

THE BIG CHEAT

How Our Elections Are Being Stolen Using Computer Software

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INTRODUCTION

Mail-in paper ballots cast by voters are being fed into ES&S and Dominion tabulators on election days. For an example, we'll use 100 ballots. Of the 100 recorded by those tabulators, a certain percentage is categorized as "Blank Ballots". This can range from 0.5% up to over 10%. We'll use 5% here. The electronic images of the ballots, generated by the tabulators, are then sent to the county Clerk. There is the "brains" of the ES&S or Dominion system. It is commonly called the "EMS" which stands for Election Management System. We have found patented software then takes those 5% Blank Ballots out of the original 100 in our example, thus five, and votes the five ballots for any candidate or race the corrupt person wishes. Our information is from the reports of the computerized voting systems at the county level. We have found this in multiple states already. The manuals of each company also show that software is part of this scheme. Such software has no business whatsoever, being in computerized voting systems. It makes them all uncertifiable. A ballot fed into a tabulator should either be fully accepted or entirely rejected; not placed into a secret file awaiting "adjustment" by some unknown person. Just one person with access could vote thousands of "Blank Ballots". We also found that this software is in the largest counties of various states, but not in the medium or smaller counties.

In Maryland, President Trump won the race in 2020 and the evidence is within the report below. Some of the software being used can perform its job but then leave no trace. We also show how Priscilla Zuckerberg is tied to this scheme in Exhibits Y and X.

In Maryland during the 2020 General Election over 98K 100% Blank Ballots were cast. Did 98K voters go out and cast a 100% blank ballot? What can be proven 100% is that in the 2020 General Election over 98K Maryland voters had their votes changed/alterd/adjudicated to blank. Their right to vote was taken entirely away from them. Furthermore, the candidates on the wrong side lost all those votes. Our elections are rigged big time.

Peter Bernegger
peter@electionwatch.info
www.electionwatch.info

March 17, 2023

RUNBECK BALLOT DUPLICATION SOFTWARE

The current contract between Runbeck and the Maryland Board of Elections contains “Ballot Duplication Software”. A screenshot of this contract was obtained directly from the State of Maryland website at the following location: <https://dgs.maryland.gov/Documents/comm/printing/001B8400214.PDF>

BLANKET PURCHASE ORDER			
STATE OF MARYLAND			
***** STATE OF MARYLAND *****			
BPO NO: 001B8400214	PRINT DATE: 07/31/20	PAGE: 03	
<u>LINE #</u>	<u>STATE ITEM ID</u>	<u>U/M</u>	<u>UNIT COST</u>
0002	60071-PBG2AP	EA	46,500.0000
STAR SYSTEM ATTACHMENT FOR ANY CRT BASE -PBG2AP, ADDRESS LABEL PRINTING SOFTWARE W/A209 PRINTER (H/S)			
THIS CONTRACT WILL ALSO REQUIRE BALLOT DUPLICATION SOFTWARE (LICENSE AND MAINTENANCE SERVICES THROUGHOUT THE TERM OF THE CONTRACT.)			
THE BALLOT DUPLICATION SOFTWARE ASSISTS THE LOCAL BOARDS WITH DUPLICATING ABSENTEE BALLOTS DURING THE CANVASSING PERIOD (PRINTING).			
THIS WILL BE 100% BILL BACK TO THE LOCAL BOARDS, SO THE COUNTIES/LOCAL BOARDS OF ELECTION WILL ACTUALLY BE PAYING FOR THE TOTAL COST OF THIS LINE ITEM.			
THIS FEATURE WOULD ONLY BE USED BY SOME COUNTIES FOR SOME ELECTIONS- FOR EXAMPLE LARGER COUNTIES FOR HIGH TURN OUT ELECTIONS. FOR LOW TURN OUT ELECTIONS COUNTIES CAN HANDLE DUPLICATION ON THEIR OWN.			
0003	57890-000SBE	EA	28,000.0000
BALLOTS ELECTION			
NOVUS ANNUAL LICENSING AND MAINTENANCE STARING IN YR 2 FOR EACH OF THE FIVE (5) COUNTIES IF ELECTED @ \$14,000.00 EA			
_____ END OF ITEM LIST _____			
***** LAST PAGE *****			

Figure 1: Blanket Purchase Order

A full copy of the document has been attached as EXHIBIT 1.

There are several key observations that must be made that are very clear in this contract/purchase order. They are as follows:

1. "THE BALLOT DUPLICATION SOFTWARE ASSISTS THE LOCAL BOARDS WITH DUPLICATING ABSENTEE BALLOTS DURING THE CANVASSING PERIOD (PRINTING)."
2. "THIS FEATURE WOULD ONLY BE USED BY SOME COUNTIES FOR SOME ELECTIONS- FOR EXAMPLE LARGER COUNTIES FOR HIGH TURN OUT ELECTIONS.

FOR LOW TURN OUT ELECTIONS COUNTIES CAN HANDLE DUPLICATION ON THEIR OWN."

To understand what this Runbeck Ballot Duplication Software does there are two sources of information that were examined. The first source was the Runbeck Ballot Duplication Software Patent on file with the US Patent Number US 2019/0311030 A. Attached to this document as EXHIBIT 2.

Below is a screenshot of what Runbeck Ballot Duplication Software was purposefully designed and intended to do as extracted from sheet 3 of the patent application.

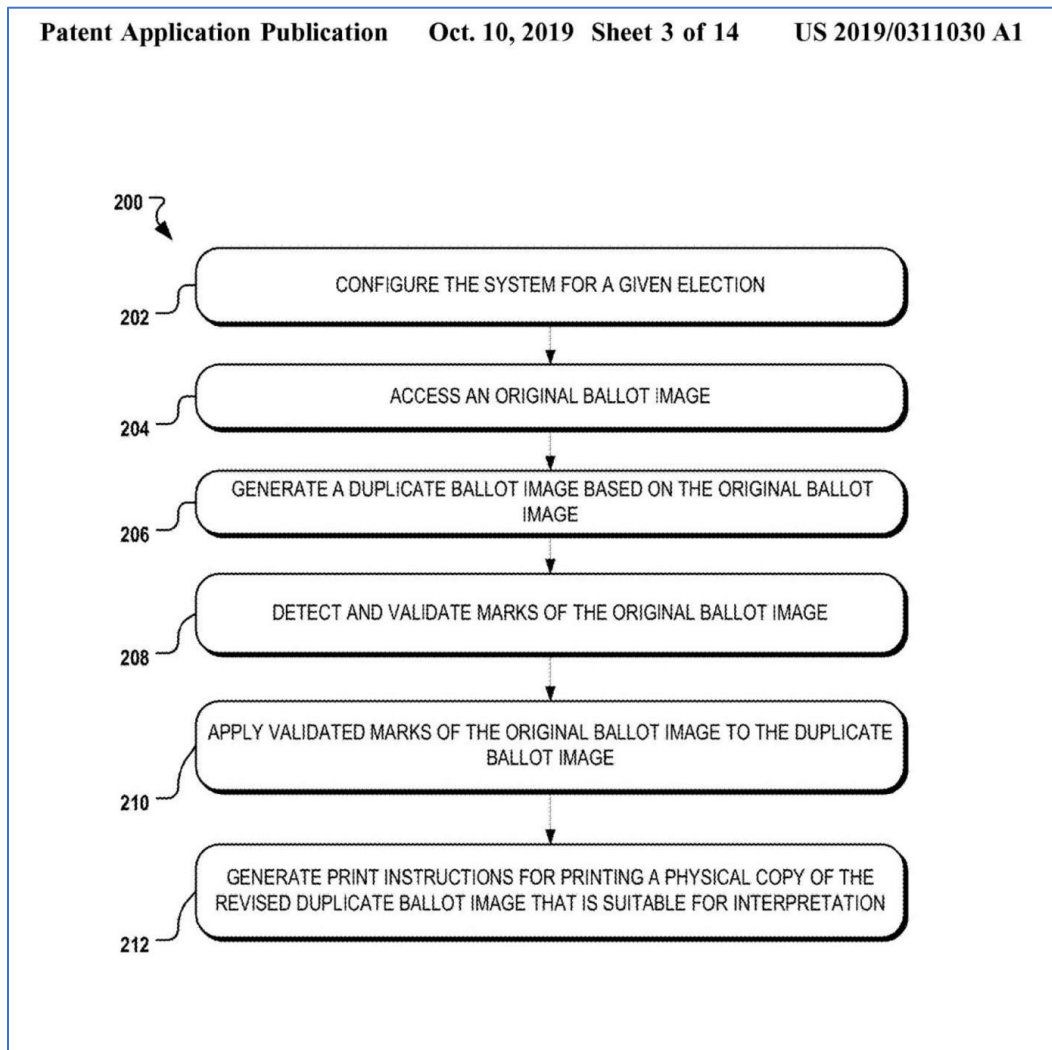


Figure 2: Screenshot Runbeck Patent Publication

According to the patent application, the Ballot Duplication Software and Hardware are specifically designed to function on computers that are not only connected to the internet but critically rely upon this internet connectivity to function. See the image below that explains how the software is deployed to Amazon Web Services and how it is configured to connect to other systems via API calls.

This is a significant breach of critical elections infrastructure and a violation of the EAC guidelines for election security as well as CISA and DHS election security protocols.

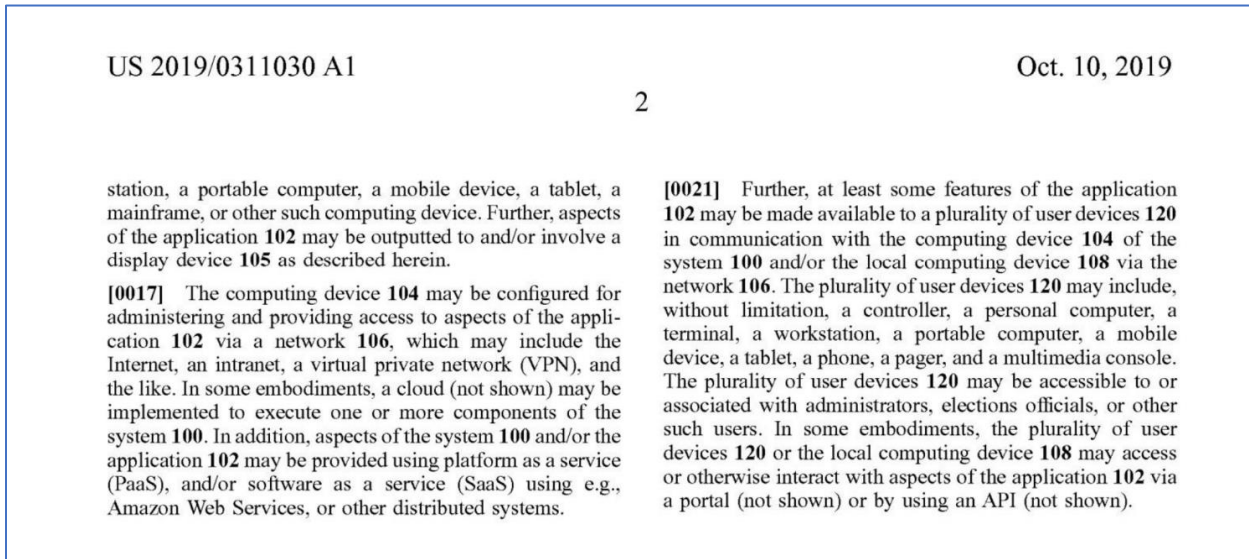


Figure 3: Software deployed on AWS using API calls to connect to other systems

The second source was the Runbeck Company website: <https://runbeck.net/election-services/ballot-duplication-software/novus/> Below is a screenshot of the product description.

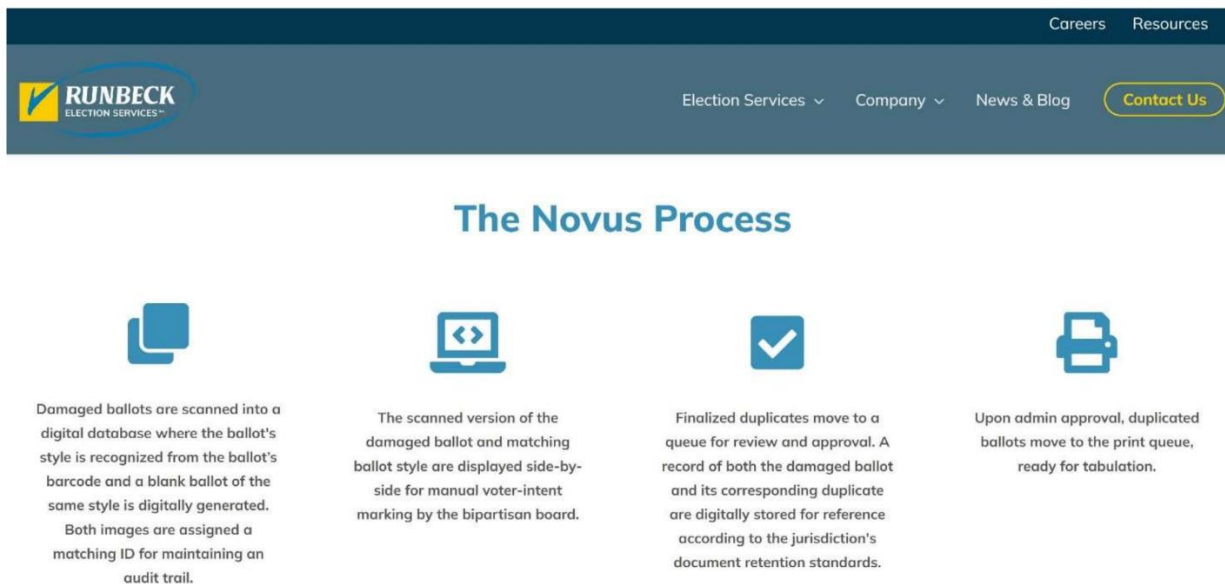


Figure 4: Runbeck Product Description

Based entirely on the information provided by Runbeck Systems, the United States Patent and Trademark office and the State of Maryland the following can clearly be observed:

1. The State of Maryland entered a contract to purchase Runbeck Ballot Duplication Software for \$46,500.
2. The State of Maryland's stated purpose of this software purchase was to duplicate absentee/vote-by-mail ballots and then print the new "corrected ballots" so they could be cast and counted in the elections.
3. The State of Maryland however, intended to limit the use of this software to only the most populous counties in Maryland and would not be made available to the smaller counties as they were "capable of doing this on their own".
4. When examining the data contained in the EL45A Reports for all Maryland Counties an extremely disturbing pattern becomes apparent to any reasonably prudent person. The more populous counties that did have access to this "Ballot Duplication Software" also had massive numbers of "BLANK BALLOTS – CAST".
5. The pattern of "BLANK BALLOTS – CAST" occurring is not seen in the "Low Turn Out Election Counties" that the State of Maryland refers to in the contract for the Runbeck Ballot Duplication Software.
6. The patterns observed in the data contained in the EL45A also show massive numbers of mail-in ballots that do not appear to be genuine and indicate the presence of widespread election and voter fraud, at a scale that would significantly impact the outcome of elections.
7. The Runbeck Ballot Duplication software is not certified for use in Maryland elections.
8. The Runbeck Ballot Duplication Software is being utilized on computers that are connected to the internet.
9. There does not appear to be any audit trail of the Mail in Ballots that are being duplicated by Runbeck Ballot Duplication Software.
10. DNI Responsibilities: President Obama signed Executive Order on National Critical Infrastructure on 6 January 2017, stating in Section 1. Cybersecurity of Federal Networks, "The Executive Branch operates its information technology (IT) on behalf of the American people. The President will hold heads of executive departments and agencies (agency heads) accountable for managing cybersecurity risk to their enterprises. In addition, because risk management decisions made by agency heads can affect the risk to the executive branch as a whole, and to national security, it is also the policy of the United States to manage cybersecurity risk as an executive branch enterprise." President Obama's EO further stated, effective immediately, each agency head shall use The Framework for Improving Critical Infrastructure Cybersecurity (the Framework) developed by the National Institute of Standards and Technology." Support to Critical Infrastructure at Greatest Risk. The Secretary of Homeland Security, in

coordination with the Secretary of Defense, the Attorney General, the Director of National Intelligence, the Director of the Federal Bureau of Investigation, the heads of appropriate sector-specific agencies, as defined in Presidential Policy Directive 21 of February 12, 2013 (Critical Infrastructure Security and Resilience) (sector-specific agencies), and all other appropriate agency heads, as identified by the Secretary of Homeland Security, shall: (i) identify authorities and capabilities that agencies could employ to support the cybersecurity efforts of critical infrastructure entities identified pursuant to section 9 of Executive Order 13636 of February 12, 2013 (Improving Critical Infrastructure Cybersecurity), to be at greatest risk of attacks that could reasonably result in catastrophic regional or national effects on public health or safety economic security, or national security (section 9 entities); This is a national security imperative. In July 2018, President Trump strengthened President Obama's Executive Order to include requirements to ensure US election systems, processes, and its people were not manipulated by foreign meddling, either through electronic or systemic manipulation, social media, or physical changes made in hardware, software, or supporting systems. The 2018 Executive Order. Accordingly, I hereby order: 6 Section 1. (a) Not later than 45 days after the conclusion of a United States election, the Director of National Intelligence, in consultation with the heads of any other appropriate executive departments and agencies (agencies), shall conduct an assessment of any information indicating that a foreign government, or any person acting as an agent of or on behalf of a foreign government, has acted with the intent or purpose of interfering in that election. The assessment shall identify, to the maximum extent ascertainable, the nature of any foreign interference and any methods employed to execute it, the persons involved, and the foreign government or governments that authorized, directed, sponsored, or supported it. The Director of National Intelligence shall deliver this assessment and appropriate supporting information to the President, the Secretary of State, the Secretary of the Treasury, the Secretary of Defense, the Attorney General, and the Secretary of Homeland Security. This is a national security issue.

11. The use of this Runbeck Ballot Duplication software on computers that connect to the internet violates the EAC Guidelines that Maryland currently claims to adhere to.

BLANKET PURCHASE ORDER
STATE OF MARYLAND

EXHIBIT 1

***** STATE OF MARYLAND *****

BPO NO: 001B8400214

PRINT DATE: 07/31/20

PAGE: 01

SHIP TO:		
AS SPECIFIED ON INDIVIDUAL ORDERS		
VENDOR ID: RUNBECK ELECTION SERVICES INC 2404 W 14TH ST STE 110 TEMPE, AZ 85281 (512) 567-3831	REFER QUESTIONS TO: MILTON FERGUSON (410) 767-4612 ALEX.FERGUSON@MARYLAND.GOV	
ITB: D38R7400002	EXPR DATE: 12/31/20 POST DATE: 11/14/17	DISCOUNT TERMS: . NET 30 DAY CONTRACT AMOUNT: 4,372,500.00

TERMS:

ARTICLES HEREIN ARE EXEMPT FROM MARYLAND SALES AND USE TAXES BY EXEMPTION CERTIFICATE NUMBER 3000256-3 AND FROM FEDERAL EXCISE TAXES BY EXEMPTION NUMBER 52-73-0358K. IT IS THE VENDOR'S RESPONSIBILITY TO ADVISE COMMON CARRIERS THAT AGENCIES OF THE STATE OF MARYLAND ARE EXEMPT FROM TRANSPORTATION TAX.

