

Chapter VI. Voting Systems

Revised 9/1/11

a. Certification

Before any voting system, equipment or software may be purchased or used by a county, it must be certified by the Secretary of State. Manufacturers and vendors apply directly to the Secretary of State to have their systems reviewed and certified. The certification process used by the Secretary of State is as follows:

Procedure for Certification of Voting Equipment

- The manufacturer or vendor sends a request for certification in writing to the Secretary of State, accompanied by a \$500 examination fee. [KSA 25-1309, 25-4405, 25-4604, 75-438]
- The Secretary of State requires that the equipment first be tested by an independent testing authority (ITA) recognized by the National Institute of Standards and Technology (NIST). A copy of the ITA's report must be filed with the Secretary of State.
- The Secretary of State reviews the equipment to ensure that it meets applicable standards established by the U.S. Election Assistance Commission and NIST and the requirements of Kansas law.
- The Secretary of State conducts a public meeting in Topeka at which the manufacturer or vendor displays the equipment and members of the Secretary's staff and other interested persons test the equipment.
- The Secretary of State may hire a private expert to review the equipment at the manufacturer's expense.
- The Secretary of State contacts other jurisdictions in the United States that have certified and used the equipment to inquire about their experiences.
- The Secretary of State may grant temporary conditional approval for the equipment to be used in a Kansas jurisdiction before granting final certification.
- If the above conditions are met, the Secretary of State makes the final decision whether to grant certification and informs the manufacturer and vendor of the decision in writing.

b. County Acquisition

Each county selects and purchases its own system, choosing from the list of systems certified by the Secretary of State. If the county chooses to use hand-counted paper ballots, the CEO selects a vendor to print paper ballots but also must choose a vendor to provide ADA-compliant voting devices pursuant to the requirements of the Help America Vote Act (HAVA). In purchasing voting systems the county deals directly with the

vendor. The Secretary of State does not make recommendations as to which system is most appropriate for a given county.

In considering the purchase of new voting equipment, it is very important to keep track of the hardware model numbers and software versions or release numbers. All voting equipment is computerized and may be upgraded at any time by the manufacturer. When the equipment is originally certified by the Secretary of State, the certification applies to a specific configuration of hardware and software. Changes in the hardware or software may have to be submitted for recertification, and purchasers must be certain they are using certified systems.

c. Types of Systems

There are three major types of voting systems in use in Kansas:

1. direct recording electronic (DRE)
2. optical scan
 - (a) precinct count
 - (b) central count
3. hand-counted paper ballots

For a detailed listing of voting system used in each county, see the chart titled “Voting Systems in Kansas Counties” at the end of this chapter.

HAVA requires each polling place in each county to provide at least one DRE voting machine that allows disabled voters to vote independently. Before HAVA, visually impaired voters had to receive assistance from another person or from an election board worker in order to vote. The HAVA-compliant equipment allows such voters to cast their ballots in secret and without assistance through the use of an audio ballot.

The Secretary of State negotiated contracts with vendors in 2005 to provide a menu of options from which county election officers chose their HAVA-compliant voting equipment. The equipment was deployed before the 2006 primary and general elections.

d. Security

In 2004 the office of the Secretary of State and the members of the Kansas County Clerks and Election Officials Association adopted a voting system security policy to increase security in the maintenance, storage and use of voting systems of all types.

In 2008 the Secretary of State amended two existing administrative regulations to strengthen the security systems for maintaining voting equipment in county election offices. KAR 7-21-1 was amended to include all modern types of voting equipment and to require restricted access to areas where equipment is stored. KAR 7-21-2 was amended to require the adoption of written security procedures in each county and to establish procedures for the secure networking of computers used in programming and secure transmission of tabulated election results.

