

2.08 - Democracy Suite[®] EMS System Operations Procedures

Version: 5.17-CO::3

April 20, 2023

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CHAPTER 1: INTRODUCTION

1.1 Document Use

This document is intended for use with the Democracy Suite[®] 5.17 platform.

1.2 Purpose and Scope

This document describes Democracy Suite[®] EMS operational procedures. In addition to the documents listed in the references section, this document provides all the information necessary to operate the EMS system. It is intended for all operating personnel, including those involved in pre-election and election preparation, post-election and central counting activities, as applicable, and describes the EMS system functions and operations identified in other TDP documents related to the Democracy Suite[®] EMS platform.

1.3 Applicable Documents

VVSG 1.0, Volume II, Version 1.0, Section 2.08 - System Operational Procedures

1.4 Design Responsibility

Dominion Voting is the design authority.

1.5 Patent Status

Certain system concepts, as well as many implementation and construction details, are protected by a series of U.S. and foreign patents pending.

1.6 Relevant Disclaimers

This document may make reference to certain Democracy Suite functionalities that are not part of the current 5.17-CO campaign and should be disregarded throughout the document.

For a full list of relevant disclaimers, please see the “Relevant Disclaimers” section in the *2.02 - Democracy Suite[®] System Overview* document.

CHAPTER 2: SYSTEM INSTALLATION AND TEST SPECIFICATION

For all information related to the Democracy Suite[®] EMS Standard System Installation and Configuration Procedure, Democracy Suite[®] EMS Express Installation and Configuration Procedure, Democracy Suite[®] EMS Client Workstation Installation and Configuration Procedure and instructions and test specification, please see the *Democracy Suite[®] EMS System Installation and Configuration Procedure* and *2.07 - Democracy Suite[®] System Test and Verification* documents.

CHAPTER 3: OPERATIONAL FEATURES

Operational features of all EMS components are described in detail in their respective user's guides. Please refer to:

- *Democracy Suite[®] EMS Election Event Designer User Guide*
- *Democracy Suite[®] EMS Results Tally & Reporting User Guide*
- *Democracy Suite[®] EMS Audio Studio User Guide*
- *Democracy Suite[®] EMS Election Data Translator User Guide*
- *Democracy Suite[®] EMS Results Transfer Manager User Guide*
- *Democracy Suite[®] EMS Mobile Ballot Production User Guide*
- *Democracy Suite[®] ImageCast[®] Voter Activation User Guide*

CHAPTER 4: OPERATING PROCEDURES

Operating Procedures for all EMS components are described in detail in their respective user guides.

Please refer to:

- *Democracy Suite[®] EMS Election Event Designer User Guide*
- *Democracy Suite[®] EMS Results Tally & Reporting User Guide*
- *Democracy Suite[®] EMS Audio Studio User Guide*
- *Democracy Suite[®] EMS Election Data Translator User Guide*
- *Democracy Suite[®] EMS Results Transfer Manager User Guide*
- *Democracy Suite[®] EMS Mobile Ballot Production User Guide*
- *Democracy Suite[®] ImageCast[®] Voter Activation User Guide*

4.1 Detailed Work Plan for Successful Ballot and Software Installation

The following work plan (Figure 4-1) contains a schedule and steps for successful ballot and software installation by election officials. The twenty-one-week schedule should be followed step by step to meet key dates, events, and deliverables. The exact dates are unique to each jurisdiction.

Methods to successfully install software are described in:

- *Democracy Suite[®] EMS Election Event Designer User Guide*

For a detailed description of all system inputs and outputs, as well as all EMS system input and output interfaces, please see *2.02 - Democracy Suite[®] System Overview*.

