Kentucky + Hart InterCivic and Harp Enterprises

Advancing Democracy. **Together.**

Interim Joint Committee on State Government,

Meeting 6, Election Security
November 13th, 2025

About Hart InterCivic

- Corporate Offices in Austin Texas
- Election technology innovator with 110+ year heritage
- 830+ customers across the US
- Statewide, large, & small county provider
- Verity Voting System designed, developed, and manufactured in Austin, Texas

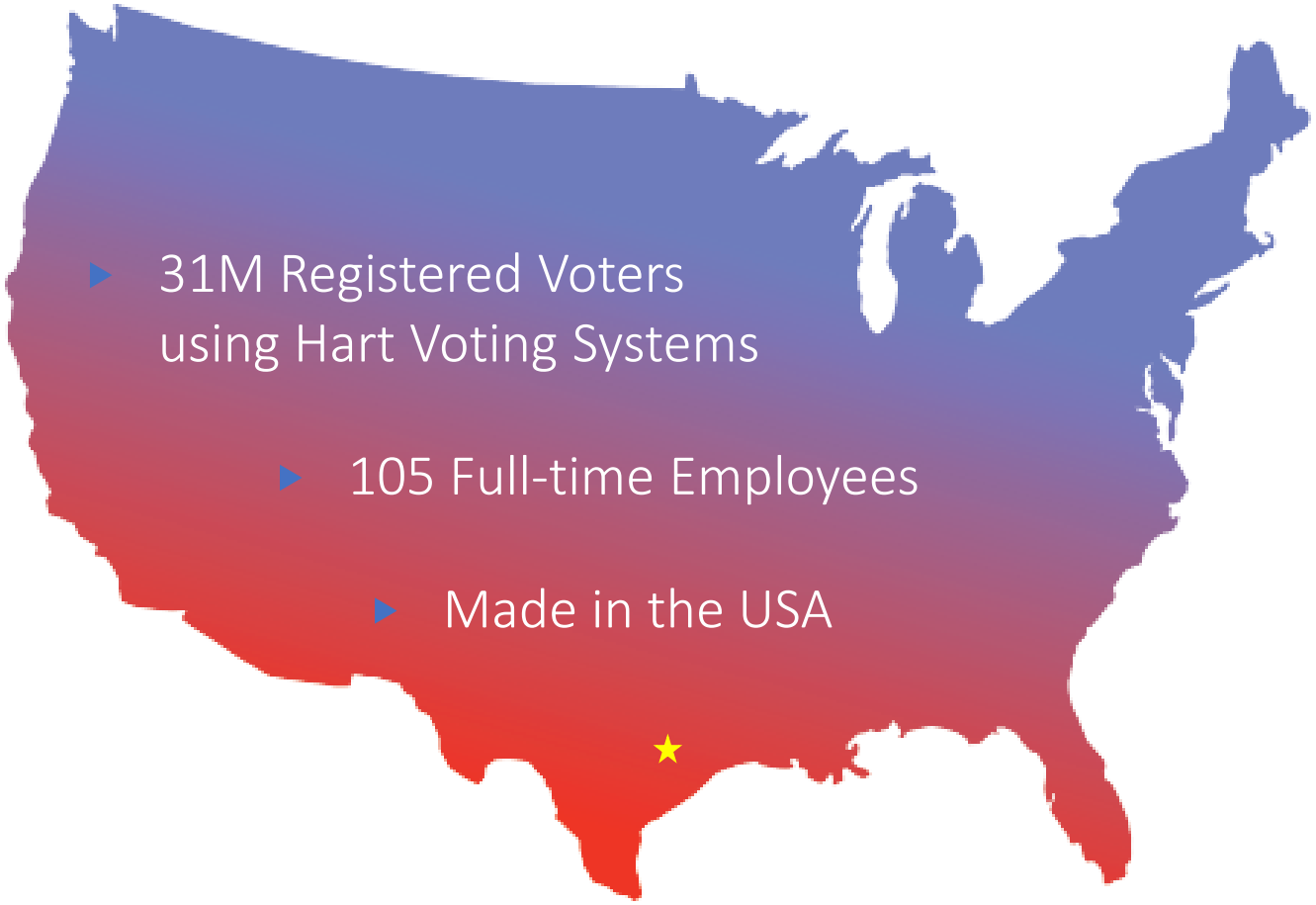
Advancing the partnership between people and their government through transformative technology.

Hart By the Numbers

One of the **Top 3 Voting System Manufacturers** in the United States proudly serving election customers for more than 110 years.