STATE BOARD OF ELECTION AGENCY CONTRACT
 FOR
 BALLOT DUPLICATION

THIS IS AN AGENCY CONTRACT FOR STATE BOARD OF ELECTION (SBE) FOR BALLOT DUPLICATION FOR A THREE (3) YEARS WITH ONE (1) RENEWAL OPTION.

VENDOR NAME: RUNBECK ELECTION SERVICES INC
VENDOR CONTACT: JAMES SUVER
VENDOR NUMBER: 602-230-0510
VENDOR EMAIL: JSUVER@RUNBECK.NET

MODIFICATION # 1: ADDS THE PRINTING AND MAILING OF A MAIL-IN ABSENTEE BALLOTS APPLICATION TO ALL ACTIVE AND PENDING VOTERS WHO HAVE NOT REQUESTED A MAIL-IN BALLOT FOR THE ELECTION COVERED BY THIS CONTRACT, INCLUDING THE 2020 PRESIDENTIAL GENERAL ELECTION AND 2022 GUBERNATORIAL PRIMARY AND GENERAL ELECTIONS. THE PRINTING AND MAILING OF ABSENTEE BALLOT APPLICATION TO ALL ACTIVE AND PENDING VOTERS WHO HAVE NOT REQUESTED A MAIL-IN BALLOT FOR THE ELECTION COVERED BY THIS CONTRACT, INCLUDING THE 2020 PRESIDENTIAL GENERAL ELECTION AND 2022 GUBERNATORIAL PRIMARY AND GENERAL ELECTIONS. THE PRINTING AND MAILING

*** CONTINUED, NEXT PAGE ***

**BLANKET PURCHASE ORDER
STATE OF MARYLAND**

EXHIBIT 1

***** STATE OF MARYLAND *****

BPO NO: 001B8400214

PRINT DATE: 07/31/20

PAGE: 02

TERMS (cont'd):

OF ABSENTEE BALLOT APPLICATIONS WILL BE ADDED TO THIS CONTRACT BASED ON PRICING INTERVALS FOR AN INDEFINITE QUANTITY CONTRACT, AS WAS THE ORIGINAL CONTRACT TYPE. THESE ARE ADDITIONAL ITEMS TO BE INCLUDED UNDER THE OVERALL SCOPE OF WORK FOR ABSENTEE BALLOT SERVICES. EXHIBIT 1 TO THIS MODIFICATION OUTLINES THE ADDITIONAL SPECIFICATIONS TO INCLUDE THE ABSENTEE APPLICATION SERVICES. EXHIBIT 2 IS THE PRICING PROPOSAL FOR THIS MODIFICATION #1 UNDER THIS CONTRACT.

AGENCY CONTACT: ERIN PERRONE
AGENCY NUMBER: 410-269-2845
AGENCY EMAIL: ERIN.PERRONE@MARYLAND.GOV

THIS CONTRACT IS FOR BALLOT DUPLICATION PER RFP MMDGS31033950, 2.3 SCOPE OF WORK REQUIREMENTS

INVOICING:

RFP 3.4.1 ALL INVOICE SHALL BE SIGNED BY RUNBECK ELECTION SERVICES, INC. AND SUBMITTED TO THE SBE CONTRACT MONITOR.

PRODUCT/SERVICE ACCEPTABILITY SHALL BE AT THE SOLE DISCRETION OF STATE BOARD OF ELECTION (SBE). SBE SHALL BE THE SOLE JUDGE OF WHAT IS AN "APPROVED EQUAL". ANY PRODUCT/SERVICE DELIVERED AS A RESULT OF THIS AWARD WHICH DOES NOT MEET THE SPECIFICATIONS OR IS OTHERWISE FOUND TO BE DEFECTIVE, SHALL BE REJECTED AND RETURNED AT THE VENDOR'S EXPENSE FOR REPLACEMENT OR CREDIT.

THE DEPARTMENT OF GENERAL SERVICES "TERMS AND CONDITIONS" FOR COMMODITY CONTRACTS OVER \$25,000" AND ALL SPECIFICATIONS, TERMS AND CONDITIONS OF RFP SOLICITATION #D38R7400002/MDDGS31033950 INCORPORATED HEREIN BY REFERENCE.

**BLANKET PURCHASE ORDER
 STATE OF MARYLAND**

EXHIBIT 1

***** STATE OF MARYLAND *****

BPO NO: 001B8400214

PRINT DATE: 07/31/20

PAGE: 03

<u>LINE #</u>	<u>STATE ITEM ID</u>	<u>U/M</u>	<u>UNIT COST</u>
0002	60071-PBG2AP	EA	46,500.0000

STAR SYSTEM ATTACHMENT FOR ANY CRT BASE -PBG2AP, ADDRESS LABEL PRINTING SOFTWARE W/A209 PRINTER (H/S)

THIS CONTRACT WILL ALSO REQUIRE BALLOT DUPLICATION SOFTWARE (LICENSE AND MAINTENANCE SERVICES THROUGHOUT THE TERM OF THE CONTRACT.) THE BALLOT DUPLICATION SOFTWARE ASSISTS THE LOCAL BOARDS WITH DUPLICATING ABSENTEE BALLOTS DURING THE CANVASSING PERIOD (PRINTING). THIS WILL BE 100% BILL BACK TO THE LOCAL BOARDS, SO THE COUNTIES/LOCAL BOARDS OF ELECTION WILL ACTUALLY BE PAYING FOR THE TOTAL COST OF THIS LINE ITEM.

THIS FEATURE WOULD ONLY BE USED BY SOME COUNTIES FOR SOME ELECTIONS- FOR EXAMPLE LARGER COUNTIES FOR HIGH TURN OUT ELECTIONS. FOR LOW TURN OUT ELECTIONS COUNTIES CAN HANDLE DUPLICATION ON THEIR OWN.

0003	57890-000SBE	EA	28,000.0000
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BALLOTS ELECTION

NOVUS ANNUAL LICENSING AND MAINTENANCE STARING IN YR 2 FOR EACH OF THE FIVE (5) COUNTIES IF ELECTED @ \$14,000.00 EA

END OF ITEM LIST

***** LAST PAGE *****



US 20190311030A1

EXHIBIT 2

(19) **United States**
 (12) **Patent Application Publication** (10) **Pub. No.: US 2019/0311030 A1**
Runbeck et al. (43) **Pub. Date: Oct. 10, 2019**

(54) **BALLOT DUPLICATION SYSTEM AND METHODS THEREOF**

Publication Classification

(71) Applicant: **Runbeck Election Services Inc.,**
 Tempe, AZ (US)
 (72) Inventors: **Kevin Runbeck, Tempe, AZ (US);**
William O'Neill, Tempe, AZ (US);
Chris Schiffhauer, Tempe, AZ (US);
Sergei Nosov, Tempe, AZ (US);
Akasha Ramnarine, Tempe, AZ (US)

(51) **Int. Cl.**
G06F 17/24 (2006.01)
G07C 13/00 (2006.01)
G06F 17/21 (2006.01)
G06K 9/00 (2006.01)
 (52) **U.S. Cl.**
 CPC *G06F 17/248* (2013.01); *G07C 13/00*
 (2013.01); *G06K 2209/01* (2013.01); *G06K*
9/00449 (2013.01); *G06Q 2230/00* (2013.01);
G06F 17/212 (2013.01)

(21) Appl. No.: **16/377,016**

(57) **ABSTRACT**

(22) Filed: **Apr. 5, 2019**

A computer-implemented system for on-screen ballot duplication is disclosed, that may be deployed for generating a revised ballot that satisfies predetermined rules or thresholds for further processing.

Related U.S. Application Data

(60) Provisional application No. 62/653,012, filed on Apr. 5, 2018.

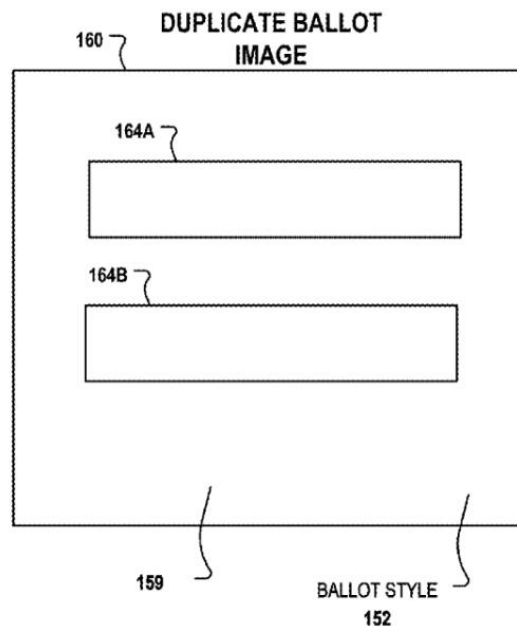
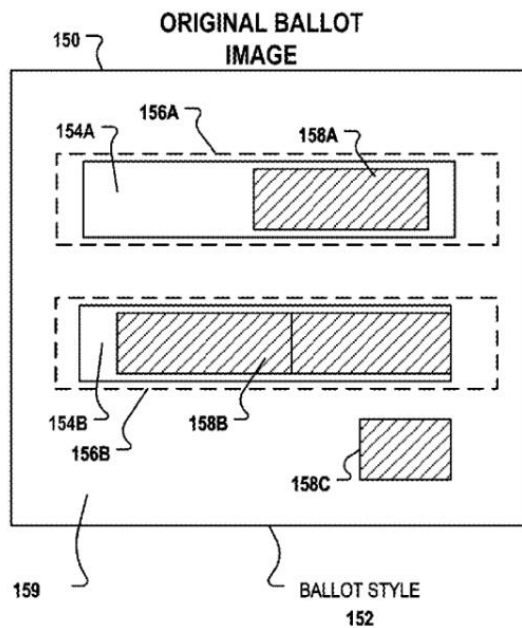


EXHIBIT 2

Patent Application Publication Oct. 10, 2019 Sheet 1 of 14 US 2019/0311030 A1

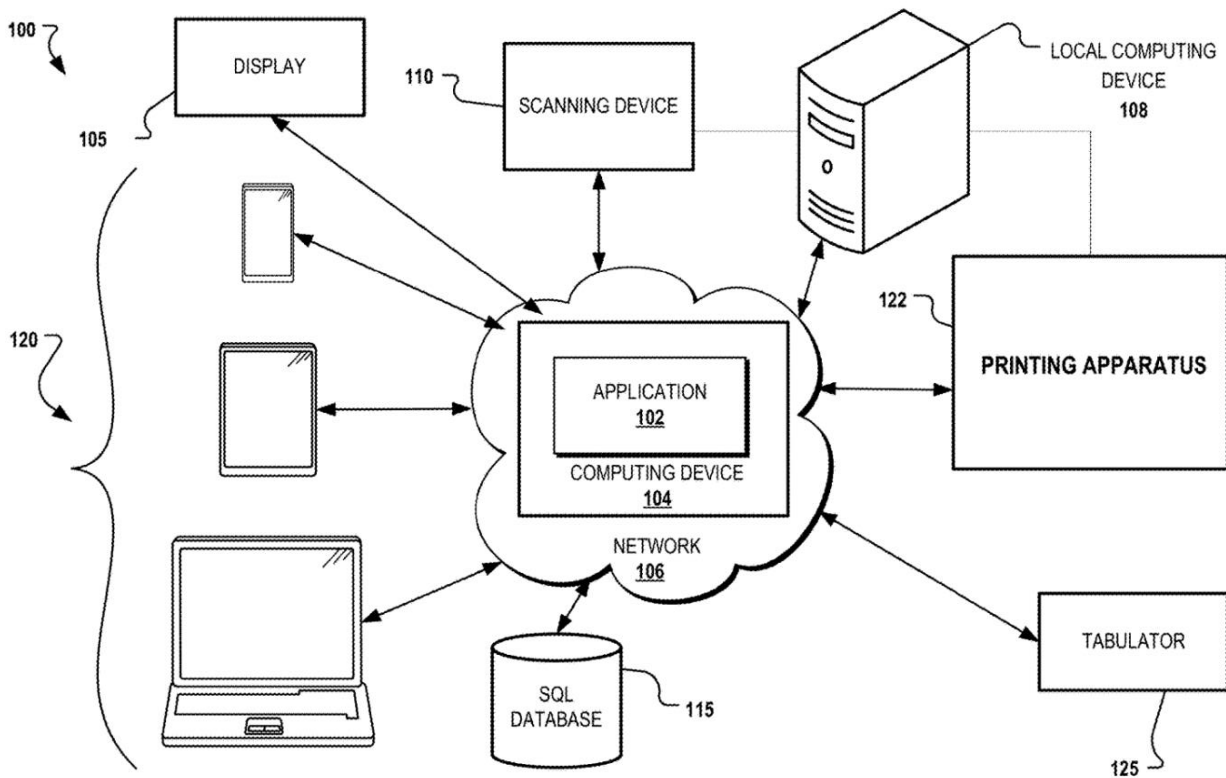


FIG. 1A

APPLICATION
102

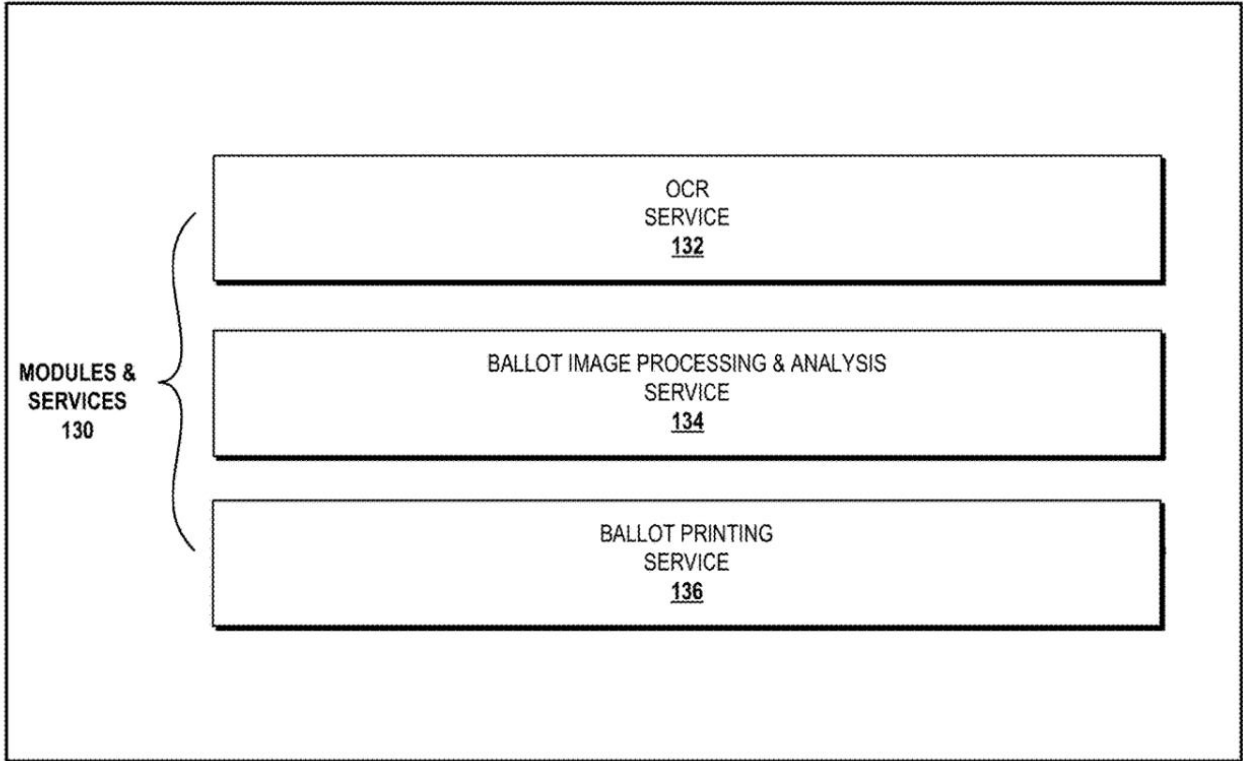
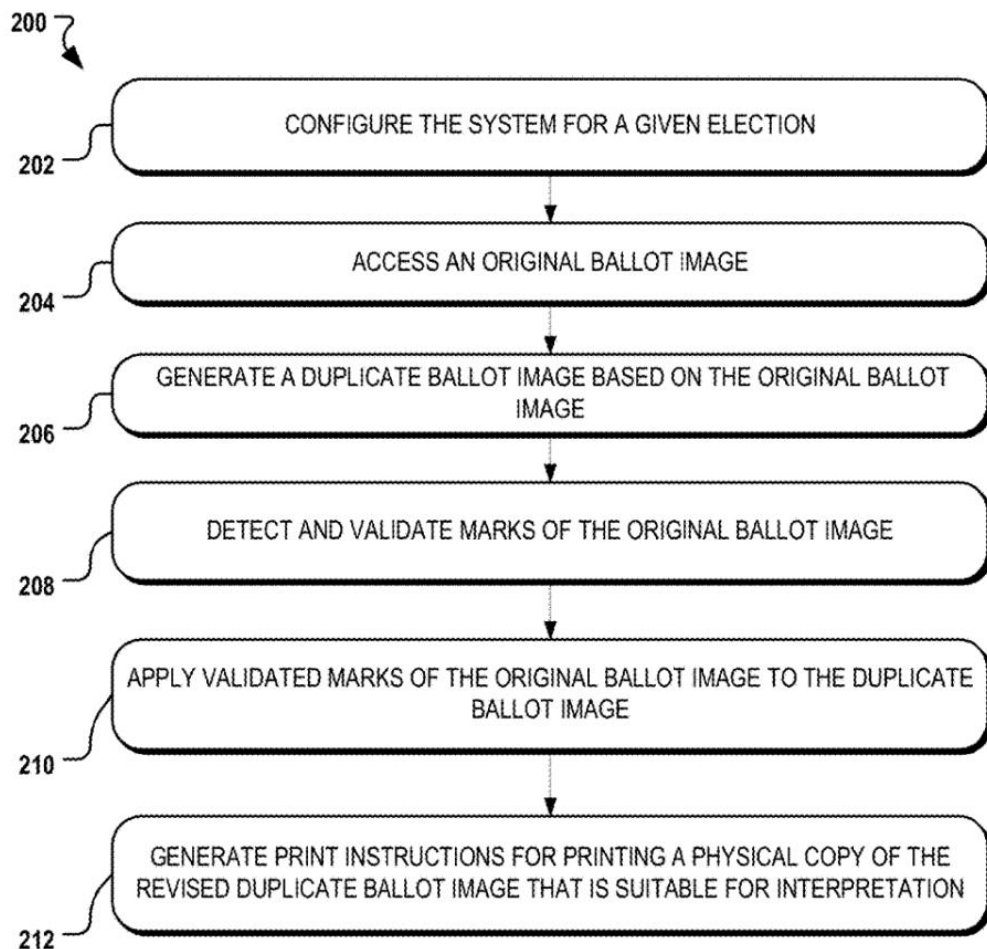