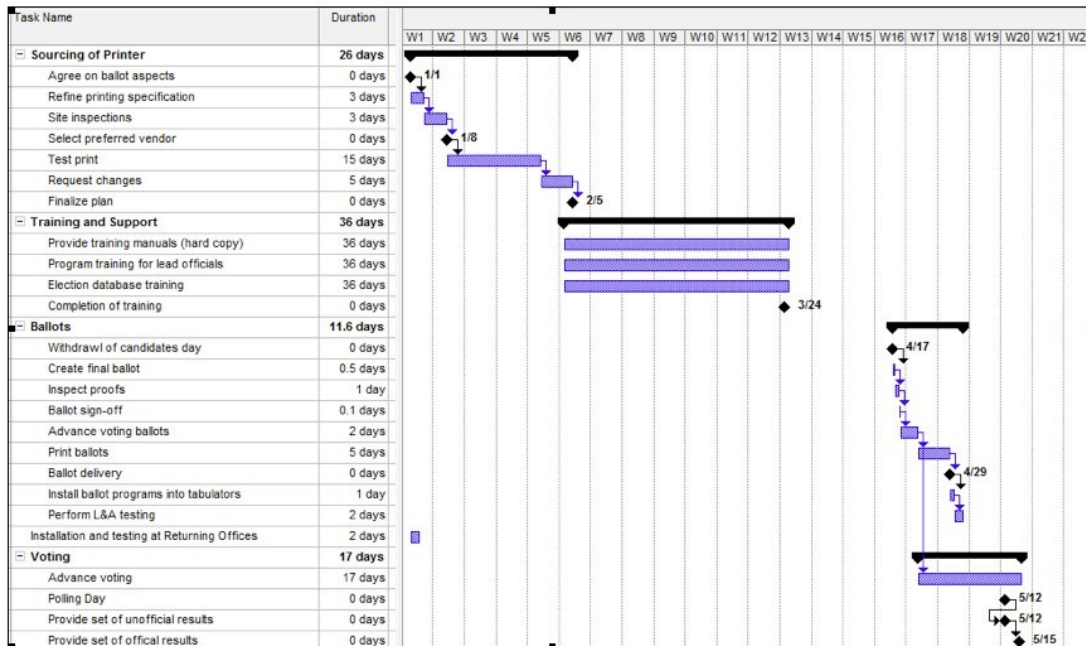


Figure 4-1: Software and Ballot Installation Schedule

4.1.1 Results Auditing (not available in NYS version of EMS)

After processing election results in most cases, there is a must inspect the system operation in a more detailed manner. As a result, the EMS RTR client application has the ability to produce a detailed audit report on how ballots were marked and how they were interpreted by tabulator devices. In addition, EMS RTR collects and copies all relevant ballots scans to be visually inspected. Furthermore, all ImageCast log files are visible through the RTR application.

For full details on the ImageCast[®] system’s audit functions as required by VVSG Vol. 1 Section 2.1.5, please refer to the following user guides:

- *Democracy Suite[®] EMS Election Event Designer User Guide*
- *Democracy Suite[®] EMS Results Tally & Reporting User Guide*

4.1.1.1 Lookup

The first step when performing an audit is to lookup the list of scanned ballot images and log files based on specific criteria. The generation of audit record entries are not terminated or altered by program control or by the intervention of any person. The physical security and integrity of the record are maintained at all times. The user can export audit images for a subset of result files, for a single

contest or for all contests. For each export a separate subfolder is created. Inside the subfolder a maximum of two subfolders can be created:

- published - the folder contains all images belonging to published results.
- notpublished - the folder contains all images belonging to non-published results.

If no contest was selected the following folders are created inside these folders:

- BlankBallot - no contest was marked on the ballot
- Blank - at least one contest did not have any votes on the ballot
- UndervotedNotBlank - at least one contest was undervoted on the ballot
- Overvoted - at least one contest was overvoted on the ballot
- Regular: each contest was fully voted on the ballot
- Write-in - write-ins were marked on the ballot

A similar approach is available for log files produced by the ImageCast[®] tabulator devices. In this case, filtering can be performed based on tabulator instance.

4.1.1.2 Ballots

This activity represents the previewing of ballot images. ImageCast[®] devices are unique due to their ballot fingerprinting technology, which records how the device interprets ballot markings, and appends this information to the bottom of the scanned ballot image. Using this activity, after lookup is performed, a user can select and inspect ballot images.

