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TEST REPORT
FOR
EXAMINATION OF BALLOT PRINTING SYSTEM
KNOWINK, LLC PollPrint 3.4 Ballot Printing Station
of the
ELECTRONIC POLL BOOK (ePollBook)
KNOWINK, LLC PollPad 3.4
to
STATE OF NEW MEXICO REQUIREMENTS

Document Number: TR-01-02-KNO-3.4-NM-01

Version: 00

Date: 04/27/2023

Approved by:

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REVISIONS

Revision	Description	Date
00	Initial Release	04/27/2023

SECTION I: INTRODUCTION

Pro V&V performed an examination effort on the KNOWiNK PollPrint 3.4, which is incorporated within the PollPad 3.4 ePollbook (ePB). The PollPrint 3.4 was configured as it will be used in the State of New Mexico. The PollPrint 3.4 is a baseline system for this testing

This Test Report documents the procedures followed, the results obtained, and the conclusions drawn from that examination.

SECTION I.1 References

The documents listed below were utilized in the development of the Test Report.

- Pro V&V, Inc. Baseline Test Cases
- New Mexico Election Code
- Ballot Printing System Requirements (No Date)

SECTION I.2 Terms and Abbreviations

This subsection lists terms and abbreviations relevant to this examination:

"EAC" – Election Assistance Commission

"ePB" – Electronic Poll Book Solution or ePollBook

"COTS" – Commercial Off-The-Shelf

"TCI" – Test Case Identifier

"TDP" – Technical Data Package

SECTION I.3 Background

KNOWiNK submitted the PollPrint 3.4 Ballot Printing System, a baseline version, for technical testing to State of New Mexico requirements.

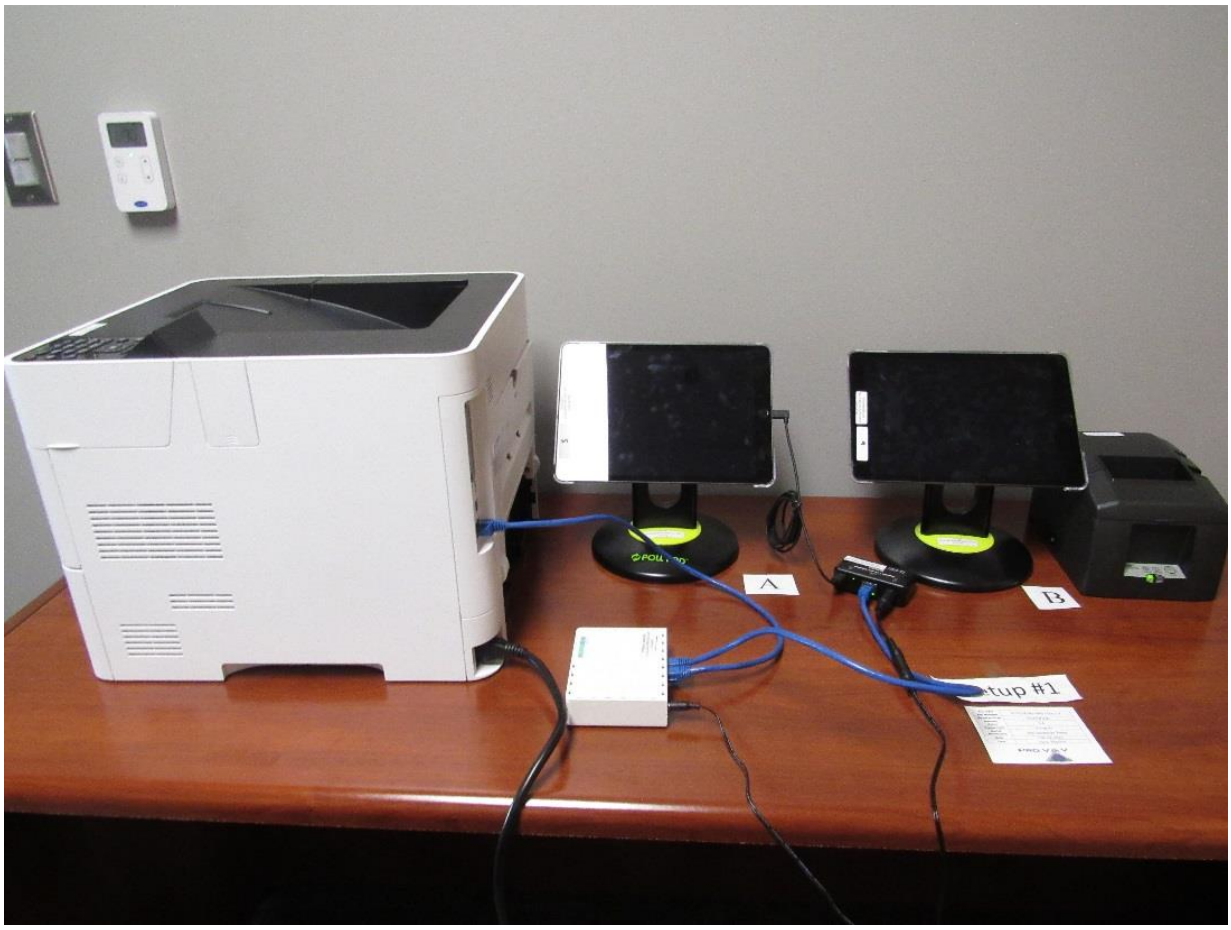
All testing was conducted under the guidance of Pro V&V by personnel verified by Pro V&V to be qualified to perform the testing. The examination was performed at the Pro V&V, Inc. test facility located in Cummings Research Park, Huntsville, Alabama.

