Election Systems & Software
MAINTAINING VOTER CONFIDENCE. ENHANCING THE VOTING EXPERIENCE.
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ISO/IEC 25062 Common Industry Format for Usability Test Report

ES&S AutoMARK Voter Assist Terminal (VAT)

Version 1.X

Tested by:

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Document Section	Description
Entire Document	CIF Usability Test Results and Methodology

Executive Summary

A summative usability test was conducted to evaluate the effectiveness, efficiency, and satisfaction of registered voters when they filled out a paper ballot and cast that ballot into the ES&S AutoMARK Voter Assist Terminal (VAT).

The ES&S AutoMARK VAT provides accessible ballot navigation and ballot marking for voters with vision and mobility impairments. Audio ballot support assists voters who are more comfortable reading or hearing ballot contents to cast their vote independently and privately.

Fourteen participants participated in the Accessibility study. Each participant performed standard voting tasks using an AutoMARK VAT.
The mean task completion time for all 14 participants was 9.36 minutes for making their selections on the AutoMARK VAT and casting their vote. The user group had a base accuracy 98.05% and an unassisted task completion rate of 64%. There were 5 dependent variables; these were task completion rate, base accuracy score, time to task completion, voter confidence and SUS score.

A questionnaire was also administered to participants after they cast their ballot, which resulted in a mean score of 64.62 based on the standard method of the System Usability Scale (SUS) and a 4.6 confidence score.

The test focused on evaluating the total number of correct votes and the number of ballots cast without any errors. The tasks were designed for the correct recording of the ballot selections while ensuring both independence and privacy.

- Table 1 -Summary Performance Results by User Type

User Type	Number of Participants Completing the Ballot	Base Accuracy Score (%)	Voting Time Mean	Voter Confidence Score Mean	Summative Usability Score Mean
Accessible Voter	**13 of 14 (92.8%)**	**98.05%**	**9.36 Minutes**	**4.61538**	**64.6153**

Introduction

Full Product Description

The ES&S AutoMARK Voter Assist Terminal Version 1.6.0.0

The ES&S AutoMARK Voter Assist Terminal Version provides accessible ballot navigation and ballot marking for voters with vision and mobility impairments. Audio ballot and multi-language support assists voters who are more comfortable reading or hearing ballot contents in an alternative language to cast their vote independently.

Interconnected touch screen and keypad controls are the main interfaces for ballot navigation. Either system can be used interchangeably to navigate the ballot at any time. Touch-screen navigation meets all applicable Voting System guidelines for text size and readability while the physical keypad was designed and tested with significant contributions from special needs groups. Physical key arrangement and shape provide intuitive voting. Braille and printed text labels describe each key's function.

Figure 1. The ES&S AutuoMark Voter Assist Terminal

ES&S AUTOMARK
TECHNICAL OVERVIEW – PHYSICAL CHARACTERISTICS

Dimensions	**Operational** • **Width –** 20.8 inches • **Depth –** 26.0 Inches • **Height –** 17.6 Inches **Closed** • **Width –** 20.8 inches • **Depth –** 26.0 Inches • **Height –**7.5 Inches **Case** • **Width –** 26 inches • **Depth –** 34 Inches • **Height –** 14 Inches
Weight	• 48 lbs with internal battery
Memory	• **Type –** Compact Flash 2 • **Memory Type –** Flash • **Capacity –** 256 MB

Display	• **Type –** TFT – resistive touch screen • **Diagonal Size –** 15 inches • **Viewing Area (Width) –** 8.9 inches • **Viewing Area (Height) –** 11.9 inches • **Equivalent PC Screen Specification –** XGA • **Screen Resolution (Horizontal) –** 768 • **Screen Resolution (Vertical) –** 1024 • **Color Depth –** 64k • **Display Brightness -** ≥250

Table 2 ES&S AutoMARK physical

ES&S AUTOMARK
TECHNICAL OVERVIEW – STORAGE AND OPERATING ENVIRONMENT

Storage	• 50 to 104 degrees Fahrenheit • Between 10% and 85% non-condensing humidity
Operation	• -4 to 140 degrees Fahrenheit • Between 10% and 50% non-condensing humidity