99%
Customer Retention

860+
Voting System Customers



20
States

96%
Customer Satisfaction

HART intercivic

Verity Voting System

Product Configuration In Kentucky

Verity’s Solution In Kentucky

Verity Print with AutoBallot
On-demand ballot printing

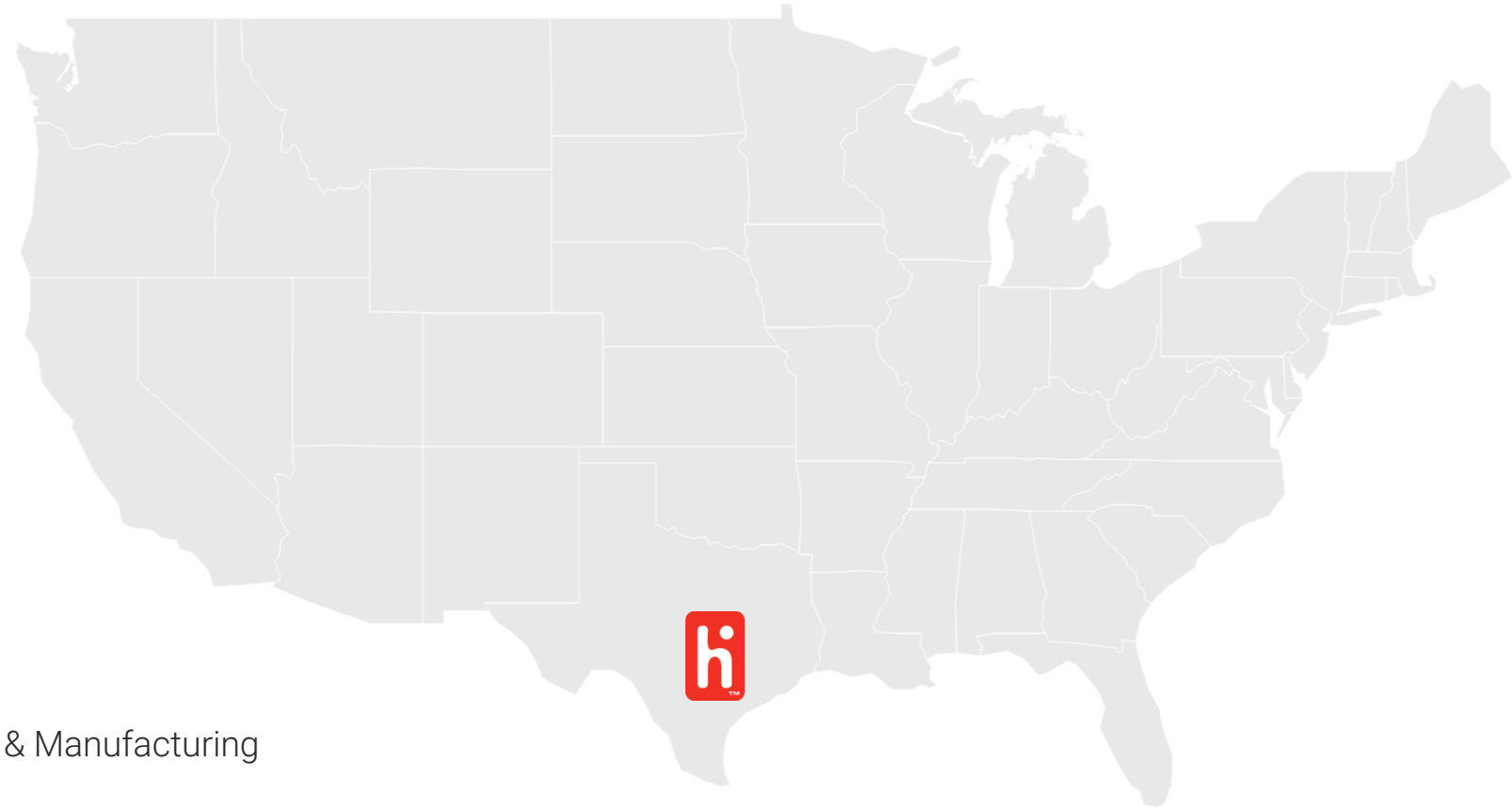
Verity Scan
Secure vote capture

Verity's Solution In Kentucky

Verity Touch Writer
On-Accessible Ballot Marking with external printer for full faced ballot creation

Verity Duo
Accessible Ballot Marking with an integrated thermal printer

Verity Is An American Product



Hart HQ & Manufacturing

Sold And Serviced In Kentucky

Hart HQ & Manufacturing

Harp HQ & Operations Facility

HART intercivic

Testing & Certification

Proven And Trusted Technology

Tested & Certified

Verity is certified at the national and state levels.

Kentucky Voting System Standards

Independently Tested

> The Hart Verity Voting system is designed utilizing the best practices commonly found in software security engineering practices.

> This multi-layered approach with intentional redundancies increases the security of the system as a whole and addresses many different attack vectors.

- SLI Compliance, U.S. Election Assistance Commission Accredited Laboratory

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Corporate Security

Its In Our DNA

Security Starts with Our People

True election security demands that people are a part of the equation – election officials, staff, poll workers, and yes, even the employees of a voting system vendor are critical to ensuring our election infrastructure remains safe. This is a core tenant of both our customer relationship model, providing ongoing training and best practice sharing, as well as key training for our employees and organizational operations.

Comprehensive Background Checks

Cybersecurity Training through CFISA

Ongoing Participation in DHS Election Security Roundtables

Comprehensive Crisis Response Planning

We're in Good Company

Hart is actively engaged in the nationwide conversation on election security. We collaborate with a broad community of stakeholders actively participating in knowledge sharing, best practice sharing, and discussions on the latest election security technology and procedures.

IT ISAC

NASS
National Association of Secretaries of State

NATIONAL ASSOCIATION of STATE ELECTION DIRECTORS

The National Academies of SCIENCES ENGINEERING MEDICINE

ELECTION CENTER

Product Security

The Most Secure Election Technology

Defense in Depth

DEFINITION Implementing multiple layers, and types, of security controls to maximize defenses and eliminate gaps between protections

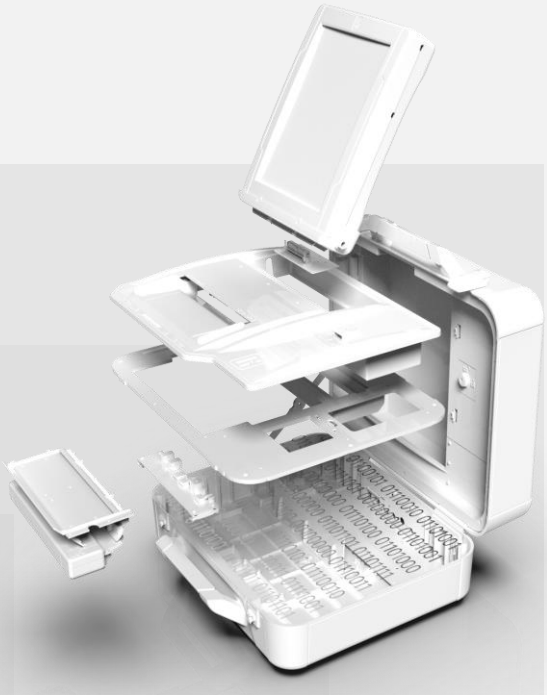
SECURE DEVELOPMENT PROCESS To be a truly secure product, the environment in which it is created must also be secure