Voting System Security Policy

Introduction:

Security of any computer-based system requires a combination of three factors. First, the computer must provide audit data that is sufficient to track the sequence of events that occur on the system and, to the extent possible, identify the person(s) that initiated the events. Next, there must be well defined and strictly enforced written policies and procedures that control who can access the system, the circumstances under which they can access the system, and the functions that they are allowed to perform on the system. [KAR 7-21-2] Finally, there must be physical security in place such as fences, doors and locks that control and limit access to the equipment. [KAR 7-21-1] Each county is required to adopt the following policy and its six components, but each may have different procedures for adhering to the policy. Kansas counties currently use DRE, optical scan and paper ballots to conduct elections, and each requires different procedures to implement the security policy.

Overview of Voting Systems:

Direct Recording Electronic (DRE): A standard personal computer running an executable software module is used to define the election, enter the candidates and questions, and format the ballots for the voting devices. This computer also accumulates the votes after the polls close and prints various reports and audits.

Optical Scan: A paper ballot is used to cast a vote and is then fed through a scanner. The device reads the voter's marks on the ballot, and tabulates number of votes cast for each candidate or question.

Paper Ballot: Votes are recorded on paper ballots and counted by hand.

Six Components of Voting System Security:

1. Access to the System:

- Stand-alone system
- No network connection
- No modem
- Only operating system and voting software loaded
- Controlled access with authorized users

The computer-based voting system should not be connected to any network and it should not have a modem. If it does have a modem, it shouldn't be connected to the Internet. The computer should have only the operating system and voting software loaded. Additional applications could jeopardize system security.

If the computer has no outside connections, it can only be accessed by county election staff or other authorized persons. Any such system should also have password requirements. There should be strict procedures that control who has access to the election system, when they can access the system, what components they can access, and what functions they are allowed to perform.

The computer portion of the election system contains features that facilitate overall security of the election system. Primary among these features is a comprehensive set of audit data. For transactions that occur on the system, a record is made of the nature of the transaction, the time of the transaction, and the person that initiated the transaction. This record is written to an audit log to allow the sequence of events surrounding the incident to be reconstructed.

A security program, similar to a virus detector program, should be run against the operating system and the election tabulation software before beginning the definition of an election to

verify that the code has not been altered. This program should be repeated after the close of the election to verify that the code did not change during the election.

Permanent storage of media containing certified application programs should be within a secure, fireproof location such as a safe. Additional backup copies of application programs and media containing election data should be created and stored securely off site.

2. Transmitting Data:

- No data transmission by modem – from polling place to election office or from election office to state

It is important that results from elections not be sent from polling places to election offices via modem, network, phone line, cable, or any other electronic form of file transmission. The same applies when sending results from the county election office to the Secretary of State's office. Results should be sent by fax, phone or by inputting the results in the SOS database directly using an IP address and/or using the state's secure Public Key Infrastructure (PKI) system.

3. Testing Voting Equipment:

- Public test 5 days prior to election
- Test before public test
- Test after canvass
- Print zero totals
- End of day totals

Voting equipment should be tested when it is first received from the vendor. Tests should cover all functions that will be necessary to conduct an election. Prior to use in an election, each voting machine should undergo system diagnostics to ensure proper operation of certified components. A checklist confirms the outcome of acceptability. Any component failure should be logged and repairs to equipment performed as soon as practical.

4. Polling Place Security:

- Hardware security
- Software security
- Poll worker procedures

There are many polling places in Kansas that simply do not provide an ideal physical security environment. For instance, church lobbies, school gymnasiums and other places may not always be locked or secured. The county election officer should, to the extent possible, designate polling sites that afford the necessary security features and should maximize the use of whatever security features exist.

The memory cards in each touch screen voting station should be stored within a locked compartment. The supervising judge should be the only person with a key to this compartment. The memory cards and/or ballots from each voting location are transported from the voting location to the county elections office by a sworn election official or a sworn law enforcement officer.

The area of the voting location that contains the voting stations is secure. A voter is not allowed to enter this area until a voting station is available for his or her use. No person other than a voter, a person assisting a voter, or a poll worker may enter this area.

Voting machine protective counters should be observed and recorded with a date of record.

Voting machines and ballot boxes should be sealed before delivery to polling place locations.

