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Connecticut Electronic Poll Book System

Requirement Specification V1.0

APPROVED

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2 Introduction

2.1 Purpose

This document defines the system requirements for any electronic poll book solution to be used in the State of Connecticut. At a minimum, an electronic poll book provides a means for checking and managing voter registration records at a polling place on Election Day.

The State of Connecticut is currently using a paper-based method to perform this task. The Connecticut Secretary of State has commissioned a transition to an electronic approach. Solutions are to be submitted by third party vendors and evaluated against the requirements specified in this document. The University of Connecticut Center for Voting Technology Research (VoTeR Center) will perform the evaluation of vendor solutions.

This document was prepared by the VoTeR Center at the University of Connecticut at the request of the Connecticut Secretary of the State.

2.2 Acknowledgements

Parts of this document were inspired by documents produced for the State of Indiana by the Voting System Technical Oversight Program at Ball State University.

2.3 References

REF-1 – National Institute of Standard of Technology, Information Technology Laboratory, "FIPS PUB 186-4: Digital Signature Standard", July 2013, doi:10.6028/NIST.FIPS.186-4.

REF-2 - Connecticut General Statutes Section 9-261c

2.4 Document Structure

This document is structured as follows.

The **Introduction** section states the purpose of this document, provides a list of references to external material, and outlines document structure.

Following the Introduction section, the **Overall Description** section specifies document semantics and gives an overview of the intended use of electronic poll books in the State of Connecticut. It is divided into four subsections: **Section 3.1 Electronic Poll Books**, **Section 3.2 Definitions**, **Section 3.3 User Characteristics**, and **Section 3.4 Requirement Format Specification**.

- **Section 3.1: Electronic Poll Book** introduces the notion of electronic poll books and elaborates on their intended use.

- **Section 3.2: Definitions** defines key terms used throughout this document.
- **Section 3.3: User Characteristics** explains anticipated user characteristics.
- **Section 3.4: Requirement Format Specification** section explains how requirements are to be read and how requirement dependencies are expressed.

As the core of the document, **Section 4: System Requirements** provides the collection of all requirements that vendor solutions will be evaluated against. It is divided into four subsections:

- **Section 4.1: Procedural Requirements**
- **Section 4.2: External Interface Requirements**
- **Section 4.3: Functional Requirements**
- **Section 4.4: Non-functional Requirements**.

Section 5: Provides a cross-reference that gives page numbers for all named requirements.

The final section, **Section 6: Appendices** contains reference information about file format specifications.

3   Overall Description

3.1   Electronic Poll Books

An electronic poll book provides means for checking and managing voter registration records at a polling place on Election Day. The electronic poll book should make the poll worker's job simpler and easier. Use of the electronic poll book should require no additional staffing beyond what is currently required to support printed voter lists.

The existing (manual) process for generating and printing the voter list is as follows: the Registrar of Voters for a town requests the registered voter list from the Connecticut Voter Registration System. The Registrar of Voters receives the registered voter list as a PDF file, which is then printed and used during the election. When the election is complete, the updated voter information is manually entered into the Connecticut Voter Registration System.

Upon implementation of the electronic poll book, the download and upload process will involve the following: the Registrar of Voters (or an election official) for a town requests the registered voter list from the Connecticut Voter Registration System. The Registrar of Voters receives the voter list in electronic form and stores it in a USB drive. The voter list is then loaded into the electronic poll book system through its USB drive. The electronic poll book system updates voter records as necessary during the election. When the election is complete, the updated voter list is stored on a USB drive. The resulting file is then uploaded into the Connecticut Voter Registration System upon the request of an election official.

3.2 Definitions

Electronic poll book system (EPBS) – A collection of hardware and software including at least one configured *electronic poll book* and aiming to implement electronic poll book functionality that satisfies the requirements stated in this document.

Electronic poll book (EPB) – A component of the *electronic poll book system* that includes a user interface device and that is to be used by a poll worker to view and update voter registration records.

Electronic poll book system configuration (EPBSC) – A physical instance of an *electronic poll book system* with all its components configured for use. An *electronic poll book system configuration* consists of peripherals (e.g., printers, scanners, etc.) and a set of configured, networked *electronic poll books*. An *EPBSC* may also contain auxiliary servers.

Voter registration record – A record containing at minimum a registered voter's name, address, polling place address, and voting eligibility information.

Voter activity record – An archive of a voter's activity within the current election. This archive includes updatable, time-stamped records of the following events:

1. The voter has been checked in to vote in person at the election;
2. The voter has returned an absentee ballot;
3. The voter has submitted a challenge ballot;
4. The voter has transferred from one voting district to another;
5. The voter has restored his/ her voter status from inactive to active;
6. The voter has completed curbside voting;
7. The voter has been checked in to use an emergency paper ballot in the election.
8. The voter has provided additional documentation to the registrar of voter's office.

Voter record – The *voter registration record* and *voter activity record* of a voter.

Local voter database – A collection of all *voter records* specific to a jurisdiction (e.g., a precinct or district). The initial state of the *local voter database* is compiled and certified by the relevant authority. Poll workers make updates to the *local voter database* throughout the election by using the *electronic poll book system* to reflect ongoing voter activity within the jurisdiction.

Voter list - A printable, exportable, and human-readable representation of the *local voter database*.

Voter history – An archive of a voter's activity in elections and changes in the voter's voter registration record since the voter's initial registration to vote.

Audit log – An electronic record documenting the actions performed on or by the *electronic poll book system*.

Completed update – An update to a *voter registration record* is *completed* if a query for said *voter registration record* on any active *electronic poll book* within the *electronic poll book system* returns the same data.

Quiescent - The *electronic poll book system* is *quiescent* if all user-initiated updates have completed at all *electronic poll books*.

Centralized Voter Registration System (CVRS) – A collection of hardware and software dedicated to storing and providing authorized access to the *voter registration records* and *voter history* of all registered voters (active or inactive) in the state of Connecticut.

Supplemental local voter database – A collection of changes to *voter registration records* and *voter history* in the *CVRS* that have occurred between the time the *local voter database* was compiled and the start of the election.

Set up EPBS – Bringing the *electronic poll book system* into an initial, functional state. This includes configuring all peripherals for use, setting up all communication networks, and configuring the initial set of *electronic poll books*. After an *EPBS* has been set up, it and all of its components are ready for use. A set up *EPBS* is an *electronic poll book system configuration*.

Reconfigure EPBSC – Configuring, adding, or removing any of the *electronic poll book configuration's* peripherals, *electronic poll books*, or auxiliary servers.

