Guidelines on How to Complete the Modified CIF Template for Voting System Test Laboratories (VSTLs)

INTENDED AUDIENCE

This document provides guidance and instructions on how to complete a modified version of *ISO/IEC 25062:2006, the Common Industry Format (CIF)* usability test report. This modified version of the CIF has been specifically tailored for Voting System Test Laboratories (VSTLs), and their usability test administrator(s) and data logger(s).

The CIF was originally designed to provide a consistent format for reporting the results of usability testing and to provide a sufficient amount of detail about a usability test so future testing teams could recreate the test, capturing data in the exact same fashion. The guidance and instructions contained in this document is to enable VSTLs to effectively communicate the results of usability testing.

In addition to this document, a template based on the modified CIF format has also been created to assist VSTL usability test administrator(s) and data logger(s) in developing a usability report that will meet the guidance set forth in this document.

INTENDED PURPOSE OF THIS DOCUMENT

The guidance included in this document has been prepared to help VSTLs meet the Voluntary Voting System Guidelines (VVSG) developed by the Technical Guidelines Development Committee (TGDC).

The VVSG requires that Voting Manufacturers submit their voting systems to one of the VSTLs for usability testing.

Section 3.2.1.1-D of the VVSG states that "The test lab shall report the metrics for the usability of the voting system as measured by the Voting Performance Protocol (VPP)."[1]

The following guidance is intended to assist test laboratories in reporting the results of usability testing for each system tested. This guidance has been specifically tailored based on the VPP and the usability test requirements for voting systems.

The purpose of this document is to provide guidance and instructions on how to complete a modified version of the CIF, and meet the requirements set forth in the VVSG.

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[1] Voluntary Voting System Guidelines Recommendations to the Election Assistance Commission, Aug. 2007

STRUCTURE OF THIS DOCUMENT

This document includes guidance and instructions for each section of the modified CIF (and any related subsections), including:

1.0 Executive Summary

2.0 Introduction

3.0 Method

4.0 Results

5.0 Appendices

In addition to these sections, the modified CIF shall also include a title page and several appendices. A sample title page has been included in the modified CIF template and guidance on the appendices is contained at the end of this document.

HOW TO USE THIS DOCUMENT

This document is based on ISO/IEC 25062:2006 Common Industry Format (CIF), a format used to report the results of summative usability testing. Before using this document, you must become familiar with this standard. ISO/IEC 25062:2006 can be purchased from: http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43046.

It is important to note that the numbering format included in this document is identical to the numbering used in the modified CIF template for VSTLs.

When completing the modified CIF template, it is highly recommended that VSTLs, their usability test administrator(s) and their data logger(s) refer to the corresponding sections in this document for instructions and guidance.

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The executive summary of the usability test report shall be a high-level overview of the test conducted, while providing enough information to adequately describe the methodology used and the results discovered.

The executive summary describes the purpose of the usability test, which is to measure the performance of a voting system using the Voting Performance Protocol (VPP) and to compare its performance to the benchmarks established by the VVSG.

In the executive summary, include key information about the test logistics, the details of the test and the test results as follows:

Test Logistics:

- Date the test was conducted

- Name and location of the test laboratory that conducted the test, including a brief summary of the qualifications of the usability test administrator(s) and data logger(s) involved in the testing

- Voting System Under Test (VSUT), including version number, class of the system according to the overall class structure outlined in the VVSG, and a brief description of how the system works

- Test method calibration system (henceforth referred to simply as the calibration system) tested, including version number, class of the system according to the overall class structure outlined in the VVSG, and a brief description of how the system works

Test Details:

- Number of participants tested for both the VSUT and the calibration system. (The total shall be no less than 100 for each, but may be higher to ensure that at least 100 ballots were analyzed.) This should include a brief description of the participants tested and a succinct comparison of how well the participants' demographics matched the criteria outlined by the VVSG

- Brief description of 28 tasks tested, including a statement that the test ballot and instructions were identical to those outlined by the VVSG

- Summary of the usability test methodology and procedures used, including a statement that the procedures matched the protocol outlined in the VPP

Test Results:

- Types of performance metrics captured for each system, including:

    - Number of ballots successfully cast
    - Number of tasks (or voting opportunities) successfully completed (for each voter)
    - Mean time to complete the voting session (for all users)

- Types of metrics captured with the post-test questionnaire, including:

    - Voters' assurance that they had tried to follow the instructions given to them
    - Voters' confidence that they had used the system correctly
    - Voters' likeability ratings of the system

- Description about how the results were analyzed, including a statement that the ballots were scored according to the requirements outlined in the VPP

- List of key results, presented in an easy-to-read format, including: Total Completion Score (TCS), Perfect Ballot Index (PBI), Voter Inclusion Index (VII), Mean Time on Task, and Voter Confidence and Likability

Test Specifications:

Within the Executive Summary, the test followed the procedures specified in the VPP. If, for some reason, the test deviated from any of the requirements of the VPP, list all the modified procedures here.