Table 3 ES&S AutoMARK Storage and Operating

ES&S AUTOMARK
TECHNICAL OVERVIEW – AUDIO SUBSYSTEM

Type	• Stereo
Cord Length	• 6 feet
Connector	• ¼" and ½" (3.5mm) headphone jack
Expected Life	• 10 years
Synthesized Speech Speed	• 0 – 250 words per minute

Table 4 ES&S AutoMARK Power

ES&S AUTOMARK
TECHNICAL OVERVIEW – POWER SUPPLY

Input Power Voltage	• 93-264 VAC
Input Power Frequency	• 45-66Hz
North American Line Cord	• 6 feet

Battery Hold-up Time (min.)	• 2 hours

Table 5 ES&S AutoMARK Power Specifications

ES&S AUTOMARK
TECHNICAL OVERVIEW – BATTERY

Battery Type	• Lithium Ion
Battery Hold-up Time (min.)	• 2 hours
Number of Cells	• 10
Useful Voltage Range	• 7.2 to 8.4 VDC

Table 6 ES&S AutoMARK Battery

ES&S AUTOMARK
TECHNICAL OVERVIEW –SPEECH

Application	• Eloquence speech synthesis program
Supported Languages (Synthesized)	• English • Spanish • Chinese • Korean • Japanese
Supported Language (Real voice .wav file)	• any

Table 7 ES&S AutoMARK Speech Specifications

Intended User Population

The ES&S AutoMARK is designed to support voters with low vision or no vision, voters with physical/dexterity impairments, voters with reading impairments and voters who are more comfortable viewing or listening to ballot contents presented in an alternate language.

Assistive Technologies Supported

The ES&S AutoMARK provides voters with vision and mobility disabilities the tools to privately cast a paper ballot.

The terminal's zoom and high-contrast display options, audio ballot and Braille embossed keypad provide full support for voters with vision impairments. An available port for a sip-n-puff device, foot pedal, or other two-position switch facilitates unassisted voting for voters with mobility issues.

Exhibit 2 Sip and Puff device

The ES&S AutoMARK records selections on the same paper ballot used by every voter at the polling place ensuring privacy and anonymity during ballot counting. The terminal is an assistive device that does not tabulate ballot selections.

Exhibit 3 Two-position foot pedal

Support for Voters with No Vision / Low Vision

The ES&S AutoMARK zoom and high contrast display options provide assistance for voters with low vision. After a voter navigates a complete ballot, the terminal generates a summary of selections in display and audio formats that the voter must approve before marking the final ballot. This ballot summary provides the opportunity to review and edit selections before committing votes to paper.

Voters who use the ES&S AutoMARK's display ballot select their options behind a standard privacy screen to prevent onlookers from viewing the ballot display.

Screen and Volume Controls

Voters can touch the ZOOM In / Out button on any screen to increase and decrease the size of the displayed text. Selecting the HIGH CONTRAST option on any screen toggles the display between high contrast mode – white text on a black background – and normal contrast – color – mode.

Exhibit 4 Voter using audio ballot controls

The touch screen and physical navigation buttons – **Exhibit 4**, following – are interconnected. Voters may use either system to navigate the ballot at any time. The touch screen navigation options meet all applicable guidelines for text size and readability, and the physical keypad has been designed and tested with significant contributions from special needs groups. The keys are arranged and shaped to provide an intuitive voting session. Braille and printed text labels describe each key's function.

- Arrow keys are used to indicate up, down, left, and right.
- The square key serves as an "enter" key.
- The diamond-shaped key turns the screen on and off for audio only voting.
- The round key repeats the last audio prompt.
- Two sets of long oval keys control the volume and tempo of audio files.

Voters can easily change ballot selections by navigating back to the appropriate contest and selecting the change.