Poll worker role – A user account type with user access privileges enabling the account holder to perform poll worker duties (e.g., verifying voter eligibility, checking in voters, etc.) outlined in this document.

Administrator role - A user account type with user access privileges enabling the account holder to perform system and account administrator duties (e.g., managing user accounts, performing system diagnostics, etc.) outlined in this document.

User Interface – A graphical user interface (GUI) enabling user input to the *electronic poll book system* through keyboard, touch screen, or similar means.

Invariant data – Data that is part of the *voter record* but not related to the registration disposition of the voter (e.g. voter driver's license number, voter date of birth).

3.3 User Characteristics

Voter: An individual eligible to vote at a particular voting precinct in a particular election.

Poll worker: An individual appointed by the relevant state authorities to operate the *electronic poll book system* during an election at a particular polling place. The individual may also perform other election duties. For each individual aiming to vote at said polling place in said election, a poll worker will use the *EPBS* to verify said individual's voting eligibility (establish if the individual is a voter) and update the individual's *voter registration record* in the *voter list* if the

individual is issued a ballot. A *poll worker* can either hold a *poll worker role*, an *administrator role*, or both roles within an *electronic poll book system.*

Registrar of Voters: As provided by law, the Registrars of Voters maintain the voter registration records for a particular jurisdiction. The Registrars' duties include:

1. Conducting the annual canvass of registered voters between January and May to ensure records are accurate and complete
2. Managing elections, primaries and referenda
3. Locating and training poll workers
4. Handling requests for voter registration and education
5. Processing mail-in and cross-town voter registrations

PCC Technology Group (PCC): The technology vendor currently tasked with maintaining the integration layer of the *CVRS*.

3.4   Requirement Format Specification

This section specifies the format of all requirements in this document. An example requirement is provided in subsection 3.4.2.

The purpose of a requirement is to capture a specific property—functional or non-functional— that an *electronic poll book system* must possess.

Requirements are either stand-alone requirements, or cross-referencing requirements. A stand-alone requirement does not depend on any other requirements, and no other requirements depend on it. Cross-referencing requirements are tied together with other requirements. An example of a cross-referencing requirement is a user interface requirement that is related to a security requirement outlining access control to the interface.

3.4.1   Requirement Specification

Each requirement has a *unique identifier*, a *title*, a *description*, a *reference section*, and a *requirement type*.

The **unique identifier** is used to identify a requirement. Whenever a requirement is referenced by another requirement, its unique identifier is used.

The **title** serves as a brief summary of the requirement.

The **description** is a detailed specification of the requirement. The description text may contain references to other related requirements (referred to by their unique identifiers).

The **reference** section gives a list of unique identifiers of all requirements that the requirement is contingent upon (e.g., a user interface requirement could be related to a corresponding security requirement outlining access control to the interface). The reference section also contains all

references to external documents (e.g., statutes) that are relevant to the requirement. Stand-alone requirements will have an empty reference section.

The *requirement type* states how crucial the requirement is. The requirement type has three possible values: *mandatory* (*M*), *preferred* (*P*), and *advisable* (*A*).

Requirement Type	Explanation
Mandatory	*Mandatory* requirements define properties necessary to any *electronic poll book system*. If a vendor solution does not fulfill a *mandatory* requirement, the entire solution receives a failing score and is rejected. In other words, *mandatory* requirements describe the baseline for a passing electronic poll book solution. Solutions that only fulfill *mandatory* requirements may require substantial technical oversight if used in actual elections.
Preferred	*Preferred* requirements define a satisfactory *electronic poll book system*. If a vendor solution does not fulfill a *preferred* requirement, the solution can be expected to have deficiencies. Solutions that fulfill all *mandatory*, and *preferred* requirements meet the functional baseline and provide a satisfactory level of security, reliability, performance, availability, and usability.
Advisable	*Advisable* requirements define a strong *electronic poll book system*. A solution fulfilling all *mandatory*, *preferred*, and *advisable* requirements can be recommended without reservation.

3.4.2   Requirement Example

The below requirement specifies the structure of all requirements by example.

ER-1: An example requirement.
{Requirement Type: **mandatory**}

Description: This is an example requirement. It is subject to example requirement **ER-2**.

Ref: ER-2.

For the example requirement above, **ER-1** is its unique identifier, and "An example requirement" is the title. **ER-1** is *mandatory (M)* and has a dependency on requirement **ER-2**.

4   System Requirements

4.1   Procedural Requirements

PROCR-1: Vendor to provide two *electronic poll book systems.*
{Requirement Type: **mandatory**}

Description: As of the date of the vendor's application for approval of the *electronic poll book system* by the secretary of the state, the vendor must provide at least two complete working *electronic poll book systems* to the State of Connecticut for evaluation against the requirements at the University of Connecticut.

Ref: None

PROCR-2: Vendor to provide list of customers.
{Requirement Type: **mandatory**}

Description: The vendor must provide a list of customers who are using, or have previously used, the vendor's *electronic poll book system.* This list must be current as of the date of the vendor's application for approval of the *electronic poll book system* by the Secretary of the State as required by Connecticut General Statutes Section 9-261c.

Ref: REF-2

PROCR-3: Vendor to provide list of known anomalies.
{Requirement Type: **mandatory**}

Description: The vendor must provide a description of any known anomalies in the function of the *electronic poll book system* as well as a description of the method for resolving those anomalies. This list must be current as of the date of the vendor's application for approval of the *electronic poll book system* by the Secretary of the State as required by Connecticut General Statutes Section 9-261c.

Ref: REF-2

PROCR-4: Compiling, importing, and exporting *local voter database*.
{Requirement Type: **mandatory**}

Description: Compiling the *local voter database*, importing it into the *electronic poll book system* from the CVRS, and exporting it from the *electronic poll book system* must not require vendor involvement.

Ref: None

PROCR-5: Vendor to provide a pre-use fitness test for the *electronic poll book system.*
{Requirement Type: **mandatory**}

Description: The vendor shall provide instructions and materials sufficient to carry out a fitness test of the *electronic poll book system* and *electronic poll books* before their use in an election. The test should be thorough enough to demonstrate that the subject is in basic working order.