FIG. 1B



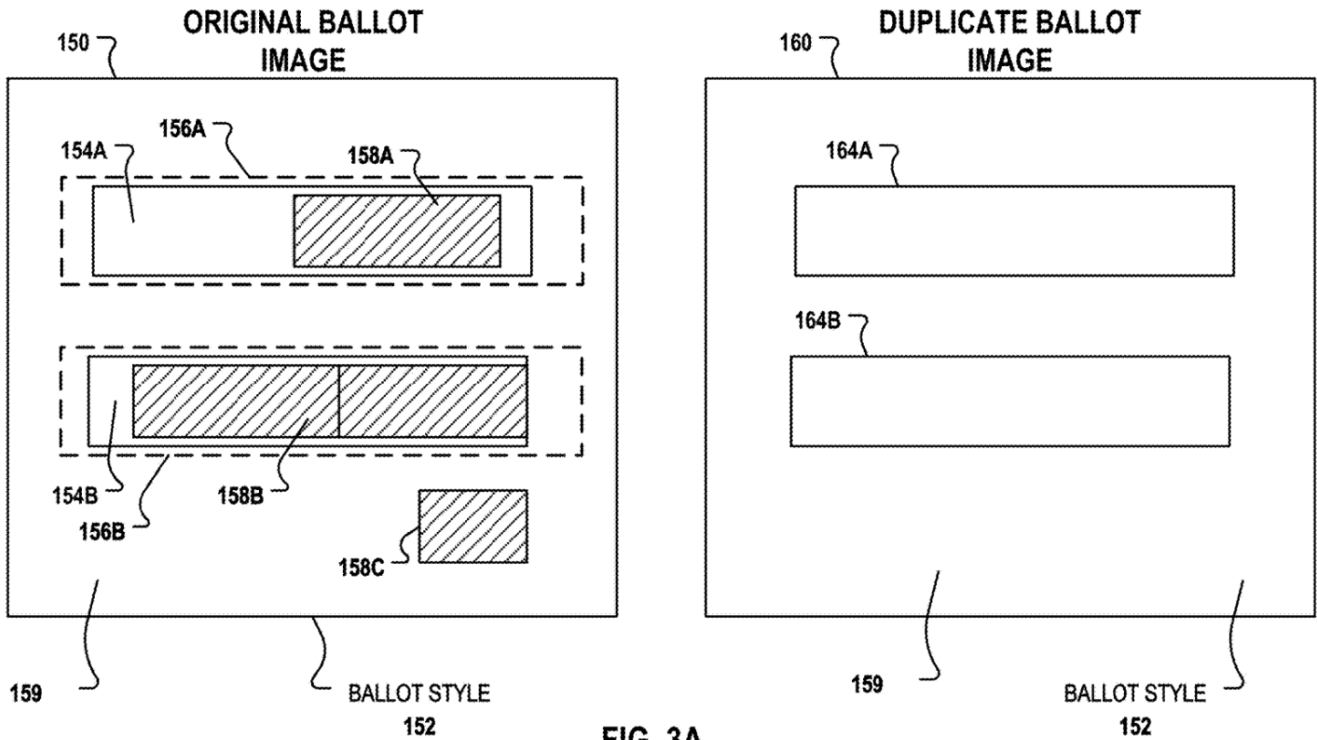


FIG. 3A

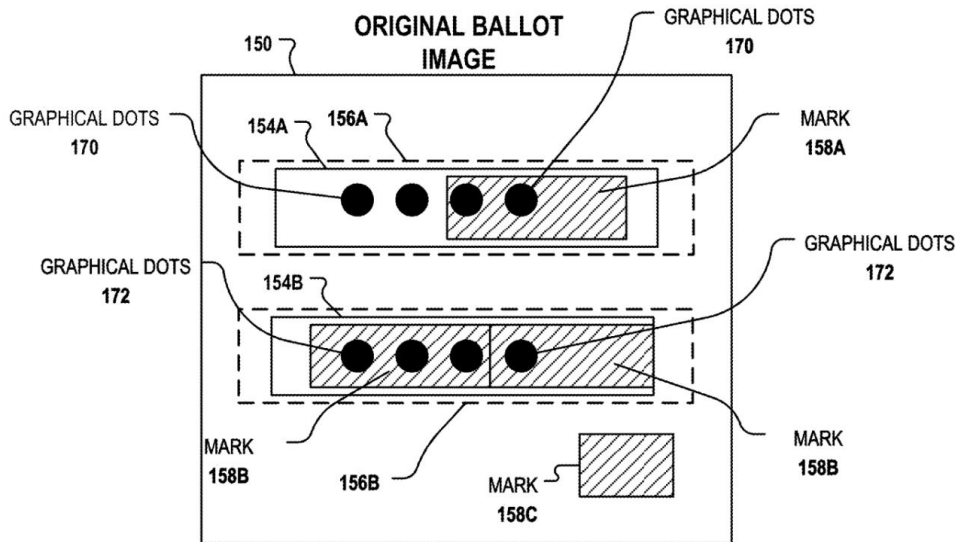


FIG. 3B

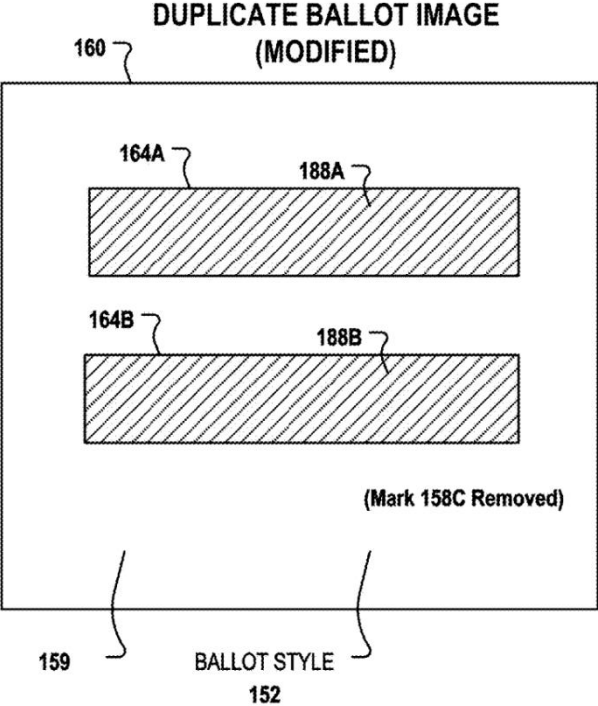
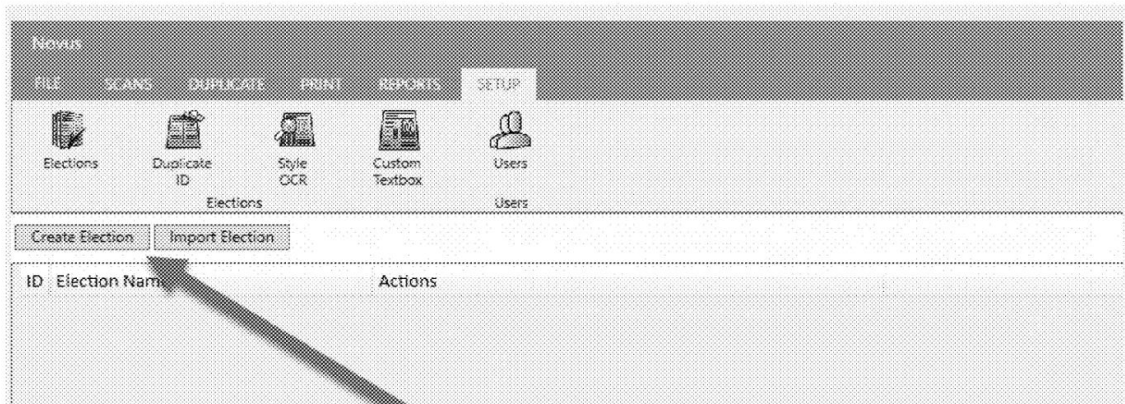