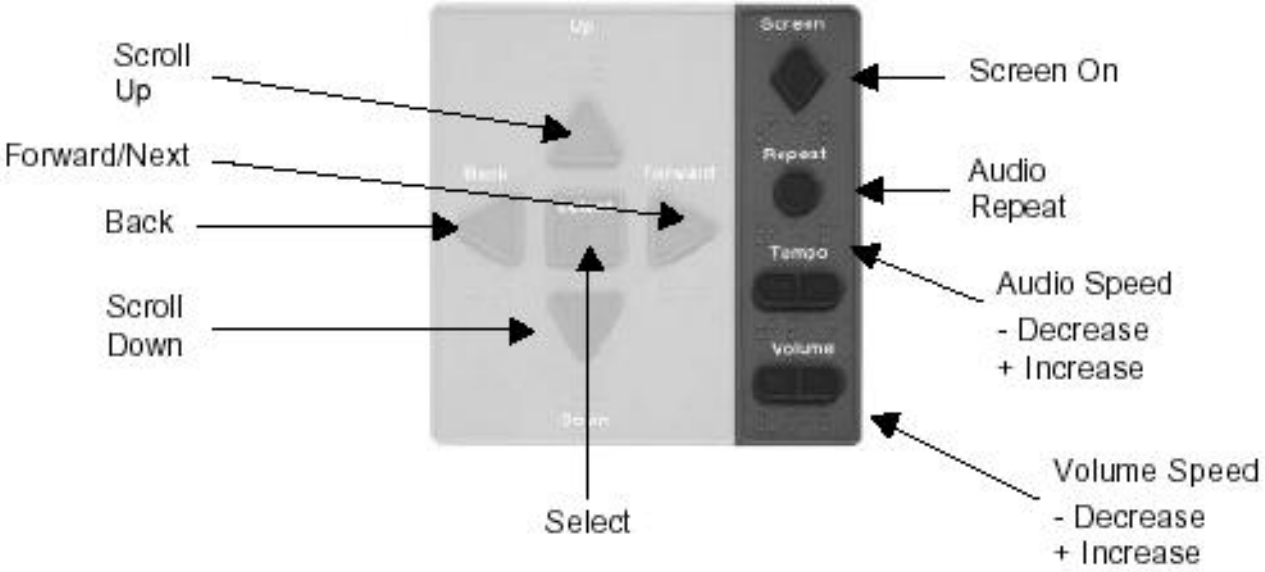


Exhibit 5 ES&S AutoMARK audio controls

Intended Environment

The ES&S AutoMARK was intended for use in any facility typically used as a polling station.

Type of Work Supported

The ES&S AutoMARK facilitates accessible ballot navigation and ballot marking for voters with vision and mobility impairments. Audio ballot and multi-language support assists voters who are more comfortable reading or hearing ballot contents in an alternative language to cast their vote independently.

Test Objectives

The goal of this summative usability test for voting systems is to identify and measure failures, not to diagnose their cause. The focus is on the accuracy, efficiency, and confidence of the voter experience. This test fundamentally adopted the usability goals for a voting system as one that allows voters to cast their vote:

- Correctly – to use the voting system to register their intended selections with minimal errors and easily detect and correct errors when they occur.
- Efficiently – to complete the voting process in a timely manner and without unproductive, unwanted, incomprehensible, or frustrating interactions with the system.
- Confidently – to be confident (1) in what actions they had to perform in order to vote, (2) that their votes were correctly recorded by the system and will be correctly counted, and (3) that their privacy is assured.

This was an accessibility test testing accessible voting systems with specific populations of people with disabilities; able bodied individuals participated as well.

Conformance test goals are to detect aspects of the system that do not meet a standard, not to identify the cause of failure. A usability test for conformance to a usability standard is a specialized type of summative test. For voting systems, such a test requires usability performance benchmarks as part of the standard to test against. These benchmarks include a representative set of test ballots and a well-specified test protocol that is explicit about how many and what types of voter populations to test against. Further, the conformance test has to be validated to produce repeatable results.

Therefore this summative test took the first steps towards meeting the proposed benchmarks for Voting System Standards Usability Testing. Because there is not an adopted benchmark to date, this test was administered in line with the intent of the proposed benchmarks. The results and findings of the test will not attempt to mirror those of the proposed benchmark.