OPERATIONAL Process & people are integral parts of any security effort

SECURE CONFIGURATIONS Designing risk out of the system

PHYSICAL Tamper resistant & tamper evident

SOFTWARE Purpose built infrastructure



Secure Development Process

Assess

Comprehensive risk & threat assessment

Design

Detailed, formal security requirements

Implement

Processes, hardware, & software controls

Validate

Comprehensive, thorough testing

Microsoft® Security Development Lifecycle

OWASP Top 10
The Ten Most Critical Web Application Security Risks

NIST

Secure Configurations

- **Minimal attack surface**
  - Reduced operating system and hardware configuration required for polling place operation
- **Least Privilege**
  - Customized user roles define permissions and access for all users
  - “Kiosk mode” prevents user access to the operating system
- **Air-gaps protect system boundaries**
  - No connectivity, wired or wireless, to any external networks
  - Verity components **cannot be remotely accessed** by anyone for any reason

Secure Configurations

+ **Disk encryption**
  - NIST FIPS 140-2 compliant full-disk encryption
+ **Redundant data storage**
  - RAID 1 Mirroring to protect against hard drive failure
  - Election data can be archived to a removable USB device for quick recovery
  - Cast Vote Records and logs stored on two separate memory devices
+ **Separation of concerns**
  - Ballot printing and scanning are performed in separate components of the system
  - Ballots never pass through a printer interface after being reviewed by a voter
  - Election definition, vote capture, and vote counting reside in separate air-gapped components

Most Secure Hardware

- **Multiple physical intrusion / tampering prevention** features including:
  - **Keyed locks**
  - **Tamper-evident seals**
  - **Non-standard ports**
  - **Two-factor authentication** for election staff (every election)
- Voters cannot insert external cards, drives, devices, or cables, and executable code cannot be hidden or run
- Multiple, **redundant data backups** ensure no data loss and provide comparisons to test against attempted data manipulation
- **Election officials are trained on strong chain-of-custody procedures for devices and data**
- Cast vote record data is digitally signed using NIST-compliant FIPS 140-2 cryptography
- **No connection to the internet,** internal office networks, virtual reality systems, campaign/candidate systems, email systems, or VEO infrastructure

Verity Devices

- Tamper-resistant
  - Two external keyed locks
    - Locking election media (vDrive) compartment
    - Keyed lock secures tablet
  - Proactive notification of any unauthorized disconnection
  - Non-standard external ports
    - Unique physical shape
    - Atypical electronic connectivity

Verity Devices

- Tamper-evident
  - Wire seal secures entire clamshell case
  - Seals over seams and screws

- Additional serialized tamper seals can be applied to:
  - The exterior handle of the case
  - The vDrive compartment
  - All external ports

Most Secure Software

- **No internet** or internal office network connectivity, thereby preventing a cyberattack
- **Cannot be accessed remotely** by Hart or anyone else
- Operates only in **“kiosk”** mode
  - Users can only access authorized elements of the voting system
  - Users cannot access the operating system
  - Users may not install other programs or files
- **Two-factor authentication** is required for all users
- All election data is secured with **military grade, NIST/VVSG-compliant cryptography**
- **Audit logs** track all user logins, data entry, vote adjudication, and system events
- Supports most rigorous and sophisticated post-election audits to ensure **confidence and transparency**

“Triple A” (AAA) Security

Who can access? What are they allowed to do? What did they do?

+ **Authentication**
  - User accounts and passwords are managed by Verity
  - Two-factor authentication at critical points in the election workflow

+ **Authorization**
  - NIST-Approved Role-Based Access Controls

+ **Accounting**
  - Clear, plain language logging of all user and system action

Trust & Traceability

- **Logging and Auditing** – All user and system actions are logged and auditable
  - Logs cannot be deleted or modified by users
  - All log data is digitally signed for tamper- evidence and non-repudiation

- **Validation** – Data validation at all critical input/output points
  - Allow Listing validates all executable code prior to allowing it to run
  - Firewalls validate all local network connections

A Step Above Secure

+ **Tamper Evidence**
  - Non-repudiation – Digital signatures provide non-repudiation for application code and data

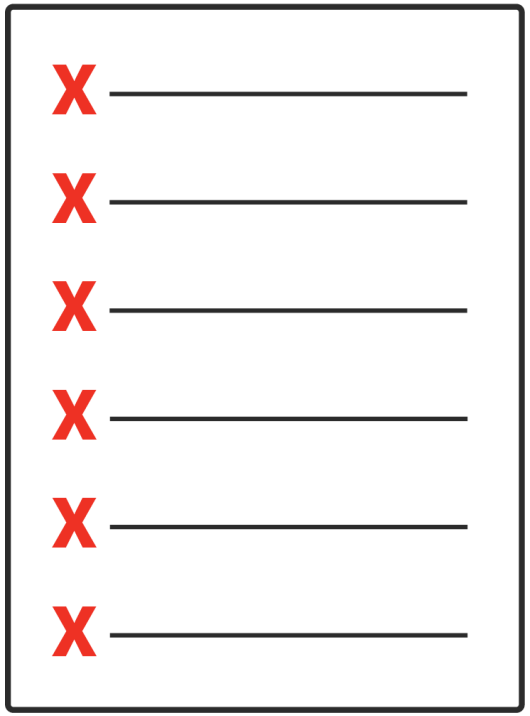
+ **Tamper Resistance**
  - Enhanced write filter
  - Transport layer security (TLS)
  - Firewalls on all workstations and devices
  - Secure boot
  - System validation tool
  - Redundant data locations
  - Application “Trust Listing” runs on every Verity Component