Ref: None

4.2   External Interface Requirements

4.2.1   User Interface Requirements

UIR-1: Poll worker interface.
{Requirement Type: **mandatory**}

Description: An *electronic poll book* must provide a *user interface* through which authorized users can verify an individual's voting eligibility and document the voter's election related activity. This interface must enable authorized users to perform updates to, and lookups of, *voter registration records* and *voter activity records* included in the *local voter database*. Specifically, the interface must allow a *poll worker* to access all functionality outlined in the following requirements: **FR-7, FR-8, FR-9, FR-11,** and **FR-14**. This interface is subject to the following security access management requirements: **SR-14.**

Ref: FR-7, FR-8, FR-9, FR-11, FR-14, SR-14

UIR-2: Configuration interface.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide a *user interface* through which authorized users can configure the system. This includes the initial setup of the system, reconfiguration, viewing the current configuration, as well as adding or removing *electronic poll books*. Specifically, the interface must allow authorized users to access all functionality outlined in the following requirements: **FR-1**, and **FR-2.** This interface is subject to the following security access management requirements: **SR-15.**

Ref: FR-1, FR-2, SR-15

UIR-3: Diagnostic interface.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide a *user interface* through which authorized users can perform system diagnostics and validation by viewing, printing, and exporting the *audit log* of the system. Specifically, the interface must allow authorized users to access all functionality outlined in the following requirements: **FR-15.** This interface is subject to the following security access management requirements: **SR-16.**

Ref: FR-15, SR-16

UIR-4: Administrative interface.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide a *user interface* through which authorized users can manage user accounts within an *electronic poll book system.* This includes adding and removing users and managing their access privileges. This interface is subject to the following security access management requirements: **SR-17.**

Ref: SR-17

UIR-5: Local voter database interface.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide a *user interface* through which authorized users can import and export the *local voter database*, view and print the *voter list*, and import *supplemental local voter databases*. Specifically, the interface must allow authorized users to access all functionality outlined in the following requirements: **FR-17**, and **FR-19**. This interface is subject to the following security access management requirements: **SR-18.**

Ref: SR-18, FR-17, FR-19

4.2.2   Hardware Interfaces

HIR-1: USB port.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must have a USB port through which the *local voter database* can be imported into the system. This interface is the only system end point through which data can be imported into the *electronic poll book system*, as specified in **SR-7**. Data imported through this interface must fulfill security requirements specified in **SR-8**.

Ref: SR-7, SR-8

HIR-2: Card reader.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must include one bar code reader per active *electronic poll book*. Each bar code reader must:

1. Permit a voter who presents a Connecticut driver's license or a Connecticut state issued identification card to scan the license or card through the bar code reader
2. Display the voter's *voter record* upon processing the information contained within the bar code on the license or identification.

Ref: None

4.3   Functional Requirements

FR-1: Adding a new *EPB* to the *EPBS*.
{Requirement Type: **preferred**}

Description: The *electronic poll book system* must provide means for the integration of an additional *electronic poll book* into its configuration at any point throughout the election without requiring a shutdown or a restart of the *electronic poll book system*. The coordinated action of at least two poll workers is required to perform this action. This system event must be documented in the *audit log*.

Ref: UIR-2

FR-2: Removing an *EPB* from the *EPBS*.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide means for the exclusion of an existing *electronic poll book* from its configuration at any point throughout the election without requiring a shutdown, or restart of the *electronic poll book system*. The coordinated action of at least two poll workers is required to perform this action. This action does not require physical access to the *electronic poll book* that is to be excluded. This system event must be documented in the *audit log*.

Ref: UIR-2

FR-3: Identifying an *EPB*.
{Requirement Type: **mandatory**}

Description: Each *electronic poll book* within an *electronic poll book system configuration* must have a unique identifier. Any component within an *electronic poll book system configuration* must be able to uniquely identify said *electronic poll book* by its identifier.

Ref: None

FR-4: Restricted access to voter information.
{Requirement Type: **mandatory**}

Description: An *electronic poll book system* may not permit access to voter information other than information included in the *local voter database*.

Ref: None

FR-5: Constrained data storage.
{Requirement Type: **advisable**}

Description: The *electronic poll book system* may not permit the storage of data other than that outlined in **DOCR-15** (voter information), **DOCR-11** (programs), and **DOCR-12** (system configuration data).

Ref: FR-4, DOCR-11, DOCR-12

FR-6: *Voter list* storage.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must have the capability of storing (in external or internal memory) a copy of the *voter list*.

Ref: None

FR-7: Voter information lookup.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must permit a *poll worker* to verify whether an individual is eligible to vote and look up the voter's activity within the election. Specifically, the *electronic poll book system* must permit a *poll worker* to look up the voter's *voter record* as it appears in the *local voter database*.

Ref: REF-2 Sec. 23-c

FR-8: Voter information updates.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must permit a *poll worker* to update a voter's *voter record* in the *local voter database*. These updates must include, but are not limited to, the recording of:

> a. The receipt of an absentee ballot from the voter.
> b. The receipt of additional documentation provided by the voter to the registrar of voter's office.
> c. The receipt of a provisional ballot from the voter.
> d. The receipt of a challenge ballot from the voter.
> e. The transfer of a voter from one voting district to another district.
> f. The restoration of a voter from inactive to active.
> g. The completion of curbside voting by a voter.
> h. The use of an emergency paper ballot by a voter.

Additionally, the *electronic poll book system* must permit the recording of a new voter information (for subsequent provision of election day registration).

Ref: REF-2 Sec. 24

FR-9: Generating and printing reports.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must provide the means for a *poll worker* to generate and print reports at any time during the election. The list of supported reports must include but not be limited to: the *voter list*, the *audit log,* and voter turnout reports.

Ref: None

FR-10: The *electronic poll book* must maintain a printable format of the *local voter database* *{Requirement Type*: **preferred***}*

Description: It must be possible to continue with an election should the *electronic poll book* become inoperable. To that end, the *electronic poll book* must maintain a printable list format of the *local voter database* on removable storage.

Ref: None

FR-11: Displaying voter signature.
{Requirement Type: **preferred***}*

Description: The *electronic poll book system* must be able to display an electronic image of the signature of a voter taken from the voter's registration application, if available. If available, this image will be found in the *local voter database* in a commonly used image file format.

Ref: None

FR-12: User accounts.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must permit an *administrator* to manage user accounts within its *configuration*. This includes adding and removing user accounts, and setting user roles for existing accounts.

Ref: None

FR-13: Title 9 of General Statutes requirements.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* must have the ability to be used in conformity with Title 9 of the General Statutes, which includes at least:

1. The support of any type of election conducted in Connecticut;
2. The proper treatment of seventeen-year-old applicants, voters with suppressed addresses and voters waiting for party privilege change;
3. The proper treatment of voters with additional marks on their *voter registration records* for Help America Vote Act identification purposes;
4. The proper treatment of unaffiliated voters allowed to vote in a party primary;
5. The proper treatment of a withdrawal of an absentee ballot on election day;
6. The ability to accommodate additional lines of voters after the polls have opened;
7. The ability to produce a hard copy of the *voter list* complete with certificates after the election that will allow election officials to certify the correctness of the *voter list*.

