in requirements as described in the following sections from Section 3 in [1]:

- 3.2 Capability requirements (changes)
- 3.3 System interface requirements (no change)
- 3.4 System internal data requirements (change)
- 3.5 Safety requirements (no change)
- 3.6 Security and privacy requirements (changes)
- 3.7 Computer resource requirements (changes)
- 3.8 System quality factors (no change)
- 3.9 Design and construction constraints (no change)
- 3.10 Qualification provisions (no change)

Only those sections with changes are included in Section 2.2 below.

For ease of cross-reference the same section identifiers in [1] are used herein.

2.2 Sections from [1] with requirement changes

For a particular section only the description or those requirements needing to be amended are included in this section.

For all other requirements, and definitions, these can be found in Tables 1 and 2 of [1].

Figures in brackets in section headings are the relevant section in [1]

2.2.1 System capability requirements (3.2)

2.2.1.1 Overview of components (3.2.1)

An installation of eVACS® to be used by Elections ACT for the 2024 Legislative Assembly Election includes the following software components:

- eVACS® Election server, includes setup, counting and reporting functionality (one instance)
- eVACS® Ballot Viewer (one instance)
- eVACS® Electronic voting client (many instances per polling place)
- eVACS® Electronic voting server (one instance per polling place)
- eVACS® Electronic telephone voting server for telephone voting system(one instance)
- Interactive Voice Response platform for telephone voting system (two instances)

Except for telephone voting, all other software components are deployed individually; only one can ever be installed on any particular hardware platform at a time. For telephone voting, the inputs provided via a digital telephone are to be transferred via 'voting client' software to the telephone voting server, in the same manner as keystrokes or keypresses are conveyed via the voting client to the voting server at polling places.

The Ballot Viewer, to be introduced for the first time in 2024, is software installed on the same equipment as used for voting clients and enables Elections ACT to manipulate the ballot for each electorate to obtain the best layout for the number of groups and candidates.

Note: Installing any of the eVACS® software components will delete any and all software existing on the selected hardware item.

2.2.2 Election setup (3.2.5)

Schedule 2.2(a)(xi)

[Redacted content]

2.2.3 Electronic voting (3.2.6)

Requirement: SSS-R-3.2-32: Voting client response time

After a vote is confirmed, eVACS® shall display the acceptance screen in a different colour for a specified time to be set by Elections ACT (subsequently set at 15 seconds). After that time expires, eVACS® shall be ready for the next voter within one second.

The voting client shall remain on when voting is available.

2.2.3.1 Ballot flexibility (3.2.6.3)

Requirement: SSS-R-3.2-35: Ability to vary font size within candidate name

The system is to provide configuration of the font size to be utilised when displaying the candidate name on the ballot screen.

2.2.3.2 Requirements specific to the voting client (3.2.6.4)

Requirement: SSS-R-3.2-36: Provide flexibility in how text is programmed and displayed on screen

The system is to provide for configuration of fonts, font size and placement of text within the voting client display, and to allow for inclusion of a 'comma' in party names.

2.2.3.2.1 Welcome screen (3.2.6.4.2)

The 'Welcome screen' shall be provided in two parts : 'Welcome screen' and 'Language Selection screen'.

Welcome Screen

Requirement: SSS-R-3.2-39: Welcome screen properties: messages

The 'Welcome Screen' shall display or play a welcome message in English.

The 'Welcome Screen' shall display a message acknowledging the traditional owners of the land.

Requirement: SSS-R-3.2-40: Welcome screen properties: e-voting card instruction

The 'Welcome Screen' shall display an instruction to scan your e-voting card to start, in each of the languages supported or play the instruction in English.

Part B – Language Selection screen

Requirement: SSS-R-3.2-41: Language Selection screen properties: messages

The 'Language Selection screen' shall allow for the selection of preferred language.

2.2.3.2.2 Main Voting Screen (3.2.6.4.3)

Requirement: SSS-R-3.2-43: Main voting screen properties: language

The 'Main Voting Screen' shall display instructions in voter's selected language, and allow for the voter to return to the 'Language Selection screen' to change their preferred language selection.

