Kennesaw State UNIVERSITY

CENTER FOR ELECTION SYSTEMS

The Georgia Voting System

February, 2014

Center for Election Systems
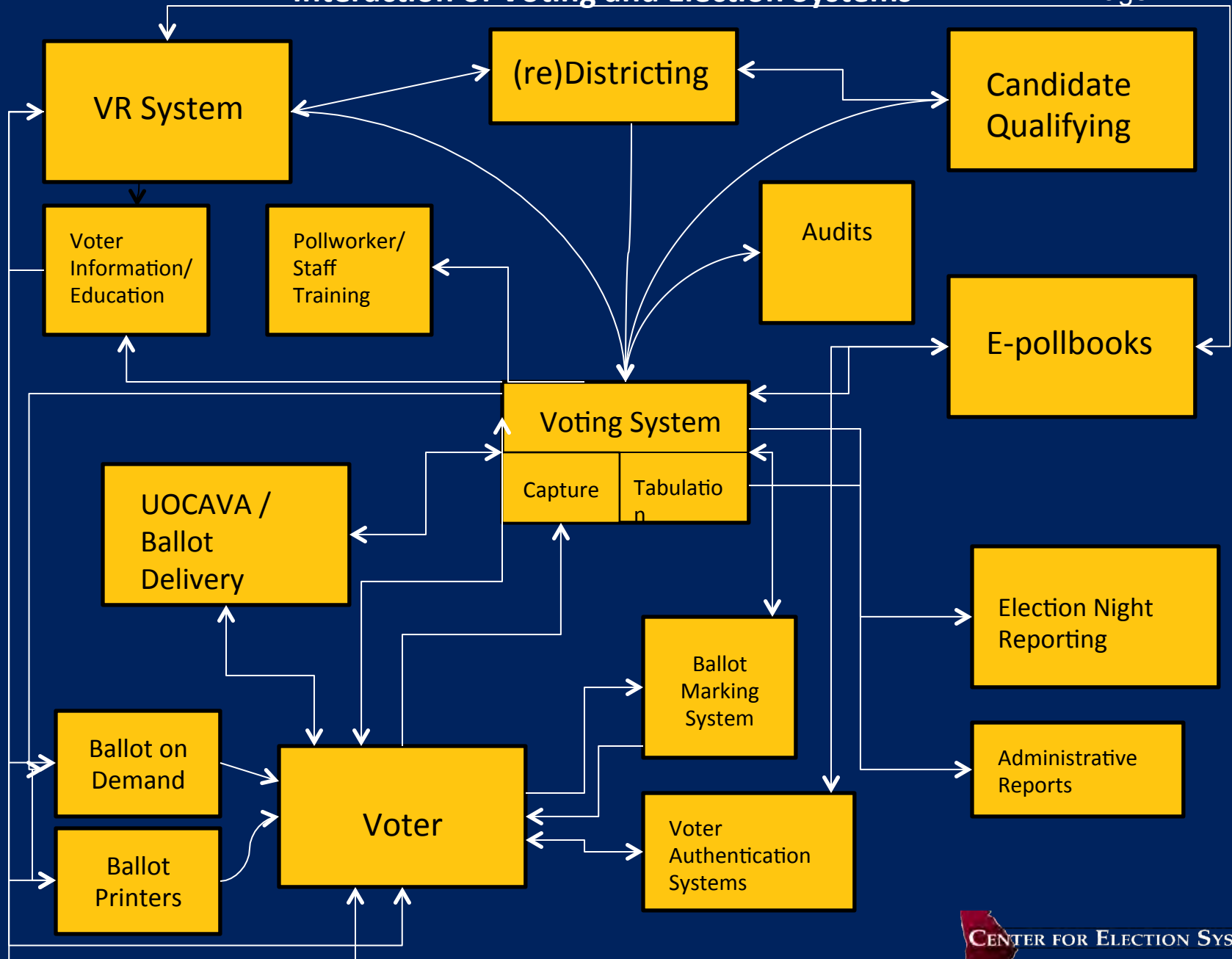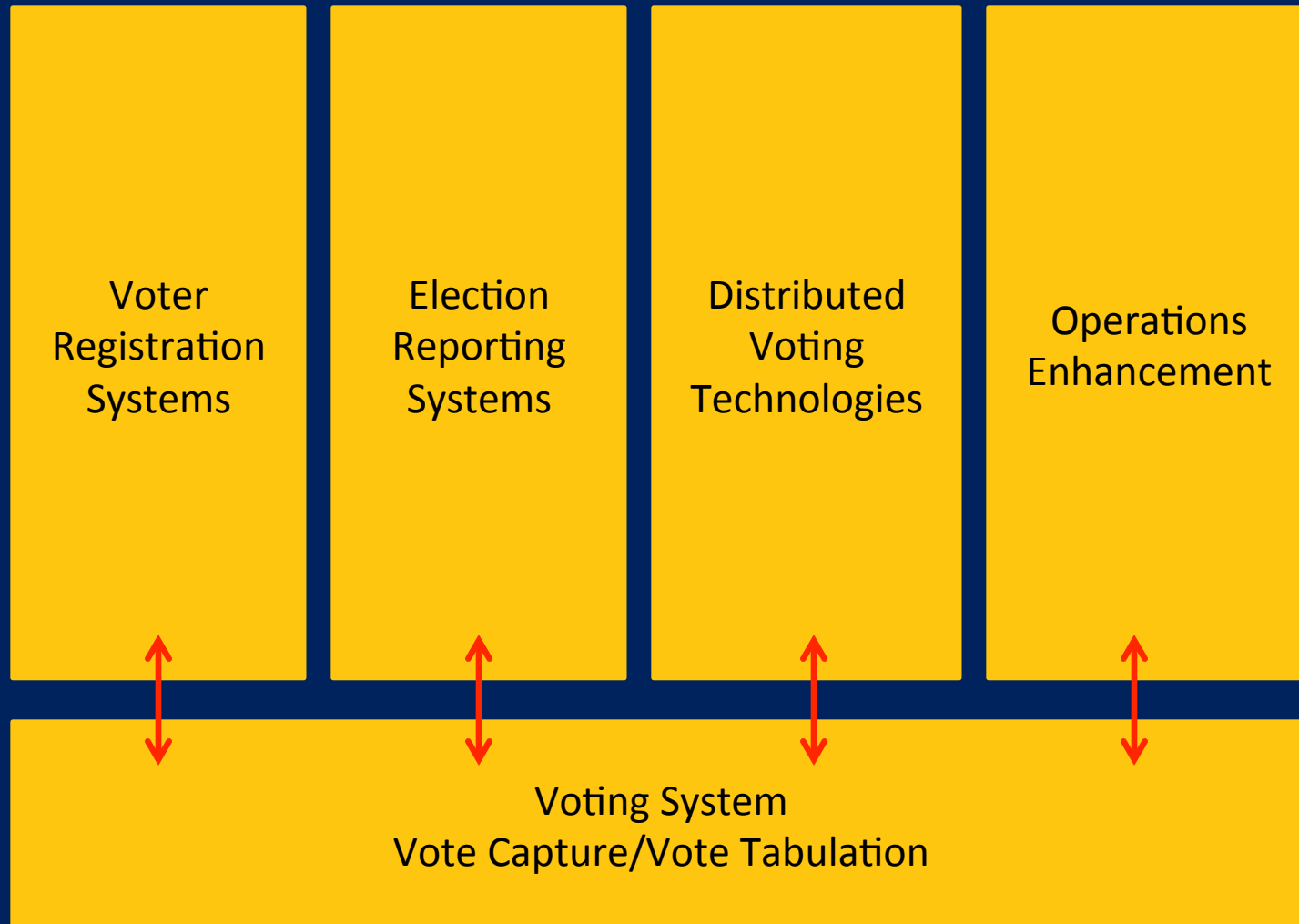
Uniform Voting System