Among the basic metrics for voting usability are:

- Low error rate for marking the ballot (the voter selection is correctly conveyed to and represented within the voting system)
- Efficient operation (time required to vote is not excessive)
- Satisfaction (voter experience is safe, comfortable, free of stress, and instills confidence)

Method

Participants

The test was conducted using fourteen individuals' both those representative of the general population of US voters as well as those with disabilities. All participants were required to have the following characteristics to participate:

a) Eligible to vote in the United States;

b) Speaks English fluently;

c) Willing to sign a non disclosure agreement;

d) Willing to sign a Participant Consent form;

Participants were selected by using an accessibility recruiting screener to ensure the specific demographic characteristics of; education, race, gender, and visual or cognitive disability to best represent those individuals most likely to use the AutoMARK VAT. There is no reason to believe that there were any significant differences between the participant sample and the general voting population.

Table 8 Participant Profile

Participant #	Gender	Age	Education	Race	Geographic	Self Reported Disability
1	Female	65+	Post graduate	Caucasian	Urban	n/a
2	Female	65+	Some college	Caucasian	Urban	n/a
3	Female	45 - 54	College graduate	Caucasian	Urban	n/a
4	Female	65+	High school	Caucasian	Urban	n/a
5	Female	65+	Some college	Other	Urban	Blind, Dexterity
6	Male	65+	College graduate	Caucasian	Urban	Low vision, Cognitive
7	Male	65+	High school	Caucasian	Urban	other
8	Female	65+	College graduate	Caucasian	Urban	n/a
9	Female	65+	Some college	Caucasian	Urban	Dexterity
10	Male	65+	Post graduate	Caucasian	Urban	Other
11	Female	65+	Some college	Caucasian	Urban	n/a
12	Female	65+	Some college	Other	Transient	Other
13	Male	65+	Post graduate	Caucasian	Urban	Low vision
14	Female	65+	College graduate	Caucasian	Urban	Other

Context of Product Use in the Test

Tasks

The test was comprised of two primary tasks; making vote selections using one of the AutoMARK interfaces and then using the AutoCast function to cast the paper ballot into a secure ballot box. These are the primary voting tasks that have a direct effect on the test objectives of allowing a voter to cast their vote correctly, efficiently and comfortably.

The test participants were instructed to make specific voting choices on the AutoMARK. All instructions about filling out the ballot were given to the participants either in writing or verbally for those who could not read the instructions, with no additional individual assistance offered. (See Appendix B)

Instructions for the participants included directions to represent realistic and commonly occurring ballot selections such as:

- Voting for names that appeared at various positions within a list of names
- Not voting in specific contests on the ballot
- Indicating a write-in vote

The participants were given verbal instructions on casting the ballot.

The key consideration for selecting the tasks was to balance of representative voter use of the product with the need to achieve future voting system benchmarks.

The source of the tasks was collaboration between product management and usability.

Test Facility

Intended context of use:
Precinct based voting can take place at any facility meeting the local jurisdictions requirements. Standard precinct based voting facilities vary widely from homeowner's garages, to public school auditoriums.

Context used for the test:
The usability test was conducted at community center that is typical of a standard voting precinct. There were 2 AutoMARK VAT system installed in a large activity center that resembled a realistic voting location. The participants' actions of inserting and marking the ballot, reviewing screen messages and casting the ballot were recorded using 2 cameras and Morae Usability testing software.

Participant's Computing Environment

The participants used the ES&S AutoMARK Voter Assist Terminal version 1.6.0.0

Display Devices:
The AutoMark uses a touch screen as the mechanism for participants to both view the messages presented and make selections such as accepting the option to reject or cast a ballot.

The display is a color liquid crystal display, with a portrait orientation. The LCD is a high-contrast device suitable for use in environments with bright ambient light. The LCD is backlit using CCFL (cold cathode fluorescent lamp) devices. Current design uses a display panel manufactured by

either LG Philips or Sharp. The display is a 15-inch device (measured diagonally).