Ballot Image audit records can be printed. As per VVSG Vol. 1, this printing procedure meets the following requirements:

- The generation of audit trail records does not interfere with the production of output reports.
- The entries can be identified to facilitate their recognition, segregation, and retention.
- The audit record entries are kept physically secure.

4.1.1.3 Logs

This activity represents a simple text viewer function for previewing the log files produced by ImageCast[®] devices. Audit Log records can be printed. As per VVSG Vol. 1, this printing procedure meets the following requirements:

- The generation of audit trail records does not interfere with the production of output reports.

- The entries can be identified to facilitate their recognition, segregation, and retention.
- The audit record entries are kept physically secure.

4.1.2 Administration

Keeping in mind that the EMS RTR client application is part of the larger Democracy Suite[®] EMS system, aspects of the application's behavior must always be configured. Unlike the EMS EED application, the EMS RTR application does not have user management capabilities. EED and RTR share the same EMS Database data repository and users, but roles and permissions are exclusively defined using the EMS EED application. Consequently, EMS RTR has a limited set of integrated administrative functions.

CHAPTER 5: OPERATIONS SUPPORT

For information regarding system acquisition, technical support, correction of defects or the incorporation of new hardware or software releases, please contact your Dominion Customer Relations Manager, or call the main support line at 1-866-654-8683.

APPENDIX A: GLOSSARY

This Appendix provides a listing and brief definition of all terms that may be unfamiliar to persons not trained in either voting systems or computer operation.

Absentee Ballot: EAC 2015 definition: Ballot cast by a voter unable to vote in person at their Polling Place on Election Day.

Accessible Voting Session (AVS): A method of voting for voters with special needs in which audio, visual, and tactile interfaces are used in any voter-preferred combination to navigate and mark a ballot.

Accuracy Test: Consists of entering a known number of ballots with a known number of voted response positions into the product being tested. Used to verify that the vote tallying hardware is operating correctly.

Application Server (APPS): A server-side application responsible for executing long-running processes such as rendering ballots, generating audio and election files, etc.

Audio Studio (AS): A supplementary pre-voting end-user application used to record audio files for an election project.

Audio Tactile Interface (ATI): A handheld controller that allows special needs voters to navigate and make selections to a ballot that is presented in audio form during an Accessible Voting Session.

Audit Trail: Recorded information that allows Election Officials to review the activities that occurred on the voting equipment, to verify or reconstruct the steps followed without compromising the ballot or voter secrecy.

Backup: Equipment and procedures available in the event of failure of the voting system.

Ballot: The official presentation of all of the contests to be decided in a particular election.

Ballot Box: A reusable bin where tabulated ballots are automatically deposited once they are scanned through an ImageCast[®] tabulator.

Ballot Counter: Process in a voting device that counts the votes cast in an election.

Ballot Definition: Information that describes to a voting machine the content and appearance of the ballots to be used in an election.

Ballot Definition Subsystem: Includes all hardware, software, and manual procedures required to accomplish the following:

- Administrative Activities
- Candidate and Contest Definition

- Voter Registration Databases Management
- Ballot Generation
- Election Programming
- Ballot Printing/Display
- Ballot Validation

Ballot Image: Electronically produced record of all votes cast by a single voter.

Ballot Layout: The ballot configuration unique to each precinct or split precinct that encompasses all candidates, including any rotation of candidate names, and ballot measures for facing Voters at that election.

Ballot Style: Particular set of contests to appear on the ballot for a particular election district, their order, the list of ballot positions for each contest, and the binding of candidate names to ballot positions.

Ballot Subset: Portion of a ballot that a particular voter is eligible to vote on. The subset (e.g. a precinct ID) is selected prior to the voter making selections.

Ballot Tabulation: Process of totaling, or tallying, votes.

Ballot Write-In Voting Position: For each office on the ballot, the space or spaces available for the voter to cast Write-In votes when required (located beneath the last candidates name on a ballot).

Blank Ballot: A ballot on which there are no voting position marks that can be read by the voting system.