- **Since 2002, Georgia has supported a uniform voting system**
  - **Every county uses the same equipment in the same way**
  - **Centralized services, including**
    - **Ballot Building**
    - **Training**
    - **E-pollbook preparation**
    - **VR system**
    - **ENR**

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System Convergence

| Voter Registration Systems | Election Reporting Systems | Distributed Voting Technologies | Operations Enhancement |

Voting System
Vote Capture/Vote Tabulation

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Core Competencies of Election Officials and Election Workers

Voter Registration Systems

Election Reporting Systems

Distributed Voting Technologies

Operations Enhancement

Voting System
Vote Capture/Vote Tabulation

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Uniform Voting System

- ~26,500 DREs
- ~621 O/S units
- ~6,825 e-pollbooks
- ~6,075 bar code scanners
- Media for devices
- 159 tabulation servers
- Deployed in 159 counties with VR list of 6.1M (2014)

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Uniform Voting System

- In constant use since 2002
  - Over 5,000 elections
  - Over 50,000,000 votes cast
- Repairs/replacements of DREs approximately .5% per year
  - 2011: ~160
  - 2012: ~150
  - 2013: ~135

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System Components

- Beginning in 2002, Georgia required the use of a uniform voting system for all state and county elections.
  - DREs used for in-precinct voting and advanced/early voting
    - Direct Record Electronic – touchscreen
    - Votes are directly recorded onto electronic media
    - HAVA section 301 compliant
    - Flexible
  - Accuvote OS used for mail-in absentee
  - Other components
    - ExpressPoll – electronic pollbooks
    - GEMS servers

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System Components

- Election Systems and Software (ES&S)
  - Supports State of Georgia Contract for voting system components:
    - New purchases
    - Repairs
    - Services
      - Ballot Printing
      - L&A Support
      - Election Day Support
    - In-state contract manager
  - Licenses software to state for voting system components
  - Purchased inventory and IP from Premier Election Solutions (Diebold)

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System Components

GEMS Servers – One in every county at the tabulation location (usually county elections office)

Vision

System Components

GEMS Servers – One in every county at the tabulation location (usually county elections office)

Dell 1900

Vision I

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System Components

DRE
– All DREs run Ballot Station 4.5.2!

R6

TSx

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System Components

- Optical Scanner
  - Accuvote OS, running firmware 1.94

System Components

- ExpressPoll 4000 (with barcode scanner)

System Components

- ExpressPoll 5000

System Components

Encoder

Certification

- System is certified by FEC/NASED, to the 1990 VSS standard.
- Georgia requires federal certification.
- State Certified
- Acceptance Tested

Local Jurisdiction Acceptance. After a voting system is delivered to a local jurisdiction, acceptance tests shall be performed in the user's environment to demonstrate that the voting system as delivered and installed is identical to the system that was certified by the State and satisfies the requirements specified in the procurement documents.

- Rules of the Secretary of State, 590-8-1-.01 Certification of Voting Systems

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Certification

- Acceptance Tested
  - DREs and OS units sent off for repair must be acceptance tested upon return to the county or municipality.

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GEMS

- GEMS – Global Election Management System. Version 1.18.22G!
- Used statewide since 2002
- Resides on a dedicated, non-networked computer (server) within the county election office
- Used to create election databases, program the voting equipment, and produce the ballots and reports for any given election within the county
- GEMS Verify

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Artifacts

- <u>Object:</u> Seals

- <u>Function:</u> Detective Control. Used to denote pre-election (red) and post election (blue) status of equipment. Other applications include secure shipping by the Center for Election Systems. All seals have multi-digit numeric values

- <u>Location/Owner:</u> County election offices. Equipment storage facilities. Center for Election Systems. Seals can be ordered directly from the vendor or from the SOS warehouse.

Artifacts

- **<u>Object:</u> Seals**

Artifacts

- <u>Object:</u> Zero Tapes

- <u>Function:</u> Demonstrate there were no votes on a TS or OS unit prior to vote capture. The zero tape provides the "before" snap shot of a unit's status at poll opening. The poll manager and two poll workers have to sign the zero tape.