FIG. 3C

400 ↷



Generate an "Election" to process ballot images

FIG. 4A

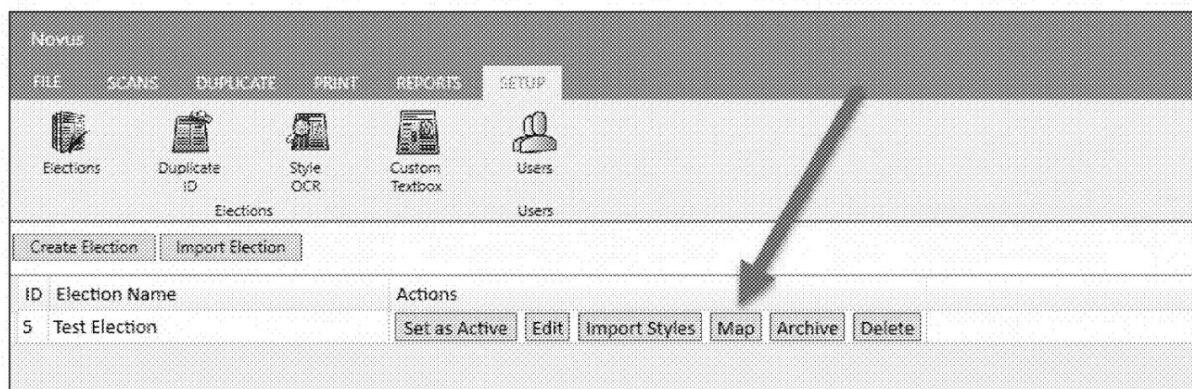
400 ↷



Configure/Import ballot styles

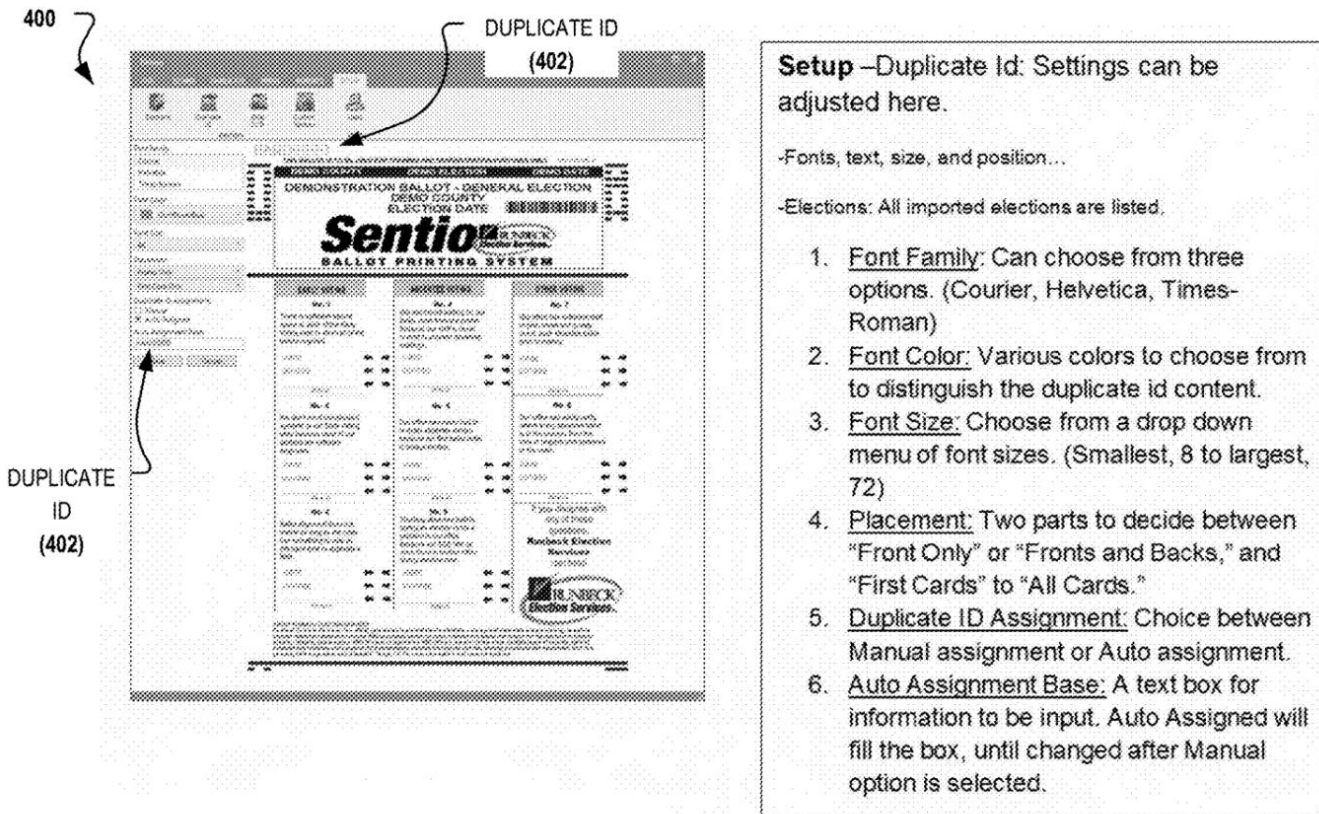
FIG. 4B

400 ↷



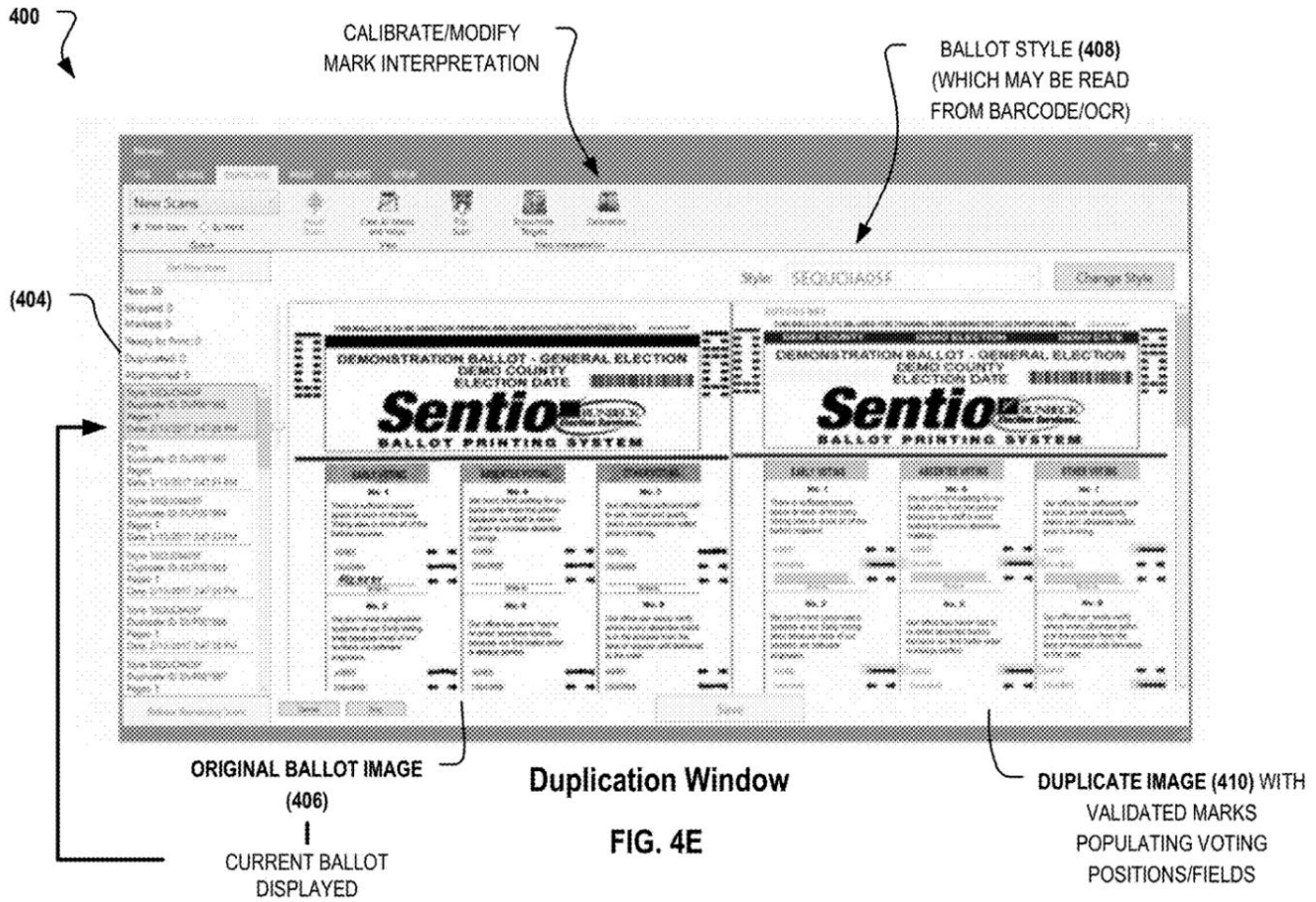
Map the Ballot/s

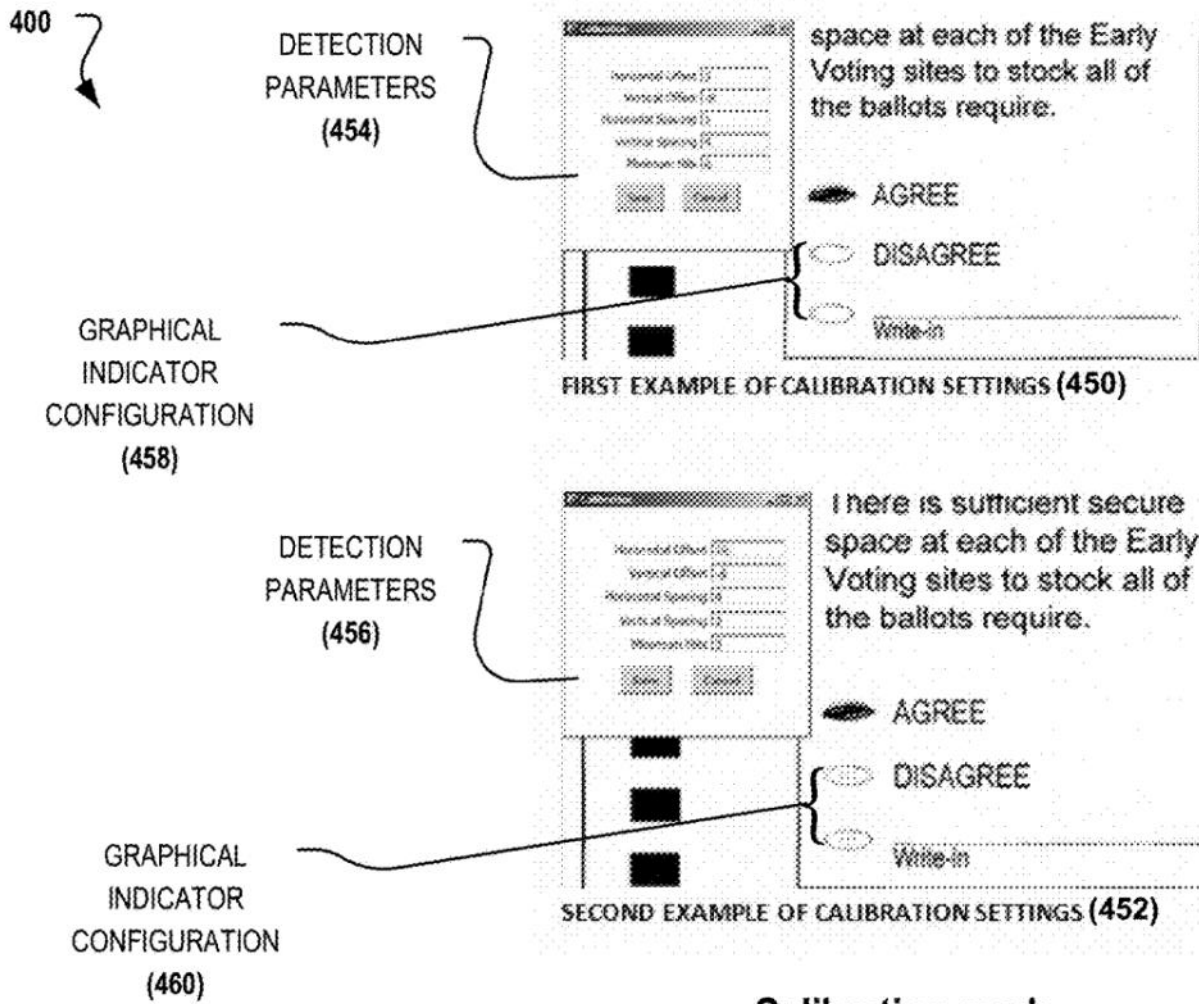
FIG. 4C



Configure the Duplicate ID

FIG. 4D





Calibrating mark interpretation

FIG. 4F

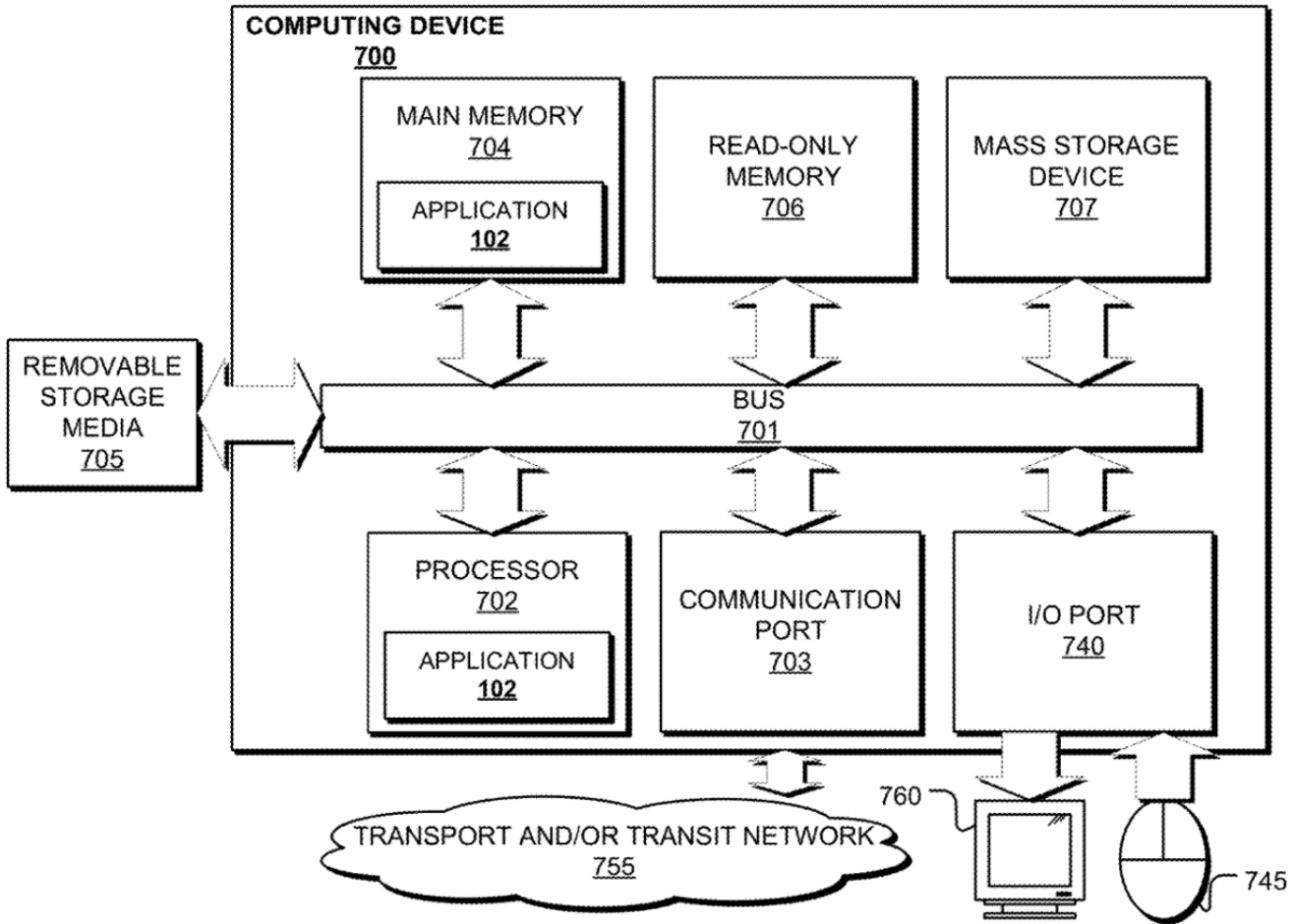


FIG. 5

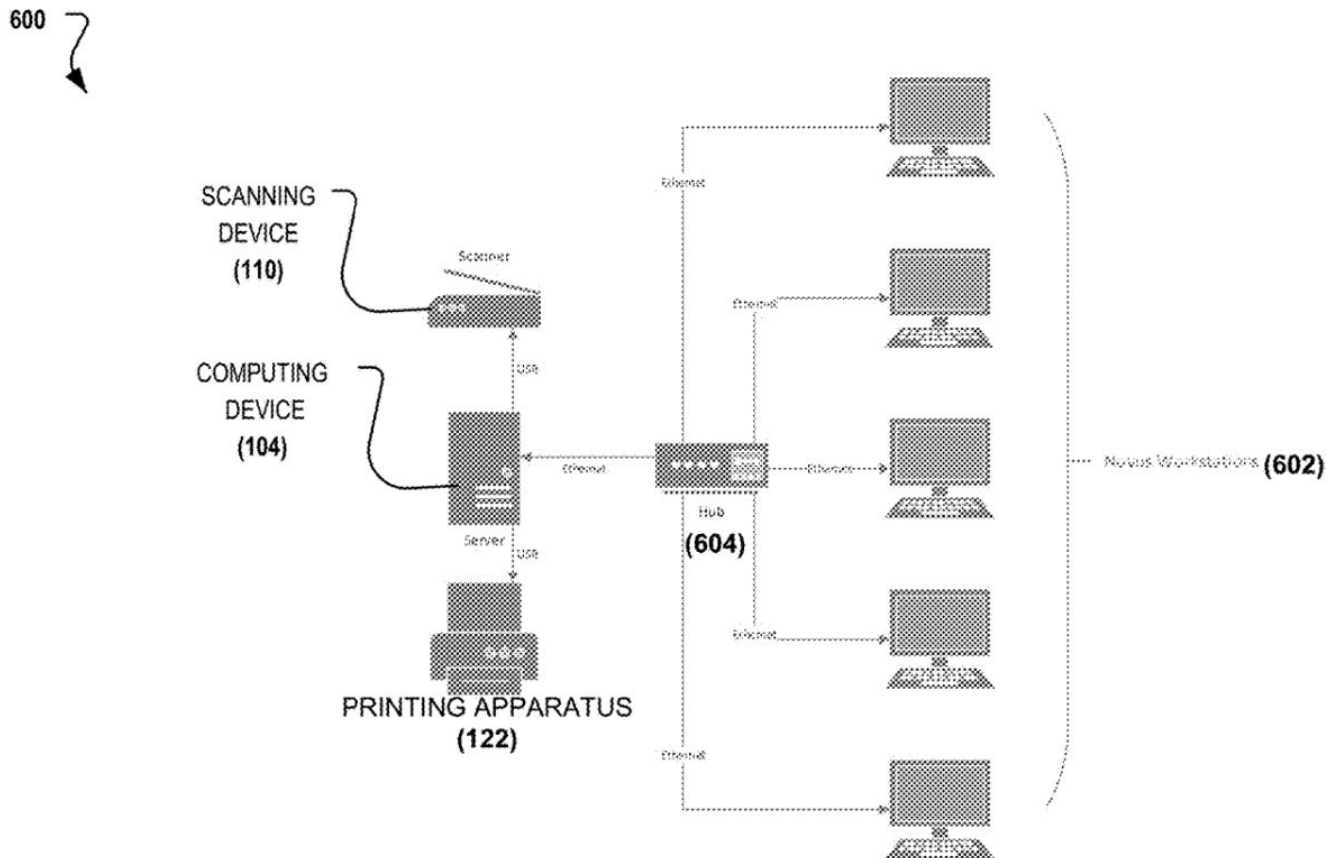


FIG. 6

BALLOT DUPLICATION SYSTEM AND METHODS THEREOF

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This is a U.S. non-provisional patent application that claims benefit to U.S. provisional patent application Ser. No. 62/653,012 filed on Apr. 5, 2018, which is incorporated by reference in its entirety.

FIELD

[0002] The present disclosure generally relates to a computer-implemented system for elections services; and in particular, relates to a computer-implemented system for ballot duplication.

BACKGROUND

[0003] During elections, processing of elections documents must be conducted in an efficient yet highly accurate manner. However, during elections, documents such as ballots may become damaged at the site of a polling location or through transfer of the documents by mail, or ballots may include markings that are inadvertently applied or incapable of being interpreted.

[0004] It is with these observations in mind, among others, that various aspects of the present disclosure were conceived and developed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The present patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

[0006] FIG. 1A is a network diagram illustrating possible components of an exemplary computer-implemented system for ballot duplication and processing.

[0007] FIG. 1B is an application stack illustrating possible modules and associated processes of an application deployed with the computer-implemented system of FIG. 1A for ballot duplication and otherwise revising ballots for further processing.

[0008] FIG. 2 is a simplified block diagram of a flow chart showing an exemplary process flow for on-screen ballot duplication and processing.

[0009] FIGS. 3A-3C are simplified block diagrams illustrating an original scanned ballot image, a duplicate ballot image, and a revised duplicate ballot image, respectively, as described herein.

[0010] FIGS. 4A-4F are application screenshots illustrating functionality associated with the computer-implemented system described herein.

[0011] FIG. 5 is a simplified block diagram showing an example of a computing system that may implement various services, systems, and methods discussed herein.

[0012] FIG. 6 is an image illustrating an exemplary network configuration for implementing the features discussed herein.

[0013] Corresponding reference characters indicate corresponding elements among the view of the drawings. The headings used in the figures do not limit the scope of the claims.

DETAILED DESCRIPTION

[0014] The present disclosure generally relates to a computer-implemented system including at least one computing device configured for managing aspects of election services; and more particularly, to a computer-implemented system for ballot duplication and/or preparation/revision of ballots so that ballots, which include incomplete/erroneous markings or are otherwise incapable of processing for whatever reason, can be tabulated or processed by an elections center. In some embodiments, an original marked ballot is scanned to generate an original ballot image, and a ballot style identifier may be accessed from the original ballot image. The original ballot image may then be used to generate a duplicate image which generally includes a graphical depiction of an empty ballot having the same ballot style as the original marked ballot, which may be displayed on-screen alongside the original ballot image for further processing. In particular, referencing data defined by the ballot style common to the duplicate image and the original ballot image, the system may be used to identify and interpret marks (e.g., selections by a voter) from the original marked ballot (reflected by physical ink markings applied along the original marked ballot). In some embodiments, the marks are highlighted, identified, and possibly confirmed as valid markings using a series of graphical indicators which may comprise dots or other indicators associated with areas of interest along the image of the original scanned ballot as defined by the ballot style. The valid markings may then be duplicated, applied to, or rendered along the duplicate image in a format that can be interpreted by a tabulator when a physical copy of the duplicate image is printed. The system may also identify erroneous markings along the original ballot image and omit the erroneous markings from the duplicate image.

[0015] In some embodiments, the ballots and ballot images may include a Duplicate Identifier (“ID”) that is applied to the original ballot image and also to the duplicate image. The orientation, position, and form of the Duplicate ID can be adjusted and modified to meet desired specifications for ballots specific to certain jurisdictions. In some embodiments, the marks and actions taken involving the marks may be viewed on-screen via one or more displays. Further, the duplicate image may be reviewed and further edited prior to printing. Further still, the computer-implemented system may be applied to generate print instructions for printing a physical ballot copy of the revised duplicate image for further processing and possible acceptance by an elections office. Referring to the drawings, one embodiment of a computer-implemented system is illustrated and generally indicated as **100** in FIGS. 1-6.

[0016] Referring to FIG. 1A, an exemplary computer-implemented system (hereinafter “system” and other times referred to herein and in the Drawings as “Novus”) **100** for implementing functionality associated with ballot duplication and preparation/revision for further processing, is shown. The system **100** may include and/or generally support functionality defined by one or more of an application **102**, which, when installed to or executed by a computing device **104**, configures the computing device **104** to process an original ballot image and generate a duplicate ballot image, and provide other functionality as described herein. The application **102** may be executed or accessed via one or more of the computing device **104**, which may include a server, controller, a personal computer, a terminal, a work-

station, a portable computer, a mobile device, a tablet, a mainframe, or other such computing device. Further, aspects of the application 102 may be outputted to and/or involve a display device 105 as described herein.

[0017] The computing device 104 may be configured for administering and providing access to aspects of the application 102 via a network 106, which may include the Internet, an intranet, a virtual private network (VPN), and the like. In some embodiments, a cloud (not shown) may be implemented to execute one or more components of the system 100. In addition, aspects of the system 100 and/or the application 102 may be provided using platform as a service (PaaS), and/or software as a service (SaaS) using e.g., Amazon Web Services, or other distributed systems.

[0018] As further shown, aspects of the application 102 may be accessible to a local computing device 108. The local computing device 108 may include a server workstation with at least one server, a controller, a personal computer, a terminal, a workstation, a portable computer, a mobile device, a tablet, a mainframe, or other such computing device. In some embodiments, the local computing device 108 may be associated with and may be generally located at a specific jurisdiction or elections center, such as a particular voting precinct that is responsible for e.g., generating, distributing, and managing ballots, and generating and transferring data about the ballots. In some embodiments, the local computing device 108 may form part of the overall system 100 as shown (e.g., where the local computing device 108 is deployed to the particular voting precinct). In other embodiments, the local computing device 108 may simply be any device executed by an end-user for accessing and utilizing aspects of the application 102, or otherwise receiving information outputted from the computing device 104 executing the application 102 and generated in response to information fed by the local computing device 108.

[0019] In some embodiments, the local computing device 108 may be in operable communication (by wired connection or wirelessly connected) with at least one of a scanning device 110. The scanning device 110 may be a high-speed scanner, configured to scan and process ballots efficiently in cooperation with the local computing device 108 and the computing device 104 as described herein. In one embodiment, the scanning device 110 may include, e.g., an ImageTrac Intelligent Production Scanner by IBM or other similar device. The scanning device 110 may be configured with high-volume scanning features such as multiple sort pockets, auto batching, pocket water falling, mixed document scanning, multi-feed detection, high capacity full page pockets, mechanical skew detection and correction, and other such features to accommodate the efficient scanning of large sets of ballot documents or other such documents associated with elections services. In some embodiments, the scanning device 110 may include any device equipped with a camera or other image capture technology and capable of generating image data or digital images from an elections document, such as a ballot.

[0020] In addition, the application 102 may have access to or be in operable communication with a SQL database 115. The SQL database 115 may store metadata associated with operations of the application 102, such as queries, and historical data. The SQL database 115 may further store and retrieve data requested by the application 102, and store information about users of the application 102.

[0021] Further, at least some features of the application 102 may be made available to a plurality of user devices 120 in communication with the computing device 104 of the system 100 and/or the local computing device 108 via the network 106. The plurality of user devices 120 may include, without limitation, a controller, a personal computer, a terminal, a workstation, a portable computer, a mobile device, a tablet, a phone, a pager, and a multimedia console. The plurality of user devices 120 may be accessible to or associated with administrators, elections officials, or other such users. In some embodiments, the plurality of user devices 120 or the local computing device 108 may access or otherwise interact with aspects of the application 102 via a portal (not shown) or by using an API (not shown).

[0022] Further still, the system 100 may include a printing apparatus 122 which may include at least a ballot printer. In some embodiments, the computing device 104 generates print instructions for the printing apparatus 122 to print duplicate ballots to replace original ballots that cannot be processed or tabulated as described herein. Aspects of the application 102 may be executed by the computing device 104, any number of processors or any number of computing devices (not shown) associated with the printing apparatus 122, so that the printing apparatus 122 may receive print instructions, access information from the application 102, or otherwise. In addition, the system 100 may include at least one tabulator 125 or other such device configured to interpret marks of a ballot printed from the printing apparatus 122 or otherwise accessed.

[0023] Referring to FIG. 1B, the application 102 may define a plurality of different modules and/or services 130 as shown, and other associated or processes. For example, the application 102 may define at least an OCR service 132 for analyzing data of a scanned ballot image to retrieve a ballot style or to interpret language along the scanned ballot image. The application 102 may further define a ballot image processing and analysis service 134 for managing mark interpretation and modification thereof associated with a ballot. The application 102 may further define a ballot printing service 136 for generating print instructions and managing the printing of a ballot (using a revised ballot image or otherwise), as further described herein.