2.2.3.3 Requirements specific to the polling place server (3.2.6.5)

Requirement: SSS-R-3.2-76: Generate and print QR codes for each voting server backup of votes

The voting server shall create a SHA2 hash for each backup and print as a QR code.

An ability to reprint QR codes when backing up votes shall be provided.

2.2.4 Telephone voting (3.2.7)

Schedule 2.2(a)(xi)

2.2.5 Electronic voting counting and reporting (3.2.10)

Requirement: SSS-R-3.2-105: Tracking of preferences

The reporting system shall be capable of producing a report which tracks the movement of each vote between counts.

While this is possible, a means for Elections ACT staff to undertake such tracking by themselves has not been identified.

Requirement: SSS-R-3.2-106: Counting – less than 20 votes

The reporting system shall not display and/or print results where there are less than 20 votes in total for either electronic voting or paper ballots in a polling place/electorate category.

The following requirements SSS-R-3.2-107 to SSS-R-3.2-120 are **new for 2024**

Requirement: SSS-R-3.2-107: Counting – show date on Election Server

The date and time of the last count made is to shown on the Election Server screen.

Requirement: SSS-R-3.2-108: Counting – reprinting scrutiny sheets

There shall be an ability to reprint scrutiny sheets for an electorate count that has been already run.

Requirement: SSS-R-3.2-109: Counting – changes to scrutiny sheet formats

The scrutiny sheets shall reflect the content and format as in previous years.

Requirement: SSS-R-3.2-110: Counting – elected members

Table II scrutiny sheet shall highlight in bold text the elected members and their elected position.

Requirement: SSS-R-3.2-111: Counting – output formats

Scrutiny sheet shall be available in excel and PDF formats only.

Requirement: SSS-R-3.2-112: Casual vacancy counting – identifying candidates

Ensure lists of candidates do not roll off the screen when identify the candidates contenting the casual vacancy.

Requirement: SSS-R-3.2-113: Casual vacancy counting – scrutiny sheet format

Scrutiny sheets for a casual vacancy shall be available as electronic files in excel format.

Requirement: SSS-R-3.2-114: Casual vacancy counting – reprinting scrutiny sheets

There shall be an ability to reprint scrutiny sheets for a casual vacancy that has been run.

Requirement: SSS-R-3.2-115: Reporting – output file for LAPPERDS

The LAPPERDS file output from eVACS® shall conform with the requirements identified in Attachment C of [3].

Requirement: SSS-R-3.2-116: Reporting – election statistics

eVACS® shall produce for the election statistics book as many tables for which data is available in eVACS®.

Requirement: SSS-R-3.2-117: Reporting – new statistical report

A report shall be available on total ACT early voting figures being the sum of all early voting centre electronic and paper votes, that is only pre-poll votes.

Requirement: SSS-R-3.2-118: Reporting – break in sequence and length of sequence tables

- i) For formal paper ballots only, there shall be a table on sequence breaks as well as repeated next consecutive numbering, and
- ii) For both paper and electronic ballots there shall be a table identifying the number of sequences of different lengths.

Requirement: SSS-R-3.2-119: Reporting – error reports

Polling place server error reports shall capture the number of incomplete votes as well as the number of resets.

2.2.6 System internal data requirements (3.4)

Requirement: SSS-R-3.4-2: Error identification

Create error prompts to identify where problems exist with specific files during the loading of phase 1 and phase 2 data.

Prompts must provide specific location details within individual files.

2.2.7 Security and privacy requirements (3.6)

Requirement SSS-R-3.6-4: Access passwords to conform to Government requirements

Passwords throughout the system should only be able to be set if they meet ACT Government and ASD password security standards applicable at the time of the election.

Requirement SSS-R-3.6-8: Asterisks to be used to indicate progress when entering passwords

Progress with entering a password is to be indicated on screen by the use of asterisks.

2.2.7.1 Requirement to be satisfied by a system component (3.6.1)

Requirement SSS-R-3.6-9: Multi-factor authentication

Multi-factor authentication shall be implemented for all servers (election Server and polling place servers).