- <u>Location/Owner:</u> Counties will have the zero tapes for each unit as a part of the election materials brought in from the precincts.

Artifacts

- **<u>Object:</u> Zero Tapes**
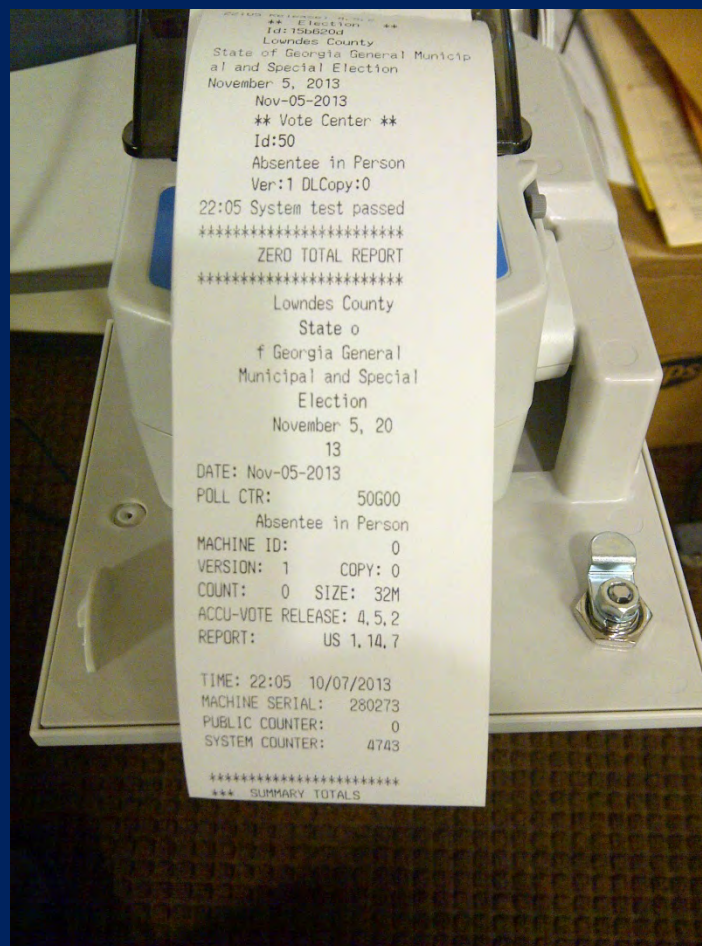
Artifacts

- <u>Object:</u> Acceptance Test Labels

- <u>Function:</u> Each election device must have an Acceptance Test Label that affirms the device conforms to the certified model. A device without an Acceptance Test label is not permitted for use in an election (exceptions are municipalities using non-certified equipment).

- <u>Location/Owner:</u> AT labels are applied by the Center at the conclusion of successful acceptance testing. Only the Center has the labels. There are different labels for each type of device.

Artifacts

- **Object:** **Acceptance Test Labels**

Artifacts

- <u>Object:</u> Security Seals from KSU

- <u>Function:</u> Detect whether a server's case has been opened.

- <u>Location/Owner:</u> Applied to server at Acceptance Testing.

Artifacts

- **<u>Object:</u> Security Seals from KSU**

Artifacts

- <u>Object:</u> Card Label

- <u>Function:</u> Used to identify the election to which a memory card belongs. These labels are produced by the TS or OS unit when the memory card is created during election preparation.

- <u>Location/Owner</u>: The county is responsible for generating and affixing these tape labels.

Artifacts

- **<u>Object:</u> Memory Cards**
- **<u>Function:</u> Devices that use Memory Cards:**
    - **TS Units: PCMCIA cards or CF cards in PCMCIA adaptors**
    - **OS Units: OS Memory Cards**
    - **ExpressPoll units: Compact Flash Cards**

    There is a one-to-one relationship between units prepared for an election and memory cards. EVERY memory card must be accounted for at tabulation. Counties MUST upload official election results directly from memory cards. Even un-voted memory cards must be uploaded.