GUIDANCE AND TIPS

✓   Provide a quick overview of the testing and include information on all of the key findings.

2.0 INTRODUCTION

The introduction shall provide an overview of the VSUT and calibration system tested.

2.1 FULL PRODUCT DESCRIPTION

Provide a description of the VSUT and calibration system tested, the formal product name, class of the system according to the overall class structure outlined in the VVSG, and the version number or timestamp of both the VSUT and the calibration system.

This section shall include:

VSUT:

- Full product identification of the voting system, including version number or timestamp and class

- If a different version number was tested by the Voting System Manufacturer this should be noted here

- High-level description of how the voting system works

Calibration System:

- Full product identification of the voting system, including version number or timestamp and class

- High-level description of how the voting system works

GUIDANCE AND TIPS

✓ Photos of the VSUT and calibration system can serve as a record of what the systems looked like at the time of testing. Not only do these artifacts help to illustrate both systems, they also serve as a point-in-time reference.

2.2 TEST OBJECTIVES

This section of the report helps to clarify the purpose of the usability test, which is to measure the performance of the VSUT and compare that performance to the benchmarks set by the VVSG. This section shall include:

- A succinct description of the objectives of this usability test (based on the requirements outlined in the VVSG and VPP)

GUIDANCE AND TIPS

✓ Reference the VVSG in describing the goals and objectives of the usability test.

3.0 METHOD

The method section shall provide details on the usability test, including the number and types of participants tested, the types of tasks included in the usability test, the test location, the test procedure, participant instructions, and the metrics recorded during the usability test. This section provides a comprehensive description of the test method and that is sufficiently descriptive so that another individual or organization could use this information to reproduce the exact same study.

3.1 PARTICIPANTS

This section shall include:

- Total number of participants tested for each system (a minimum of 100 participants shall successfully cast a ballot for each of the two systems)

- Key characteristics and demographics of the participants, including gender, race, education and age. This information can be expressed in a table, a bulleted list or even in a graph/chart

- Comparison of the participants tested with the target demographic criteria outlined in the VPP

Once you have adequately described the voters who participated in the usability test. It is important to note how these users were selected. Be sure to describe your recruiting strategies and list the amount of the compensation given to participants.

3.2 CONTEXT OF USE IN THE TEST

The context of use section shall describe the environment in which the voting system was evaluated. It should sufficiently describe the tasks tested, the testing location, and the specific types of equipment used during the testing. Lastly, it should detail any test administrator tools that were used to help facilitate or conduct the usability testing.

3.2.1 TASKS

The tasks are to vote the ballot as instructed. This section shall specify the number and types of tasks tested. It shall include:

- Number of tasks tested

- Description of the tasks used

- Success criteria for the tasks

The report shall include a copy of the test ballot and a list of the voting instructions given to participants in an appendix to this report.

3.2.2 TEST LOCATION

This section shall describe the test location in sufficient detail so that those reading the report not only understand the environment in which the voting system was tested, but in enough detail that the test could be repeated in a similar environment. Include a description of the location, such as:

- Type of building used for testing

- Number and set-up of polling stations

- Type of lighting

- Ambient temperature

- Ambient noise level

In addition to a detailed description of the environment, this section should detail any aspects of the location that could have an impact on the results of testing.

Guidance and Tips

✓ The location used for testing should closely resemble that of a polling location.

✓ In addition, it is important to ensure that the test location is comfortable for participants. This includes ensuring that the area is not too noisy as to be distracting. It also includes ensuring that the temperature of the facility is set at a comfortable level, so participants are not cold or hot.

✓ Also, be aware that glare from lighting can seriously degrade the readability of electronic screens.

✓ If an observation room is provided for facilitators, it is important to ensure that this area is comfortable and describe the usage of this room in the Experimental Design section on Procedure.

✓ Pictures of the testing location should be included in the report to help document the physical aspects of the test environment.