2.2.8 Computer resource requirements (3.7)

In addition to the hardware requirements specified in [2], the new Ballot Viewer module is designed to replicate the ballot as seen by a voter and therefore the same equipment as provided for voting clients is required for the Ballot Viewer, currently an All-in-One computer with a touch screen.

2.2.8.1 Voting server (3.7.1.3)

Requirement SSS-R-3.7-7: Failed hard drive

Streamline The process for checking drive failure in a voting server shall be streamlined from that implemented in eVACS® 2020.

Schedule 2.2(a)(xi)

Table 2 - Wording of messages and instructions on each screen

Screen	Text
Welcome Screen	Welcome to the ACT electronic touch screen voting system Scan your e-voting card to start in English and 12 other languages The ACT Electoral Commission acknowledges the traditional owners of this land
Language selection screen	Select your preferred language
Main Voting screen	Electorate name Select five candidates in the order of your choice. You may then select as many further candidates as you wish. (changes based on selected language) When you have finished marking your choices, touch NEXT (changes based on selected language, except for NEXT)
Start Again screen	Are you sure you want to clear all preferences and start again? (changes based on selected language) YES NO
Hidden Vote screen (reached from Main Voting screen)	Your vote is now hidden Raise your hand if you need help. An e-voting officer will be with you shortly. Touch CONTINUE VOTING to return to ballot paper (All change based on selected language, except for CONTINUE VOTING)
Hidden Vote screen (reached from Confirmation screen)	Your vote is now hidden Raise your hand if you need help. An e-voting officer will be with you shortly. Touch CONTINUE VOTING to return to ballot paper OR

Screen	Text
	<p>To confirm your choices scan e-voting card to cast your vote</p> <p>(All change based on selected language, except for CONTINUE VOTING)</p>
Confirmation screen (choices)	<p>Review your choices</p> <p>To change your choices touch GO BACK</p> <p>OR</p> <p>To confirm your choices scan e-voting card to cast your vote.</p> <p>Your choices in preference order are:</p> <p>(All change based on selected language, except for GO BACK)</p>
Confirmation screen (informal)	<p>You have not selected any candidates.</p> <p>Do you want to cast a blank informal vote?</p> <p>No I want to return to the ballot paper, GO BACK.</p> <p>Yes I want to CAST AN INFORMAL VOTE.</p> <p>(All change based on selected language, except for GO BACK and CAST AN INFORMAL VOTE)</p>
Reconfirm screen	<p>Nearly there ...</p> <p>You are casting a blank informal vote</p> <p>To return to the ballot paper, touch GO BACK</p> <p>Or</p> <p>Scan your e-voting card to cast your informal vote</p> <p>(All change based on selected language, except for GO BACK)</p>
Acceptance screen (with tick in circle and GIF putting e-voting card in ballot box)	<p>Your vote has been accepted.</p> <p>Thank you for using the ACT's electronic voting system.</p> <p>Place your e-voting card in the ballot box on your way out.</p> <p>(All change based on selected language)</p>
Error screen	<p>Please call an official for help (changes based on selected language)</p> <p>Error code: <n></p>

Attachment A – Complete list of changes to be implemented in eVACS® 2024 and where addressed in the requirements

In the following Table section identifiers are: in column 3 are as in [1], and in column 2 are as in section 2 in this document.

In section 3.2 in column 3, any requirement after requirement SSS-R-3.2-106 is a new requirement.

All other requirements are existing requirements that have been amended to reflect the changes for eVACS® 2024.

The item numbers (#) are as per Identifiers in Attachment A of [4].