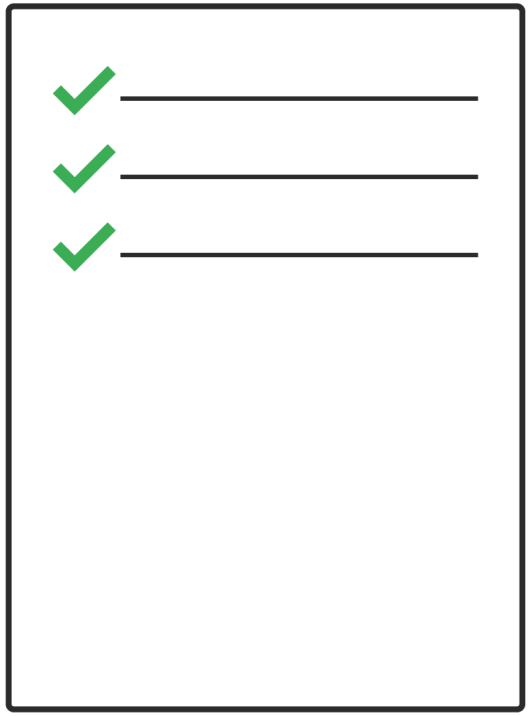
Verity digital signatures are implemented with Microsoft cryptographic libraries and NIST-validated, FIPS 140-2 cryptographic modules applying SHA-256 hash methods.

What is “Allow Listing”?

Threat Centric

Trying to block every new threat requires a lot of work & leaves you vulnerable to unknown risks.





Trust Centric

Only approves the stuff you need the system to do. Eliminates the need for constant updates.

VERITY COUNT OVERVIEW

Verity Count capabilities:

- Manage all elections, including test and official
- Perform logic and accuracy testing
- Read and tabulate results
- Print reports and build custom reports
- Export data