Ref: Title 9 of the general statutes.

FR-14: System event confirmation.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must indicate that

1. The *electronic poll book system* has been set up for use in the election;
2. An *electronic poll book* has been set up for use in the election;
3. A *voter registration record* has changed;
4. A *voter activity record* has changed;
5. The *local voter database* has been imported into the *electronic poll book system.*
6. A system error or deviation has been detected, along with a description of the system error or deviation;
7. An *electronic poll book* is shutting down.

Ref: None

FR-15: Diagnostics mode.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide a diagnostics mode that

1. Allows the *administrator* to view and print the *audit log;*
2. Allows the *administrator* to verify that all events required to set up the system have been recorded in the audit log;
3. Allows the *administrator* to check any *voter registration record* and *voter activity record* at any time during the election;
4. Allows the *administrator* to view all system errors and deviations that have been recorded in the audit log;
5. Allows the *administrator* to verify the time stamp and polling place of the imported *local voter database*.

Ref: UIR-3

FR-16: Program execution.
{Requirement Type: **advisable**}

Description: The *electronic poll book system* must prevent any program that is not listed in **DOCR-11** from being executed within the *EPBS*.

Ref: DOCR-11

FR-17: Printing *voter list*.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must allow *registrars of voters* to print the *voter list* used in the system in paper format. The format of the printed-paper record is to be specified and/or approved by the SOTS.

Ref: Connecticut General Statutes Section 9-261c

FR-18: Retaining voter information.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must permit the *poll workers* to extract all voter information (specifically the *local voter database*) as it appears in the *electronic poll book system*, for retention on the distinct storage components maintained by the *registrar of voters* for the period required by Connecticut and federal laws.

Ref: None

FR-19: Compatibility with CVRS.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must be compatible with Connecticut's *centralized voter registration system*.

Ref: FR-22, FR-23

FR-20: As a part of the *local voter database* import, the *electronic poll book system* must require the user to confirm that they are importing the intended *local voter database*.

Description: When the user imports the *local voter database*, they must take some action to verify that they are importing the *local voter database* for the correct election and for the correct polling place.

Ref: None

FR-21: One voter/ one vote within *EPBS*.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must guarantee that within an *electronic poll book system configuration* a voter can be checked in at most once during normal connectivity.

Ref: None

FR-22: *Local voter database* import.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must enable a *poll worker* to import the *local voter database* through hardware interface **HIR-1**. The *local voter database* will be provided in a format specified in **APPENDIX A**.

Ref: HIR-1, UIR-5, APPENDIX A

FR-23: *Local voter database* export.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must enable a *poll worker* to export the *local voter database* through hardware interface **HIR-1** in a format adhering to the specification in **APPENDIX B**.

Ref: HIR-1, UIR-5, APPENDIX B

FR-24: *Supplemental local voter database*.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must enable a *poll worker* to import a *supplemental local voter database* through hardware interface **HIR-1**. The voter information contained in the *supplemental local voter database* must be merged with the existing *local voter database.* The *supplemental local voter database* must be provided in a format specified in **APPENDIX A**

Ref: HIR-1, UIR-5, APPENDIX A

FR-25: Transfer of Voters between districts
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must enable a *poll worker* to update the *voter activity record* to indicate that the voter has been transferred between districts. The result of the voter transfer operation must be idempotent (that is, yield the same result if invoked more than once).

Ref: None

FR-26: The *electronic poll book* must not change *invariant data*
{Requirement Type: **mandatory**}

Description: The *electronic poll book* shall not modify *invariant data* in the voter record during normal operation, *local voter database* import, or *local voter database* export.

Ref: None

4.4   Non-Functional Requirements

4.4.1   Performance

PR-1: *Electronic poll book* capacity during peak usage.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must accommodate up to ten (10) *electronic poll books* operating in parallel within a single *electronic poll book configuration* during peak usage.

Ref: None

PR-2: Voter throughput per *EPB*.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must allow for a voter throughput of forty (40) voters per minute within an *electronic poll book system configuration*.

Ref: None

PR-3: *Voter list* export.
{Requirement Type: **mandatory**}

Description: Exporting the *voter list* using **UI-5** (voter list import and export) may take no longer than five (5) minutes.

Ref: None

PR-4: *Voter list* import.
{Requirement Type: **mandatory**}

Description: Importing the *voter list* using **UI-5** (voter list import and export) may take no longer than five (5) minutes.

Ref: None

PR-5: *Electronic poll book system* setup.
{Requirement Type: **mandatory**}

Description: Setting up an *electronic poll book system* with ten (10) active *electronic poll books* may not take longer than forty-five (45) minutes.

Ref: None

PR-6: *Electronic poll book* boot up and configuration.
{Requirement Type: **mandatory**}

Description: Booting up an *electronic poll book* and adding it to an *electronic poll book system configuration* may not take longer than one (1) minute.

Ref: None

4.4.2   Reliability

RR-1.1: Voter check-in during interruption of connectivity.
{Requirement Type: **mandatory**}

Description: In the event of a temporary interruption of connectivity within an *electronic poll book system*, the *electronic poll book system* must permit a voter to check-in.

Ref: None

RR-1.2: Upon restoration of connectivity.
{Requirement Type: **mandatory**}

Description: In the event of a temporary interruption of connectivity within an *electronic poll book system*, the *electronic poll book system* must automatically restore *voter list* consistency across the *electronic poll books* after connectivity is restored.

Ref: None

RR-1.3: Identify double voting.
{Requirement Type: **advisable**}

Description: In the event of a temporary interruption of connectivity within an *electronic poll book system*, the *electronic poll book system* must identify voters that have been checked in at two or more different *electronic poll books* during the interruption of connectivity.

Ref: None

RR-1.4: Indicate interruption of connectivity.
{Requirement Type: **mandatory**}

Description: In the event of a temporary interruption of connectivity within an *electronic poll book system*, the *electronic poll book system* must indicate that there has been an interruption of connectivity by signaling and entering relevant event information into the *audit log*.

Ref: None

RR-2: Loss of power.
{Requirement Type: **mandatory**}

Description: In the event of a temporary loss of power, the *electronic poll book system* must permit a voter to check-in. The *electronic poll book system's* battery supply must allow for at least four (4) hours of operation without external power supply.

Ref: None

RR-3: Data recovery.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must provide means for *local voter database* data recovery, should one of the physical memory storage components fail.