3.2.3 VOTING ENVIRONMENT

This section shall describe the VSUT and calibration system used, including:

- Description of the VSUT and calibration system (if not already included in the 'Product Description' section of this report)

- List of any additional equipment used in the testing environment

This section shall also include photos of the systems to help document the state at the time of testing.

3.2.3.1 DISPLAY DEVICES

This section shall describe the display devices used.

The following list is just a sample of the types of display devices that may be used and is not intended to be a comprehensive list of display devices:

- If a paper ballot is used, include a copy of the ballot in an appendix of this report

- If an electronic ballot is used, photos of the electronic ballot shall be provided in an appendix of this report

- If an electronic ballot is used, list the default setting the system was set to, including screen display, font sizes, etc.

- Include a description of any other type of display device, including settings of the display, used during testing

3.2.3.2 AUDIO

This section shall describe any audio heard or used by voters during the usability testing.

The following list is just a sample of the types of audio devices that may be used and is not intended to be a comprehensive list of audio devices:

- If headphones are used, please describe the headphones here

- If voters were allowed to adjust volume controls, note that here and list the default volume settings used during testing

- If voters were allowed to pause or replay the audio, please list the controls that voters were allowed to use to manage the audio

- Include a description of any other type of audio, including audio settings, used during testing

> **GUIDANCE AND TIPS**
>
> ✓ Readers of this report should have a clear understanding of the VSUT and calibration system used and the state of those systems. Using photos or screenshots can be a helpful way to document and illustrate the systems and the testing environment.

3.2.4 TEST ADMINISTRATOR TOOLS

This section shall describe the tools used to conduct the usability test and shall include (but is not limited to):

- Forms for informed consent and release

- Voting instructions

- Data collection tools and materials (for data logger(s) to record whether the voter successfully cast the ballot – regardless of whether the ballot choices were correct – and for recording time taken to vote)

- Software used to analyze the data

- Post-test questionnaire

- Incentive receipt and acknowledgment form

Describe any additional tools used to record the data, including items such as a stopwatch, video camera, digital camera, logging software, or other tools used during the usability test.

3.3 EXPERIMENTAL DESIGN

The section on experimental design shall describe the test design, including the procedures used, instructions given to voters, and the usability metrics captured.

3.3.1 PROCEDURE

The procedure section shall document the usability testing process and shall provide the sequence of events that occurred during the usability test, from the greeting of the voter to dismissing the participant.

Describe the make-up of the usability testing team, their roles, responsibilities, and procedures for interacting with voters during the usability test. This section shall include:

- Number of individuals conducting the test and the roles of each individual

- Protocol for interaction between the participant and the usability testing team

Describe the sequence of events that occurred during testing. Include all of the steps that occurred during testing, taking care to reference how the test administrator tools (described in the previous section) were used and noting when voters were given instructions by the usability test administrator(s) and data logger(s).

(Note, that the next section will provide more information on the instructions given to participants; this section should simply note at what stage in the process the instructions were provided.)

When documenting the testing procedure, be sure to:

- Describe the procedure for greeting the participant

- Specify when participants were asked to review and sign any informed consent or release forms. Include a copy of any consent forms used in an appendix of this report

- Indicate that voters were informed of their rights during the test (including the right to leave at any time) and that the test participants understood these instructions

- Include a copy of the written instructions provided to participants to explain how the usability test would be conducted

- State how the tasks were administered to voters

- Detail any post-test procedures, including the post-test questionnaire. Include a copy of the post-test questionnaire in an appendix of this report

- Specify whether voters were compensated for their participation, and if so, indicate the amount and form of that compensation here

GUIDANCE AND TIPS

✓ This section serves as a step-by-step description of what happened during the usability test and the roles that each member of the testing team played.

✓ This section need not provide copies of the test administrator tools. These tools should be included in the appendices.

✓ This section need not include the instructions given to participants. This information is specified in the next section.

3.3.2 PARTICIPANT GENERAL INSTRUCTIONS

This section shall include:

- The written instructions given to voters are as below.

  Note: We are testing the voting system in a specific configuration. Though the system may allow you to change features such as font size and contrast, please do not adjust these settings for this test.

  In our mock election, we will be using fake names for candidates and colors for political party names. For example, you might see this:

  Joe Jones/Yellow Party

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

  Please attempt to vote exactly as described on the following pages

  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 administrator.

  Thank you.

- Include a copy of the written instructions in an appendix to this report in the exact same format as the instructions provided to votes

- Include any instructions voters received on how to interact with the usability test administrator(s) and data logger(s), including how they were instructed about assistance and indicate that they were finished with the usability tasks provided to them.