LCD specifications include the following:

Table 9 LIQUID CRYSTAL DISPLAY SPECIFICATIONS

ITEM	ATTRIBUTE	SPEC	UNITS
1.	LCD TECHNOLOGY	TFT	
2.	NOMINAL SIZE (DIAGONAL)	15	INCHES
3.	VIEWING AREA, WIDTH	8.9	INCHES
4.	VIEWING AREA, HEIGHT	11.9	INCHES
5.	EQUIVALENT PC SCREEN SPECIFICATION	XGA	
6.	SCREEN RESOLUTION, HORIZONTAL	768	PIXELS
7.	SCREEN RESOLUTION, VERTICAL	1024	PIXELS
8.	COLOR DEPTH	64K	COLORS
9.	DISPLAY BRIGHTNESS	≥250	NITS

The paper ballot was 8.5" x 11"in size.

Test Administrator Tools

Tasks were timed using Morae Recorder Usability Testing Software. Sessions were videotaped (one camera was used to capture the participants interaction with the screen and one camera was used to observe the facial actions of the participant), although information derived from the recordings are not part of this report. At the end of the sessions, participants completed a 2 part questionnaire. The first part of the questionnaire assessed confidence and the second part assessed usability with the standard System Usability Scale (SUS) using a 5-point Likert scale.

Experimental Design

The experimental design was a between subject study. No control variables (other than voter type) were accounted for either experimentally or statistically. Counterbalancing was not done because the two tasks needed to occur in chronological order.

Several additional control variables were recorded, including English proficiency, voting eligibility, gender, age, race, education, geographic background and disability.

There were 5 dependent variables: unassisted task completion rate, base accuracy score, time to task completion, voter confidence and System Usability Scale score.

Procedure

a. Upon arrival at the community center, the participants were met by a greeter and asked to first fill out the consent form and were offered a second form for their records.
b. They were given the same greeting; "Thank you for your interest to participate in our study. We appreciate your help. We are researching which things are easy to do and which are difficult to do on the AutoMARK. Please understand that we are not in any way testing your ability. We are evaluating the AutoMARK's Usability."
c. They were then given paper ballot (Appendix A), and a set of

written instructions (Appendix B). They were told that the test facilitator will not be able to assist them once they had started. The exception is for those with visual impairments.

d. The participant was escorted to one of the two AutoMARK VAT's where they were "introduced" to a test facilitator.
e. The facilitator took the blank paper ballot and inserted it into the AutoMARK the same way a Poll worker would do in a real election.
f. The participant would then follow the instructions making the vote selections.
g. The test facilitator was able to verbally read the instructions aloud for those who could not read the instructions. They were read as many times as the participant requested.
h. When the participant finished making their selections, they were presented an option to mark their paper ballot.
i. The AutoMark would mark the paper ballot as the participant selected and the ballot summary review would be presented back to the voter for verification.
j. At that point the participant had the option to cast their ballot or have it returned so that they could obtain a new ballot and start over.
k. Once the participant indicated they were finished, they were verbally given the the12 question survey to provide us feedback on their voting experience.
l. Upon completion of the survey the participant was returned to the greeter where they were thanked and given an option of the available gifts.

Participant General Instructions

Once the test began, the following statement was read by the test facilitator in response to any question from a participant:
"I'm sorry but I'm not allowed to help you once you start. If you are having difficulties you can try to finish. If you are stuck and cannot continue, you can stop if you wish."

Participant Task Instructions

The test participants were told to make specific voting choices on the ballot. All instructions about filling out the ballot were given to the participants in writing, with no additional individual assistance offered. (See Appendix B) The test facilitator was able to verbally read the instructions aloud for those who could not read the instructions. They were read as many times as the participant requested.

The following statement was read by the test facilitator in response to any question from a participant:

"I'm sorry but I'm not allowed to help you once you start. If you are having difficulties you can try to finish. If you are stuck and cannot continue, you can stop if you wish."

