

# Unilect Election Systems

The Unilect system was re-examined in Austin on May 26, 2005. The system components and current releases are as follows:

**Patriot PCU** - version 2.56 – precinct control unit used select the voters ballot  
**Patriot CVU** - version 2.54 – DRE touch screen voting machine  
**Patriot CurbSide Model** - version 2.54 – portable DRE touch screen voting machine  
**Patriot Freedom Unit** - version 1.0 – keyboard used with curbside DRE  
**IntEllectVoting Software**- version 2.60 – PC based ballot preparation, accumulation and reporting system.  
**Absentee Optical card reader**-- Model 1000 – used to read large volume of absentee mark-sense ballot cards.  
**Absentee Optical Mark reader**-- Model 20 – generic mark-sense card reader made by Peripheral Dynamics used to read small volume of absentee ballots.  
**InfoPackER**-- version 1.0 – utility to burn the InfoPacks  
**InfoPack**-- version 1.0 – portable device containing the election setup and ballots cast records; used in the Patriot PCU's

## Findings

- *IntEllect* is a character-based (written in Borland C), not a graphical application. It contains all the modules needed for the central site (i.e. ballot preparation and election results tabulation and reporting). It runs on a dedicated PC running Windows 98SE that boots into *IntEllect*. If you exit *IntEllect*, the PC shuts down. While it is running, you cannot escape to the operating system in order to run another program.
- The PC could be booted from a CDROM or USB drive to gain access to the files directly. However, it is not likely that the election setup could be compromised without detection. The binary files used for the election would be difficult to modify. If a change was made to a file, the CRC check should fail when *IntEllect* accesses the file.
- During examination of the accumulation process, messages on the *IntEllect* console were interspersed in the middle of a long list of precincts making them hard to read. This is not acceptable. The operator needs a clear display for messages.
- *IntEllect* does not poll the parallel port used by the real-time audit log printer. As long as the operator doesn't issue a command, the program continues to run. If the printer is off-line and a command is issued, the program will exit and the PC shuts down. It is preferable that *IntEllect* suspends operation rather than exit if the printer is off-line.
- Because the printer port is not being polled constantly, it is possible for someone to connect a different printer to the PC, manipulate the results (operations would be logged to the second printer), reconnect the original printer, and continue. The manipulations would not be recorded on the real-time audit log. Also, the *IntEllect* disk audit-log is not encrypted; therefore, it can be modified with a text editor.
- Certain operations to be performed by the precinct judge on the Patriot PCU require keystrokes that are not intuitive. For example, the key labeled "ACCUMULATE RESULTS" is used for several important operations that have nothing to do with accumulating results. This could lead to errors. The buttons should be clearly labeled for the functions they are intended or have a more generic label such as "ENTER".
- The large card-reader (model 1000) was not tested due to a missing cable.

- The small card-reader (model 20) was not tested due to a lack of time.
- Modem transfer from Patriot PCU was not done due to modem problem.
- It was stated (although not tested) that manual updates to the vote totals in *IntElect* is allowed. This needs to be tested. The audit-log must provide detailed messages as to the adjustment.

## **Conclusion**

The parts of the system that were tested (PCU, CVU, *IntElect*) operated accurately but there are deficiencies as noted above. The *IntElect* application needs to be more secure. Its user interface is not up to modern standards, which may lead to mistakes. The *IntElect* operator on election night is very busy and should have a clean (preferably graphical) interface from which to work.

The system does not meet the standards outlined in the Texas Election Code. I do not recommend certification.

Tom Watson  
Examiner