[0024] In general, the system 100 is generally configured to generate a duplicate image of a scanned original ballot that can be printed and properly tabulated in the case where the original ballot cannot be tabulated for whatever reason. These features directly address the technical issue where an original physical ballot has marks applied to it that are not discernable or are otherwise incapable of being read by a tabulator or other device that is configured to interpret and process the ballot. Aspects of the system 100 may be implemented or accessed by devices equipped at the voting location. In some embodiments, for example, the local computing device 108 may involve check-in equipment comprising any number of devices suitable for receiving or accessing voter information and selections from a voter. A network connection or other communication channel may be established via the network 106 between the local computing device 108 and the computing device 104. In some embodiments, a router (not shown) may also be deployed to provide fail-over connections between the computing device 104 (and the application 102) and the local computing device 108.

[0025] Referring to FIG. 2 and the process flow 200, further details of the computing device 104, the application 102, and the system 100 shall now be described. When accessing or configured with aspects of the application 102, the computing device 104 provides a graphical user interface (GUI) 400 shown in FIGS. 4A-4F, which accommodates further configurations to the computing device 104 to prepare ballot processing for a particular election. This step may involve configuring certain parameters for ballots to be scanned via the GUI 400, and specifying one or more “styles” as discussed herein for processing each ballot. In particular, referring to block 202 of FIG. 2, an “Election” may be generated (FIG. 4A), which may be defined by one or more objects or files associated with the application 102. The Election may be assigned a name or other identifier, may be associated with a password, and may reference or define a particular ballot style or ballot template.

[0026] In some embodiments, the Election may include or be configured with one or more of a particular ballot style. Ballot styles may be imported or specially created for the Election, and may be associated with different or unique jurisdictions or party affiliations; e.g., a first county may utilize a first ballot style, and a second county may utilize a second ballot style. As such, an Election may utilize a plurality of ballot styles to accommodate different ballot formats for different jurisdictions or sub-jurisdictions. Ballot styles may define where certain fields or voting positions are located and aligned along each ballot of the Election. In other words, an exemplary ballot style may generally comprise a template that defines where the different voting positions and fields are organized along a given ballot that uses or relates to that exemplary ballot style.

[0027] In some embodiments, the computing device 104 is operable to import or access a ballot style (FIG. 4B), and map the voting positions and other fields of the ballot style (FIG. 4C). Mapping may include identifying specific (x, y) pixel regions, or a set of pixel values defining one or more areas of interest (for example, a first field 154A and second field 154B of FIG. 3A), that correspond with particular voting positions or fields defined by the ballot style so that when a ballot is scanned or a ballot image is accessed, the computing device 104 is capable of identifying and interpreting locations along the ballot image where the voting positions and fields of the ballot are defined. An area of interest may include a bubble, space, or any other area where a mark is typically applied to a ballot. For the Election, the system 100 may examine each ballot style template used and map the fields and/or voting positions defined by each style as well as identifying and flagging the front and back images for the ballots. Mapping can be reviewed and edited by an administrator as desired. For example, when creating the Election, a user or reviewer may be provided with a general base ballot style template, and the user may create a graphical text box to form customized fields or areas of interest positioned along a ballot style which may then reference the locations of voting positions and other fields.

[0028] During configuration of the Election, the computing device 104 is further configured to define and manage a Duplicate ID (shown as Duplicate ID 159 in FIG. 3A and shown as 402 in FIGS. 4D-4E). In some embodiments, the Duplicate ID is an identifier assigned to every scan of an original ballot that is accessed by the computing device 104 for on-screen duplication, and links an original ballot image with a corresponding duplicate image (each of the original

ballot image and the duplicate image later generated references the same Duplicate ID). The Duplicate ID can be adjusted in color, size, font, and placement, and an automatic Duplicate ID may be generated or a manual Duplicate ID can be created so desired. As described herein, the Duplicate ID may be assigned (in a file header, metadata, or otherwise referenced) to or visually rendered along an original ballot image of an original ballot that needs duplication as the ballot it is scanned, and the same Duplicate ID may be assigned (in a file header, metadata, or otherwise referenced) to or visually rendered along a duplicate ballot image to ensure the two ballot images (original ballot image and the duplicate image) are always “tied” together in the event of future review. Duplicate IDs can be used in coordination with local elections rules and regulations.

[0029] In some embodiments, the Duplicate ID may be rendered along the top left of a ballot image, but the Duplicate ID may be modified or moved to a different position along an image as desired. Further, the data of the Duplicate ID may be assigned manually or automatically. For example, each ballot may automatically be assigned a Duplicate ID with an auto-incrementing number, requiring no action by the reviewer, and the ID may be predicated with the Username and a number (i.e., DupBoard00001).

[0030] As indicated in FIG. 4F, mark interpretation may be calibrated or configured for the Election via the GUI 400 or otherwise. Mark interpretation generally involves graphical processing of the areas of interest defining voting positions and other fields of a scanned ballot image; and generally e.g., assists to determine if a voter has placed a mark in a proper field or voting position, and properly executed the mark according to predetermined rules such that the mark can later be established as a valid mark, as further described herein. For example, if the computing device 104 detects a mark in a voting position of an original ballot image, a mark may be placed and recorded in the same voting position along a corresponding duplicate ballot image, and this mark may be highlighted to notify the reviewer of a potential vote. Utilizing the GUI 400 shown in FIG. 4E, the reviewer can accept/leave the mark or identify the mark as a valid mark, or click on it to remove the mark.

[0031] In some embodiments, for mark detection and interpretation by the computing device 104, a user may customize one or more detection parameters (454 and 456 in FIG. 4F) which may define a graphical indicator configuration (458 and 460 in FIG. 4F) for analyzing the area of interest along a ballot image for potential valid voter marks, and the user may set rules for interpreting marks. More specifically for example, in some embodiments, a user may configure the Election to define a predetermined number of a plurality of graphical indicators that may be aligned in a predetermined position/pattern along areas of interest of a ballot image. The graphical indicators may comprise solid identifiable shapes such as dots that may be rendered along a scanned ballot image; and in particular, may be rendered along specific predefined pixel regions of a display such that the graphical indicators are viewable via the GUI 400 along portions of the image. In some embodiments, the graphical indicators may be defined along the areas of interest of the ballot image to identify required graphical areas where a voter’s mark must pass through on the original ballot image 150 to be automatically interpreted as a vote. For example, a predetermined plurality of graphical indicators may be defined along one or more areas of interest of a ballot style.

Then, a rule may be set by the user that a mark is not considered to be valid or otherwise needs to be reviewed where the mark fails to occupy or pass over each of the graphical indicators, as further described herein. The computing device **104** may be configured to apply the rules associated with the graphical indicators to suggest to a user engaging the GUI **400** to apply a mark in a field of a duplicate image (or not) by weighing the properties of the mark (position, size, and color) relative to the graphical indicators and configurations thereof.

[0032] The calibration of the plurality of indicators and/or mark interpretation can be adjusted when and as desired. In some embodiments, during processing, the computing device **104** identifies marks of a voter from the original ballot image, looking only in the areas of interest/voting positions, and adds marks on a corresponding duplicated ballot image automatically. In some embodiments, the graphical indicators may be spread out evenly within the areas of interest but keeping distance from adjacent voting position outlines (oval, square, arrow) because the dark area of the voting positions can be picked up as a mark. Different possible non-limiting configurations or parameters associated with the indicators for mark interpretation are further provided in Table 1.

TABLE 1

Horizontal Offset—The higher the number, the further the cluster of dots moves to the Right.
Vertical offset—The higher the negative number the Higher the cluster of dots are on this page.
Horizontal Spacing—Determines the spacing of the targets from each other from left to right
Vertical Spacing—Determines the spacing of targets from each other up and down.
Minimum Hits: A number from 0 to 6. This is the number of targets (red dots) that must be impacted by a mark for Novus to replicate on the duplicate. For Example: If the Minimum Hits is set to 3, then a dark mark only needs to intersect 3 of the red dots for Novus to suggest a vote on the Duplicate.

[0033] Referring to blocks **204** and **206** of FIG. 2, once the Election is sufficiently configured with e.g., the designated ballot style and the desired mark interpretation, etc., the computing device **104** may then begin accessing and duplicating individual original ballot images. Original ballot images may be accessed from pre-scanned image data remotely or via a storage device, or may be generated using the scanning device **110** and may be accessed by the computing device **104** in batches and stored in a folder specific to the Election created above. Further, each original ballot image may be placed into a queue (**404** in FIG. 4E), which may be accessed by a user as desired. One example of an original ballot image is original ballot image **406** selected from queue **406** and displayed along the GUI **400** in FIG. 4E. As indicated, this original ballot image **406** defines a ballot style **408**, which may be identified during OCR applied to the corresponding original physical ballot, or by a barcode reader. As further shown in FIG. 4E, a duplicate image **410** may be generated and displayed via the GUI **400** next to the original ballot image **406**. The duplicate image **410** may include the same ballot style **408** such that the format of fields and voting positions matches the fields and voting positions of the original ballot image **406**.

[0034] Further details regarding the image duplication of FIG. 4E are illustrated in FIGS. 3A and 3B. Referring to FIG. 3A, an original ballot image **150** may be accessed by the computing device **104** and displayed along the display

105. The original ballot image **150** may be a scanned image of an original, physical ballot (not shown) that is configured with a ballot style **152** that needs to be duplicated and/or edited for whatever reason in order for the votes of the original ballot to be properly processed or interpreted by a tabulator. In the example shown, the ballot style **152** defines a first field **154A** and a second field **154B**, such that the original ballot image **150** and the original ballot both include the first field **154A** and the second field **154B**. It should be appreciated that the ballot style **152** may define any number of fields associated with voting positions or other data points. In some embodiments, Optical Character Recognition (OCR) may be employed in order to ‘read’ the original ballots to determine the ballot style **152**. Fields are indicated in FIG. 4E as field “No. 1,” field “No. 2”, and so on, and are displayed identically along both of the original ballot image **406** and the duplicate image **408** because the images share the same ballot style **408**.

[0035] As shown in FIG. 3A and FIG. 3B, an area of interest **156A** and an area of interest **156B** may be mapped for the ballot style **152** by the computing device **104** and rendered along the display **105** over the original ballot image **150**. In this example, the area of interest **156A** may be associated with the first field **154A**, and the area of interest

156B may be associated with the second field **154B**. In some embodiments, the area of interest **156A** and the area of interest **156B** may define respective predetermined sets of pixel values or respective pixel regions along the display **105** defining specification locations where the computing device **104** has been configured, during mapping, to detect the first field **154A** and the second field **154B**, based on the format and layout of the ballot style **152**.

[0036] As further shown, the original ballot image **150** may include several marks **158**, designated mark **158A**, mark **158B**, and mark **158C**. The marks **158** may correspond to physical markings applied to the corresponding original ballot by a voter using a pen or other instrument that are scanned during creation of the original ballot image **150** from the corresponding original physical ballot (not shown). As further described herein, any of the marks **158** may be intended to apply a vote and may be sufficient for populating a voting position or field, may be illegible, illegible, or otherwise insufficient for interpretation by a tabulator. In some cases, one or more of the marks **158** may be inadvertently scanned or created by the voter.

[0037] In some embodiments, the original ballot image **150** may be assigned a Duplicate ID **159**. The Duplicate ID **159** may be rendered along the original ballot image **150**, or may be tracked or defined within metadata of a digital file storing the original ballot image **150**. The value of the Duplicate ID **159** and format may be customized as desired

to conform to local elections rules or regulations. The Duplicate ID 159 is unique to the original ballot scanned to create the original ballot image 150, and may be replicated to any duplicate ballot images based on the original ballot image 150.

[0038] Referring to block 206 of FIG. 2, FIG. 3A, and FIG. 4E, a duplicate ballot image 160 may be generated and also rendered side-by-side along the display 105 by the computing device 104. By referencing the ballot style 152, the computing device 104 is operable to generate the duplicate ballot image 160 to include the same layout of fields and voting positions as the original ballot image 150. Accordingly as indicated, the duplicate ballot image 160 may include a first field 164A corresponding to the first field 154A of the original ballot image 150, and the duplicate ballot image 160 may also include a second field 164B corresponding to the second field 154B of the original ballot image 150 in the same orientation, location, and format as the original ballot image 150. In some embodiments, the duplicate ballot image 160 can be formed to generally resemble a blank copy of the original ballot image 150; i.e., the first field 164A and the second field 164B of the duplicate ballot image 160 may be blank, empty, or unpopulated as shown, until the marks 158 of the original ballot image 150 can be analyzed and validated as further described herein.

[0039] Referring to blocks 208 and 210 of FIG. 2 and FIG. 3B, in some embodiments, the marks 158 of the original ballot image 150 may be analyzed using OCR or otherwise to determine the size, characteristics, and position of the marks 158 relative to the areas of interest 156A and 156B, in order to ascertain whether any of the marks 158 sufficiently cover a predetermined required amount of physical space along the first field 154A or the second field 154B, or otherwise satisfy predefined rules such that the mark 158 may be deemed to reflect a valid mark and vote for either field which may be interpreted by a tabulator or other vote tallying device. More specifically, each of the marks 158 may define respective sets of pixel values or pixel regions along the display 105. The mark 158A may define a first set of pixel values that overlaps or at least partially passes through the region of interest 156A, and the mark 158B may define a second set of pixel values that overlaps or at least partially passes through the region of interest 156B. In addition, the mark 158C may define a third set of pixel values that falls outside both of the areas of interest 156A and 156B. In the example shown, the mark 158C indicates a possible erroneous mark that may be omitted from the duplicate ballot image 160 to decrease the likelihood of an erroneous reading of a printed version of the duplicate ballot image 160 during tabulation. Leveraging OCR or other such functionality, the computing device 104 is operable to identify the marks 158 including any of the marks 158 such as the mark 158C that are outside any of the fields of the original ballot image 150, and those marks may be removed from the duplicate ballot image 160 so that a new ballot printed from the duplicate ballot image 160 does not contain any misplaced marks that may affect interpretation of the original ballot by a tabulator.

[0040] The mark 158A and the mark 158B may be further processed in view of a plurality of indicators 170 to determine whether either of these marks 158 are valid or should be modified in the duplicate ballot image 160 to accommodate accurate vote tallying. As previously described, in some

embodiments, a plurality of graphical indicators such as dots or other predetermined shapes may be pre-calibrated and defined for each of the areas of interest 156A and 156B, in any manner described in Table 1 above or otherwise. For example, as indicated in FIG. 4F, arrangement of the graphical indicators relative to the areas of interest may be defined using detection parameters 454 for a first example 450, and detection parameters 456 for a second sample 452. The detection parameters 454 may define a graphical indicator configuration 458 that renders graphical indicators along a left side of a field of interest (bubble shape for receiving a mark). Alternatively, the detection parameters 456 may define a graphical indicator configuration 458 that renders graphical indicators along a centermost area of an area of interest (bubble shape for receiving a mark). Many different varieties of graphical indicator configurations are contemplated.

[0041] Continuing the example shown in FIG. 3B, a plurality of indicators 170 may be defined within the area of interest 156A, and a plurality of indicators 172 may be defined within the area of interest 156B. Each of the plurality of indicators 170 and the plurality of indicators 172 may be rendered over the original ballot image 150 along the display 105 as shown (or may be compared non-visually with the areas of interest by the computing device 104), and may be useful for determining or at least indicating whether a particular field/area of interest defines a mark that is considered to be "valid" or indicative of a vote, and/or needs to be modified in some form. A mark occupying a region of interest may be deemed to be valid or indicative of a vote based on any number of predefined rules. For example, in some embodiments, where a mark overlaps all of the plurality of indicators defined within an area of interest, the mark may be deemed to be sufficient for being interpreted by a tabulator or other ballot processing device, such that the mark can simply be duplicated in the form depicted along the original ballot image to a corresponding duplicate image. Conversely, a mark that occupies at least a portion of an area of interest but fails to cover or overlap all associated graphical indicators may be deemed to be invalid and may need to be modified within the corresponding duplicate ballot image to fill a sufficient amount of space, or omitted. In some embodiments, a threshold may be set for a minimum number of indicators a mark must occupy in an area of interest of an original ballot image to reflect a vote (which may be applied to a duplicate image of the original ballot image). In some embodiments, the marks may define color elements corresponding to the pixel regions occupied by the marks, and values of these color elements may be detected by the computing device 104 which may further be used to determine whether a mark is a "valid" mark.

[0042] Referring to the example of FIG. 3B, the mark 158A occupies at least a portion of the area of interest 156A, and covers, intersects, or overlaps at least a portion of the plurality of graphical indicators 170, but does not cover all of them. Depending upon the rules created by an administrator, this may indicate a valid mark, or may not. On the other hand, the mark 158B covers, intersects, or overlaps all of the graphical indicators 172 of the area of interest 156B, which may indicate that the mark 158B reflects a valid mark for a vote in the second field 154B.

[0043] Referring to FIG. 3C, and based on the mark detection and interpretation depicted in FIG. 3B, the duplicate ballot image 160 may be populated with markings or

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otherwise modified. For example, marks **158** identified along the fields of the original ballot image **150** as “valid” may be duplicated in some form along the corresponding areas of the duplicate ballot image **160** (field **164A** and field **164B**) as mark **188A** and mark **188B**. Any of these marks applied to the duplicate ballot image **160** may be analyzed further and modified to optimize processing (e.g., increased in size to increase the likelihood of interpretation), and then verified. In other words, the mark **188A** and the mark **188B** can be configured in size and format to ensure proper interpretation by a tabulator so that voter intent of the original ballot can be realized—the duplicate ballot image **160** can be printed to form a new physical ballot (not shown) in a tabulation-ready format and the votes can be processed as intended by the voter. Any such printed version of the duplicate ballot image **160** includes the duplicate fields (field **164A** and field **164B**) corresponding to the fields of the original ballot image **150**, the same Duplicate ID **159**, and the same ballot style **152**. In the example shown, the mark **158A** and mark **158B** of the original ballot image **150** are determined to be valid marks or occupy sufficient space within respective fields of the original ballot image **150** to indicate votes for those fields. Accordingly, the new marks **188A** and **188B** of the duplicate ballot image **160** may be generated to cover the first field **164A** and second field **164B**, respectively, in a manner which is more likely to be properly interpreted by a tabulator or other device used to interpret the votes deemed to be reflected by the duplicate ballot image **160**. In addition, as indicated, the mark **158C** of the original ballot image **150** may be omitted from the duplicate ballot image **160** and/or any printed version of the same.

[0044] All ballot markings and actions may be taken as viewed on-screen along the display **105** and stored on a user log. Review after duplication may be available to administrators and can take place before printing. When the duplicate ballot image **160** is ready to be printed, as reflected in block **210** of FIG. 2, a file containing all ballots for duplication can be printed directly to a connected ballot printer such as the printing apparatus **122**, or exported to be printed through another source. For procedures that require further final review, duplicate ballots may include “Duplicate ID” to distinguish such ballots from the original and a report of user activity may be generated for auditing and any other county specific procedures.