Seals should be tamperproof and serialized with numbers. Logging of machine serial number, seal number and designated voting location is an essential part of the audit trail.

Equipment Delivery: Voting equipment delivery to polling place locations should be conducted with the same degree of control as applied to storage. A delivery person or company should continue the audit trail for the election officer. Documentation and daily reporting are essential.

- The delivery person or company, or in some cases the supervising judge, should provide documentation containing voting machine numbers, seal numbers and identification for each voting location where equipment has been delivered.
- The length of time the voting equipment, auxiliary equipment and supplies, and ballots are in transport should be minimized. Equipment is safest when it is in the county's locked storage facility, and it is relatively safe when being used at the polling place on election day. The amount of time it spends between these two locations, sometimes in the hands of non-election personnel, should be minimized to the extent possible. "Sleepovers" when equipment or ballots are kept overnight by supervising judges or others are discouraged.
- A list of persons involved in equipment delivery should be maintained by the county election officer.
- Voting machines should remain locked and stored in a secure location. Multiple voting machines should be secured together by a keyed or combination lock and a single cable or chain. Additional supplies delivered with machines should be secured with the same cable or chain.
- Polling places should be in locked buildings or locations that are capable of monitoring secure storage of voting equipment.

Election Worker Security Awareness and Requirements: All election judges are responsible for maintaining the security of the polling place, the integrity of the vote and the protection of voting equipment and supplies. Judges must be vigilant throughout election day and be aware of who is in the polling room. Frequent monitoring of voting machines and securing voting supplies ensures that any malicious attempt to compromise the accurate gathering and reporting of the vote is unsuccessful. The following steps should be taken to ensure that the voting equipment and the voting process are secure at all times in every precinct:

Supervising Judges:

- Inspect voting machines for physical damage while setting up or closing units and record on maintenance log. Examples: damaged or broken lid hinges, cracked cases, and damage to equipment inside case.
- Control and secure keys to all voting machines.
- Assure that the election media slot (memory cartridge slot area) on every voting machine is locked.
- Report any suspicious activity in or around voting machines to the county election officer and call 911 if immediate help is required.

5. Equipment Storage:

- Election computers should be kept in locked offices.
- Physical security during non-election times
- Protective seals
- Limited access

The first line of defense in any system is physical security. When not in use, all election equipment should be stored in a locked room. Access to the room should be limited to election officials and authorized county officials or technicians. A paper

activity log should be maintained to record date, time, staff person, and reason for entering the secured computer room. A video camera is *recommended* to be installed in the locked office to monitor activity. All voting machine keys, voter cards, and storage media should be secured in a controlled access room. Staff should maintain a detailed inventory control of these supplies.

6. Voting Equipment Certification Process:

Kansas participates in the Election Assistance Commission's voluntary voting systems standards program. This program defines three levels of testing that voting equipment must pass before it can be used: national qualifications testing, state certification, and local acceptance testing.

National independent testing authorities (ITAs) selected and monitored by the Voting System Board, affiliated with the EAC and the National Institute of Standards and Technology (NIST), administer the qualifications tests. After ITA certification, any change to either the operating system or the election system requires retesting.

After the system has successfully completed qualification testing it is brought to the state for state certification testing. Certification testing is conducted by the Secretary of State's office.

The final level of tests, acceptance tests, is conducted in the county offices after the voting system has been delivered and installed. The purpose of these tests is to verify that the system as delivered and installed in the county is complete, is working properly, and is identical to the system that was previously qualified by the ITA and certified by the state.

The Help America Vote Act has given NIST a key role in helping to realize nationwide improvements in voting systems by January 2006. NIST's Information Technology Laboratory (ITL) coordinates the agency's HAVA efforts through its expertise in areas such as computer security and usability. NIST supports the Election Assistance Commission (EAC) as chair of the Technical Guidelines Development Committee (TGDC). The TGDC makes recommendations to the EAC on voluntary standards and guidelines related to voting machines.