HART intercivic

Anatomy of a Ballot

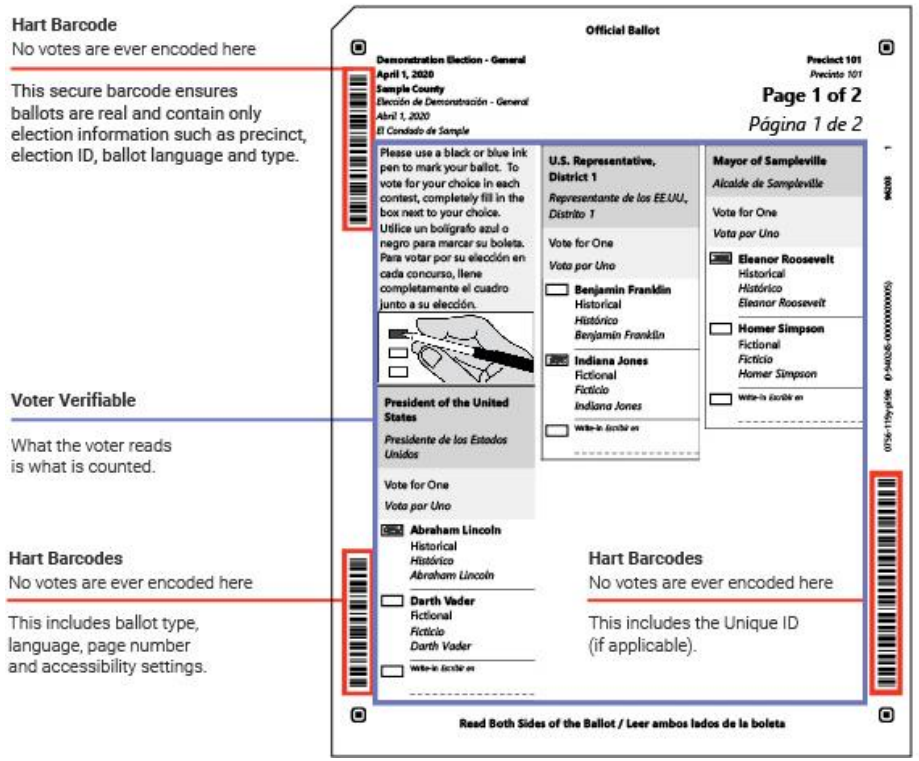
Transparency Without Compromise

Anatomy Of A Verity Ballot

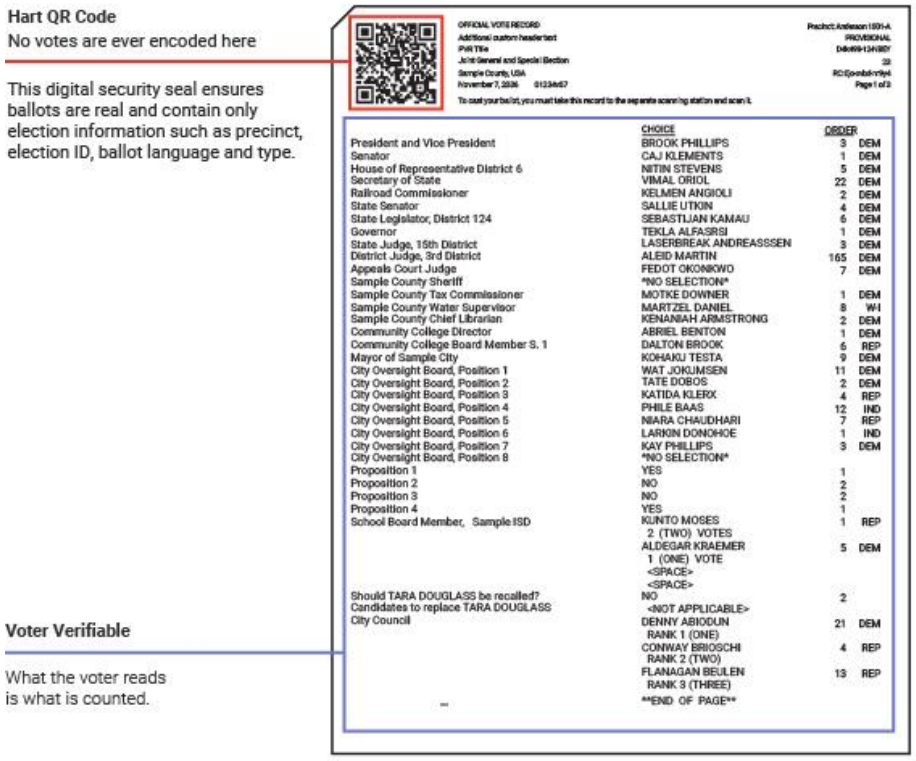
What's Stored in Hart's QR Codes and Barcodes?

- Hart QR codes and barcodes contain essential election and security data—such as ballot validation, election and precinct information, party, ballot type, election ID, language, and page number, but never voter selections.

Verity Full Ballot



Hart Summary Ballot



Anatomy of a Verity Ballot
Transparency Without Compromise

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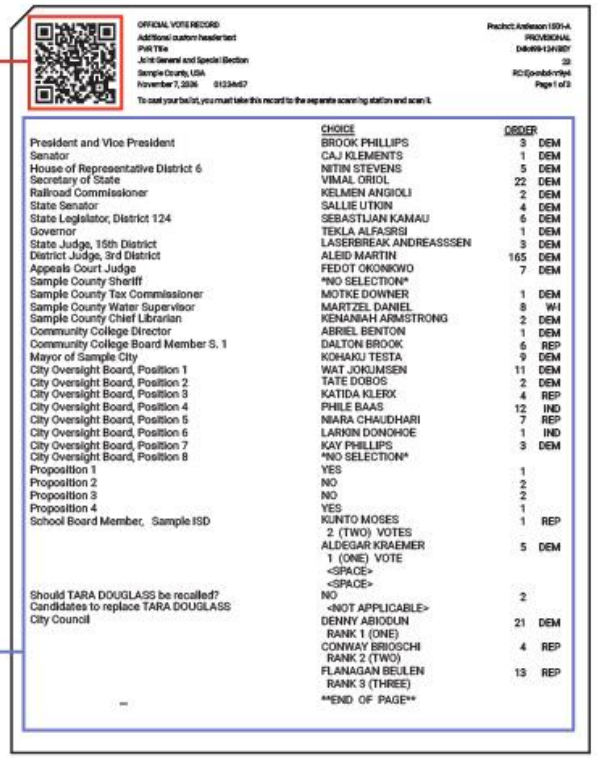
Hart Summary Ballot

Hart QR Code
No votes are ever encoded here

This digital security seal ensures ballots are real and contain only election information such as precinct, election ID, ballot language and type.



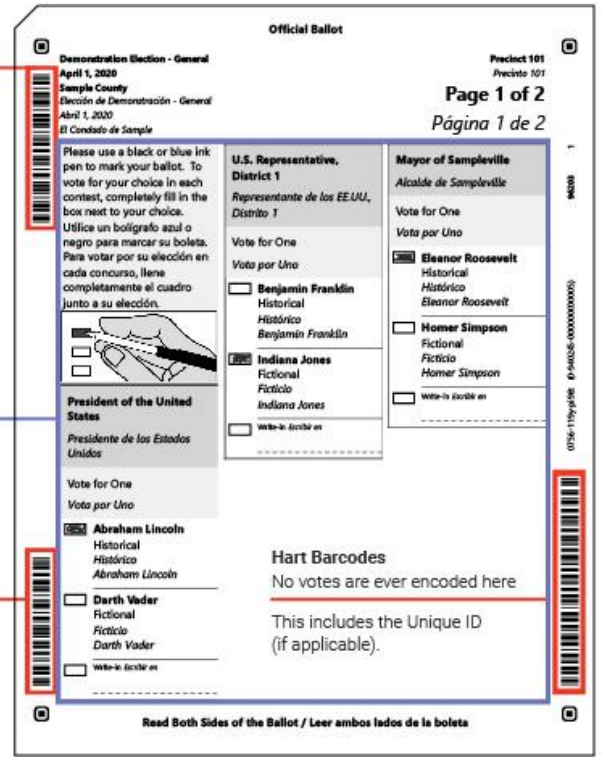
	CHOICE	ORDER	
President and Vice President	BROOK PHILLIPS	3	DEM
Senator	CAJ KLEMENTS	1	DEM
House of Representative District 6	NITIN STEVENS	5	DEM
Secretary of State	VIMAL ORIOL	22	DEM
Railroad Commissioner	KELMEN ANGIOLI	2	DEM
State Senator	SALLIE UTKIN	4	DEM
State Legislator, District 124	SEBASTIJAN KAMAU	6	DEM
Governor	TEKLA ALFASRSI	1	DEM
State Judge, 15th District	LASERBREAK ANDREASSSEN	3	DEM
District Judge, 3rd District	ALEID MARTIN	165	DEM
Appeals Court Judge	FEDOT OKONKWO	7	DEM
Sample County Sheriff	*NO SELECTION*		
Sample County Tax Commissioner	MOTKE DOWNER	1	DEM
Sample County Water Supervisor	MARTZEL DANIEL	8	WI
Sample County Chief Librarian	KENANIAH ARMSTRONG	2	DEM
Community College Director	ABRIEL BENTON	1	DEM
Community College Board Member S. 1	DALTON BROOK	6	REP
Mayor of Sample City	KOHAKU TESTA	9	DEM
City Oversight Board, Position 1	WAT JOKUMSEN	11	DEM
City Oversight Board, Position 2	TATE DOBOS	2	DEM
City Oversight Board, Position 3	KATIDA KLERX	4	REP
City Oversight Board, Position 4	PHILE BAAS	12	IND
City Oversight Board, Position 5	NIARA CHAUDHARI	7	REP
City Oversight Board, Position 6	LARKIN DONOHOE	1	IND
City Oversight Board, Position 7	KAY PHILLIPS	3	DEM
City Oversight Board, Position 8	*NO SELECTION*		
Proposition 1	YES	1	
Proposition 2	NO	2	
Proposition 3	NO	2	
Proposition 4	YES	1	
School Board Member, Sample ISD	KUNTO MOSES	1	REP
	2 (TWO) VOTES		
	ALDEGAR KRAEMER	5	DEM
	1 (ONE) VOTE		
	<SPACE>		
	<SPACE>		
Should TARA DOUGLASS be recalled?	NO	2	
Candidates to replace TARA DOUGLASS	<NOT APPLICABLE>		
City Council	DENNY ABIODUN	21	DEM
	RANK 1 (ONE)		
	CONWAY BRIOSCHI	4	REP
	RANK 2 (TWO)		
	FLANAGAN BEULEN	13	REP
	RANK 3 (THREE)		
	END OF PAGE		