[0045] In some embodiments, modification of the marks along the duplicate ballot image **160** may involve close comparison with the marks along the original ballot image **150** to identify voter intent. In some embodiments, a reviewer of the original ballot image **150** and the duplicate ballot image **160** may manually review and edit marks, e.g., remove all marks from the duplicate ballot image **160** with a single click of a tab. In some embodiments, the entire scanned image may be rotated as desired.

[0046] FIG. 5 is an example schematic diagram of a computing device **700** that may implement various methodologies discussed herein. For example, the computing device **700** may comprise the local computing device **108** or the computing device **104** executing or accessing functionality and/or aspects of the application **102**. The computing device **700** includes a bus **701** (i.e., interconnect), at least one processor **702** or other computing element, at least one communication port **703**, a main memory **704**, a removable storage media **705**, a read-only memory **706**, and a mass

storage device **707**. Processor(s) **702** can be any known processor, such as, but not limited to, an Intel® Itanium® or Itanium 2® processor(s), AMD® Opteron® or Athlon MP® processor(s), or Motorola® lines of processors. Communication port **703** can be any of an RS-232 port for use with a modem based dial-up connection, a 10/100 Ethernet port, a Gigabit port using copper or fiber, or a USB port. Communication port(s) **703** may be chosen depending on a network such as a Local Area Network (LAN), a Wide Area Network (WAN), or any network to which the computer device **700** connects. Computing device may further include a transport and/or transit network **755**, a display screen **760**, an I/O port **740**, and an input device **745** such as a mouse or keyboard.

[0047] Main memory **704** can be Random Access Memory (RAM) or any other dynamic storage device(s) commonly known in the art. Read-only memory **706** can be any static storage device(s) such as Programmable Read-Only Memory (PROM) chips for storing static information such as instructions for processor **702**. Mass storage device **707** can be used to store information and instructions. For example, hard disks such as the Adaptec® family of Small Computer Serial Interface (SCSI) drives, an optical disc, an array of disks such as Redundant Array of Independent Disks (RAID), such as the Adaptec® family of RAID drives, or any other mass storage devices, may be used.

[0048] Bus **701** communicatively couples processor(s) **702** with the other memory, storage, and communications blocks. Bus **701** can be a PCI/PCI-X, SCSI, or Universal Serial Bus (USB) based system bus (or other) depending on the storage devices used. Removable storage media **705** can be any kind of external hard drives, thumb drives, Compact Disc-Read Only Memory (CD-ROM), Compact Disc-ReWritable (CD-RW), Digital Video Disk-Read Only Memory (DVD-ROM), etc.

[0049] Embodiments herein may be provided as a computer program product, which may include a machine-readable medium having stored thereon instructions which may be used to program a computer (or other electronic devices) to perform a process. The machine-readable medium may include, but is not limited to optical discs, CD-ROMs, magneto-optical disks, ROMs, RAMs, erasable programmable read-only memories (EPROMs), electrically erasable programmable read-only memories (EEPROMs), magnetic or optical cards, flash memory, or other type of media/machine-readable medium suitable for storing electronic instructions. Moreover, embodiments herein may also be downloaded as a computer program product, wherein the program may be transferred from a remote computer to a requesting computer by way of data signals embodied in a carrier wave or other propagation medium via a communication link (e.g., modem or network connection).

[0050] As shown, main memory **704** may be encoded with the application **102** that supports functionality discussed above. In other words, aspects of the application **102** (and/or other resources as described herein) can be embodied as software code such as data and/or logic instructions (e.g., code stored in the memory or on another computer readable medium such as a disk) that supports processing functionality according to different embodiments described herein. During operation of one embodiment, processor(s) **702** accesses main memory **704** via the use of bus **701** in order to launch, run, execute, interpret, or otherwise perform processes, such as through logic instructions, executing on

the processor 702 and based on the application 102 stored in main memory or otherwise tangibly stored.

[0051] Referring to FIG. 6, an exemplary network configuration 600 is shown which may be deployed to implement aspects of the system 100. As indicated, the network configuration 600 may include the printing apparatus 122, a computing device 104 such a server, and a scanning device 110. In addition, the network configuration 600 may include a plurality of workstations 602 in operable communication with the printing apparatus 122, computing device 104 scanning device 110 via a hub/router 604. The work stations 602 may include desktop computers, laptops, or other such devices accessing or configured with aspects of the application 102 (e.g., may define client-side devices). In some cases, the workstations 602 may access aspects of the application 102 as software as a service (SaaS).

[0052] In some embodiments, the system 100 may be used in a standalone, single-station environment with no networking to external devices/environments to preserve security. At least some installations may include a scanner and printer connected to a server via USB, and one or more workstations as shown that are connected with the server to a hub. Additional networking components are contemplated.

[0053] The description above includes example systems, methods, techniques, instruction sequences, and/or computer program products that embody techniques of the present disclosure. However, it is understood that the described disclosure may be practiced without these specific details. In the present disclosure, the methods disclosed may be implemented as sets of instructions or software readable by a device. Further, it is understood that the specific order or hierarchy of steps in the methods disclosed are instances of example approaches. Based upon design preferences, it is understood that the specific order or hierarchy of steps in the method can be rearranged while remaining within the disclosed subject matter. The accompanying method claims present elements of the various steps in a sample order, and are not necessarily meant to be limited to the specific order or hierarchy presented.

[0054] The described disclosure may be provided as a computer program product, or software, that may include a machine-readable medium having stored thereon instructions, which may be used to program a computer system (or other electronic devices) to perform a process according to the present disclosure. A machine-readable medium includes any mechanism for storing information in a form (e.g., software, processing application) readable by a machine (e.g., a computer). The machine-readable medium may include, but is not limited to optical storage medium (e.g., CD-ROM); magneto-optical storage medium, read only memory (ROM); random access memory (RAM); erasable programmable memory (e.g., EPROM and EEPROM); flash memory; or other types of medium suitable for storing electronic instructions.

[0055] Certain embodiments are described herein as including one or more modules. Such modules are hardware-implemented, and thus include at least one tangible unit capable of performing certain operations and may be configured or arranged in a certain manner. For example, a hardware-implemented module may comprise dedicated circuitry that is permanently configured (e.g., as a special-purpose processor, such as a field-programmable gate array (FPGA) or an application-specific integrated circuit (ASIC)) to perform certain operations. A hardware-implemented

module may also comprise programmable circuitry (e.g., as encompassed within a general-purpose processor or other programmable processor) that is temporarily configured by software or firmware to perform certain operations. In some example embodiments, one or more computer systems (e.g., a standalone system, a client and/or server computer system, or a peer-to-peer computer system) or one or more processors may be configured by software (e.g., an application or application portion) as a hardware-implemented module that operates to perform certain operations as described herein.

[0056] Accordingly, the term “hardware-implemented module” or “module” encompasses a tangible entity, be that an entity that is physically constructed, permanently configured (e.g., hardwired), or temporarily configured (e.g., programmed) to operate in a certain manner and/or to perform certain operations described herein. Considering embodiments in which hardware-implemented modules are temporarily configured (e.g., programmed), each of the hardware-implemented modules need not be configured or instantiated at any one instance in time. For example, where the hardware-implemented modules comprise a general-purpose processor configured using software, the general-purpose processor may be configured as respective different hardware-implemented modules at different times. Software may accordingly configure a processor, for example, to constitute a particular hardware-implemented module at one instance of time and to constitute a different hardware-implemented module at a different instance of time.

[0057] Hardware-implemented modules may provide information to, and/or receive information from, other hardware-implemented modules. Accordingly, the described hardware-implemented modules may be regarded as being communicatively coupled. Where multiple of such hardware-implemented modules exist contemporaneously, communications may be achieved through signal transmission (e.g., over appropriate circuits and buses) that connect the hardware-implemented modules. In embodiments in which multiple hardware-implemented modules are configured or instantiated at different times, communications between such hardware-implemented modules may be achieved, for example, through the storage and retrieval of information in memory structures to which the multiple hardware-implemented modules have access. For example, one hardware-implemented module may perform an operation, and may store the output of that operation in a memory device to which it is communicatively coupled. A further hardware-implemented module may then, at a later time, access the memory device to retrieve and process the stored output. Hardware-implemented modules may also initiate communications with input or output devices.

[0058] It is believed that the present disclosure and many of its attendant advantages should be understood by the foregoing description, and it should be apparent that various changes may be made in the form, construction, and arrangement of the components without departing from the disclosed subject matter or without sacrificing all of its material advantages. The form described is merely explanatory, and it is the intention of the following claims to encompass and include such changes.

[0059] While the present disclosure has been described with reference to various embodiments, it should be understood that these embodiments are illustrative and that the scope of the disclosure is not limited to them. Many variations, modifications, additions, and improvements are pos-

sible. More generally, embodiments in accordance with the present disclosure have been described in the context of particular implementations. Functionality may be separated or combined in blocks differently in various embodiments of the disclosure or described with different terminology. These and other variations, modifications, additions, and improvements may fall within the scope of the disclosure as defined in the claims that follow.

What is claimed is:

1. A method implemented by a computing device, comprising:

accessing an original ballot image associated with an original ballot;

mapping areas of interest of the original ballot image based on a ballot style associated with the original ballot;

generating a duplicate ballot image from the original ballot image, the duplicate ballot image defining the same areas of interest of the original ballot image and the ballot style;

rendering the original ballot image alongside the duplicate ballot image via a display, the original ballot image comprising a first set of marks defined along the areas of interest; and

generating a second set of marks along the areas of interest of the duplicate ballot image based on the first set of marks of the original ballot image.

2. The method of claim 1, further comprising:

processing an area of interest of the original ballot image to identify a mark intersecting a predetermined minimum number of graphical indicators defined along the area of interest; and

suggesting a mark application along the same area of interest as the duplicate ballot image.

3. The method of claim 1, further comprising:

applying optical character recognition to identify a mark outside the areas of interest of the original ballot image; and

removing the mark from the duplicate ballot image.

4. The method of claim 1, wherein the first set of marks of the original marked ballot is highlighted along the display.

5. The method of claim 1, further comprising rendering a common duplication identifier along the original ballot, the original ballot image, and the duplicate ballot image.

6. The method of claim 1, further comprising accessing the original ballot image from a ballot repository associated with an elections office.

7. The method of claim 1, further comprising generating a print file from the duplicate ballot image that defines a set of print instructions for generating a new ballot that satisfies predetermined mark rules and reflects voter intent as defined by the first set of marks of the original ballot image.

8. The method of claim 1, further comprising customizing one or more detection parameters for analyzing an area of interest along the original ballot image.

9. The method of claim 1, further comprising employing Optical Character Recognition to read the original ballot to determine ballot style.

10. A computer-implemented system for ballot processing, comprising:

a display; and

a computing device in operable communication with the display, the computing device configured to:

access an original ballot image associated with an original ballot,

generate a duplicate ballot image based on the original ballot image, the duplicate ballot image and the original ballot image defining common areas of interest,

conduct mark interpretation of the original ballot image; and

configure marks of the duplicate ballot image based on the mark interpretation conducted.

11. The computer-implemented system of claim 10, wherein the computing device is further configured to utilize a predefined Ballot Style Template to identify the common areas of interest.

12. The computer-implemented system of claim 10 further comprising a tabulator configured to interpret marks of a ballot printed from the printing apparatus.

13. The computer-implemented system of claim 10, wherein the duplicate ballot image is assigned a unique Duplicate ID.

14. A method implemented by a computing device configured for interpreting ballot marks, comprising:

customizing a plurality of detection parameters operable to analyze an area of interest along an original ballot image for a valid voter mark;

defining a plurality of graphical indicators aligned in along the area of interest of the original ballot image; rendering the plurality of graphical indicators over the original ballot image along a display; and

measuring the amount that a voter mark overlaps a portion of the plurality of graphical indicators within the area of interest.

15. The method of claim 14, wherein the plurality of graphical indicators define predetermined shapes rendered along the original ballot image and associated with a particular pixel region along the original ballot image.

16. The method of claim 14, wherein the computing device identifies the voter mark from the original ballot image and automatically adds a new mark on a corresponding duplicated ballot image.

17. The method of claim 14, wherein the plurality of graphical indicators is consistently spaced and does not overlap an adjacent voting position outline.

18. The method of claim 14, further comprising setting a threshold for a minimum number of graphical indicators the mark must overlap in the area of interest of the original ballot image to reflect a vote.

19. The method of claim 14, wherein the mark is determined to be valid if the mark overlaps all of the plurality of graphical indicators in the area of interest.

20. The method of claim 14, wherein the mark is determined to be invalid if the mark occupies at least a portion of the plurality of graphical indicators in the area of interest but fails to overlap all of the plurality of graphical indicators in the area of interest.

* * * * *

MARYLAND BLANK BALLOTS CASE DEFINED

Run Date:12/03/20 11:30 AM
 Presidential General Election
 Baltimore County, Maryland
 November 3, 2020
 OFFICIAL RESULTS
 Report EL30A Page 0101-01

	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
REGISTERED VOTERS - TOTAL	4,122						
BALLOTS CAST - TOTAL	3,993		1,016	303	602	1,198	874
BALLOTS CAST - BLANK	1,007	25.22	37	21	28	876	45
VOTER TURNOUT - TOTAL		96.87					
VOTER TURNOUT - BLANK		24.43					

President - Vice Pres
(VOTE FOR) 1

Trump-Pence (REP)	375	9.54	112	37	22	149	55
Biden-Harris (DEM)	3,487	88.71	881	254	566	998	788
Jorgensen-Cohen (LIB)	26	.66	5	3	2	9	7
Hawkins-Walker (GRN)	19	.48	4	2	2	7	4
Segal-de Graaf (BAR)	5	.13	3	0	0	0	2
WRITE-IN	19	.48	7	3	0	8	1
Total	3,931		1,012	299	592	1,171	857
Over Votes	46		1	0	10	19	16
Under Votes	16		3	4	0	8	1

Save

#E#&l2a007c067F#(s0p16.66h3b6T#&a00L
 NUMBERED KEY CANVASS
 RUN DATE:05/09/22 10:16 AM
 General Election
 November 3, 2020
 Broward County, Florida
 OFFICIAL RESULTS
 REPORT-EL52 PAGE 0001
 WITH 577 OF 577 PRECINCTS REPORTING
 01 = REGISTERED VOTERS - TOTAL 1267,187
 02 = BALLOTS CAST - TOTAL 964,444
 03 = BALLOTS CAST - BLANK 56,915
 04 = VOTER TURNOUT - TOTAL 76.11

	01	02	03	04
0001 A001	4362	3633	171	83.29
0002 A002	1445	1070	78	74.05
0003 A003	1910	1543	175	80.79
0004 A004	1649	1236	110	74.95
0005 A005	1691	1390	107	82.20
0006 A006	2297	1687	138	73.44
0007 A007	1854	1482	80	79.94
0008 A008	639	430	28	67.29
0009 A009	3338	2670	283	79.99
0010 A010	1201	947	56	78.85
0011 A011	2270	1516	84	66.78
0012 A012	2176	1660	160	76.29
0013 A013	3478	2730	195	78.49
0014 A014	3598	2722	163	75.65
0015 A015	2197	1507	106	68.59
0016 A016	2083	1590	120	76.33
0017 A017	663	483	36	72.85
0018 A018	1496	1029	68	68.78
0019 A019	1790	1411	91	78.83
0020 A020	2432	1878	129	77.22
0021 A021	1818	1299	118	71.45
0022 A022	1682	1132	92	67.30
0023 A023	934	639	42	68.42
0024 A024	1240	936	93	75.48
0025 B001	1189	1040	75	87.47
0026 B002	1863	1592	79	85.45
0027 B003	1349	1138	72	84.36
0028 B004	2474	2125	113	85.89
0029 B005	882	688	64	78.00
0030 B006	782	664	26	84.91
0031 C001	3114	2530	171	81.25
0032 C002	1046	839	49	80.21

5.9% of all Ballots Cast in Broward County in the 2020 Election were 100%

Out of 2670 Ballots Cast - 283 were classified as BLANK
 10.59% of all ballots cast in Precinct 9 were 100%

56,915 Broward County Voters Were Disenfranchised in the

EXPLANATION OF BLANK BALLOTS FROM ES&S DS850 OPERATORS MANUAL

Chapter 5: Pre Elections Day

Tasks Page 74

Bin Sorting



There are two options on the Bin Sorting screen: Sort Settings and Scan Screen Sort Options.

Sort Settings

The Sort Settings option allows you to specify which output bin the ballots will be diverted to. It also allows you to specify whether undervotes, overvotes, crossovers, blank ballots, and ballots with unclear marks are to be processed.

Note: ElectionWare provides the ability to set bin sorting in the Election Definition.

If you want to use settings that are different from the ones in the Election Definition, you can use the bin sorting screens to change the settings on the scanner.



If the Sorting on/off feature is enabled, you can override the default settings for bin sorting in the Election Definition, as well as any changes that have been made using the Bin Sorting screens, by turning sorting off from the Scan Ballots screens. When the Sorting on/off feature is enabled, there is a button on the scan ballots screens that allows the user to turn sorting on or off. The middle bin is not able to be changed and will always follow the ElectionWare defaults

Reference: See the ES&S ElectionWare Volume IV: Deliver User's Guide for additional information on ElectionWare.



See [Scan Screen Sort Options](#) for instructions on how to enable and disable the Sorting on/off feature.

See [Sorting On/Off Feature](#) for information on the impacts of turning sorting off.

Write-In	A write-in space appears on the ballot as a voting target next to a blank line that a voter uses to fill in the name of a write-in candidate. To vote for a write-in candidate, a voter writes the name of the candidate on the write-in line and marks the ballot target that corresponds to the line.
Overvote	Ballots having more than the allowed number of votes cast for one or more contests
Undervote	The election definition can designate one or more contests as an "undervote-contest". This option out-stacks any scanned ballot that has a designated undervote contest that was undervoted. This option does not out-stack blank ballots
Blank Ballots	This option out-stacks ballots that do not contain any votes, have been marked with a non-standard marking device for the DS850, or have been marked improperly (for example, the voter circled the candidate's name instead of filling in the appropriate oval).

VERIFICATION OF DATA SOURCE

I, Christopher Gleason, declare under the penalties of perjury:

That the numbers in the preceding reports are official Maryland government records which I extracted and reproduced verbatim before adding the (Red & Blue) Comment Notes.

I swear or affirm that the above and foregoing representations are true and correct to the best of my information, knowledge, and belief.

Date: 03/07/2023

Respectfully Submitted,



Christopher Gleason

PRELIMINARY REPORT ON MARYLAND ELECTIONS BLANK BALLOTS

BALLOTS CAST – BLANK EXPLAINED

- The following is a breakdown of the ballots cast in the 2020 November Election for a single precinct in Baltimore County Maryland. This data was extracted from the OFFICIAL RESULTS ES&S Precinct Summary Report in Detail. This election results report is referred to as the EL30A report.