SECTION I.4 Scope

The scope of testing was focused on the ability of the PollPrint 3.4 to meet the requirements set forth by the State of New Mexico.

SECTION II: SYSTEM IDENTIFICATION

This section contains detailed descriptions of the submitted ballot printing solution including: PollPad ePollBooks for configuration testing. Items tested during the evaluation (including all software, hardware, and peripherals, both proprietary and COTS), and any test support equipment or materials necessary for test performance.



Photograph 1: PollPad 3.4 - Testing Setup 1

A; iPad GEN 9 (V62L447367), Stand ([PS-17])
Kyocera Ecosys Printer (11U2600622)

B: iPad GEN 7 (F9FDG3NAMDG1), Stand ([PS15]),
TSP 650 II Bluetooth Printer (2517412030600587)

SECTION II.1 Software

The software listed in Table 2.1 was used during the examination of the ballot printing system. Table 2-1 provides the component name, software/firmware version and a MD5 Hash, if calculated, during the examination.

Table 2-1 Software

Component Name	Version	Unique Identifier (MD5 Hash Value)
PollPad	3.4	4283d47eb35b70fa1f9ac1750fab42ff

SECTION II.1 Hardware

The tables below provide hardware component name, description, model number, and the serial number for the units that were examined.

Table 2-2 Hardware

Component Name	Model Number	Operating System	Serial Number(s)	Description
PollPad 3.4	iPad GEN 9	iOS 16.4.1	V62L447367	ePB Tablet
PollPad 3.4	iPad GEN 7	iOS 16.4.1	F9FDG3NAMDG1	ePB Tablet

SECTION II.3 Peripherals

Table 2-3 provides the information for the peripheral components used during the examination.

Table 2-3 Peripherals

Part Name	Model Number	Serial Number(s)	Description
PollPad Stand	N/A	[PS-15] [PS-17]	ePB Stand
Kyocera Ecosys Printer	P3150dn	11U2600622	Ballot Printer
Mikrotik Router with Power Supply	213/r3	D15A0F227FF1	Ballot Printer Connection
Redpark Gigabit Ethernet Adapter Set	L6-NETAC	[PAS-001]	Ballot Printer Connection
Star Bluetooth Printer	TSP 650 II	2517412030600587	Receipt and Report Printer

SECTION II.4 Test Support Equipment/Materials

The test materials listed in Table 2-4 were used during the examination.