Various tasks were included in the instructions for the participants to represent realistic voting events. These included:

• Voting for names that appeared at various positions within a list of names

• Not voting in specific contests on the ballot

• Indicating a write-in vote

By instructing the participants how to vote, the difference between the "intended" votes of the test participants and the actual votes that they cast can be determined. Accuracy of the cast ballot is calculated by counting the number of correct votes, 11 being a perfect score. Note that both the test ballot and the tasks were constructed to be complex enough to expose the different types of errors that would occur if a voting system design had poor usability.

Usability Metrics

Effectiveness

Completion Rate: Unassisted task completion rate was defined as the percentage of participants who completed each task correctly without assistance from the test administrator.

Base Accuracy Score: is the mean of the percentage of all ballot choices that are correctly cast by each of the test participants.

Efficiency

Task time: is the amount of time to complete the task.

Satisfaction

Voter Confidence Score: the mean confidence level expressed by the voters that they believed they voted correctly and the system successfully recorded their votes. This was based on a confidence question developed specifically for this type of test.

System Usability Scale: is a simple, ten-item scale giving a global view of subjective assessments of usability.

Results

Data Analysis

Data Scoring: Participant behavior was categorized into groups of successes, accuracy, and satisfaction. Behaviors were marked as errors when a participant made an action that could not lead to them successfully casting their ballot.
Data Reduction: Data for each task was analyzed separately and summarized together. Data was based on a voter using an accessible voting device whether they were actually disabled or not.
Statistical Analyses: Descriptive statistics used included: means, minimum values, and maximum values. There were no inferential statistical analyses performed.

Presentation of the Results

Performance Results

The mean task completion time for all 14 participants was 9.36 minutes for making their selections on the AutoMARK VAT and casting their vote. The user group had a base

acuracy98.05% and an unassisted task completion rate of 64%. There were 5 dependent variables; these were task completion rate, base accuracy score, time to task completion, voter confidence and number of errors.

Typical Voting Performance Results by Participant

Participant #	Unassisted Task Completion Rate	Base Accuracy Score	Casting Ballot Task Time
1	100%	11	10.64
2	100%	11	9.48
3	100%	11	7.56
4	100%	11	7.58
5	100%	11	10.73
6	100%	11	15.01
7	100%	11	4.46
8	100%	11	6.43
9	100%	11	13.53
10	100%	11	6.76
11	100%	11	13.02
12	100%	10	7.16
13	100%	10	9.35
14	0%	0	Abandon

Satisfaction Results

A questionnaire was administered to participants after they cast their ballot, which resulted in a mean score of 64.62 (out of 100) based on the standard method of the System Usability Scale (SUS) and a 4.6 (out of 5) confidence score.

Participant #	Voter Confidence	SUS
1	5	67.5
2	5	55
3	5	87.5
4	3	77.5
5	4	67.5
6	5	62.5
7	5	62.5
8	4	50
9	4	55
10	5	60
11	5	55
12	5	50
13	5	90
14	0	0

Appendices

Appendix A – Test Paper Ballot

This provides a reduced size image of how the ballot was laid out.

Appendix B -- Instructions for Participants

These are the instructions that were given to each participant on how to mark their ballot.

