

# ElectSoft User's Manual

## Introduction

ElectSoft is designed and written for the purpose of printing and counting ballots in Student Government elections conducted by the Student Union at Rensselaer Polytechnic Institute. However, any organization may use the software for any purpose. The ballots are scanned with an NCS OpScan 2 scanner. This manual assumes that the user is familiar with the operation of the OpScan unit.

## License

ElectSoft is covered by Version 2 of the GNU General Public License (GPL). See Appendix C for a copy of the GPL.

## This Manual

This manual is designed to outline the features of ElectSoft in the order that they are used. If they are used out of order, some features may not be available at the time that their usage is indicated.

## Create Folder

It is advisable to create a new file folder for each election season (e.g. Freshmen Elections, Spring Elections). All files that are used and created in a season should be placed in this folder.

## Race List

An election contains a number of races (i.e. Grand Marshall, President of the Union). Race information is imported into ElectSoft from a text file. Such a file should have the extension *.rac*. Each line represents one race unless a backslash (\) is used to continue an entry on the next line.

Each race contains one or more groups of candidates. When the races are printed, the groups retain the order in which they appear in the entry in the race file. The individual candidates within a group, however, are printed in a random order.

The format of each line is as follows:

<b>Number of Characters</b>	<b>Description</b>
2	Year Code AL – All FR – Freshmen SO – Sophomore JR – Junior SR – Senior GR – Graduate Student
1	Affiliation B – Both G – Greek I – Independent
2	Maximum Votes – the number of candidates for whom a voter may vote  This must be two digits.
Variable	Name – a unique name of the race
1	Separator – a vertical bar ( )
Variable	Caption – a string that will appear at the beginning of the race on the ballots
1	Separator – a caret (^)
Variable	Description – a description of the race that will appear on the ballots (may be blank)
1	Separator – a caret (^)
Variable	Candidates – lists of candidates in each group
1	Separator – a caret (^)

The description (if it is not blank) is displayed on the ballots in the lines following the caption. Multiple line descriptions can be entered by separating the lines with a vertical bar (|). The candidates are organized into groups as described above. The groups are separated by carets (^). Candidates within a group are separated by vertical bars (|). Write-ins are denoted by a blank candidate name.

Comments can be added to the file by preceding them with a hashmark (#). Blank lines are ignored. See Appendix A for a sample race list.

To load the student list, select the **Races→Load Races** menu item. Information about the races can be viewed by selecting the 'Race' tab on the main window. Double-clicking an entry in the race list will display a race dialog box which displays the candidates and the description.

## Printing

All ballots are printed to the system default printer. This printer must be configured to print at 8½ × 11 inches. Any type of printer should work. However, it is recommended that a postscript printer be used. The automatic print queue regulation ensures that only one ballot is in the print queue at once. In order to accommodate this feature, ElectSoft must be the only program using the printer.

## Aligning Printer

The fact that ElectSoft prints on premade, blank ballots presents a unique problem. The newly printed information will not necessarily be aligned with the printing on the blank ballot. Therefore, before printing, the printer should be aligned.

To align the printer, select the **Printing→Align Printer** menu item. This will print an alignment ballot with only four dots on it. A dialog box with four dots will also appear. Use the sliders on the dialog box to position the dots relative to the circles shown so that they resemble the dots and corresponding circles on the ballot. When the user clicks OK, another alignment ballot will be printed and the dialog box will be shown again. If the dots on the ballot are printed over the corresponding circles, click OK on the dialog box without moving the sliders. Otherwise, position the dialog box's circles in the same manner as before and click OK. The process continues until the user clicks OK without moving the sliders.

## Printing Sample Ballots (optional)

Sample ballots have no serial number and have the word 'VOID' printed on them. These ballots are suitable for proofreading and posting.

To print a sample ballot that shows only the races that are open to members of all class years, select the **Printing→Sample Ballots→All** menu item. To print a sample ballot that shows the races that are open to members of a particular class year, select the **Printing→Sample Ballots→class year** menu item.

## Printing Ballots

To print ballots select the **Printing→Start Printing** menu item. This will display a ballot order dialog box. This box allows the user to select the class year of the ballots, the number of ballots to be printed and the alignment rate. The alignment rate determines how often the program will align the printer. The aligning procedure is identical to the one described above. Printing can be stopped before the specified number is printed by selecting the **Printing→Stop Printing** menu item.

Information about the print ballots can be viewed by selecting the 'Print Ballots' tab on the main window. Double-clicking an entry in the print ballot list will display a ballot history dialog box. This dialog box lists all the events in the ballot's history and when they occurred.

## Saving

While printing ballots, it is advisable to save the Election file (.els) regularly. To do this, select the **File→Save** menu item. The Election file stores information about the ballots' histories and races.

## Locking Ballots

The ballots must be locked before they can be counted. However, locking is an irreversible process that prevents the user from printing any more ballots. To lock the ballots, select the **Printing→Lock Ballots** menu item.

## Student List

Student information is imported into ElectSoft from a text file. Such a file should have the extension .stu. Each line represents one student. The format of each line is as follows:

Number of Characters	Description
9	RIN – a unique, nine-digit identification number
2	Year Code NE – Not Eligible FR – Freshmen SO – Sophomore JR – Junior SR – Senior GR – Graduate Student
2	Year Code - same codes as before
1	Affiliation G – Greek I – Independent
Variable	Name – the student's name Any white spaces are trimmed from the name.

The year code NE indicates that the student is not eligible to vote. If one or both of the year codes is 'NE', the student is not loaded. It is recommended that a space or a tab be inserted before the name in order to aid readability. Comments can be added to the file by preceding them with a hashmark (#). Blank lines are ignored. See Appendix B for a sample student list.