Table 2-4 Test Support Equipment/Materials

Component Name	Quantity	Description
8.5x11 Ballot Stock	10	Ballot Paper
Thermal Paper Rolls	1	Receipt and Report Paper
Stylus	1	Voter Interface

SECTION II.5 Technical Data Package

All relevant manufacturer-provided documentation that was provided during the examination is listed in Table 2-5.

Table 2-5 Documentation

Document Name	Document Number	Version
Accessibility		
Accessibility Review Test Report	1.1	11/19/2019
Accessibility Features	---	---
Electronic Poll Book System Accessibility Review Test Report	1.0	9/25/2020
Hardware		
System Hardware Specifications	---	---
Policies		
Incident Management Process, Methodology, Procedures, and Escalation Process	---	---
Information Security Policy	1.1	2/17/2017
PollPrint		
PollPrint Ballot Station	---	---
PollPrint	---	---
Security		
Bluetooth Security	---	---
iOS Security iOS 12	---	Sept 2018
Peer-to-Peer Security Features	---	---
Platform Security Information	---	---
Current Security Issue Backlog – Poll Pad and ePulse	---	---
Security Solution	---	---
Software Design		
Communication Protocol	---	---
Fail Safe and Emergency Backup	---	---
Software Design and Specifications	---	---
System Functionality Description	---	---
System Architecture	---	---
Storage and Maintenance		
System Maintenance Procedures	---	---

Table 2-5 Documentation

Document Name	Document Number	Version
Testing - Third Party Test Reports		
Third Party Security Validation	---	---
Remote Penetration Test	1001.1	6/8/2020
KNOWiNK DHS Security Report	---	7/17/2020
Electronic Poll Book System Security and Telecommunications Test Report	1.1	11/19/2019
Electronic Poll Book System Source Code Review Test Report	1.1	11/19/2019
System Test and Verification Specifications	1.1	6/26/2017
Testing		
Quality Assurance Program	1.1	4/16/2019
Training		
Personnel Deployment and Training Requirements	---	---

SECTION III: TEST PROCESS AND RESULTS

SECTION III.1 General Information

The examination of the ballot printing solution was performed by Pro V&V, Inc. If applicable, previous test results utilized as a basis for this test campaign are detailed below.

Table 3-1 Previous Test Results

Document Name	Version	Issue Date
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SECTION III.2 Test Approach

The Ballot Printing Station was configured as they would be for normal field use. KNOWiNK provided materials and support as needed to aid in the testing process.

SECTION III.3 Test Process and Results

Testing was accomplished by reviewing the system under test to the requirements in the New Mexico Technical Testing Matrix. Standardized Pro V&V ePB test cases were used as a baseline with New Mexico specific testing where necessary. A consolidation of the test cases and the results obtained is presented in Table 3-2.

Table 3-3 Consolidated Testing Results
New Mexico Election Code, Ballot Printing System Requirements (No Date)

#	Requirement/Discussion Text	Compliant ✓ = YES X = NO
1-9-20	Systems designed to print ballots at polling locations shall provide the general capabilities for ballot preparation and shall be capable of:	
A	enabling the automatic formatting of ballots in accordance with the requirements of the Election Code, as amended from time to time, for offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district;	✓
B	supporting the maximum number of potentially active voting positions;	✓
C	generating ballots for a primary election that segregate the choices in partisan contests by party affiliation;	✓
D	generating ballots that contain identifying codes or marks uniquely associated with each format;	✓
E	ensuring that voting response fields properly align with the specific candidate names or questions printed on the ballot;	✓
F	generating ballots that can be tabulated by all certified voting systems in the state;	✓
G	generating a ballot for an individual voter based on voter registration data provided by state or county;	✓
H	functionality in absentee, early and election day voting environments;	✓
I	providing absentee ballot tracking ability;	✓
J	uniform allocation of space and fonts used for each office, candidate and question such that the voter perceives no active voting position to be preferred to any other;	✓
K	rendering the ballot in any of the written languages required by the federal Voting Rights	✓
L	conformity with optical scan vote tabulator vendor specifications for type of paper stock, weight, size and shape; size and location of voting positions used to record votes; folding; bleed through; and ink for printing; and	✓
M	interfacing with the statewide voter file for the exchange of data.	✓
1-9-21	Systems designed to print ballots at polling locations shall provide the security capabilities for ballot preparation and shall be capable of:	
A	providing a full audit trail of individual voter activity;	✓
B	providing full ballot production audit logs for all activity, including absentee voting by mail, in-person absentee voting, early voting, provisional voting and spoiling ballots;	✓
C	creation and preservation of an audit trail of every ballot issued, including during a period of interrupted communication in the event of loss of network connectivity;	✓
D	suitable security passwords at user, administrator and management levels;	✓
E	preventing the modification of ballot formatting by polling place users; and	✓
F	retaining full functionality and capability of printing ballots during a period of interrupted communication in the event of loss of network connectivity.	✓