Appendix C – Facilitator Notes

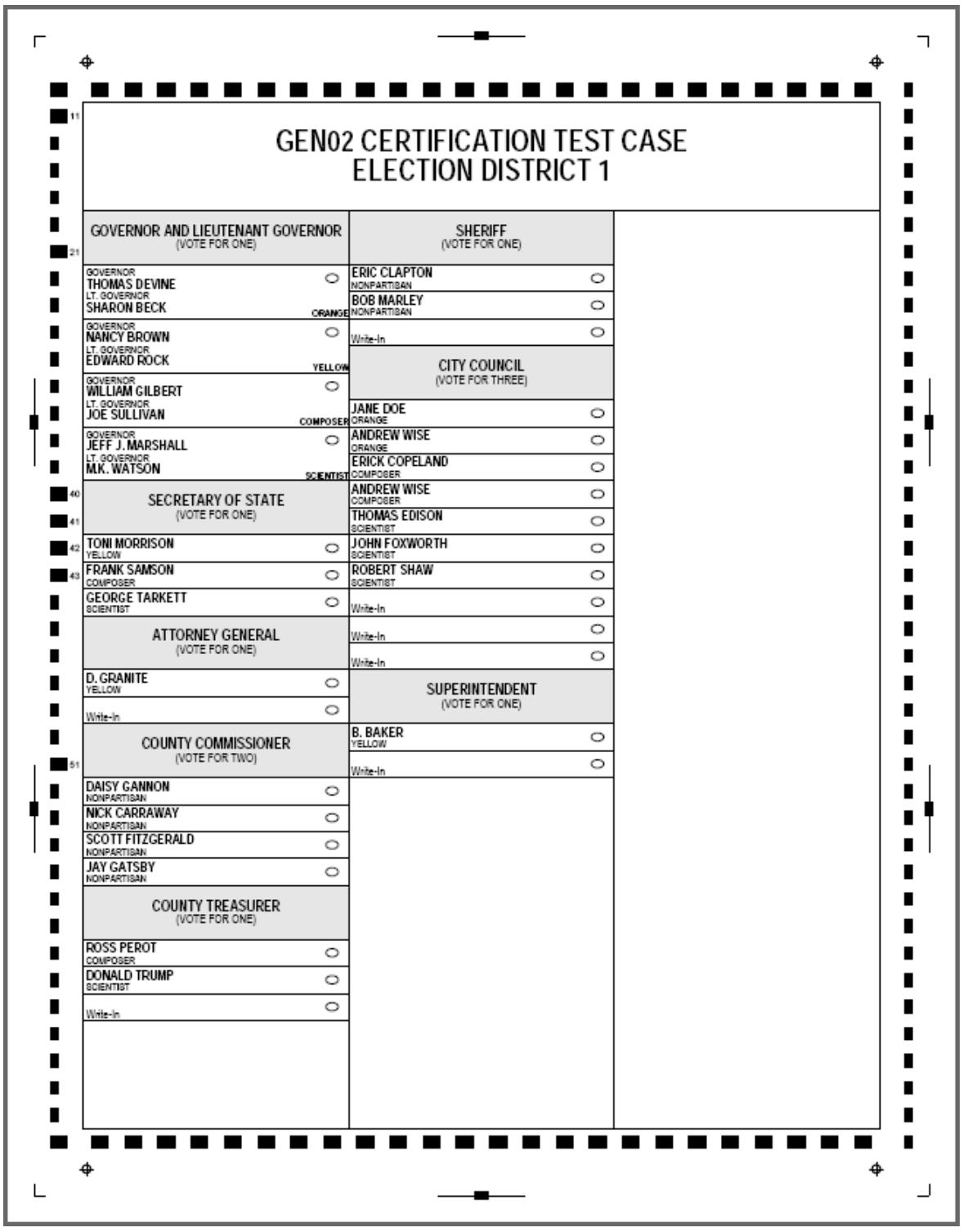
These are the instructions that were given to each facilitator to ensure consistent interaction with the participant.

Appendix D -- Voting System Usability Scale – Voting SUS

This document contains a list of questions and the 5 point Likert scale for the SUS assessment and the two questions used to establish confidence.

Appendix A

Test Paper Ballot



GEN02 CERTIFICATION TEST CASE
ELECTION DISTRICT 1

GOVERNOR AND LIEUTENANT GOVERNOR (VOTE FOR ONE)

- GOVERNOR THOMAS DEVINE / LT. GOVERNOR SHARON BECK — ORANGE
- GOVERNOR NANCY BROWN / LT. GOVERNOR EDWARD ROCK — YELLOW
- GOVERNOR WILLIAM GILBERT / LT. GOVERNOR JOE SULLIVAN — COMPOSER
- GOVERNOR JEFF J. MARSHALL / LT. GOVERNOR M.K. WATSON — SCIENTIST

SECRETARY OF STATE (VOTE FOR ONE)

- TONI MORRISON — YELLOW
- FRANK SAMSON — COMPOSER
- GEORGE TARKETT — SCIENTIST

ATTORNEY GENERAL (VOTE FOR ONE)