Ref: None

RR-4: Simultaneous data storage.
{Requirement Type: **mandatory**}

Description: Each *electronic poll book* must provide at least two methods for simultaneous data storage in distinct physical storage components (to prevent the loss of data).

Ref: None

RR-5: *Local voter database* replicas.
{Requirement Type: **mandatory**}

Description: Within the *electronic poll book system* there must exist at least two replicas (logical or physical) of the *local voter database*. These replicas must be stored in distinct physical storage components.

Ref: None

RR-6: *Local voter database* replica consistency.
{Requirement Type: **mandatory**}

Description: If the *electronic poll book system* is in a *quiescent* state all replicas of the *local voter database* must be logically consistent.

Ref: None

RR-7: Operational consistency.
{Requirement Type: **mandatory**}

Description: Any update to a *voter record* or to any other data pertaining to the election completed on one *electronic poll book* must be seen as *complete* on all other *electronic poll books*.

Ref: None

RR-8: Environmental robustness.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must be usable within a standard office environment and with temperature ranging at from 50°F (or lower) to 90°F (or higher).

Ref: None

4.4.3   Availability

AR-1: At least three *EPBs* in an *EPBS*.
{Requirement Type: **mandatory**}

Description: An *electronic poll book system* must support at least three (3) *electronic poll books* in a single polling location. Each of the *electronic poll books* must be usable concurrently. Should one of the *electronic poll books* become inoperable, the operation of the remaining *electronic poll book* or *electronic poll books* must not be affected.

Ref: None

AR-2: No single point of failure.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must be designed to tolerate any single point of failure scenarios.

Ref: None

4.4.4   Safety and Security

SR-1: *EPBS* must prevent injury or damage.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must be designed to prevent injury or damage to any individual or the hardware, including fire and electrical hazards.

Ref: None

SR-2: Isolation from other electronic election systems.
{Requirement Type: **mandatory**}

Description: An *electronic poll book system* may not be connected to any other electronic election system.

Ref: None

SR-3: Restricted access and communications.
{Requirement Type: **mandatory**}

Description: The *electronic poll book* must prevent access to the system and its components by Internet or wireless method. The only exception is secure, reliable, dedicated, local-area communication limited to the system's components that is designed and required for correct system operation.

Ref: None

SR-4: Eavesdropping attack prevention.
{Requirement Type: **preferred**}

Description: The *electronic poll book system* must be protected against eavesdropping attacks.

Ref: None

SR-5: Man-in-the-middle attack prevention.
{Requirement Type: **preferred***}*

Description: The *electronic poll book system* must be protected against man-in-the-middle attacks.

Ref: None

SR-6: Replay attack prevention.
{Requirement Type: **preferred***}*

Description: The *electronic poll book system* must be protected against replay attacks.

Ref: None

SR-7: Imports restricted to **HIR-1** (USB port).
{Requirement Type: **mandatory***}*

Description: A file can only be imported into the *electronic poll book system* through **HIR-1**. No other interfaces may be used to import files into the *electronic poll book system.*

Ref: HIR-1

SR-8: HIR-1 (USB port) restrictions.
{Requirement Type: **preferred***}*

Description: The *electronic poll book system* must preclude all files--other than those specified in **DOCR-15** (voter information), **DOCR-11** (programs), and **DOCR-12** (system configuration data)--from being imported into the system through **HIR-1** (USB port)*.

Ref: HIR-1, DOCR-11, DOCR-12, DOCR-15

SR-9: File format verification.
{Requirement Type: **mandatory***}*

Description: A file can only be imported into the *electronic poll book system* if it complies with its file format specification provided in **DOCR-16**.

Ref: DOCR-16

SR-10: File authenticity verification.
{Requirement Type: **preferred***}*

Description: A file can only be imported into the *electronic poll book system* if it passes file authenticity verification. This verification must prove that the file originates from a trusted source, by validating the digital signature of the file.

Ref: None

SR-11: Signed exports.
{Requirement Type: **preferred**}

Description: Any file to be used in the electoral process, e.g., for information exchange with other election systems, audit purposes, etc., must be cryptographically signed before it is exported from the *electronic poll book system*. Digital signatures must be compliant with a standard, such as the Digital Signature Standard (DSS) specified in external document **REF-1**.

Ref: REF-1

SR-12: Use by account holders only.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must restrict its use to individuals holding an account created through **FR-20**.

Ref: FR-20

SR-13: User roles.
{Requirement Type: **preferred**}

Description: Within the *electronic poll book system* there must only be two user roles: *poll worker role*, or *administrator role.* Any account created as part of **FR-20** must be assigned one of these two roles, or both.

Ref: FR-20

SR-14: Access to **UI-1** (poll worker interface).
{Requirement Type: **mandatory**}

Description: Access to **UI-1** and all underlying functionality is restricted to account holders of *poll worker role* accounts. Password authentication is required to validate the account holder's access privileges.

Ref: UI-1

SR-15: Access to **UI-2** (configuration interface).
{Requirement Type: **mandatory**}

Description: Access to **UI-2** and all underlying functionality is restricted to account holders of *poll worker role* accounts. The coordinated actions of two (2) *poll workers* are required to validate the account holder's access privileges.

Ref: UI-2

SR-16: Access to **UI-3** (diagnostic interface).
{Requirement Type: **mandatory**}

Description: Access to **UI-3** and all underlying functionality is restricted to account holders of *administrator role* accounts. Password authentication is required to validate the account holder's access privileges.

Ref: UI-3

SR-17: Access to **UI-4** (administrative interface).
{Requirement Type: **mandatory**}

Description: Access to **UI-4** and all underlying functionality is restricted to account holders of *administrator role* accounts. Password authentication is required to validate the account holder's access privileges.

Ref: UI-4

SR-18: Access to **UI-5** (*local voter database*).
{Requirement Type: **mandatory**}

Description: Access to **UI-5** and all underlying functionality is restricted to account holders of *poll worker role* accounts. Password authentication is required to validate the account holder's access privileges.

Ref: UI-5

SR-19: File integrity verification.
{Requirement Type: **preferred**}

Description: A file can only be imported into the *electronic poll book system* if it passes file integrity verification. This verification must prove that the file has not been tampered with between the time that it was signed and the time of the import.

Ref: None

SR-20: Tamper evident cases.
{Requirement Type: **mandatory**}

Description: All *electronic poll book* hardware interfaces must be sealable with tamper-evident seals. This includes HIR-1 (USB port).

Ref: HIR-1

4.4.5   Auditability

AUR-1: Audit log.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* must be auditable. To that end, the system must maintain an *audit log*.