Table 3-3 Consolidated Testing Results
New Mexico Election Code, Ballot Printing System Requirements (No Date) *(continued)*

#	Requirement/Discussion Text	Compliant ✓ = YES X = NO
1-9-22	Systems designed to print ballots at polling locations shall:	
A	provide hardware requirements that:	
1	shall be networkable and scalable for multi-user environments;	✓
2	function without degradation in capabilities after transit to and from the place of use;	✓
3	function without degradation in capabilities after storage between elections;	✓
4	function in the natural environment, including variations in temperature, humidity and atmospheric pressure;	✓
5	function in an induced environment, including proper and improper operation and handling of the system and its components during the election process;	✓
6	contain prominent instructions as to any special requirements;	✓
7	have no restrictions on space allowed for installation, except that the arrangement of the system shall not impede the performance of duties by election workers, the orderly flow of voters through the polling place or the ability of voters to vote in private; and	✓
8	operate with the electrical supply ordinarily found in polling place, nominal one hundred twenty volts alternating current, sixty hertz, single phase;	✓
B	provide software requirements that shall:	
1	be capable of exporting voter data and voter activity status data to state and county voter registration systems;	✓
2	be capable of generating all required absentee and early voting signature rosters in a state-approved format;	✓
3	generate daily and to-date activity reports based on user-defined criteria; and	✓
4	have both single transaction and batch transaction absentee production capability; and	✓
C	be capable of being operated by computer users familiar with a graphical user interface.	✓

SECTION IV: CONCLUSION

Based on the regression testing performed and the results obtained, no further testing is warranted. The ballot printing solution identified in this test report meets the requirements set forth by the State of New Mexico.

Additionally, it should be noted that PollPrint does not generate ballots. PollPrint prints ballot images as provided by the jurisdiction.

New Mexico Election Code
Ballot Printing System Requirements

#	Requirement		Comment
1-9-20	Systems designed to print ballots at polling locations shall provide the general capabilities for ballot preparation and shall be capable of:		
A		enabling the automatic formatting of ballots in accordance with the requirements of the Election Code, as amended from time to time, for offices, candidates and questions qualified to be placed on the ballot for each political subdivision and election district;	Poll Print prints ballot artwork as provided by the jurisdiction.
B		supporting the maximum number of potentially active voting positions;	Poll Print prints ballot artwork as provided by the jurisdiction.
C		generating ballots for a primary election that segregate the choices in partisan contests by party affiliation;	Poll Print can print ballot artwork as provided by the jurisdiction by party based on either the voter's registration or selection on Election day.

D		generating ballots that contain identifying codes or marks uniquely associated with each format;	Poll Print prints ballot artwork for each voter's assigned voting jurisdiction as provided by the jurisdiction.
E		ensuring that voting response fields properly align with the specific candidate names or questions printed on the ballot;	Poll Print prints ballot artwork as provided by the jurisdiction.
F		generating ballots that can be tabulated by all certified voting systems in the state;	Poll Print prints ballot artwork as provided by the jurisdiction.
G		generating a ballot for an individual voter based on voter registration data provided by state or county;	Poll Print prints ballot artwork for each voter's assigned voting jurisdiction as provided by the jurisdiction.
H		functionality in absentee, early and election day voting environments;	Poll Print can print different ballots for early voting, absentee, and election day as provided by the jurisdiction.
I		providing absentee ballot tracking ability;	Poll Print can print different ballot types including Election Day, Early Voting, Absentee etc. as provided by the jurisdiction.
J		uniform allocation of space and fonts used for each office, candidate and question such that the voter perceives no active voting position to be preferred to any other;	Poll Print prints ballot artwork as provided by the jurisdiction.
K		rendering the ballot in any of the written languages required by the federal Voting Rights	Poll Print prints ballot artwork in multiple languages as provided by the jurisdiction.
L		conformity with optical scan vote tabulator vendor specifications for type of paper stock, weight, size and	Poll Print prints ballot artwork as provided by the jurisdiction on paper the jurisdiction provides as required by the voting system.

