

System Functionality Description

URCVT v. 1.2.0 04-NY System Functionality Description v.1.0.0 document is solely for use in the State of New York. This document can be expanded or updated as is necessary or required. Any recommendations listed in this document should not supersede user jurisdiction procedures or other controlling governance entities.

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The Universal RCV Tabulator is developed to run using the Java Development Kit (JDK) version 14.0.1. The Java platform includes an execution engine, a compiler and a set of libraries used by the Universal RCV Tabulator. For more information, see ***URCVT v. 1.2.0 02-NY Software Design and Specifications v. 1.0.0***.

The Universal RCV Tabulator is designed to run as a stand-alone software compatible with Windows Operating System. Java 14 compatibility and system requirements are listed in the [Java 14 Compatibility Document](#).

The Universal RCV Tabulator is normally received by the user election jurisdictions as a fully-compiled program in a Trusted Build by contacting the relevant authority directly for directions and procedures to receive the Trusted Build.

Git is the distributed version-control system used to track changes in the source code during software development. It is designed for coordinating work among programmers, and is used to track changes in any set of the files. Its goals include speed, data integrity, and support for distributed, non-linear workflows. Here is a link to additional Git information: [Git External Documentation](#)

Hardware Functionality and Recovery Requirements

a. Restoration of the device to the operating condition existing immediately prior to an error or failure, without loss or corruption of voting data previously stored in the device

The Universal RCV Tabulator relies upon exportable data from a jurisdiction's voting system. Data operated upon by the Universal RCV Tabulator may be stored on external devices such as flash drives or copied directly into the memory of the hardware the Universal RCV Tabulator software is installed on. If the URCVT fails while tabulating results, the original files used should not be altered because the Tabulator does not directly operate upon CVR data. However, any loss of data caused by a failure of the Universal RCV Tabulator software or the hardware upon which the Universal RCV Tabulator is installed should be rectified by exporting a new copy of the same data from the jurisdiction's voting system.

If the hardware the Universal RCV Tabulator software is installed upon fails while tabulating results, a user should first restart the machine and the Universal RCV Tabulator and run the tabulation again. There is no persistent state of the Universal RCV Tabulator that would persist after a crash or after a machine restart.

Original versions of voting data used in the Universal RCV Tabulator should be maintained on the jurisdiction's voting systems for as long as required by jurisdiction rules. See **URCVT v. 1.2.0 06-NY System Design Specification v. 1.0.0** and **URCVT v. 1.2.0 08-NY System Operations Procedures v.1.0.0** for more.

b. Resumption of normal operation following the correction of a failure in a memory component, or in a data processing component, including the central processing unit

If the hardware the Universal RCV Tabulator software is installed upon fails while tabulating results, a user should first restart the machine and the Universal RCV Tabulator and run the tabulation again. If the hardware continues to fail, users should consult the documentation included with the hardware to determine any error resolution steps. See **URCVT v. 1.2.0 09-NY System Maintenance Procedures v. 1.0.0** for more.

c. Recovery from any other external condition that causes equipment to become inoperable, provided that catastrophic electrical or mechanical damage due to external phenomena has not occurred

If the hardware the Universal RCV Tabulator software is installed upon fails while tabulating results, a user should first restart the machine and the Universal RCV Tabulator and run the tabulation again. There is no persistent state of the Universal RCV Tabulator that would persist after a crash or after a machine restart. If failure persists, users should consult the documentation included with the hardware to determine any error resolution steps. See **URCVT v. 1.2.0 09-NY System Maintenance Procedures v. 1.0.0** for more.

Vote Tabulating Information

The Universal RCV Tabulator processes vote tabulation data exported from a jurisdiction's voting systems according to the rules as set up in the configuration file used by the user when operating the Universal RCV Tabulator. See **URCVT v. 1.2.0, 02-NY Software Design and Specifications v. 1.0.0** for more.

a. Monitor system status and generate machine-level audit reports

URCVT provides users system status information through the log box in the user interface and through log documents (both tabulation audit logs produced after successful tabulation and the operator log file, which is available in the /bin folder on Windows computers). Audit logs capture details of successful tabulations, including all configuration file details, CVR parsing information, details on how every ballot was processed in every round of counting, and summary round-by-

round results. The operator log captures all messages produced by the Universal RCV Tabulator: those produced during a failed tabulation, messages sent during successful tabulation, messages sent while validating configuration files, and any other messages sent via the log box in the user interface. See **URCVT v. 1.2.0, 02-NY Software Design and Specifications v. 1.0.0** for more about audit reports and system status reports.

b. Accommodate device control functions performed by polling place officials and maintenance personnel

Polling place officials will not interact with the URCVT software. Maintenance personnel should refer to the **URCVT v. 1.2.0 09-NY System Maintenance Procedures v. 1.0.0** and **URCVT v. 1.2.0 08-NY System Operations Procedures v. 1.0.0** when interacting with the URCVT. All device control functions are laid out in those materials.

c. Register and accumulate votes

The URCVT processes digital cast vote records of ballots as cast by voters. Part of this requires accumulation of cast vote record data; this is done in accordance with configuration requirements as set by users. See **URCVT v. 1.2.0 06-NY System Design Specification v.1.0.0** and **URCVT v. 1.2.0 08-NY System Operations Procedures v. 1.0.0** for more information about how URCVT handles vote records.

d. Accommodate variations in ballot counting logic

The URCVT relies upon cast-vote record data from a jurisdiction's voting system. CVR data must be adjudicated before being processed by the URCVT. That cast-vote record data will have varying types of ballot data depending on how voters marked their ballots and how ballots were adjudicated, including candidate names, overvoted markings, skipped rankings, undervoted ballots, and write-in markings. The URCVT has settings for users to determine how each of these different types of markings are processed by the software. The URCVT performs no interpretation of voter marks on ballots, however, as CVR data used in the URCVT software will include only non-ambiguous marks and data representing how voters marked their ballots. See **URCVT v. 1.2.0, 300-NY Configuration File Parameters, v. 1.0.0** and **URCVT v. 1.2.0, 08-NY System Operations Procedures, v. 1.0.0** for more information on the settings available to users for processing these varying voter marks.

The only voting variation the URCVT supports is ranked order voting. The URCVT supports many permutations of ranked order voting (referred to ranked-choice voting in documentation). See **URCVT v. 1.2.0 08-NY System Operations Procedures v.1.0.0** for more information on the permutations and settings available to users.

Document Revision History

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04/27/2021	1.0.0	System Functionality Description	Louis Eisenberg