Ref: None

AUR-2: Log voter registration record queries and updates.
{Requirement Type: **mandatory**}

Description: The *audit log* must retain time-stamped records of any query of, or update to, a *voter record* by any user of the *electronic poll book system*.

Ref: None

AUR-3: Log user actions.
{Requirement Type: **preferred**}

Description: The *audit log* must retain time-stamped records of any actions performed by any user on the *electronic poll book system*, including but not limited to:

1. Starting up the system.
2. Shutting down the system.
3. Switching user accounts.
4. Creating/ modifying user accounts.
5. Switching to diagnostic/ administrative mode.
6. Printing.
7. Exporting.
8. Importing.
9. Adding/ removing an *electronic poll book.*

Ref: None

AUR-4: Log system deviations.
{Requirement Type: **mandatory**}

Description: The *audit log* must retain time-stamped records of:

1. Any interruption in connectivity (between the components of *electronic poll book system*) or loss of power;
2. Any detected system error or deviation from expected system behavior;

Ref: None

AUR-5: Printable audit log.
{Requirement Type: **mandatory**}

Description: The *audit log* must be printable.

Ref: None

AUR-6: Exportable audit log.
{Requirement Type: **mandatory***}*

Description: The *audit log* must be exportable to an external, removable storage device.

Ref: None

AUR-7: No *audit log* encryption.
{Requirement Type: **mandatory***}*

Description: The audit log must **not** be encrypted.

Ref: None

AUR-8: Audit log format compliance.
{Requirement Type: **mandatory***}*

Description: The *audit log* must be compliant with the format specified in **DOCR-9**.

Ref: DOCR-9

4.4.6   Usability

UR-1: Ease of use.
{Requirement Type: **mandatory***}*

Description: The vendor of an *electronic poll book system* must provide procedures for setting up, using, and shutting down an *electronic poll book system* that are reasonably easy for a *poll worker* to learn, understand, and perform. The procedures for setting up, using, and shutting down an *electronic poll book system* must not require a significant amount of training in addition to the initial training required when a purchase of the equipment is made. The vendor must also make available additional training in the setup, use, and shutdown of the system.

Ref: None

4.4.7   Documentation

DOCR-1: Set up, use, and shutdown instructions.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* documentation must include well-written, complete instructions sufficient for a poll worker to set up, use, configure, reconfigure, and shut down the *electronic poll book system*.

Ref: None

DOCR-2: Functionality specification.
{Requirement Type: **mandatory***}*

Description: The *electronic poll book system* documentation must include detailed specification of all implemented functionality of the system.

Ref: None

DOCR-3: Training materials.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include training materials that:

1. May be in written or video form;
2. Must be in a format suitable for use at a polling place, such as simple "how to" guides;

Ref: None

DOCR-4: Data recovery procedures.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include data recovery procedures for information included in the *electronic poll book system*.

Ref: None

DOCR-5.1: System architecture.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include an architecture model of the *electronic poll book system*.

Ref: None

DOCR-5.2: End user documentation.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include end-user documentation.

Ref: None

DOCR-5.3: System level documentation.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include system level documentation.

Ref: None

DOCR-5.4: Developer documentation.
{Requirement Type: **preferred**}

Description: The *electronic poll book system* documentation must include developer documentation.

Ref: None

DOCR-6: Consumables documentation.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include detailed information concerning:

1. Electronic poll book system consumables; and
2. The vendor's supply chain for those consumables.

Ref: None

DOCR-7: Quality assurance procedures, test data, and reports.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include vendor internal quality assurance procedures and any internal or external test data and reports available to the vendor concerning the electronic poll book system.

Ref: None

DOCR-8: Repair and maintenance policies.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include repair and maintenance policies for the electronic poll book system.

Ref: None

DOCR-9: Audit log specification.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include detailed specification of the system's *audit log*, including but not limited to:

1. A complete definition of the audit log format; and
2. For each audit log entry, a precise statement regarding the system event that causes said entry to be generated.

Ref: None

DOCR-10: Usability tests.
{Requirement Type: **preferred**}

Description: The *electronic poll book system* documentation must include usability tests that address all user-facing features of the system, including but not limited to: the setting up, configuring, reconfiguring, using, and shutting down of the *electronic poll book system*. These are to be conducted by the manufacturer of the *electronic poll book system* using individuals who are representative of the general public.

Ref: None

DOCR-11: List of all *EPBS* programs.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include a list of all programs that will be executed during the use of the system, as well as a list of all files storing program data. For each program in the list, the intended function of the program must be identified. For each file storing program data the associated program must be identified.

Ref: None

DOCR-12: List of system configuration data.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include a list of all system configuration data required for proper system function. For each configuration data file in the list, the intended function of the configuration data must be identified. For each configuration data file in the list, the hardware and/ or software component to which the configuration data is applied must be identified.

Ref: None

DOCR-13: User interfaces.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include a list of all user interfaces, including but not limited to the interfaces outlined in **UI-1, UI-2, UI-3, UI-4,** and **UI-5**. For each user interface in the list a description must be provided, as well as information on what user roles are authorized to access said interface.

Ref: UI-1, UI-2, UI-3, UI-4, UI-5.

DOCR-14: Non-functional requirements documentation.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include documentation on the system's non-functional qualities, including but not limited to Performance, Availability, Reliability, Safety, Security, and Auditability.

Ref: None

DOCR-15: List of files containing voter information.
{Requirement Type: **mandatory**}

Description: The *electronic poll book system* documentation must include a list of all files containing information that is part of the *local voter database*.

Ref: None

DOCR-16: File format specification.
{Requirement Type: **preferred**}

Description: The *electronic poll book system* documentation must include a file format specification for each file or program listed in **DOCR-11, DOCR-12,** and **DOCR-15**.

Ref: DOCR-11, DOCR-12, DOCR-15

5　Cross-Reference Table

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FR-10: The *electronic poll book* must maintain a printable format of the *local voter database*	15
FR-10: The *electronic poll book* must maintain a printable format of the *local voter database* *{Requirement Type*: **preferred**} **Description:** It must be possible to continue with an election should the *electronic poll book* become inoperable. To that end, the *electronic poll book* must maintain a printable list format of the *local voter database* on removable storage. **Ref:** None **FR-11:** Displaying voter signature.	15
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FR-12: User accounts. *{Requirement Type*: **mandatory**} **Description:** The *electronic poll book system* must permit an *administrator* to manage user accounts within its *configuration*. This includes adding and removing user accounts, and setting user roles for existing accounts. **Ref:** None **FR-13:** Title 9 of General Statutes requirements.	15
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6   Appendices

6.1   Appendix A – The Local Voter Database Download Format

6.1.1   Download Package Description

The download package from the Connecticut Voter Registration System will consist of two files: a zip archive containing the download data and a signature file containing the digital signature for the zip archive.