The red rectangle represents the total votes cast that were classified as **“BALLOTS CAST – BLANK”**. This category of **BALLOTS CAST – BLANK** can be seen as reflected in each of the five ballot categories. **EV, ED, MB1, Prov, MB2**

The blue circled numbers reflect the following:

- Total Number of Blank Ballots Cast
- Blank Ballots as a Percentage of All Ballots Cast In This Precinct
- Blank Ballots Cast In Early Voting
- Blank Ballots Cast On Election Day
- Blank Ballots Cast by Mail in Ballot Category 1
- Blank Ballots Cast as Provisional Ballots
- Blank Ballots Cast by Mail in Ballot Category 2

Precinct Summary

Run Date:12/03/20 11:30 AM

0101 001-001

Presidential General Election
Baltimore County, Maryland
November 3, 2020

OFFICIAL RESULTS
Report EL30A Page 0101-01

	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
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Total	3,931	1,012	299	592	1,171	857
Over Votes	46	1	0	10	19	16
Under Votes	16	3	4	0	8	1

FIGURE 1

Every single ballot that was cast by a Maryland voter and then classified as a **“BALLOTS CAST – BLANK”** is the ballot of a voter being disenfranchised.

Blank ballots being cast in such large numbers are a clear indicator of either voting system machine hardware errors, software accuracy errors, machine tampering, or some other illegal activity used to materially affect the outcome of an election.

In this particular precinct in Baltimore County Maryland over 25% of all the ballots cast by voters have been classified as “BLANK BALLOTS”.

2. BLANK BALLOTS AS DEFINED BY ES&S IN THE DS850 OPERATORS MANUAL

Blank Ballots are defined as ballots with one of the three characteristics:

- a.) Ballots that do not contain any votes,
- b.) have been marked with a non-standard marking device that the DS850 cannot read
- c.) have been marked improperly.

FIGURE 2

Bin Sorting

- ▶ There are two options on the Bin Sorting screen: Sort Settings and Scan Screen Sort Options.

Sort Settings

The Sort Settings option allows you to specify which output bin the ballots will be diverted to. It also allows you to specify whether undervotes, overvotes, crossovers, blank ballots, and ballots with unclear marks are to be processed.

Note: ElectionWare provides the ability to set bin sorting in the Election Definition.

If you want to use settings that are different from the ones in the Election Definition, you can use the bin sorting screens to change the settings on the scanner.



If the Sorting on/off feature is enabled, you can override the default settings for bin sorting in the Election Definition, as well as any changes that have been made using the Bin Sorting screens, by turning sorting off from the Scan Ballots screens. When the Sorting on/off feature is enabled, there is a button on the scan ballots screens that allows the user to turn sorting on or off. The middle bin is not able to be changed and will always follow the ElectionWare defaults.

Reference: See the ES&S ElectionWare Volume IV: Deliver User's Guide for additional information on ElectionWare.



See [Scan Screen Sort Options](#) for instructions on how to enable and disable the Sorting on/off feature.

See [Sorting On/Off Feature](#) for information on the impacts of turning sorting off.

Write-In	A write-in space appears on the ballot as a voting target next to a blank line that a voter uses to fill in the name of a write-in candidate. To vote for a write-in candidate, a voter writes the name of the candidate on the write-in line and marks the ballot target that corresponds to the line.
Overvote	Ballots having more than the allowed number of votes cast for one or more contests
Undervote	The election definition can designate one or more contests as an "undervote-contest". This option out-stacks any scanned ballot that has a designated undervote contest that was undervoted. This option does not out-stack blank ballots
Blank Ballots	This option out-stacks ballots that do not contain any votes, have been marked with a non-standard marking device for the DS850, or have been marked improperly (for example, the voter circled the candidate's name instead of filling in the appropriate oval).

3. The ES&S DS200 machine MUST be set up to always accept the blank ballots without alerting the voter to check the ballot for this many ballots to be accepted as blank if they are indeed blank. These are CAST ballots, not pre-printed and not used stock, in order to be counted as a blank ballot here. The image below was captured from the operator’s manual for the ES&S DS200 which is used in precincts to tabulate voters’ cast ballots.

Blank Ballots

If the ballot is blank, the DS200 can be setup to identify these ballots.

- Press **Correct Your Ballot** to return the ballot to the voter. The voter then can review and mark the ballot.
- Press **Cast Blank Ballot** to cast the ballot without making any changes.



Important: If **Always Accept** is selected in the **Blank Ballot** field in the in the DS200 settings in ElectionWare, the **Blank Ballot** screen will not appear.

If **Always Reject** is selected in n the DS200 settings in ElectionWare, the ballot will not be able to be processed until all mistakes are resolved.



Reference: For more information about the Set Tabulator Parameters window in ElectionWare, refer to the Tabulator Settings heading in Chapter 5: Generate Elections in the *ElectionWare System Operations Procedures* manual.

FIGURE 3

4. EAC – Voting Systems Performance Guidelines: Accuracy and Functional Requirements For Software used in voting systems. In the following section of the EAC certification, the accuracy requirement is very clear, as it states: **“SHALL MAINTAIN ABSOLUTE CORRECTNESS”**.

“g. In all systems, voting system software, firmware, and hardwired logic **shall** maintain absolute correctness (introduce no errors) in the recording, tabulating, and reporting of votes”.

2.1.2 Accuracy

Memory hardware, such as semiconductor devices and magnetic storage media, must be accurate. The design of equipment in all voting systems **shall** provide for the highest

15

*Voting System Performance Guidelines
2 Functional Requirements*

possible levels of protection against mechanical, thermal, and electromagnetic stresses that impact system accuracy. Section 4 provides additional information on susceptibility requirements.

To ensure vote accuracy, all systems **shall**:

- a. Record the election contests, candidates, and issues exactly as defined by election officials
- b. Record the appropriate options for casting and recording votes
- c. Record each vote precisely as indicated by the voter and produce an accurate report of all votes cast;
- d. Include control logic and data processing methods incorporating parity and check-sums (or equivalent error detection and correction methods) to demonstrate that the system has been designed for accuracy
- e. Provide software that monitors the overall quality of data read-write and transfer quality status, checking the number and types of errors that occur in any of the relevant operations on data and how they were corrected

In addition, DRE systems **shall**:

- f. As an additional means of ensuring accuracy in DRE systems, voting devices **shall** record and retain redundant copies of the original ballot image. A ballot image is an electronic record of all votes cast by the voter, including undervotes.

The accuracy benchmark specified in Section 4.1.1 is intended to allow tolerance for unpreventable hardware-related errors that occur rarely and randomly as a result of physical phenomena. It is not intended to allow tolerance of software faults that result in systematic miscounting of votes. As was written in Section 7.1.1 of the 1990 VSS, “In this case, no margin for error exists.” Therefore,

- g. In all systems, voting system software, firmware, and hardwired logic **shall** maintain absolute correctness (introduce no errors) in the recording, tabulating, and reporting of votes.

FIGURE 4

5. EAC – Voting Systems Performance Guidelines: Accuracy for Hardware Requirements. The benchmark is derived from the “maximum acceptable error rate of 1 in 125,000. Therefore 2 or more errors in every 125,000 votes would exceed the maximum acceptable error rate.

4.1.1 Accuracy Requirements

The following requirements are intended to allow tolerance for unpreventable hardware-related errors that occur rarely and randomly as a result of physical phenomena. They are not intended to allow tolerance of software faults that result in systematic miscounting of votes. Section 2.1.2 includes a requirement for accuracy of logic.

- a. All systems **shall** achieve a report total error rate of no more than one in 125,000 (8×10^{-6}).
- b. Given a set of vote data reports, the observed cumulative report total error rate **shall** be calculated as follows.

6. EAC – Voting Systems Performance Guidelines: Accuracy Requirement Hardware Calculations. According to the EAC guidelines as prescribed under the Help America Vote Act of 2002 presenting this benchmark in terms of votes instead of ballot positions provides a more precise metric for the evaluation of accuracy.

*Voting System Performance Guidelines
 4 Hardware Requirements*

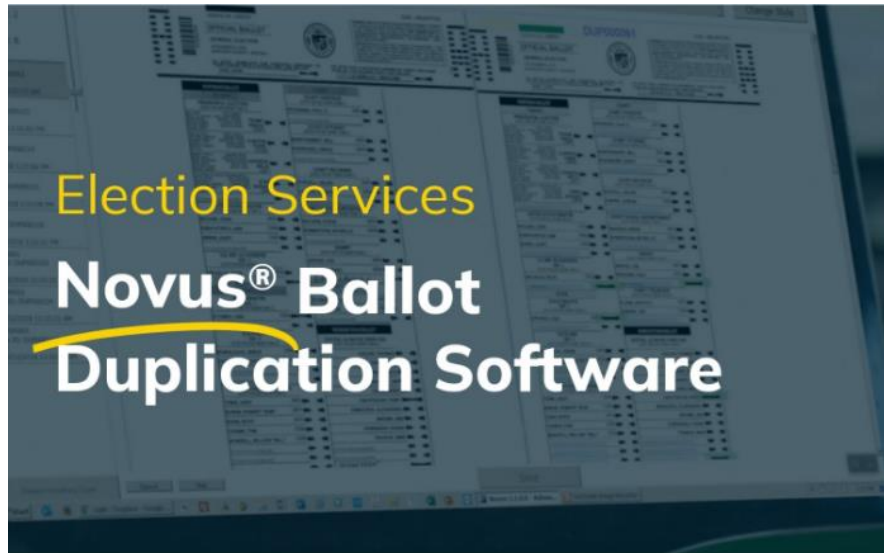
- i. Define a “report item” as any one of the numeric values (totals or counts) that must appear in any of the vote data reports. Each ballot count, each vote, overvote, and undervote total for each contest, and each vote total for each contest choice in each contest is a separate report item. The required report items are detailed in Volume I Section 2.4.3.
- ii. For each report item, compute the “report item error” as the absolute value of the difference between the correct value and the reported value. Special cases: If a value is reported that should not have appeared at all (spurious item), or if an item that should have appeared in the report does not (missing item), assess a report item error of one. Additional values that are reported as a manufacturer extension to the standard are not considered spurious items.
- iii. Compute the “report total error” as the sum of all of the report item errors from all of the reports.
- iv. Compute the “report total volume” as the sum of all of the correct values for all of the report items that are supposed to appear in the reports. Special cases: When the same logical contest appears multiple times, e.g. when results are reported for each ballot configuration and then combined or when reports are generated for multiple reporting contexts, each manifestation of the logical contest is considered a separate contest with its own correct vote totals in this computation.
- v. Compute the observed cumulative report total error rate as the ratio of the report total error to the report total volume. Special cases: If both values are zero, the report total error rate is zero. If the report total volume is zero but the report total error is not, the report total error rate is infinite.

The benchmark of one in 125,000 (8×10^{-6}) is derived from the “maximum acceptable error rate” used as the lower test benchmark in the 2005 Voluntary Voting System Guidelines Version 1.0. That benchmark was defined as a ballot position error rate of one in 500,000 (2×10^{-6}). The benchmark of one in 125,000 is expressed in terms of votes¹¹, however it is consistent with the previous benchmark in that the estimated ratio of votes to ballot positions is $\frac{1}{4}$.

Given that there is no “typical” ratio of votes to ballot positions with such diversity among the many jurisdictions, it is nevertheless necessary to base the benchmark on some rough estimates in order that it may be in the correct order of magnitude, albeit not optimal for every case. The estimated ratio was derived as follows. In a presidential election, there would be approximately 20 contests with a vote for 1 on each ballot with an average of 4 candidates, including the write-in position, per contest. (Some states would have fewer contests and some more. A few contests, like President, would have 8–13 candidates; most would have 3 candidates including the write-in, and a few would have 2 candidates.) Thus, the estimated ratio of votes to ballot positions is $\frac{1}{4}$.

¹¹ The error rate was originally defined in Volume 1 of the 2002 Voting System Standards and is prescribed by Sec. 301(a)(5) of the Help America Vote Act of 2002. Expressing this benchmark in terms of votes instead of ballot positions provides a more precise metric for the evaluation of accuracy.

RUNBECK BALLOT DUPLICATION SOFTWARE – SCREENSHOTS



Keep Your Elections Moving Forward.

Duplicating damaged or unreadable ballots is a stressful, time and labor-intensive part of every election process. Our solution allows jurisdictions to process up to 150 ballots per hour vs. 30 ballots per hour with traditional methods. Using the Novus On-Screen Ballot Duplication software, your bipartisan boards can quickly recreate a ballot on-screen within a secure and transparent environment. The regenerated ballots are fully auditable, tabulation-ready, and can be printed using our [Sentio Ballot Printing On-Demand System](#).

The Novus Process



Damaged ballots are scanned into a digital database where the ballot's style is recognized from the ballot's barcode and a blank ballot of the same style is digitally generated. Both images are assigned a matching ID for maintaining an audit trail.



The scanned version of the damaged ballot and matching ballot style are displayed side-by-side for manual voter-intent marking by the bipartisan board.





Finalized duplicates move to a queue for review and approval. A record of both the damaged ballot and its corresponding duplicate are digitally stored for reference according to the jurisdiction's document retention standards.



Upon admin approval, duplicated ballots move to the print queue, ready for tabulation.

Novus Features



**MARYLAND ZUCKERBUCK GRAND AMOUNTS
AND MARYLAND BLANK BALLOTS CAST – EL5A DATA - EXHIBIT Y1**

EXHIBIT Y1 - MARYLAND ZUCKERBUCK GRANT AMOUNTS AND MARYLAND BLANK BALLOTS CAST

MARYLAND COUNTY	2020 GRANT AMOUNT	2020 UNOFFICIAL BLANK BALLOTS CAST	2022 UNOFFICIAL BLANK BALLOTS CAST				
PRINCE GEORGES	\$1,325,384.00	16,684	22,453				
BALTIMORE CITY	\$1,147,043.00	12,796	6,506				
BALTIMORE COUNTY	\$1,044,824.00	26,845	19,678				
MONTGOMERY	\$801,913.00	41,680	20,098				
HOWARD	\$688,226.00	12	1,770				
ANNE ARUNDEL	\$330,076.00	11	4,157				
HARFORD	\$181,537.00	10	1,892				
CHARLES	\$129,030.00	8	436				
FREDERICK	\$121,975.00	12	1,187				
WASHINGTON	\$90,512.00	4	871				
CARROLL	\$76,536.00	11	3				
WICOMICO	\$67,168.00	2	911				
CALVERT	\$47,492.00	1	85				
CECIL	\$45,975.00	2	680				
ALLEGHENY	\$41,475.00	2	271				
QUEEN ANNE'S	\$22,650.00	0	80				
DORCHESTER	\$22,352.00	2	3				
TALBOT	\$20,650.00	3	476				
CAROLINE	\$19,108.00	0	0				
KENT	\$12,696.00	0	121				
GARRETT	\$9,478.00	2	357				
WORCESTER	\$0.00	4	0				
SOMERSET	\$0.00	0	1				
ST MARY'S	\$0.00	4	320				
Total Amounts	\$6,246,100.00	98,095	82,356				

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y1

MARYLAND COUNTY	2020 GRANT AMOUNT	2020 UNOFFICIAL BLANK BALLOTS CAST	2022 UNOFFICIAL BLANK BALLOTS CAST
MONTGOMERY	\$801,913.00	41,680	20,098
BALTIMORE COUNTY	\$1,044,824.00	26,845	19,678
PRINCE GEORGES	\$1,325,384.00	16,684	22,453
BALTIMORE CITY	\$1,147,043.00	12,796	6,506
HOWARD	\$688,226.00	12	1,770
FREDERICK	\$121,975.00	12	1,187
ANNE ARUNDEL	\$330,076.00	11	4,157
CARROLL	\$76,536.00	11	3
HARFORD	\$181,537.00	10	1,892
CHARLES	\$129,030.00	8	436
WASHINGTON	\$90,512.00	4	871
WORCESTER	\$0.00	4	0
ST MARY'S	\$0.00	4	320
TALBOT	\$20,650.00	3	476
WICOMICO	\$67,168.00	2	911
CECIL	\$45,975.00	2	680
ALLEGHENY	\$41,475.00	2	271
DORCHESTER	\$22,352.00	2	3
GARRETT	\$9,478.00	2	357
CALVERT	\$47,492.00	1	85
QUEEN ANNE'S	\$22,650.00	0	80
CAROLINE	\$19,108.00	0	0
KENT	\$12,696.00	0	121
SOMERSET	\$0.00	0	1
Total Amounts	\$6,246,100.00	98,095	82,356

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y1

MARYLAND COUNTY 2020 GRANT AMOUNT 2020 UNOFFICIAL BLANK BALLOTS CAST 2022 UNOFFICIAL BLANK BALLOTS CAST

PRINCE GEORGES	\$1,325,384.00	16,684	22,453
MONTGOMERY	\$801,913.00	41,680	20,098
BALTIMORE COUNTY	\$1,044,824.00	26,845	19,678
BALTIMORE CITY	\$1,147,043.00	12,796	6,506
ANNE ARUNDEL	\$330,076.00	11	4,157
HARFORD	\$181,537.00	10	1,892
HOWARD	\$688,226.00	12	1,770
FREDERICK	\$121,975.00	12	1,187
WICOMICO	\$67,168.00	2	911
WASHINGTON	\$90,512.00	4	871
CECIL	\$45,975.00	2	680
TALBOT	\$20,650.00	3	476
CHARLES	\$129,030.00	8	436
GARRETT	\$9,478.00	2	357
ST MARY'S	\$0.00	4	320
ALLEGHENY	\$41,475.00	2	271
KENT	\$12,696.00	0	121
CALVERT	\$47,492.00	1	85
QUEEN ANNE'S	\$22,650.00	0	80
CARROLL	\$76,536.00	11	3
DORCHESTER	\$22,352.00	2	3
SOMERSET	\$0.00	0	1
WORCESTER	\$0.00	4	0
CAROLINE	\$19,108.00	0	0
Total Amounts	\$6,246,100.00	98,095	82,356

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2 – MARYLAND ZUCKERBUCK GRANT AMOUNTS AND MARYLAND BLANK BALLOTS CAST

2020 EL45A REPORT DATA – SHOWING BLANK BALLOTS – CAST

Summary by Canvass		Presidential General Election Montgomery County, Maryland November 3, 2020						UNOFFICIAL RESULTS	
Run Date: 11/24/20 01:22 AM								Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	.	
PRECINCTS COUNTED (OF 255)	255	100.00							
REGISTERED VOTERS - TOTAL	674,928								
BALLOTS CAST - TOTAL	536,704		128,717	40,651	178,433	19,354	169,549	0	
BALLOTS CAST - BLANK	41,680	7.77	6,630	2,753	12,211	2,547	17,539	0	
VOTER TURNOUT - TOTAL		79.52							
VOTER TURNOUT - BLANK		6.18							
President - Vice Pres									
(VOTE FOR) 1									
Trump-Pence (REP)	101,222	18.96	41,476	16,506	14,962	3,687	24,591	0	
Biden-Harris (DEM)	419,568	78.61	83,156	21,625	160,521	14,914	139,352	0	
Jorgensen-Cohen (LIB)	4,246	.80	1,037	734	764	150	1,561	0	
Hawkins-Walker (GRN)	3,091	.58	1,052	630	417	214	778	0	
Segal-de Graaf (BAR)	1,440	.27	617	334	146	127	216	0	
WRITE-IN	4,174	.78	913	519	818	139	1,785	0	
Total	533,741		128,251	40,348	177,628	19,231	168,283	0	
Over Votes	680		72	48	265	45	250	0	
Under Votes	2,283		394	255	540	78	1,016	0	

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

**BREAKDOWN OF BALLOTS CAST - BLANK
MONTGOMERY COUNTY MARYLAND**

EXHIBIT Y2

Election Summary	Presidential General Election	Official Results
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:29 PM	November 3, 2020	

	VOTES	PERCENT
PRECINCTS COUNTED (OF 255).	255	100.00
REGISTERED VOTERS - TOTAL	674,928	
BALLOTS CAST - TOTAL.	536,706	
BALLOTS CAST - BLANK.	41,680	7.77
VOTER TURNOUT - TOTAL		79.52
VOTER TURNOUT - BLANK		6.18

Figure 1.