Voter Verifiable
What the voter reads is what is counted.

Verity Full Ballot

Hart Barcode
No votes are ever encoded here

This secure barcode ensures ballots are real and contain only election information such as precinct, election ID, ballot language and type.



Voter Verifiable
What the voter reads is what is counted.

Hart Barcodes
No votes are ever encoded here

This includes ballot type, language, page number and accessibility settings.

Why Include QR Codes and Barcodes?

These elements streamline election operations without compromising voter trust.

Security & Validation

QR codes and barcodes help verify ballot authenticity and prevent duplicate counting. They carry critical election data such as precinct, ballot type, language settings, not voter choices.

Ballot Real Estate Optimization

QR codes and barcodes compress large amounts of data into a small footprint, preserving valuable space on the ballot for election content.

Enhanced Voter Experience

Vanguard barcodes and QR codes support accessibility by carrying interface settings from ballot marking devices to precinct scanners.

What Happens if a Ballot Doesn't Have any QR Codes or Barcodes?

QR codes and barcodes enable efficient processing and preserve essential ballot functions. Without them, ballots would lose key features like security validation, precinct identification, and accessibility support. For details, see “Why Include QR Codes and Barcodes?” above.

At Hart, transparency isn’t new, it’s our standard.
We’ve always kept votes out of QR codes and barcodes, long before the 2025 Executive Order required it.

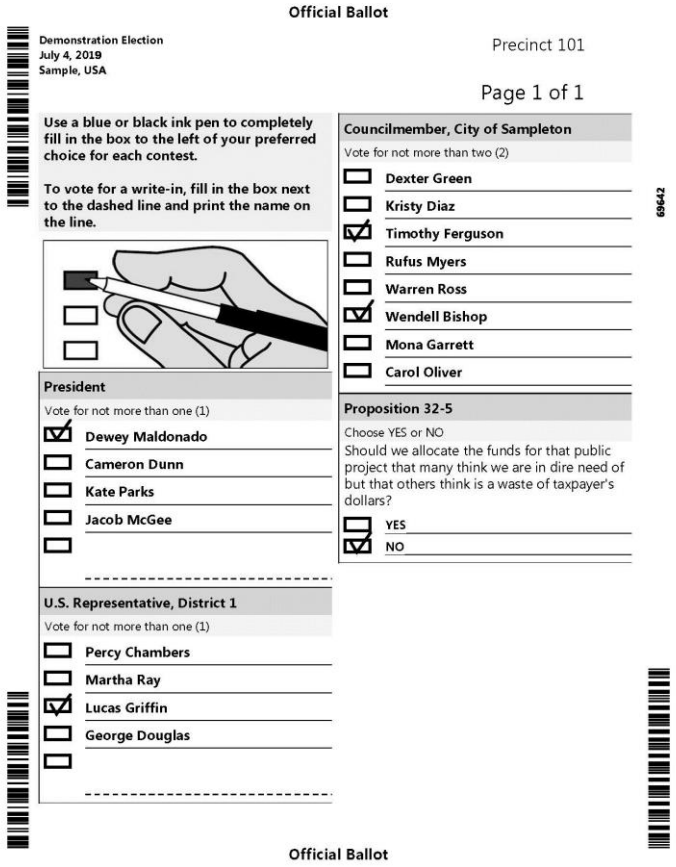
Executive Order 2025

The March 2025 Executive Order is a federal mandate for transparency. It reinforces Hart’s long-standing approach that voting systems must produce voter-verifiable paper ballots. It discourages vote tabulation via QR codes or barcodes, aligning with Hart’s commitment to auditable, transparent elections.