To load the student list, select the **Counting→Load Students** menu item. Student information can be viewed by selecting the 'Students' tab in the main window.

## Creating Count

To create a new count select the **Counting→New Count** menu item. A count is a collection of scan ballots, each of which corresponds to a print ballot. A scan ballot contains information about the status of the ballot and, if applicable, the RIN of the voter and the candidates for whom he voted. A given count is permanently associated with the election that is loaded when it was created.

## Saving Count

To save the count file (.cou), select the **Counting→Save Count** menu item. The count file contains information stored in the current count (see previous section).

Count files are unencrypted and contain a record of each vote cast. It is strongly recommended that they be encrypted prior to storage. There are a number of third party encryption tools available for download. These include Pretty Good Protection and Gnu Privacy Guard.

## Opening Count

To load a previously saved count file, select the **Counting→Open Count** menu item. The count file that is loaded must have been generated with the election that is loaded.

## Scanning Ballots

To scan ballots, the NCS OpScan 2 scanner must be connected to the computer via a serial port, loaded with a stack of ballots and configured to communicate with the computer. To begin scanning, select the **Counting→Start Scanning** menu item. The user will then be asked if he wants to count or void the ballots. If the user selects 'Yes,' the ballots will be scanned and the votes will be recorded. If the ballots are void or invalid, the user should select 'No.' A comm port settings dialog box is then displayed. The user must select the correct port and set its baud rate to be the same as the scanners. The default timeout values most likely need not be changed.

Scanning can be stopped before the scanner's hopper is empty by selecting the **Counting→Stop Scanning** menu item.

Information about the scan ballots can be view by selecting the 'Scan Ballots' tab on the main window. Double-clicking an entry in the scan ballot list will display a scan ballot dialog box. This dialog box displays all of the information regarding the scan ballot.

## Ballot Status

A given scan ballot has a particular status. They are as follows:

Status	Description
Outstanding	The ballot is not accounted for. The final results of an election should indicate zero outstanding ballots.
Counted	The ballot has been scanned and the information on the ballot will be added to the results when a report is exported.
Lost/Destroyed	The ballot has been reported lost or destroyed. To do this select the <b>Counting→Report Ballot Lost/Destroyed.</b>
Voided	The ballot has been scanned and has been recorded as void.

## Exporting Report

In order to view the results of the election as recorded in the count file, a report must be exported. To do this select the **Counting→Export Report** menu item. This will save a text file that is human readable.

## Timekeeping

In order to facilitate accurate record keeping, ElectSoft has the ability to synchronize the system clock to Universal Coordinated Time (UTC) as maintained by the National Institute of Standards and Technology (NIST). ElectSoft does this by utilizing the Simple Network Time Protocol (SNTP). More information about UTC and the SNTP is available at the NIST website (<http://www.nist.gov/>). This feature can be utilized at any time.

In order to synchronize the system clock with NIST, select the **Time→Sync Time** menu item. If the autosync feature is activated, the system clock will be synchronized with NIST every five minutes while ElectSoft is running. To active the autosync feature, select the **Time→AutoSync** menu item.

NIST maintains several time servers. In addition to these, there are several servers maintained by non-governmental organizations. ElectSoft's default server is *time-a.nist.gov*. The time server can be changed by selecting the **Time→Time Server** menu item.

## Author Contact Information

ElectSoft was written by Edward Behn. For the foreseeable future, I can be contacted at:

ed@behn.us  
(508)366-2516

5 Thomas Rice Dr.  
Westboro, MA 01581

I may also be reachable through the Alpha Phi Omega chapter at RPI.



# Appendix A

## Sample Race List File

```
# This is a sample races file for ElectSoft
# It should have the extension .rac

ALB01GM|Grand Marshall^^Thing 1|Thing 2^^ # This is a generic comment
ALB01Ref|Referendum^How should one|eat bread?^Buttered \
side up^Buttered side down^ # This is a multi-line entry

FRB04Senator-FR|Senator^^Sir Beers|Sir Bopps|Sir Dawkins|Sir \
Hawkins|Sir Hector|Sir Jawks|Sir Jeers|Sir Vector^|||^
FRI03IC-FR|Independent Council^^One Fish|Two Fish|Red Fish|Blue Fish^||^

SOB04Senator-SO|Senator^^Peeping Dick|Peeping Drexel|Peeping \
Frelinghuysen|Peeping Harry|Peeping Jack|Peeping Tom^|||^

JRI03IC-JR|Independent Council^^Abstain^Bipper Fuddnudler|Bud \
Fuddnudler|Skipper Fuddnudler|Jipper Fuddnudler|Jeffrey \
Fuddnudler|Jud Fuddnudler|Horatio Fuddnudler^||^

GRB04Senator-GR|Senator^^|||^
```

# Appendix B

## Sample Student List File

```
# This is a sample students file for ElectSoft
# It should have the extension .stu

552166462FRFRI Coholic, Al # This is a generic comment
243439703FRFRI Freely, I. P.
538983590FRFRG Strap, Jacques
821712733SOSOI Clothesoff, Oliver
124838303SOSOG Butz, Seymour
673956133SOFRI Sexual, Homer
378693391JRSOG Rotch, Mike
314159265GRNEI Galpin, Arthur # This student is ineligible to vote
027988306JRJRI Jass, Hugh
507872925SRSRG O'Problem, Bea
175791168GRGRG Huggenkiss, Amanda
856225801FRFRI Tinkle, Ivana
321069113SOSOI Bath, Anita
217428974FRSOG Buttrees, Maya
659285698SOSOI Snotball, Eura
881530905FRSOG Tabooger, Ollie
```

# **Appendix C**

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