Legal References

KSA 25-1307 through -1343 (mechanical voting machines)

KSA 25-4401 through -4414 (electronic voting machines)

KSA 25-4601 through -4613 (optical scan systems)

The following charts list the voting systems currently certified in Kansas and the type of voting system used in each county.

Voting Systems Certified in Kansas

		rev. 6/20/2007			
Vendor Name	Contact		Certified System	System Type	Cert. Date
Election Systems & Software 11208 John Galt Blvd. Omaha, NE 68137	Mark Manganaro (402) 938-1399	a.	AIS 115/315	Optical Scan	3/2/1984
		b.	AIS 315/550	Optical Scan	3/2/1984
		c.	Model 100 Precinct Level Tabulation	Optical Scan	5/23/1997
		d.	Votronic Touch Screen Voting System	Direct Recording Electronic	8/9/2000
		e.	iVotronic Touch Screen DRE Voting System	Direct Recording Electronic	12/22/2005
		f.	iVotronic ADA Compliant Touch Screen DRE Voting System	Direct Recording Electronic	12/22/2005
		g.	AutoMARK Ballot Marking Device	Optical Scan	12/22/2005
		h.	Model 100 Precinct Level Tabulation	Optical Scan	12/22/2005
		I.	Model 650 Central Level Tabulation	Optical Scan	12/22/2005
Premier Election Solutions 1611 Wilmeth McKinney, TX 75069	Don Vopalensky (800) 443-8683	a.	AccuVote Tally System	Optical Scan	3/4/1993
		b.	I-Mark Systems Electronic Ballot Station	Direct Recording Electronic	8/12/1997
		c.	AccuTouch Electronic Ballot Station	Direct Recording Electronic	4/22/1999
		d.	AccuVote-TS R6	Direct Recording Electronic	1/16/2002
		e.	AccuVote-TSX Touch Screen DRE	Direct Recording Electronic	8/11/2004
		f.	AccuVote-OS	Optical Scan	8/11/2004
		g.	AccuVote-TS R6	Direct Recording Electronic	8/11/2004
		h.	AccuVote-TSX & TS R6 Touch Screen DRE	Direct Recording Electronic	10/11/2004
		I.	AccuVote-OS Central Count	Optical Scan	3/4/2005
		j.	AccuVote-TSX Touch Screen DRE	Direct Recording Electronic	10/24/2005
		k.	AccuVote-OS (Model D)	Optical Scan	10/24/2005
		l.	ExpressPoll Model 4000	Electronic Poll Book	10/24/2005
		m.	AccuVote-TSX Touch Screen DRE	Direct Recording Electronic	2/1/2006
		n.	AccuVote- TSX Model D	Direct Recording Electronic	6/9/2006
		o.	ExpressPoll Model 5000	Electronic Poll Book	2/28/2007
Voting Technologies International 757 N. Broadway Milwaukee, WI 53202	Donna Bowen (888) 989-8683	a.	VOTWARE Touch Screen Voting System	Direct Recording Electronic	7/3/2003
Micro Vote Corporation 6366 Guilford Ave. Indianapolis, IN 46220	Steve Shamo (317) 257-4900 shamo@microvote.com	a.	Election System	Direct Recording Electronic	3/4/1993
		b.	Micro Vote Advance Voting System	Optical Scan	7/1/1999
		c.	Micro Vote Advance Voting System	Optical Scan	9/4/2003
		d.	Micro Vote Infinity voting system	Direct Recording Electronic	3/4/2005
Avante International Technology, Inc. 70 Washington Road Princeton Junction, NJ 08550	Kevin Chung (609) 799-8896 avante@aitechnology.com	a.	Avante VOTE-TRAKKER Model EVC 308	Direct Recording Electronic	1/8/2003

Voting Systems Certified in Kansas (cont.)