Hart’s Security Promise

“For our customers, we relentlessly seek the most secure processes and technologies in the industry. We are committed to our ongoing partnerships with election leaders to pursue the ever-changing best practices for elections security. This is our promise to ensure our customers can deliver secure, accurate elections for years to come.”

100% Voter Verifiable



Official Ballot

Demonstration Election
July 4, 2019
Sample, USA

Precinct 101

Page 1 of 1

Use a blue or black ink pen to completely fill in the box to the left of your preferred choice for each contest.

To vote for a write-in, fill in the box next to the dashed line and print the name on the line.

President
Vote for not more than one (1)
- [x] Dewey Maldonado
- [ ] Cameron Dunn
- [ ] Kate Parks
- [ ] Jacob McGee
- [ ]

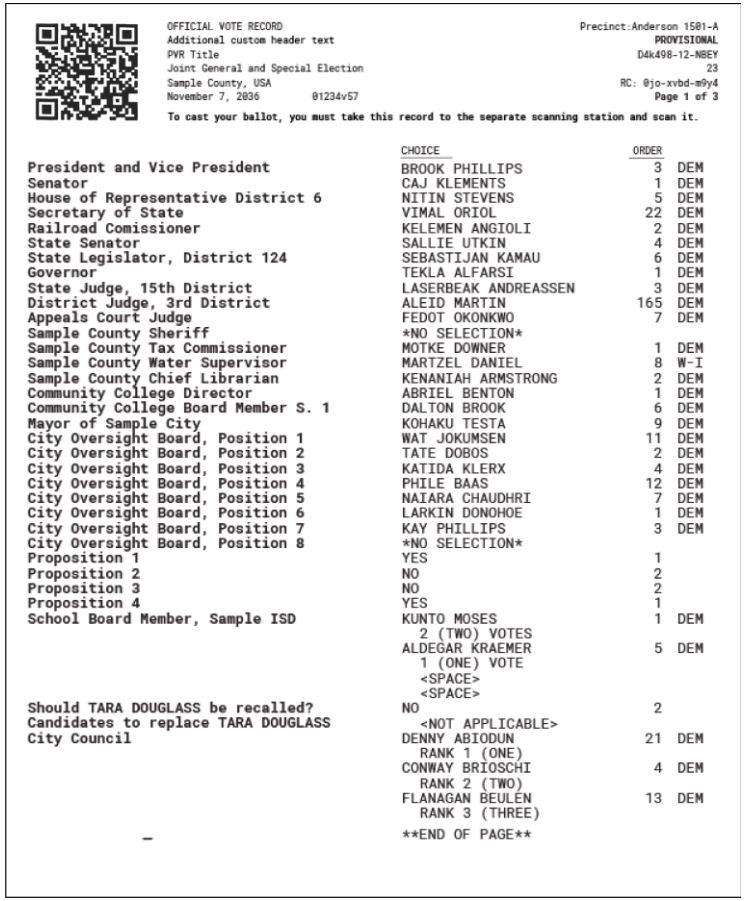
U.S. Representative, District 1
Vote for not more than one (1)
- [ ] Percy Chambers
- [ ] Martha Ray
- [x] Lucas Griffin
- [ ] George Douglas
- [ ]

Councilmember, City of Sampleton
Vote for not more than two (2)
- [ ] Dexter Green
- [ ] Kristy Diaz
- [x] Timothy Ferguson
- [ ] Rufus Myers
- [ ] Warren Ross
- [x] Wendell Bishop
- [ ] Mona Garrett
- [ ] Carol Oliver

Proposition 32-5
Choose YES or NO
Should we allocate the funds for that public project that many think we are in dire need of but that others think is a waste of taxpayer's dollars?
- [ ] YES
- [x] NO

69642

Official Ballot



OFFICIAL VOTE RECORD
Additional custom header text
PVR Title
Joint General and Special Election
Sample County, USA
November 7, 2036 01234v57

Precinct:Anderson 1501-A
PROVISIONAL
D4k498-12-NBEY
23
RC: 0jo-xvbd-m9y4
Page 1 of 3

To cast your ballot, you must take this record to the separate scanning station and scan it.

	CHOICE	ORDER	
President and Vice President	BROOK PHILLIPS	3	DEM
Senator	CAJ KLEMENTS	1	DEM
House of Representative District 6	NITIN STEVENS	5	DEM
Secretary of State	VIMAL ORIOL	22	DEM
Railroad Comissioner	KELEMEN ANGIOLI	2	DEM
State Senator	SALLIE UTKIN	4	DEM
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Appeals Court Judge	FEDOT OKONKWO	7	DEM
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Sample County Chief Librarian	KENANIAH ARMSTRONG	2	DEM
Community College Director	ABRIEL BENTON	1	DEM
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	RANK 3 (THREE)		