The zip archive will be named with the format:
<<TownName_ElectionDate_ElectionName>>.zip. For example, the file name for the 2010 General Election held on November 2, 2010 in Hartford would be:
HARTFORD_11022010_2010General.zip.

The zip archive will contain four items (described in more detail below):

- A file containing voter records (section 6.1.2)
- A file containing street records (section 6.1.3)
- A file containing polling place records (section 6.1.4)
- A directory containing signature image files (section 6.1.5)

The signature file will be named with the same convention as the zip archive except that the file extension will be .sig. The signature file will contain a SHA-256 hash of the zip archive that has been encrypted using the State of Connecticut's private key.

6.1.2   File Specification - voter_extract.txt

Description: The voter_extract.txt file contains voter records.

Format: The file will be a delimited text file containing a header row. The field separator is the "|" (Pipe) character and the record separator is CRLF (Carriage Return + Line Feed).

Fields:

Field Name	Data Type	Description
ELECTION_ID	Integer	Election ID is a unique ID assign to each election. This ID will help to identify the election for which the extract is created.
VOTER_ID	Varchar(9)	Voter ID is a unique ID assigned to each voter
PREFIX	Varchar(5)	The current name prefix of the voter

Field Name	Data Type	Description
LAST_NAME	Varchar(40)	The current last name of the voter
FIRST_NAME	Varchar(30)	The current first name of the voter
MIDDLE_NAME	Varchar(30)	The current middle name/initial of the voter
SUFFIX	Varchar(5)	The current name suffix of the voter
DRIVER_LICENSE	Varchar(20)	The current Driver license number of the voter
SSN	Varchar(4)	The Current SSN number (only Last 4 digits of SSN) of the voter
BIRTH_DATE	Datetime	The Date of Birth of the voter
GENDER	Varchar(6)	Gender of the voter
PARTY_AFFILIATION	Varchar(50)	The current party of the voter
STREET_NUMBER	Varchar(20)	The current street number of the voter's residence address
UNIT_NUMBER	Varchar(25)	The current unit number of the voter's residence address
STREET_NAME	Varchar(125)	The current Street Name of the voter's residence address
ADDRESS_LINE_2	Varchar(125)	The current Address Line 2 of the voter's residence address
CITY_NAME	Varchar(30)	The current city name of the voter's residence address
STATE	Varchar(2)	The current state of the voter's residence address
ZIP5	Varchar(5)	The current zip5 of the voter's residence address
ZIP4	Varchar(4)	The current zip4 of the voter's residence address
PRECINCT	Varchar(7)	The current precinct of the voter
STATUS	Varchar(15)	The current status of the voter: A – Active I – Inactive
CD_SPEC_STATUS	Varchar(1)	The current special status of the voter:

Field Name	Data Type	Description
		M – Member of Uniformed Services O – Citizen Residing Overseas S – Spouse or Dependent of Uniformed Services
ID_REQUIRED	Char(1)	Y – Yes (Voter need to show ID at the poll place) N – No (Voter does not need to show ID at the poll place)
ID_STREET	Varchar(8)	The unique Street ID which helps in determining the Precinct from the Street data extract
ID_LOCAL_STREET	Varchar(8)	The unique Local Street ID which helps in determining the Municipal Precinct from the Street data extract
ID_SPEC_STREET	Varchar(8)	The unique Special Street ID which helps in determining the Precinct from the Street data extract
VOTED_STATUS	Char(1)	'How Voted' if the voter has already voted for the particular election E – Early Voted A – Absentee by Mail
SIGNATURE	Char(1)	Whether a signature exists for the voter Y – If a signature exists for the voter N – If a signature does not exist for the voter
SIGNATURE_UUID	Char(36)	If **SIGNATURE** is Y then this is a Universally Unique Identifier (UUID) that relates this record to a file in the accompanying Signatures directory. IF **SIGNATURE** is N then this field is undefined.
ID_TOWN	Varchar(3)	The Unique Town code e.g. "001" for Hartford town
ID_BALLOT_STYLE	Integer	The Ballot Style ID helps in determining which ballot goes to Voters
EMAIL	Varchar(254)	Email address of the voter

6.1.3   File Specification - street_extract.txt

Description: The voter_extract.txt file contains street records.

Format: The file will be a delimited text file containing a header row. The field separator is the "|" (Pipe) character and the record separator is CRLF (Carriage Return + Line Feed).

Fields:

Field Name	Data Type	Description
ID_STREET	Varchar(8)	The unique Street ID.
CD_DISTRICT_TYPE	Char(1)	F – FEDERAL DISTRICT L – LOCAL DISTRICT S – SPECIAL DISTRICT
PRE_DIRECTION	Varchar(2)	Pre-direction of the Street
STREET_NAME	Varchar(75)	Name of the street
STREET_TYPE	Varchar(3)	Type of the Street (e.g. street, Avenue, drive)
POST_DIRECTION	Varchar(5)	Post-direction of the Street
CITY_NAME	Varchar(30)	Name of the City
ZIPCODE	Varchar(5)	Zip code of the Street
LOW_STREET_NUMBER	Varchar(6)	Lowest number in the range of street addresses
HIGH_STREET_NUMBER	Varchar(6)	Highest number in the range of street addresses
SIDE	Char(1)	E – Even O – Odd A – ALL
PRECINCT	Varchar(7)	Ward/Precinct number of the Street
DISTRICT	Varchar(50)	District number of the Street
CONGRESSIONAL	Varchar(4)	Congressional district number of the Street
SENATORIAL	Varchar(4)	Senatorial district number of the Street
ASSEMBLY	Varchar(4)	Assembly district number of the Street
ID_TOWN	Varchar(2)	The Unique Town code

6.1.4   File Specification - polling_place_extract.txt

Description: The voter_extract.txt file contains polling place records.

Format: The file will be a delimited text file containing a header row. The field separator is the "|" (Pipe) character and the record separator is CRLF (Carriage Return + Line Feed).

Fields:

Field Name	Data Type	Description
PRECINCT	Varchar(7)	Assigned Precinct for the Polling Place
POLLING_PLACE_NAME	Varchar(100)	Name of the Polling Place
STREET_NUMBER	Varchar(20)	Street number of the Polling Place Address
STREET_NAME	Varchar(50)	Street name of the Polling Place Address
CITY_NAME	Varchar(30)	City of the Polling Place Address
ZIP5	Varchar(5)	Zip5 of the Polling Place Address
ZIP4	Varchar(4)	Zip4 of the Polling Place Address
PHONE_NUMBER	Varchar(10)	Phone Number of the Polling Place
ID_TOWN	Varchar(2)	The Unique Town code

6.1.5   Signatures Directory

Description: The Signatures directory contains signature image files for the voters identified in the voter_extract.txt file and related using the voter record SIGNATURE_UUID field.