- D. GRANITE — YELLOW
- Write-In

COUNTY COMMISSIONER (VOTE FOR TWO)

- DAISY GANNON — NONPARTISAN
- NICK CARRAWAY — NONPARTISAN
- SCOTT FITZGERALD — NONPARTISAN
- JAY GATSBY — NONPARTISAN

COUNTY TREASURER (VOTE FOR ONE)

- ROSS PEROT — COMPOSER
- DONALD TRUMP — SCIENTIST
- Write-In

SHERIFF (VOTE FOR ONE)

- ERIC CLAPTON — NONPARTISAN
- BOB MARLEY — NONPARTISAN
- Write-In

CITY COUNCIL (VOTE FOR THREE)

- JANE DOE — ORANGE
- ANDREW WISE — ORANGE
- ERICK COPELAND — COMPOSER
- ANDREW WISE — COMPOSER
- THOMAS EDISON — SCIENTIST
- JOHN FOXWORTH — SCIENTIST
- ROBERT SHAW — SCIENTIST
- Write-In
- Write-In
- Write-In

SUPERINTENDENT (VOTE FOR ONE)

- B. BAKER — YELLOW
- Write-In

Appendix B

Instructions for Participants

In our mock election, we will be using fake names for candidates and for political parties.

Parties will be represented by either colors or occupations.

For example, you might see or hear this:

Joe Jones / Yellow Party

-or-

Mary Smith / Scientist

Any similarity between names of candidates and real people is purely coincidental.

Please attempt to vote exactly as described on the back of this page

Once you start, we will not be able to help you.

Please do the best you can. If you are stuck and cannot continue, inform the facilitator.

Thank you.

For Governor and Lieutenant Governor, vote for

William Gilbert & Joe Sullivan

For Secretary of State, vote for
Frank Samson

For Attorney General,
Do not vote

For County Commissioner, vote for the following candidates:
Daisy Gannon
Scott Fitzgerald

For County Treasurer, vote for
Ross Perot

For Sheriff,
Do not vote

For City Council, vote for the following candidates:
Jane Doe
Erick Copeland
Robert Shaw

For Superintendent, write in a vote for
Bob Adams

Cast your ballot

Appendix C

Facilitation Notes

Facilitator and Participant interaction

To minimize interference in the measurement of usability, once the participant has begun the test, the facilitator's interaction with them is limited to the following statement:

"I'm sorry but I'm not allowed to help you once you start. If you are having difficulties you can try to finish. If you are stuck and cannot continue, you can stop if you wish."

The only facilitator interaction allowed will be to provide the visually impaired participants the instructions on which contest selections are to be marked.

They must be read exactly as the written instructions.

They can be read to the participant as many times as requested.

Appendix D

Voting System Usability Scale

1. To the best of my ability, I followed the instructions telling me how to vote.

☐ Yes ☐ No

2. I was able to cast all of the votes in today's test exactly as instructed

Strongly disagree — Strongly agree

1	2	3	4	5

3. I think that I would like to vote on this system in a real election

Error! Objects cannot be created from editing field

1	2	3	4	5

4. I found the voting system unnecessarily complex

1	2	3	4	5

5. I thought the voting system was easy to use

1	2	3	4	5

6. I think that I would need the support of a poll worker to be able to use this system

1	2	3	4	5

7. I found the various functions in this voting system were well integrated

1	2	3	4	5

8. I thought there was too much Inconsistency in this voting system

1	2	3	4	5

9. I would imagine that most people would learn to use this voting system very quickly

1	2	3	4	5

10. I found the system very cumbersome to use

1	2	3	4	5

11. I felt very confident using the system

1	2	3	4	5

12. I needed to learn a lot of things before I could get going with this system

1	2	3	4	5

codes.

1	2	3	4	5

Instructions to the participant:

I am going to ask you to rate some things on a 1 to 5 scale. You can choose one, or five, or any number in between. If you feel that you cannot respond to a question please choose the center point of the scale.

Please record your immediate response to each item, rather than thinking about items for a long time.