END OF PAGE

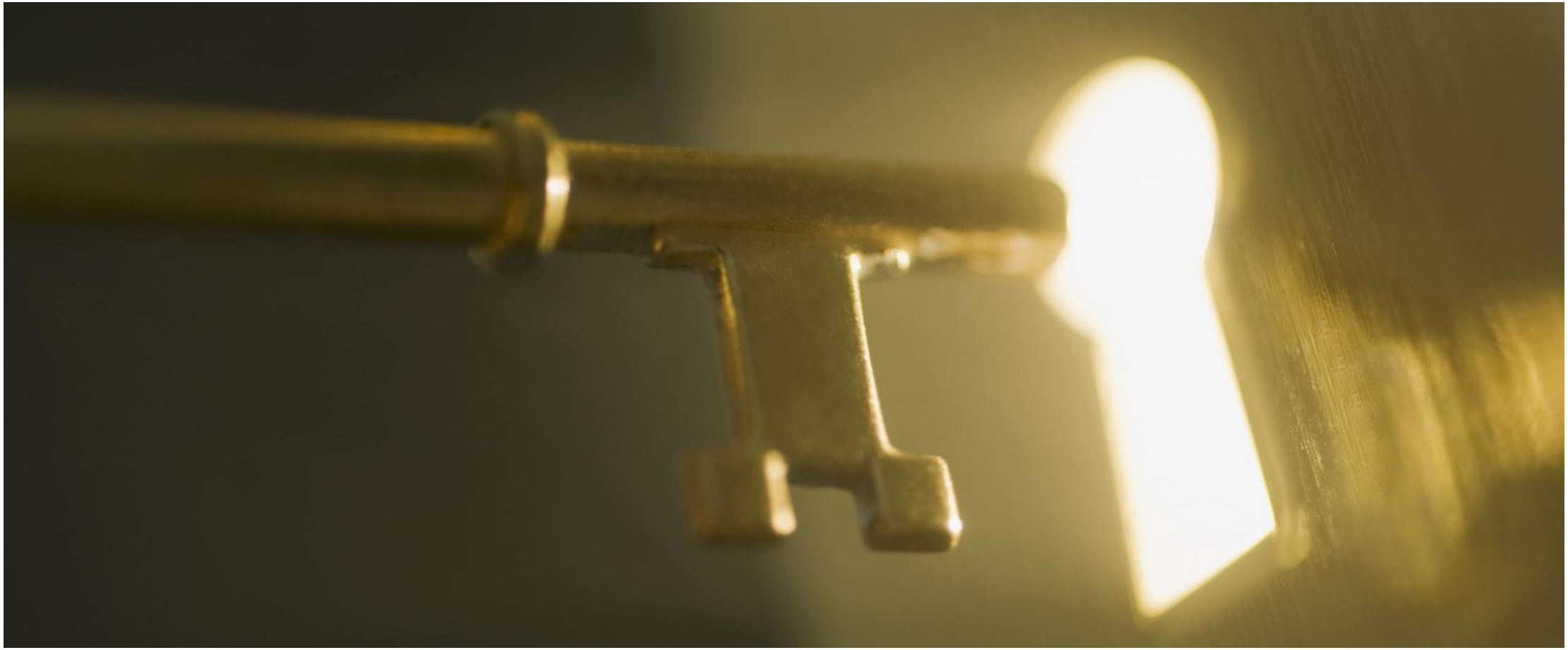
Harp Enterprises

Security And Service Are Paramount

54 YEARS SERVING THE COMMONWEALTH OF KENTUCKY

Harp ENTERPRISES, INC.
ELECTION SERVICES

SECURITY IS OUR PRIORITY



Secure Configurations

KIOSK MODE

All Harp production units are stand-alone for each database build during production

No internet connection while utilizing Hart software

CANNOT be accessed remotely by Hart or anyone else

Users can only access authorized elements of the voting system

Users cannot access the operating system

Users may not install other programs or files

Secure Configurations

PROOFING/TESTING

Three (3) Rounds of proofing checking office titles, candidates, vote for, etc.

Production team tests each database before it is locked down including audio files

Accuracy tests are produced as well as test decks for use on every voting machine

All election media (v-drives) are hand-delivered to each county clerk's office by Harp reps

Field Technicians perform logic/accuracy tests on the voting system

Field Technicians scan pre-marked ballots to ensure accuracy and transparency

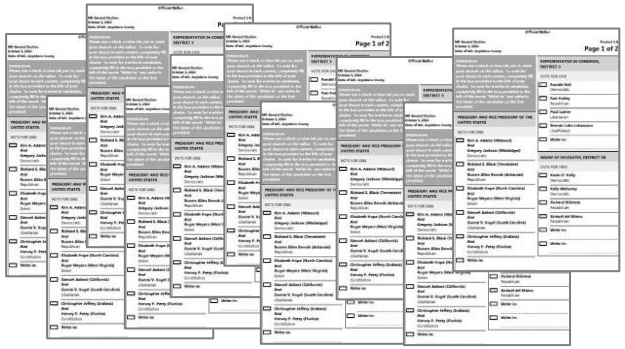
CUSTOMER SERVICE IS PRIORITY #1

BALLOT PICK-UP AND LAYOUT	DATABASE PRODUCTION	AUDIO FILE PRODUCTION	PROOFREADING
BALLOT PRINTING	VOTING MACHINE SETTING	PRECINCT ELECTION OFFICER'S TRAINING	ELECTION DAY SUPPORT

***ALL SERVICES ORIGINATE FROM OUR HEADQUARTERS IN LEXINGTON KENTUCKY**

Voting Process

Provide Ballot to Voter

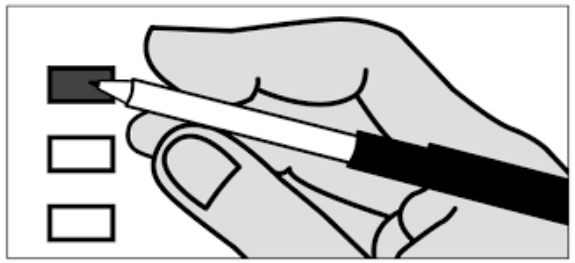


Pre-print Ballots before Election

OR

Verity Print on-demand Ballot printing for each voter as they arrive

Voter marks the Ballot



Mark ballot by hand

OR

Choice of **Verity Touch Writer** or **Verity Duo**. Full accessibility features for voters with disabilities to vote independently.

Voter scans the Ballot

Verity Scan
Ballot selections are captured electronically in two secure, redundant memory locations.

The physical paper ballots are held in a secure ballot box for recounts or post-election audits