Hart InterCivic Election Solutions Group 1650 Coal Creek Drive, Suite E Lafayette, CO 80026	Sandy Green (303) 385-6440	a.	eSlate DRE Voting System 2.1	Direct Recording Electronic	6/17/2003
Sequoia Pacific Voting Equipment Inc.	Michael Frontera (510) 875-1200	a.	AVC Advantage Voting System	Direct Recording Electronic	7/18/1986
		b.	Team Work Voting System	Optical Scan	1/20/1994
		c.	AVC Edge	Direct Recording Electronic	9/21/1999
Business Records Corporation 1111 W. Mockingbird Lane, Ste. 1400 Dallas, TX 75247	Tom Eschberger (214) 905-2300	a.	OPTECH III P	Optical Scan	11/16/1987
		b.	OPTECH III C	Optical Scan	11/16/1987
		c.	OPTECH 111 P Eagle	Optical Scan	3/4/1993
		d.	OPTECH IV C Central Tabulator	Optical Scan	3/4/1993
Fidlar & Chambers Co P.O. Box 6248 Rock Island, IL 61204	Paul Van Camp (309) 794-3200	a.	EV 2000	Direct Recording Electronic	9/21/1999
AccuPoll 15101 Red Hill Ave., Suite 220 Tustin, CA 92780	Frank Wiebe (949) 200-4000	a.	AccuPoll Model AVS-1000-A vVoting System	Direct Recording Electronic	7/9/2004
		b.	AccuPoll Model AVS 1000 Voting System	Direct Recording Electronic	12/7/2005

Voting Systems in Kansas Counties

May, 2011

**76 Optical Scan Ballots
21 Electronic (DRE) Voting
8 Paper Ballots**

County	System Type	Vendor	Scanner Model	DRE for ADA
Allen	Optical Scan - central	ES&S	m650	AutoMARK
Anderson	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Atchison	Optical Scan - precinct	ES&S	m100	AutoMARK
Barber	Optical Scan - precinct	Premier	OS	AccuVote TSX
Barton	DRE	ES&S		iVotronic
Bourbon	Optical Scan - precinct	ES&S	m100	AutoMARK
Brown	Optical Scan - precinct	ES&S	m100	AutoMARK
Butler	DRE	ES&S		iVotronic
Chase	Paper	ES&S	m100	AutoMARK
Chautauqua	Optical Scan - precinct	ES&S	m100	AutoMARK
Cherokee	Optical Scan - central	ES&S	m650, m100	AutoMARK
Cheyenne	Paper	ES&S		AutoMARK
Clark	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Clay	DRE	ES&S		iVotronic
Cloud	Optical Scan - precinct	ES&S	m100	AutoMARK
Coffey	DRE	ES&S		iVotronic
Comanche	Paper	ES&S		iVotronic
Cowley	DRE	ES&S		iVotronic
Crawford	Optical Scan - precinct	ES&S	m100	iVotronic & AutoMARK
Decatur	Paper	ES&S		AutoMARK
Dickinson	Optical Scan - central	ES&S	m650	AutoMARK
Doniphan	Optical Scan - precinct	ES&S	m100	AutoMARK
Douglas	Optical Scan - precinct	ES&S	m100	AutoMARK
Edwards	Optical Scan - central	ES&S	m650	AutoMARK
Elk	Optical Scan - precinct	ES&S	m100	AutoMARK
Ellis	DRE	ES&S		iVotronic
Ellsworth	Optical Scan - central	ES&S	m650	AutoMARK
Finney	Optical Scan - precinct	ES&S	m100	AutoMARK
Ford	DRE	Premier		AccuVote TSX
Franklin	Optical Scan - precinct	ES&S	m100	AutoMARK
Geary	DRE	ES&S		iVotronic
Gove	Paper	ES&S		AutoMARK
Graham	Optical Scan - central	ES&S	m100	AutoMARK
Grant	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Gray	Optical Scan - precinct	ES&S	m100	AutoMARK
Greeley	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Greenwood	Optical Scan - precinct	ES&S	m100	AutoMARK
Hamilton	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX

County	System Type	Vendor	Scanner Model	DRE for ADA
Harper	DRE	Premier		AccuVote TSX
Harvey	Optical Scan - central	ES&S	m650	iVotronic
Haskell	Optical Scan - precinct	ES&S	m100	AutoMARK
Hodgeman	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Jackson	Optical Scan - precinct	ES&S	m100	AutoMARK
Jefferson	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Jewell	DRE	ES&S		iVotronic
Johnson	DRE	Premier		AccuVote TSX
Kearny	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Kingman	DRE	ES&S		iVotronic
Kiowa	Optical Scan - precinct	ES&S	m100	AutoMARK
Labette	Optical Scan - central	ES&S	m650	AutoMARK
Lane	Optical Scan - precinct	ES&S	m100	AutoMARK
Leavenworth	DRE	ES&S		iVotronic
Lincoln	DRE	ES&S		iVotronic
Linn	Optical Scan - central	ES&S	m650	AutoMARK
Logan	Optical Scan - central	ES&S	m650	AutoMARK
Lyon	DRE	Premier		AccuVote TSX
Marion	Optical Scan - central	ES&S	m650	AutoMARK
Marshall	Optical Scan - precinct	ES&S	m100	AutoMARK
McPherson	Optical Scan - central	ES&S	m650	AutoMARK
Meade	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Miami	DRE	Premier		AccuVote TSX
Mitchell	Paper	ES&S		iVotronic
Montgomery	Optical Scan - Central	ES&S	m650	AutoMARK
Morris	Paper	Premier		AccuVote TSX
Morton	Optical Scan - central	ES&S	m650	AutoMARK
Nemaha	Optical Scan - precinct	ES&S	m100	AutoMARK
Neosho	Optical Scan - precinct	ES&S	m100	AutoMARK
Ness	Optical scan - central	ES&S	m100	AutoMARK
Norton	Optical Scan - precinct	ES&S	m100	AutoMARK
Osage	Optical Scan - precinct	ES&S	m100	AutoMARK
Osborne	Optical Scan - precinct	ES&S	m100	AutoMARK
Ottawa	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Pawnee	Optical Scan - central	ES&S	m650	AutoMARK
Phillips	Optical Scan - central	ES&S	m650	AutoMARK
Pottawatomie	Optical Scan - central	ES&S	m650	AutoMARK
Pratt	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Rawlins	Optical Scan - central	ES&S	m650	AutoMARK
Reno	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Republic	Optical Scan - precinct	ES&S	m100	AutoMARK
Rice	DRE	ES&S		iVotronic
Riley	DRE	ES&S		iVotronic

County	System Type	Vendor	Scanner Model	DRE for ADA
Rooks	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Rush	Optical Scan - central	ES&S	m100	AutoMARK
Russell	Optical Scan - central	ES&S	m650	AutoMARK
Saline	DRE	ES&S		iVotronic
Scott	Optical Scan - precinct	ES&S	m100	AutoMARK
Sedgwick	DRE	ES&S		iVotronic
Seward	DRE	Premier		AccuVote TSX
Shawnee	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Sheridan	Optical Scan - precinct	ES&S	m100	AutoMARK
Sherman	Optical Scan - precinct	ES&S	m100	AutoMARK
Smith	Optical Scan - precinct	ES&S	m100	AutoMARK
Stafford	Optical Scan - central	ES&S	m650	AutoMARK
Stanton	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Stevens	Optical Scan - central	ES&S	m100	AutoMARK
Sumner	DRE	ES&S		iVotronic
Thomas	Optical Scan - precinct	ES&S	m100	AutoMARK
Trego	Optical Scan - precinct	ES&S	m100	AutoMARK
Wabaunsee	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX
Wallace	Optical Scan	Premier	AccuVote OS	AccuVote TSX
Washington	Optical Scan - precinct	ES&S	m100	AutoMARK
Wichita	Optical Scan - precinct	ES&S	m100	AutoMARK
Wilson	Optical Scan - precinct	ES&S	m100	iVotronic
Woodson	Optical Scan - precinct	ES&S	m100	AutoMARK
Wyandotte	Optical Scan - precinct	Premier	AccuVote OS	AccuVote TSX

*Premier - formerly Diebold