3.3.3 PARTICIPANT TASK INSTRUCTIONS

This section shall include:

- Instructions given to participants to select a particular candidate for each task.

- Include a copy of the voting instructions in an appendix to this report in the exact same format as the instructions provided to voters.

- Description of how the instructions were administered and when they were provided to participants during the usability testing process.

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GUIDANCE AND TIPS

✓ This section is critical, as it is important that each voter have the same experience during the usability testing. By standardizing the instructions provided to participants, it ensures that the each participant receives the same guidance during the usability test.

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3.4 USABILITY METRICS

This section shall detail the types of usability metrics captured and shall specifically describe the metrics used to measure voters' effectiveness, efficiency, and satisfaction with the voting system.

3.4.1 EFFECTIVENESS

This section shall describe the metrics used to measure the effectiveness of the voting system.

This section shall describe how the usability tasks were scored and should indicate the criteria used to determine success, as outlined in the VPP.

In evaluating a system's effectiveness or completion rate, the following metrics shall be calculated and reported for both the VSUT and the calibration system:

- **NPART:** Number of participants who attempted to vote on the system.

- **NCAST:** Number of participants who successfully cast a ballot on the system.

- **NPERFECT:** Number of participants who successfully case a perfectly correct ballot on the system.

- **Total completion score:** Percentage of participants who were able to complete the process of voting and cast their ballots so that their ballot choices were recorded by the system.

In addition, the following metrics shall be calculated for the VSUT:

- **Voter Inclusion Index:** Measures base accuracy score and standard deviation in order to combine accuracy with variability among test participants.

- **Perfect Ballot Index:** Comparison of the number of participants who cast a ballot without any errors to those that had a least one error in order to detect a systemic design problem that causes the same type of error by many test participants.

3.4.2 EFFICIENCY

This section shall describe the metrics used to measure the efficiency of the voting system.

3.4.2.1 TIME-ON-TASK

This section shall list any measures that were used to record time on task, including:

- **Mean Time:** Mean time taken per test participant (who successfully completed a ballot) to complete the process of activating, filing out and casting the ballot.

- **Average Session Time:** The average time on task is calculated simply as the sum of the times taken, in seconds, (TASKTIME-i) divided by the number of participants who successfully cast a ballot on the system (NCAST).

3.4.3 SATISFACTION

This section shall describe the metrics used to evaluate voters' satisfaction, including confidence and likeability with the voting system.

3.4.2.1 SATISFACTION RATING

This section shall list any measures that were used to measure voter satisfaction, including:

- **Mean Voter Confidence:** Mean confidence level expressed by voters that they believed they voted correctly and the system successfully recorded their votes.

- **Mean Voter Likeability:** Mean likeability level expressed by voters on how well they liked the system.

GUIDANCE AND TIPS

✓ Even though metrics for efficiency, voter confidence and voter likeability are reported. These metrics do not have pass/fail criteria associated with them, as do the Total Completion Score, Voter Inclusion Index and Perfect Ballot Index.

4.0 Results

4.1 DATA ANALYSIS

The following information shall be provided in sufficient detail to allow replication of the data analysis methods by another organization if the test is repeated.

This section of the report shall provide information on four key concepts, including data collection (how the data was collected), data scoring (how the data was scored), data reduction (how variation was calculated) and statistical analysis (how the data was analyzed).

Include within each section:

4.1.1 DATA COLLECTION:

Describes how the data was collected and shall include an account of any differences between the data that was planned to be collected and the data that was actually collected.

4.1.2 DATA SCORING:

Describes the procedures for scoring the data and maps any data ranges reported with the actual data collected during the testing. The usability test report shall also provide raw scores for both the VSUT and the calibration system. This data shall be provided in an appendix to the report.

4.1.3 DATA REDUCTION:

Explains the method used to compute the measure of central tendency and to characterize the variation in the data. In this section, it is important to note that mean and standard deviation were used to calculate central tendency and variation respectively.

4.1.4 STATISTICAL ANALYSIS:

The test report shall also indicate that the statistical analysis set forth in the VPP for Total Completion Score, Perfect Ballot Index, Voter Inclusion Index, Mean Time on Task, Mean Confidence Score, and the Mean Likeability Score were used to score the data from the VSUT. It should also describe the statistical analysis conducted on the data from the current test of the calibration system and the comparison of this data to the nominal data, which is used to determine the validity of the overall test.

✓ Note how data was collected and then subsequently analyzed. This information will help others better understand how data was scored when interpreting the results section of the usability report.