    Memory cards must be maintained for at least 30 days after an election.

    Separate memory cards are used for run-offs.
- **<u>Location/Owner:</u> Counties.**

Artifacts

- **Object:** **Memory Cards**

ExpressPoll Memory Card

OS Memory Card

TS Memory Card

Artifacts

- **Object:** **GEMS Reports: Election Summary Report and Statement of Votes Cast (SOVC) Report**
- **Function:** **These are standard printed reports that present the vote totals by race and displayed by precinct, and a report that details the totals votes (ballots) cast in that election. Used to reconcile that all memory cards from all precincts have been loaded and that the number of votes cast match the number of voter access cards generated and the number of oaths signed in the precinct. The Election Summary Report is also generated before beginning the upload of memory cards to confirm the database contains zero results prior to the first results being uploaded.**
- **Location/Owner:** **County Election Office**

Artifacts

- **Object:** Numbered List
- **Function:** A list of voters who cast ballots in a precinct and ballot they selected if a primary election. This list is used to reconcile with the number of votes cast in that precinct. This list is electronic on election night and is produced by the ExpressPoll unit. It can be extracted and printed to a file or to paper.

- **Location/Owner:** County has the initial list, but once the ExpressPoll CF cards are returned to the Center, that list is extracted and posted to the county via our password-protected web site. The list is public information and is requested by candidates and parties.

Artifacts

- Object: Logic and Accuracy Test Forms

- Function: Each device used in the election is subject to L&A testing. Each device as well as the date and status of the test is recorded on an L&A document. This includes touchscreens, optical scanners, and ExpressPolls. The form will include seal numbers as well as who conducted the test.

- Location/Owner: County Election Office.

Artifacts

- <u>Object:</u> Access Logs

- <u>Function:</u> Manual logs are maintained for each voting equipment storage facility and the office/ location where the GEMS server is located. This log will record who accessed the devices, when, why, and who signed-off at the county level.

- <u>Location/Owner:</u> County Election Office

Artifacts

- <u>Object:</u> Audit Logs

- <u>Function:</u> The GEMS server will maintain two audit logs. One is the Windows Server log. This will indicate when and by whom the server was accessed. This audit log is mapped to the access log.

  GEMS maintains a separate log that records which databases were opened and what operations were performed on that database, including memory card activities.

- <u>Location/Owner:</u> These audit logs resides on the GEMS server and should only be pulled by Center personnel.

Artifacts

- <u>Object:</u> Audit Logs (continued) - Touchscreen
- <u>Function:</u> The TS audit log records all high level activities (not individual vote selections) on the TS unit, including opening and closing of polls. Can be used to determine at what time an election was ended on a TS unit and the total number of cast ballots on the unit at the ending time.
- <u>Location/Owner:</u> The TS audit log resides on the TS unit and should only be pulled by Center personnel.

Artifacts

- <u>Object:</u> Voter Access Cards - Yellow with State Seal.
- <u>Function:</u> Are programmed with the code that brings up the appropriate ballot for a voter and with a counter that is set at 1 when the card is created and 0 once the ballot is cast. Cards can be viewed to determine the status of the vote cast field. No voter information is on the card. The current issue of the card has one 1/64" hole in the center column of the State Seal.
- <u>Location/Owner:</u> County Election Offices. Center personnel can use a card reader and software to review the card's contents.

Artifacts

- <u>Object:</u> Voter Access Cards - Yellow with State Seal.

Artifacts

- Object: Supervisor Card – Green with State Seal
- Function: Used to permit poll managers to access certain functions on the TS units. Each county's PIN is unique and changed every two years.
- Location/Owner: County Election Office. Center programs cards every two years. Currently, cards are being programmed by KSU. When complete all updated cards will have a total of four 1/64" holes; two of which will be in the bottom corners of each card.

Artifacts

- <u>Object:</u> Supervisor Card – Green with State Seal

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