#	Description	Section (in this document)	Section in [1] and requirement
	Setup and installation	Section 2	Section 3
1	Provide error prompts to identify where errors are in the Phase 1 and Phase 2 data uploads	2.2.6	Section 3.4 - SSS-R-3.4-2
2	Ensure compliance with new ACT Government passwords	2.2.7	Section 3.6 - SSS-R-3.6-4
3	Introduce asterisks in lieu of keystrokes when entering passwords	2.2.7	Section 3.6 - SSS-R-3.6-8
4	Introduce multi-factor authentication across the eVACS® system	2.2.7.1	Section 3.6.1 - SSS-R-3.6-9
	The voting process	Section 2	Section 3.2
5	Consistently and equally display party and candidate names	2.2.3.1	3.2.6.3 and 3.2.6.4 in [1] now provided via Ballot Viewer
6	Allow for ability to customise long party names	2.2.3.1	3.2.6.3 and 3.2.6.4 now provided via Ballot Viewer
7	Allow for ability to customise long candidate names	2.2.3.1	3.2.6.3 and 3.2.6.4 now provided via Ballot Viewer

#	Description	Section (in this document)	Section in [1] and requirement
8	Allow for ability to display party name with a 'comma'	2.2.3.2	Section 3.2.6 - SSS-R-3.2-36
9	Separate language selection from eVACS® Welcome screen	2.2.3.2.1	Section 3.2.6.4.2 - SSS-R-3.2-39 to SSS-R-3.2-41
10	Introduce on main voting screen a 'Change language' button	2.2.3.2.2	Section 3.2.6.4.3 - SSS-R-3.2-43
11	Set touchscreens to be awake for longer periods	2.2.3	Section 3.2.6 - SSS-R-3.2-32
12	Streamline the process for checking drive failure in a voting server	2.2.8.1	Section 3.7.1.3 - SSS-R-3.7-7
13	Include ability to re-print QR codes on polling place server (via menu option 6) when backing up votes	2.2.3.3	Section 3.2.6.5 - SSS-R-3.2-76
14	Delete PIN and voting token pair information from secure USB as soon as information is uploaded to telephone Voting server	2.2.4	Section 3.2.7 - SSS-R-3.2-78
	Counting	Section 2	Section 3.2.10
15	Show date and time on Election Server screen when last count was made	2.2.5	SSS-R-3.2-107
16	Ability to re-print scrutiny sheets if an electorate count has already been run	2.2.5	SSS-R-3.2-108
17	Implement change to scrutiny sheet format	2.2.5	SSS-R-3.2-109
18	Change the eVACS® Table II scrutiny sheet to highlight in bold text the elected members and their elected position.	2.2.5	SSS-R-3.2-110
19	Produce scrutiny sheets in excel and PDF formats only.	2.2.5	SSS-R-3.2-111

#	Description	Section (in this document)	Section in [1] and requirement
	Reports	Section 2	Section 3.2.10
20	<p>Amend eVACS® LAPPERDS output file (FirstPreference.txt)</p> <ul style="list-style-type: none"> (i) to show correct entries where there are zero votes received by candidates; (ii) fix errors in displaying candidate names; (iii) remove entries for electronic votes at static polling places; (iv) address scenarios where there are fewer than 20 votes received at a polling place for any electorate (both paper or electronic); and (v) allow central scrutiny results to be displayed for both paper and electronic votes (fewer than 20 votes for any electorate). 	2.2.5	SSS-R-3.2-115
21	Polling place server error reports to capture the number of incomplete votes as well as the number of resets.	2.2.5	SSS-R-3.2-119
22	Provision eVACS® to produce the tables required for the election statistics book	2.2.5	SSS-R-3.2-116
23	Add an additional report to the statistics book to provide only total ACT early voting figures, electronic and paper votes.	2.2.5	SSS-R-3.2-117
24	Produce break in sequence and length of sequence tables.	2.2.5	SSS-R-3.2-118

#	Description	Section (in this document)	Section in [1] and requirement
	Casual vacancy	Section 2	Section 3.2.10
25	Ensure lists of candidates do not roll off the screen when identify the candidates contenting the casual vacancy.	2.2.5	SSS-R-3.2-112
26	Scrutiny sheet be available as electronic files in excel format.	2.2.5	SSS-R-3.2-113
27	Casual vacancy scrutiny sheets can be re-printed.	2.2.5	SSS-R-3.2-114

- E N D O F D O C U M E N T -