Format: The image files in the Signatures directory will be in the JPEG. The files will be named <<SIGNATURE_UUID>>.jpeg where SIGNATURE_UUID is taken from the voter record.

6.2   Appendix B – The Voter History Upload Format

6.2.1   Upload Package Description

The upload package for the Connecticut Voter Registration System must consist of two files: a zip archive containing the upload data and a signature file containing the digital signature for the zip archive.

The zip archive must be named with the format: <<TownName_ElectionDate_ElectionName>>.zip. So an example file name for the 2010 General Election held on November 2, 2010 in Hartford would be: HARTFORD_11022010_2010General.zip.

The zip archive will contain three items (described in more detail below):

- A file containing voter election history (section 6.2.2)
- A file containing voter change history (section 6.2.3)
- A directory containing signature image files (section 6.2.4)

The signature file must be named with the same with the same convention as the zip archive except that the file extension will be .sig. The signature file must contain a SHA-256 hash of the zip archive that must be encrypted using the polling place's or town's private key.

6.2.2   File Specification – Election_History.txt

Description: The Election_History.txt file contains voter election history records.

Format: The file will be a delimited text file containing a header row. The field separator is the "|" (Pipe) character and the record separator is CRLF (Carriage Return + Line Feed).

Fields:

Field Name	Data Type	Type*	Description
ELECTION_ID	Integer	R	Election ID is a unique ID assigned to each election. This ID will help to identify the election for which election history is to be created.
VOTER_ID	Varchar(9)	R	Voter ID is a unique ID assigned to each voter
DATE_VOTED	Datetime	O	Date the vote was cast
HOW_VOTED	Char(1)	R	Possible values are

Field Name	Data Type	Type*	Description
			A – Absentee
			R – Regular
			E – Early voting
			P – Petition
			B – ePollbook
CHALLENGED	Char(1)	R	"Y", If the ballot is challenged else "N"
CHALLENGED_REASON	Varchar(100)	O	Ballot Challenged Reason
ID_BALLOT_STYLE	Integer	O	The Ballot Style ID helps in determining which ballot goes to Voters

*R=Required, O=Optional

6.2.3   File Specification – Voter_Change_History.txt

Description: The Voter_Change_History.txt file contains voter change records. If a value is present for a field then it represents the current value of that field for that voter.

Format: The file will be a delimited text file containing a header row. The field separator is the "|" (Pipe) character and the record separator is CRLF (Carriage Return + Line Feed).

Fields:

Field Name	Data Type	Type*	Description
NEW_VOTER	Char(1)	R	"Y" if the voter is new and "N" for existing voter records
VOTER_ID	Varchar(36)	O	Voter ID is a unique ID assigned to each voter. For new voters, this will be a UUID
DATE_CHANGED	Datetime	R	Date of the name change of the voter

Field Name	Data Type	Type*	Description
PREFIX	Varchar(5)	O	The current name prefix of the voter
LAST_NAME	Varchar(40)	O	The current last name of the voter
FIRST_NAME	Varchar(30)	O	The current first name of the voter
MIDDLE_NAME	Varchar(30)	O	The current middle name/initial of the voter
SUFFIX	Varchar(5)	O	The current name suffix of the voter
DRIVER_LICENSE	Varchar(20)	O	The current Driver license number of the voter
SSN	Varchar(4)	O	The Current SSN number (only Last 4 digits of SSN) of the voter
BIRTH_DATE	Datetime	O	The Date of Birth of the voter
GENDER	Varchar(6)	O	Gender of the voter
PARTY_AFFILIATION	Varchar(50)	O	The current party of the voter
STREET_NUMBER	Varchar(20)	O	The current street number of the voter's residence address
UNIT_NUMBER	Varchar(25)	O	The current unit number of the voter's residence address
STREET_NAME	Varchar(125)	O	The current Street Name of the voter's residence address
ADDRESS_LINE_2	Varchar(125)	O	The current Address Line 2 of the voter's residence address

Field Name	Data Type	Type*	Description
CITY_NAME	Varchar(30)	O	The current city name of the voter's residence address
STATE	Varchar(2)	O	The current state of the voter's residence address
ZIP5	Varchar(5)	O	The current zip5 of the voter's residence address
ZIP4	Varchar(4)	O	The current zip4 of the voter's residence address
PRECINCT	Varchar(7)	O	The current precinct of the voter
STATUS	Varchar(15)	O	The current status of the voter: A – Active I – Inactive
CD_SPEC_STATUS	Varchar(1)	O	The current special status of the voter: M – Member of Uniformed Services O – Citizen Residing Overseas S – Spouse or Dependent of Uniformed Services
ID_REQUIRED	Char(1)	O	Y – Yes (Voter need to show ID at the poll place) N – No (Voter does not need to show ID at the poll place)
ID_STREET	Varchar(8)	O	The unique Street ID which helps in determining the Precinct from the Street data extract
ID_LOCAL_STREET	Varchar(8)	O	The unique Local Street ID which helps in determining the Municipal Precinct from the Street data extract
ID_SPEC_STREET	Varchar(8)	O	The unique Special Street ID which helps in

Field Name	Data Type	Type*	Description
			determining the Precinct from the Street data extract
SIGNATURE	Char(1)	R	Whether a signature exists for the voter Y – If a signature exists for the voter N – If a signature does not exist for the voter
SIGNATURE_UUID	Char(36)	O	If **SIGNATURE** is Y then this is a Universally Unique Identifier (UUID) that relates this record to a file in the accompanying Signatures directory. IF **SIGNATURE** is N then this field is undefined.
ID_TOWN	Varchar(3)	O	The Unique Town code e.g. "001" for Hartford town
ID_BALLOT_STYLE	Integer	O	The Ballot Style ID helps in determining which ballot goes to Voters
EMAIL	Varchar(254)	O	Email address of the voter

*R=Required, O=Optional

6.2.4   Signatures Folder

Description: The Signatures directory contains signature image files for the voters identified in the Voter_Change_History.txt file and related using the voter record SIGNATURE_UUID field.

Format: The image files in the Signatures directory must be in the TIFF file format. The files must be named <<SIGNATURE_UUID>>.TIFF> where SIGNATURE_UUID is taken from the voter record.

[end]