✓ When writing the section on data collection, consider the following:

  o Was demographic and satisfaction data captured by paper and pencil or did voters complete the questions electronically?

  o Was time data captured with a stopwatch and then entered into a spreadsheet?

  o How was missing data handled?

✓ When writing the section on data scoring, consider the following:

  o How were the ballots scored? How were voters' errors recorded?

  o How were the post-test questionnaires scored?

  o If ranges were used to collect demographic data, how do the ranges relate to the actual data (i.e. How do actual ages map to age ranges?)

  When documenting how the data was scored, it is important to note who was responsible for scoring the data and any safeguards that were put into place to ensure data was scored in a consistent manner (i.e. Did one person score the data while a second person reviewed the scores for accuracy and consistency?).

  o Describe any tools that were used to score the data. Did the testing team use the benchmark calculation Perl scripts provided with the VPP or any other scoring tools when coding the data? If so, specify the tools used in this section of the report.

✓ When writing the section on data reduction, consider the following:

  o Were there voters whose behaviors were not consistent with the rest of the test participants or could be considered outliers? Were any statistical tests run to confirm outliers? If so, how was the data handled?

✓ When writing the section on statistical analysis, consider the following:

- Does the report clearly state that the statistical analyses outlined in the VPP were used to calculate the data?

- Does the report provide formulas for calculating each of the usability metrics or does it simply reference the formulas provided in the VPP?

4.2 PRESENTATION OF THE RESULTS

This section shall detail the performance results in tabular format. The testing team will provide performance metrics for each task, as specified by the VPP.

PERFORMANCE RESULTS

This section shall provide summary tables that characterize the measures of effectiveness and efficiency across all tasks and all users. This section may take the form of a data table or include graphs and charts to illustrate the data in a graphical presentation.

At a minimum, the following metrics shall be included in this report. (Note, a glossary has been provided at the end of this report to describe many of the metrics below.)

- Calibration System

  - NPART
  - NCAST
  - NPERFECT
  - Total Completion Score (95% Confidence Interval)
  - Z-score resulting from Mann-Whitney comparison of current and nominal distributions

- VSUT

    - NPART
    - NCAST
    - NPERFECT
    - PCORRECT-i
    - Distribution of raw scores
    - Mean and standard deviation for the distribution of scaled scores
    - Total Completion Score (95% Confidence Interval)
    - Perfect Ballot Index (95% Confidence Interval)
    - Voter Inclusion Index (95% Confidence Interval)
    - Mean distribution of TASKTIME-i
    - Standard deviation for distribution of TASKTIME-i *(optional)*

SATISFACTION RESULTS

This section shall provide summary tables of likeability and confidence data. This data may be presented in a summary table or in various graphs and charts that appropriately summarize the results of the satisfaction data.

- Satisfaction Metrics for the VSUT

    - Mean for distribution of confidence responses
    - Mean for distribution of likability responses

5.0 APPENDICES

The usability report shall provide several appendices, including (but not limited to):

- Participant demographics

- Informed consent

- Instructions for participants

- Ballot implementation

- Post-test satisfaction questionnaire

- Results

5.1 APPENDIX A: PARTICIPANT DEMOGRAPHICS

Participant demographics shall be included as an appendix to the report in the form of a tabular summary of characteristics for each user.

This section may also include a brief summary of the voters who participated in the usability test and may include various graphs and charts to summarize the data.

GUIDANCE AND TIPS

✓ It is sometimes helpful to create a table of voters' demographics in Excel and then copy and paste the information into the report.

✓ In addition to a tabular summary, it can also be helpful to provide an overall summary of the voters who participated in the usability study. By providing charts and graphs that summarize the user data, readers of the report can more easily understand the overall characteristics of the group of users tested.

5.2 Appendix B: Informed Consent

Provide a copy of the informed consent and any additional non-disclosure or release forms provided to voters during the usability test.

The informed consent shall inform participants of their rights during the study and describe how the data will be collected and used, especially with regard to personally identifiable information.

> GUIDANCE AND TIPS
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> ✓ An example informed consent form used by the National Institute of Standards and Technology (NIST) can be found here: http://vote.nist.gov/meeting20070817/Informed-consent-form.doc.

5.3 APPENDIX C: INSTRUCTIONS FOR PARTICIPANTS

Provide a copy of the facilitator's introduction and any additional instructions provided to voters during the course of the usability testing.

Note: We are testing the voting system in a specific configuration. Though the system may allow you to change features such as font size and contrast, please do not adjust these settings for this test.