Candidate: Person contending in a contest for office. A candidate may be explicitly presented as one of the choices on the ballot or a Write-In candidate.

Canvass: Compilation of election returns and validation of the outcome that forms the basis of the official results by political subdivision.

Central Count System: A voting system that tabulates ballots from multiple precincts at a central location. Voted ballots are placed into secure storage at the polling place. Stored ballots are transported/transmitted to a central counting place which produces the vote count report.

Central Counting Location: The place where the following operations occur, after the polls close:

- Tabulate ballots or accumulate the results of previously tabulated ballots at one or more Central Counting Locations.
- Merge the voting data produced by dissimilar voting systems.
- Program or reprogram ballot-tabulating devices after Opening the Polls.
- Edit Vote Tally programs or voting data.

Certification Message: A message, followed by signature lines, printed on

reports to attest that the statistics and results are true to the best of the Precinct Board's/Central Count Operator's knowledge.

Contest: Decision to be made within an election, which may be a contest for office or a referendum, propositions and/or questions. A single ballot may contain one or more contests. **Contest Headers:** Space on the displayed ballot image where the contest name is shown.

CPU (Central Processing Unit): Commonly used abbreviation to describe the Central Processing Unit of a computer or computer system as distinguished from other peripheral devices or components.

Cumulative Voting: A method of voting exclusive to multi-member district election (e.g. county board) in which each voter may cast as many votes as there are seats to be filled and may cast two or more of those votes for a single candidate.

Demonstration Ballot: Ballot, used for Demonstration purposes, which displays a mock election. Such ballots may be used and re-used for demonstrations from voter to voter and from election to election.

Device Configuration File (DCF): The file that holds configuration parameters as defined by EMS applications and passed onto the ImageCast[®] Precinct and ImageCast[®] Central. This file defines and determines the behavior of the tabulator during an Election.

Diagnostic Messages: Appropriate message printed by the election log, under certain conditions, which indicates a problem or condition, as well as the recovery procedure. Such messages are Tracking Points in the audit trail.

Election: A formal process of selecting a person for public office or of accepting/rejecting a political proposition by voting.

Election Coding: Process by which Election Officials or their designees using voting system software to logically define the ballot for a specific election.

Election Cycle: Represents all activity required to conduct an election. Comprised of the following election phases:

- Pre-election: Includes all preparation activities occurring before Opening the Polls.
- Election Day: Includes all activities occurring during the election, including Opening the Polls, Official Election, and Closing the Polls.
- Post-Election: Includes all activities occurring after Closing the Polls.

Election Database: Database created for each election that defines the appropriate election parameters and attributes including the number of issues, offices, candidates, and other election-specific information.

Election Day: Election phase which allows for official ballots to be cast during

the Official Election. Includes all activities occurring during the following sub-phases:

- Opening the Polls
- Official Election
- Closing the Polls

Election Definition Cycle: The step-by-step processes used to program and prepare an election using the Election Management System set of applications.

Election Definition Files: A term used to collectively describe both Device Configuration and voter Information Files, which are stored on Compact Flash cards within the ImageCast[®] series of tabulators.

Election Event Designer (EED): The primary pre-voting end-user application used to define, design, and program an Election Event.

Election Management System (EMS): A set of applications for all pre-voting and post-voting activities accomplished in the process of defining and managing an election. These applications include Election Event Designer, Results Tally and Reporting, Audio Studio, Election Data Translator, and Results Transfer Manager.

Election Official (EO): Applies to the County Clerk, the County Registrar of Voters, the City Clerk, or any other person who has been properly and legally charged with the responsibility of conducting the election. They may deputize others to perform functions.

Election Programming: Process by which Election Officials or their designees use voting system software to logically define the ballot for a specific election.

Election Stage: Individual operational activity, which occurs within an election phase. Several election stages make up an election phase. Some election stages are required, others are optional.