		shape; size and location of voting positions used to record votes; folding; bleed through; and ink for printing; and	
M		interfacing with the statewide voter file for the exchange of data.	Poll Print accepts CSV ballot style, jurisdiction, and party data in CSV format to map ballot data to voter registration data as well as PDF ballot artwork files that can be imported to Poll Print.
1-9-21	Systems designed to print ballots at polling locations shall provide the security capabilities for ballot preparation and shall be capable of:		
A		providing a full audit trail of individual voter activity;	All ballot printing activities are logged and accessible on the system at all times.
B		providing full ballot production audit logs for all activity, including absentee voting by mail, in-person absentee voting, early voting, provisional voting and spoiling ballots;	All ballot printing activities are logged and accessible on the system at all times.
C		creation and preservation of an audit trail of every ballot issued, including during a period of interrupted communication in the event of loss of network connectivity;	All ballot printing activities are logged and accessible on the system at all times.

D		suitable security passwords at user, administrator and management levels;	Poll Pad includes password
E		preventing the modification of ballot formatting by polling place users; and	Ballot artwork cannot be modified at any point in the Poll Pad system.
F		retaining full functionality and capability of printing ballots during a period of interrupted communication in the event of loss of network connectivity.	Ballots can be printed with or without network connectivity at all times.
1-9-22	Systems designed to print ballots at polling locations shall:		
A	provide hardware requirements that:		
1		shall be networkable and scalable for multi-user environments;	Poll Pad and Poll Print are capable of being used in thousands of locations by multiple users concurrently.
2		function without degradation in capabilities after transit to and from the place of use;	Provided Poll Pad and Poll Print are transported in approved case and storage solutions, the system functions normally after being transported to polling places.
3		function without degradation in capabilities after storage between elections;	Poll Pad functions without degradation between elections provided proper storing procedures are followed.
4		function in the natural environment, including variations in temperature, humidity and atmospheric pressure;	Poll Pad and Poll print comply with this requirement.
5		function in an induced environment, including proper and improper	Poll Pad and Poll print comply with this requirement.

		operation and handling of the system and its components during the election process;	
6		contain prominent instructions as to any special requirements;	Poll Pad and Poll Print come with detailed user instructions for operation.
7		have no restrictions on space allowed for installation, except that the arrangement of the system shall not impede the performance of duties by election workers, the orderly flow of voters through the polling place or the ability of voters to vote in private; and	Poll Pad and Poll print comply with this requirement.
8		operate with the electrical supply ordinarily found in polling place, nominal one hundred twenty volts alternating current, sixty hertz, single phase;	Poll Pad and Poll print comply with this requirement.
B	provide software requirements that shall:		
1		be capable of exporting voter data and voter activity status data to state and county voter registration systems;	Data can be exported in common formats such as CSV imports and exports as required by the state and county voter registration systems.
2		be capable of generating all required absentee and early voting signature rosters in a state-approved format;	Signature rosters can be generated in PDF format for export after the election in ePulse.
3		generate daily and to-date activity reports based on user-defined criteria; and	Reports can be generated in Velocity Reports area of ePulse with several pre-configured report templates that can be customized to meet the needs of the jurisdiction.

4		have both single transaction and batch transaction absentee production capability; and	Ballots can be printed individually for each voter or in batch.
C	be capable of being operated by computer users familiar with a graphical user interface.		Poll Pad and Poll Print are operated on the Apple iPad GUI.