In our mock election, we will be using fake names for candidates and colors for political party names. For example, you might see this:

> *Joe Jones/Yellow Party*

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

Please attempt to vote exactly as described on the following pages

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 administrator.

Thank you.

For President and Vice President of the United States, vote for
    Adam Cramer and Greg Vuocolo

For Senator, vote for
    David Platt

For Congress, vote for
    Brad Schott

For Governor, vote for
    Cathy Steele

Do not cast a vote for
    Lieutenant Governor

For Registrar of Deeds, write in a vote for
    Christopher Christopher

For State Senator, vote for
    Edward Shiplett

For State Assemblyman, vote for
    Amos Keller

For County Commissioners, vote for the following candidates:
    Camille Argent
    Mary Tawa
    Joe Barry

and enter write in votes for:
    Dorothy Johns
    Charles Blank

For Court of Appeals Judge, vote for
    Michael Marchesani

For Water Commissioner, vote for
    Orville White

    Gregory Seldon

For City Council, vote for the following candidates:
    Randall Rupp
    Carroll Shry
    Donald Davis

For Chief Justice of the Supreme Court
    Vote to keep Robert Demergue in office

For the question of retaining Justice of the Supreme Court Elmer Hull
    Do not vote

For Proposed Constitutional Amendment C
    Vote for this amendment

For Proposed Constitutional Amendment D
    Vote for this amendment

For Proposed Constitutional Amendment H
    Vote against this amendment

For Proposed Constitutional Amendment K
    Vote against this amendment

For Ballot Measure 101: Open Primaries
    Do not vote

For Ballot Measure 106: Limits on Private Enforcement of Unfair Business
    Competition Laws
    Vote for the measure

Cast your ballot

5.4 APPENDIX D: BALLOT IMPLEMENTATION

Provide a copy of the test ballot for both the VSUT and the calibration system.

- If a paper ballot was used, insert an exact replica of that ballot. This information may take the form of an image in order to capture the exact presentation of the ballot.

- If an electronic ballot was used, a copy of that ballot shall be provided (in text form) in this section of the report and may be associated with screenshots to illustrate how the information was presented to voters.

5.5 APPENDIX E: PERFORMANCE RESULTS

Provide a copy of the testing results in tabular format. This section shall include raw data for each of the systems tested, VSUT and the calibration system.

GUIDANCE AND TIPS

- ✓ In addition to a tabular summary, it can also be helpful to provide an overall summary of voter performance. By providing charts and graphs that summarize user performance, readers of the report can more easily understand the overall performance of the voting system.

5.7 APPENDIX F: POST-TEST QUESTIONNAIRE

Provide a copy of the post-test questionnaires provided to users, as well as information on how the questionnaires were scored.

Additionally, provide a copy of the results in a tabular format.

Participant Number _____   Machine Type: ☐ DRE   ☐ Optscan

Post Test Questionnaires

Please complete the following questionnaire

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

☐ Yes
☐ No

2.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
I was able to cast all of the votes in today's test exactly as instructed.					

3.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
I would like to use this voting system in a real election.					

Glossary

Name	Meaning	Value Range
NPART	Number of participants who attempt to vote on the system.	At least 100
NCAST	Number of participants who successfully cast a ballot on the system.	100 - NPART
NPERFECT	Number of participants who successfully cast a perfectly correct ballot on the system.	0 - NCAST
NCORRECT-i	Number of voting opportunities successfully taken by i-th participant.	0-28
PCORRECT-i	Proportion of voting opportunities successfully taken by i-th participant.	0-1.00
TASKTIME-i	Number of seconds taken by the i-th participant to complete the voting task.	Typical value in the hundreds

Works Cited

Please note: The following references were cited in preparing the "Guidelines on How to Complete the Modified CIF Fortmat for Voting System Test Laboratories (VSTLs)." These works are not intended to be a part of the modified CIF report developed by the test laboratories, their usabiltiy test administrator(s) or data loggers(s).

Human Factors & Privacy (HFP) Subcommitee, T. G. (2007). *Usability Performance Benchmarks for the Voluntary Voting System Guidelines.*

ISO/IEC 25062:2006. (n.d.). Retrieved from International Organization of Standardization's Software engineering -- Software Product Quality Requirements and Evaluation (SQuaRE) -- Common Industry Format (CIF) for usability test reports: http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43046

Technical Guidelines Development Committee (Aug. 2007). *Voluntary Voting System Guidelines Recommendations to the Election Assistance Commission (VVSG).*