‘Famous Names’ Ballot: A mock election ballot carrying fictitious offices and candidates who are familiar in history. This ballot is used as a demonstration item and as an Accuracy Test. Also known as an ‘Ice Cream’ Ballot, where flavors of ice cream are listed as voter selections.

ImageCast[®] Central (ICC): A central ballot scan tabulator coupled with a ballot processing application which is primarily used to process absentee ballots.

ImageCast[®] Evolution (ICE): A precinct-based optical scan ballot tabulator with an integrated inkjet printer and touchscreen.

ImageCast[®] Precinct (ICP): A precinct-based optical scan ballot tabulator.

iButton Security Key: A computer chip enclosed in a 16mm-thick stainless steel capsule, used as an Administrative Security Key for accessing secured menus

within the Democracy Suite R set of products and applications.

Initialization Process of returning a computer to its original state by returning all counters to zero or their starting values.

Local Election Official (LEO): The individual or officer of a local governmental unit responsible for certifying candidates and issues to be placed on the ballot.

Logic Test: Tests which must be run before and after processing official ballots for an election. The logic test group of ballots has predetermined totals for all contests on the ballot, with every candidate in a contest receiving a different number of votes than any other candidate in that contest.

Machine Behavioral Settings (MBS): The settings that hold configuration parameters as defined by EMS applications and passed onto the ImageCast[®] Evolution. These settings define and determine the behavior of the ImageCast[®] Evolution during an election.

Maintenance Diagnostics: Series of software and hardware tests and system utilities that allow for troubleshooting and setting system parameters.

Network: Interconnected system of transmission lines that allows the following to communicate with each other:

- Computers
- Terminals
- Peripheral Devices
- Similar enters of equipment

Network Attached Storage (NAS): A server-based repository used for storing files and data related to the election cycle.

Non-Partisan Offices: Elected offices for which candidates run without political party affiliation.

Official Canvass: Consists of a Post-Election audit of all precinct returns and Absentee Ballot returns.

Official Election: Election Day sub-phase when Voters cast official ballots for their candidate choices.

Open Primary: Primary Election in which any Voters, regardless of political affiliation, may participate. Some states require Voters to publicly declare their choice of party ballot at the Polling Place, after which the Poll worker provides/activates the appropriate ballot. Other states allow the Voters to make their choice of party ballot within the privacy of the voting booth.

Opening the Polls: Election Day sub-phase for the Official Election sub-phase that allows for Opening the Polls.

Overvote: Voting for more than the maximum number of selections allowed in a contest.

Overvoted Ballot: A ballot where the voter has voted for more than the allotted number of candidates for the office being contested.

Paddles: Foot switches attached to the ATI and used to navigate the ballot and vote during an Accessible Voting Session.

Partisan Offices: Elected offices for which candidates run as representatives of a political party.

Post-Election: Election phase that includes all activities occurring after Closing the Polls.

Post-Election LAT (Logic and Accuracy Tests): Optional Post-Election function, which includes post-election Logic and Accuracy Tests for ballot verification and public oversight of ballot integrity.

Pre-Election: Election phase that includes all activities occurring before Opening the Polls.

Pre-Election LAT (Logic and Accuracy Tests): Pre-Election function, including mandator Logic and Accuracy Tests that which are performed during Pre-Election for electronic verification and public oversight of ballot integrity.

Precinct Count System: A voting system that tabulates ballots at the Polling Place. These systems typically tabulate ballots as they are cast and print the results after close of polling. For DREs, and for some paper-based systems, these systems provide electronic storage of the vote count and may transmit results to a central location over public telecommunications networks.

Printer: System component that is used to produce reports of the Vote Tally.

Protective Counter: Optical scan function which includes a counter that records all of the testing and election ballots read since the device was built.

Provisional Ballot: Ballot provided to individuals who claim they are eligible to vote but whose eligibility cannot be confirmed when they present themselves to vote. Once voted, such ballots are not included in the tabulation until after the voter's eligibility is confirmed.

Provisional Voting: Ballot provided to individuals who claim they are eligible to vote but whose eligibility cannot be confirmed when they present themselves to vote. Once voted, such ballots are not included in the tabulation until after the voter's eligibility is confirmed. In some jurisdictions called, an Affidavit Ballot.

Public Counter: FEC 2002 definition: Counter in a voting system that counts the ballots cast in a single election or election test.

Recall Voting: Process that allows Voters to remove their elected representatives from office prior to the expiration of their terms of office. The

Recall may involve not only the question of whether a particular Officer should be removed, but also naming a successor in the event that there is an affirmative vote for the Recall.

Results Tally & Reporting (RTR): The primary post-voting end-user application that integrates election results acquisition, validation, tabulation, reporting, and publishing capabilities.

Rotation: Process of varying the order of the candidate names within a given contest.

Secrecy Sleeve: An envelope or folder of such design and dimensions as to hide from view the Voted

Ballot.

Semi-Official Canvass: The process of collecting processing, and tabulating ballots on election night. This may include reporting results to the Secretary of State. The semi-official canvass may include some or all of the Absentee vote totals. The semi-official canvass is contrasted with the official canvass which begins no later than the first Thursday following the election and, for statewide elections, must result in final certification 28 days following the election.

Sip and Puff: Pneumatic switch attached to the ATI and used to navigate the ballot and vote during an Accessible Voting Session.

Split Precinct: A precinct that contains an election district subdivision, e.g., a water district or school board district, requiring an additional Ballot Configuration.

Spoiled Ballot: Ballot that has been voted but will not be cast.

System Proofing: Procedure which verifies that all materials, files, and programs for an election are correctly prepared. This proofing is normally done in approximately two (2) weeks, 40 days to 14 days prior to Election Day. Logic and Accuracy tests are included in System Proofing.

Test Deck: Stack of vote-marked ballots that are not election-specific, but which will generate predictable patterned results. This deck is used for Accuracy Testing.

Undervote: Occurs when:

- The number of choices selected by a voter in a contest is less than the maximum number allowed for that contest.
- No selection is made for a single choice contest.

Undervoted Ballot: A ballot where the voter has voted for less than the total number of election contests listed on the ballot, or less than the number of positions to be filled for a single office.

Virtual Outstack: A function within the ImageCast[®] Central application where

ballots containing voter exceptions (e.g. misread, overvote, undervote, blank, ambiguously marked ballots), halts the scanning process and notifies the operator which ballot contains the voter exception.

Vote For: A ballot choice in which Voters are allowed to:

- Vote for a specified number (N) of candidates
- Vote in a multi-seat (M) contest

Voted Ballot: Ballot that contains all of a voter's selections and has been cast.

Voter Information Files (VIFs): Election information including, but not limited to, ballot layouts, contests, and candidate names that are stored on the Compact Flash cards within the tabulator.

Write-In: To select an individual not listed on the ballot. In some jurisdictions, Voters may do this by:

- Using a marking device to physically write their choice on the ballot.
- Using a keypad, touchscreen, or other electronic means to enter the name.

Write-In Ballot: A ballot where a vote has been cast for a candidate whose name does not appear on the ballot.

Write-In Candidate: Optional candidate type that allows the voter to write the name of a candidate whose name does not appear on the ballot.

REVISION HISTORY

Rev.	Date	Summary
3	04-20-2023	<ul style="list-style-type: none">• Revised based on 5.17-CO doc revision feedback
2	04-14-2023	<ul style="list-style-type: none">• Updates made based on CO feedback
1	04-03-2023	<ul style="list-style-type: none">• Branched for 5.17-CO

LIST OF FIGURES

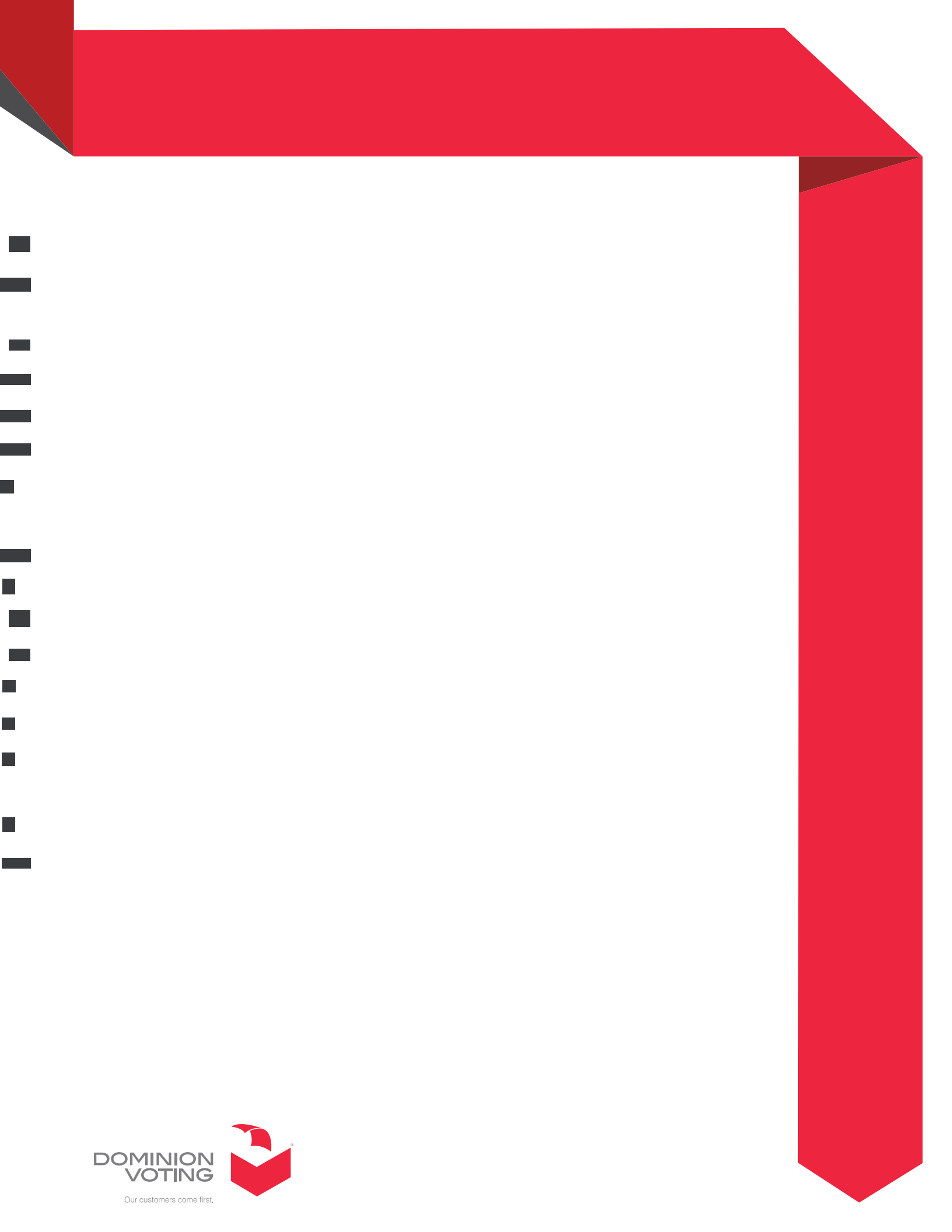
Figure 4-1: Software and Ballot Installation Schedule 5

VVSG TRACE LIST

VVSG Criteria	Pg.
VVSG 1.0 Vol I - 2.8	1
VVSG 1.0 Vol I - 2.8.3	2
VVSG 1.0 Vol I - 2.8.4	3
VVSG 1.0 Vol I - 2.2.3a	4
VVSG 1.0 Vol I - 2.8.5	4
VVSG 1.0 Vol I - 2.1.5	5
VVSG 1.0 Vol I - 5.4	5
VVSG 1.0 Vol I - 2.1.5.1.a.iii	5
VVSG 1.0 Vol I - 2.1.5.1.a.v	5
VVSG 1.0 Vol I - 2.1.5.1.a.vii	6
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Our customers come first.