41,680 Ballots Cast in Montgomery County, MD were classified as “BLANK”

These “BALLOTS CAST – BLANK” comprise 7.77% of all Ballots Cast

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Election Summary	Presidential General Election	(10 -Early Voting)
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:35 PM	November 3, 2020	

	VOTES	PERCENT
PRECINCTS COUNTED (OF 255).	255	100.00
REGISTERED VOTERS - TOTAL	674,928	
BALLOTS CAST - TOTAL.	128,717	
BALLOTS CAST - BLANK.	6,630	5.15
VOTER TURNOUT - TOTAL		19.07
VOTER TURNOUT - BLANK . . . . .		.98

Figure 2.

According to Montgomery County during EV (Early Voting), there were 6,630 “BLANK” Ballots Cast.

These “BALLOTS CAST – BLANK” comprised of 5.15% of all the ballots cast.

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Election Summary	Presidential General Election	(20 -Election Day)
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:36 PM	November 3, 2020	

	VOTES	PERCENT
PRECINCTS COUNTED (OF 255)	255	100.00
REGISTERED VOTERS - TOTAL	674,928	
BALLOTS CAST - TOTAL	40,653	
BALLOTS CAST - BLANK	2,753	6.77
VOTER TURNOUT - TOTAL		6.02
VOTER TURNOUT - BLANK . . . . .		.41

Figure 3.

According to Montgomery County during ED (Election Day), there were 2,753 “BLANK” Ballots Cast.

These “BALLOTS CAST – BLANK” comprised of 6.77% of all the ballots cast.

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Election Summary	Presidential General Election	(30 -Mail-in Ballot 1)
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:37 PM	November 3, 2020	
		VOTES PERCENT
PRECINCTS COUNTED (OF 255).	. . . .	255 100.00
REGISTERED VOTERS - TOTAL	. . . .	674,928
BALLOTS CAST - TOTAL.	. . . .	178,433
BALLOTS CAST - BLANK.	. . . .	12,211 6.84
VOTER TURNOUT - TOTAL	. . . .	26.44
VOTER TURNOUT - BLANK	. . . .	1.81

Figure 4.

According to Montgomery County during MB1 (Mail in Ballot 1), there were 12,211 “BLANK” Ballots Cast.

These “BALLOTS CAST – BLANK” comprised of 6.84% of all the ballots cast.

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Election Summary	Presidential General Election	(50 -Mail-In Ballot 2)
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:38 PM	November 3, 2020	

	VOTES	PERCENT
PRECINCTS COUNTED (OF 255)	255	100.00
REGISTERED VOTERS - TOTAL	674,928	
BALLOTS CAST - TOTAL	169,549	
BALLOTS CAST - BLANK	17,539	10.34
VOTER TURNOUT - TOTAL		25.12
VOTER TURNOUT - BLANK		2.60

Figure 5.

According to Montgomery County during MB2 (Mail in Ballot 2), there were 17,539 “BLANK” Ballots Cast.

These “BALLOTS CAST – BLANK” comprised of 10.34% of all the ballots cast.

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Election Summary	Presidential General Election	(40 -Provisional)
Run Date:11/29/20	Montgomery County, MD	
RUN TIME:06:37 PM	November 3, 2020	

	VOTES	PERCENT
PRECINCTS COUNTED (OF 255).	255	100.00
REGISTERED VOTERS - TOTAL	674,928	
BALLOTS CAST - TOTAL.	19,354	
BALLOTS CAST - BLANK.	2,547	13.16
VOTER TURNOUT - TOTAL		2.87
VOTER TURNOUT - BLANK . . . . .		.38

Figure 6.

According to Montgomery County during Prov (Provisional), there were 2,547 “BLANK” Ballots Cast.

These “BALLOTS CAST – BLANK” comprised of 13.16% of all the ballots cast.

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary

Presidential General Election
Baltimore County, Maryland
November 3, 2020

OFFICIAL RESULTS

Run Date:12/03/20 11:13 AM

Report EL45A

Page 001

	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
PRECINCTS COUNTED (OF 236)	236	100.00					
REGISTERED VOTERS - TOTAL	566,361						
BALLOTS CAST - TOTAL	418,687		133,509	58,152	97,918	15,801	113,307
BALLOTS CAST - BLANK	26,845	6.41	7,716	3,930	4,958	2,917	7,324
VOTER TURNOUT - TOTAL		73.93					
VOTER TURNOUT - BLANK		4.74					
President - Vice Pres							
(VOTE FOR) 1							
Trump-Pence (REP)	146,202	35.24	66,437	31,927	16,954	4,043	26,841
Biden-Harris (DEM)	258,409	62.28	63,878	23,728	78,059	11,210	81,534
Jorgensen-Cohen (LIB)	4,927	1.19	1,326	1,168	758	126	1,549
Hawkins-Walker (GRN)	1,820	.44	497	404	291	66	562
Segal-de Graaf (BAR)	548	.13	193	127	70	15	143
WRITE-IN	3,026	.73	655	496	535	75	1,265
Total	414,932		132,986	57,850	96,667	15,535	111,894
Over Votes	2,160		219	100	892	180	769
Under Votes	1,595		304	202	359	86	644

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Prince Georges County, Marylan November 3, 2020					UNOFFICIAL RESULTS		
Run Date:11/20/20 07:33 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 275)	275	100.00							
REGISTERED VOTERS - TOTAL	604,369								
BALLOTS CAST - TOTAL	427,166		128,831	37,870	180,063	24,030	56,372		
BALLOTS CAST - BLANK	16,684	3.91	4,665	1,847	5,859	2,029	2,284		
VOTER TURNOUT - TOTAL		70.68							
VOTER TURNOUT - BLANK		2.76							
President - Vice Pres (VOTE FOR) 1									
Trump-Pence (REP)	37,090	8.73	15,824	6,691	8,685	1,948	3,942		
Biden-Harris (DEM)	379,208	89.26	109,223	28,996	168,777	21,399	50,813		
Jorgensen-Cohen (LIB)	1,810	.43	509	328	473	119	381		
Hawkins-Walker (GRN)	3,349	.79	1,569	879	446	172	283		
Segal-de Graaf (BAR)	1,394	.33	748	389	109	62	86		
WRITE-IN	2,004	.47	539	364	559	103	439		
Total	424,855		128,412	37,647	179,049	23,803	55,944		
Over Votes	868		152	64	461	97	94		
Under Votes	1,443		267	159	553	130	334		

- % = % of Total**
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- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election				UNOFFICIAL RESULTS		
		Baltimore City, Maryland						
		November 3, 2020						
Run Date:11/16/20 10:32 PM						Report EL45A		Page 001
		TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
PRECINCTS COUNTED (OF 296)	. . . . .	296	100.00					
REGISTERED VOTERS - TOTAL	. . . . .	396,988						
BALLOTS CAST - TOTAL	. . . . .	241,668		59,791	29,629	103,087	14,458	34,703
BALLOTS CAST - BLANK	. . . . .	12,796	5.29	2,495	1,318	3,227	3,132	2,624
VOTER TURNOUT - TOTAL	. . . . .		60.88					
VOTER TURNOUT - BLANK	. . . . .		3.22					
President - Vice Pres								
(VOTE FOR) 1								
Trump-Pence (REP)	. . . . .	25,374	10.69	8,465	5,444	6,768	1,296	3,401
Biden-Harris (DEM)	. . . . .	207,260	87.28	49,591	22,896	92,866	12,554	29,353
Jorgensen-Cohen (LIB)	. . . . .	1,761	.74	421	349	510	112	369
Hawkins-Walker (GRN)	. . . . .	1,338	.56	367	280	359	70	262
Segal-de Graaf (BAR)	. . . . .	456	.19	156	106	91	32	71
WRITE-IN	. . . . .	1,272	.54	271	254	355	76	316
Total	. . . . .	237,461		59,271	29,329	100,949	14,140	33,772
Over Votes	2,666		326	133	1,681	192	334
Under Votes	1,541		194	167	457	126	597

- % = % of Total**
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- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Howard County, Maryland November 3, 2020					UNOFFICIAL RESULTS	
Run Date:11/13/20 05:15 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 118)	118	100.00						
REGISTERED VOTERS - TOTAL	228,227							
BALLOTS CAST - TOTAL	184,388		61,188	18,409	63,817	4,896	36,078	
BALLOTS CAST - BLANK	12	.01	0	1	0	5	6	
VOTER TURNOUT - TOTAL		80.79						
VOTER TURNOUT - BLANK		.01						
President - Vice Pres								
(VOTE FOR) 1								
Trump-Pence (REP)	48,390	26.43	23,430	9,534	7,458	1,177	6,791	
Biden-Harris (DEM)	129,433	70.70	35,872	7,878	54,712	3,546	27,425	
Jorgensen-Cohen (LIB)	2,471	1.35	810	472	543	52	594	
Hawkins-Walker (GRN)	785	.43	248	111	209	17	200	
Segal-de Graaf (BAR)	245	.13	70	45	54	7	69	
WRITE-IN	1,738	.95	499	231	398	26	584	
Total	183,062		60,929	18,271	63,374	4,825	35,663	
Over Votes	463		58	19	212	43	131	
Under Votes	863		201	119	231	28	284	

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- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Frederick County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date:11/19/20 04:08 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	PROV	MB2		
PRECINCTS COUNTED (OF 78)	78	100.00							
REGISTERED VOTERS - TOTAL	187,063								
BALLOTS CAST - TOTAL	146,427		52,954	26,727	42,962	3,775	20,009		
BALLOTS CAST - BLANK	12	.01	4	2	3	0	3		
VOTER TURNOUT - TOTAL		78.28							
VOTER TURNOUT - BLANK		.01							
President - Vice Pres (VOTE FOR) 1									
Trump-Pence (REP)	63,682	43.73	31,490	17,190	7,936	1,374	5,692		
Biden-Harris (DEM)	77,675	53.34	20,063	8,302	33,787	2,256	13,267		
Jorgensen-Cohen (LIB)	2,282	1.57	681	655	438	60	448		
Hawkins-Walker (GRN)	686	.47	208	188	150	17	123		
Segal-de Graaf (BAR)	243	.17	92	64	50	4	33		
WRITE-IN	1,047	.72	278	211	272	35	251		
Total	145,615		52,812	26,610	42,633	3,746	19,814		
Over Votes	303		31	21	168	25	58		
Under Votes	509		111	96	161	4	137		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary	Presidential General Election Anne Arundel County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date:11/16/20 08:24 AM						Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 195)	195	100.00						
REGISTERED VOTERS - TOTAL	406,477							
BALLOTS CAST - TOTAL	300,294		112,365	40,008	89,197	0	58,724	
BALLOTS CAST - BLANK	11		2	4	2	0	3	
VOTER TURNOUT - TOTAL		73.88						
VOTER TURNOUT - BLANK								
President - Vice Pres								
(VOTE FOR) 1								
Trump-Pence (REP)	123,965	41.56	65,507	24,625	17,630	0	16,203	
Biden-Harris (DEM)	165,642	55.53	43,825	13,405	68,916	0	39,496	
Jorgensen-Cohen (LIB)	4,497	1.51	1,418	1,008	879	0	1,192	
Hawkins-Walker (GRN)	1,188	.40	390	235	272	0	291	
Segal-de Graaf (BAR)	365	.12	154	64	77	0	70	
WRITE-IN	2,612	.88	651	407	634	0	920	
Total	298,269		111,945	39,744	88,408	0	58,172	
Over Votes	954		167	94	496	0	197	
Under Votes	1,071		253	170	293	0	355	

- % = % of Total**
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- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Carroll County, Maryland November 3, 2020					UNOFFICIAL RESULTS	
Run Date:11/13/20 04:20 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 36)	36	100.00						
REGISTERED VOTERS - TOTAL	126,271							
BALLOTS CAST - TOTAL	100,968		35,414	27,679	23,563	588	13,724	
BALLOTS CAST - BLANK	11	.01	3	2	1	2	3	
VOTER TURNOUT - TOTAL		79.96						
VOTER TURNOUT - BLANK		.01						
President - Vice Pres								
(VOTE FOR) 1								
Trump-Pence (REP)	60,206	60.01	25,404	21,750	7,022	399	5,631	
Biden-Harris (DEM)	36,454	36.34	8,898	4,647	15,590	156	7,163	
Jorgensen-Cohen (LIB)	2,028	2.02	545	714	353	15	401	
Hawkins-Walker (GRN)	537	.54	175	166	108	1	87	
Segal-de Graaf (BAR)	169	.17	70	47	20	0	32	
WRITE-IN	933	.93	202	237	240	4	250	
Total	100,327		35,294	27,561	23,333	575	13,564	
Over Votes	204		34	20	96	5	49	
Under Votes	437		86	98	134	8	111	

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary			Presidential General Election Harford County, Maryland November 3, 2020				UNOFFICIAL RESULTS	
Run Date:11/13/20 04:38 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 86)	86	100.00						
REGISTERED VOTERS - TOTAL	187,955							
BALLOTS CAST - TOTAL	149,588		69,434	26,826	19,995	3,962	29,371	
BALLOTS CAST - BLANK	10	.01	0	1	0	6	3	
VOTER TURNOUT - TOTAL		79.59						
VOTER TURNOUT - BLANK		.01						
President - Vice Pres (VOTE FOR) 1								
Trump-Pence (REP)	81,196	54.58	45,623	18,918	4,927	1,712	10,016	
Biden-Harris (DEM)	63,379	42.61	22,216	6,701	14,464	2,072	17,926	
Jorgensen-Cohen (LIB)	2,488	1.67	899	686	234	82	587	
Hawkins-Walker (GRN)	578	.39	200	159	53	12	154	
Segal-de Graaf (BAR)	147	.10	38	38	20	3	48	
WRITE-IN	969	.65	297	232	91	13	336	
Total	148,757		69,273	26,734	19,789	3,894	29,067	
Over Votes	455		75	9	146	51	174	
Under Votes	376		86	83	60	17	130	

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary			Presidential General Election Charles County, Maryland November 3, 2020				UNOFFICIAL RESULTS	
Run Date:11/14/20 03:45 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 43)	43	100.00						
REGISTERED VOTERS - TOTAL	118,747							
BALLOTS CAST - TOTAL	90,442		35,698	11,158	10,921	3,103	29,562	
BALLOTS CAST - BLANK	8	.01	0	1	1	0	6	
VOTER TURNOUT - TOTAL		76.16						
VOTER TURNOUT - BLANK		.01						
President - Vice Pres (VOTE FOR) 1								
Trump-Pence (REP)	25,579	28.58	13,578	5,339	1,372	590	4,700	
Biden-Harris (DEM)	62,171	69.47	21,333	5,358	9,246	2,403	23,831	
Jorgensen-Cohen (LIB)	769	.86	282	184	48	26	229	
Hawkins-Walker (GRN)	408	.46	174	109	20	13	92	
Segal-de Graaf (BAR)	136	.15	63	39	6	4	24	
WRITE-IN	435	.49	114	73	39	8	201	
Total	89,498		35,544	11,102	10,731	3,044	29,077	
Over Votes	655		104	20	150	45	336	
Under Votes	289		50	36	40	14	149	

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Summary by Canvass		Presidentail General Election Washington County, Maryland November 3, 2020					UNOFFICIAL RESULTS	
Run Date:11/14/20 10:25 AM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 53)	53	100.00						
REGISTERED VOTERS - TOTAL	99,295							
BALLOTS CAST - TOTAL	68,189		17,722	26,953	15,186	1,942	6,386	
BALLOTS CAST - BLANK	4	.01	1	0	1	2	0	
VOTER TURNOUT - TOTAL		68.67						
VOTER TURNOUT - BLANK								
President - Vice Pres (VOTE FOR) 1								
Trump-Pence (REP)	40,221	59.34	11,880	20,759	4,276	856	2,450	
Biden-Harris (DEM)	26,044	38.42	5,520	5,470	10,432	1,001	3,621	
Jorgensen-Cohen (LIB)	836	1.23	124	409	147	31	125	
Hawkins-Walker (GRN)	309	.46	87	120	53	10	39	
Segal-de Graaf (BAR)	97	.14	42	32	12	4	7	
WRITE-IN	272	.40	31	76	89	5	71	
Total	67,779		17,684	26,866	15,009	1,907	6,313	
Over Votes	224		15	39	112	26	32	
Under Votes	186		23	48	65	9	41	

- % = % of Total**
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- MB1 = Mail in Ballot 1**
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- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary

Presidential General Election
St. Mary's County, Maryland
November 3, 2020

UNOFFICIAL RESULTS

Run Date: 11/13/20 01:57 PM

Report EL45A

Page 001

	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
PRECINCTS COUNTED (OF 36)	36	100.00					
REGISTERED VOTERS - TOTAL	73,818						
BALLOTS CAST - TOTAL	56,109		20,357	12,772	11,722	1,136	10,122
BALLOTS CAST - BLANK	4	.01	1	0	0	0	3
VOTER TURNOUT - TOTAL		76.01					
VOTER TURNOUT - BLANK		.01					

President - Vice Pres
(VOTE FOR) 1

Trump-Pence (REP)	30,822	55.37	13,907	9,068	2,910	532	4,405
Biden-Harris (DEM)	23,137	41.56	5,887	3,193	8,337	545	5,175
Jorgensen-Cohen (LIB)	1,112	2.00	351	319	186	25	231
Hawkins-Walker (GRN)	200	.36	65	49	38	7	41
Segal-de Graaf (BAR)	63	.11	26	11	17	0	9
WRITE-IN	331	.59	76	77	66	0	112
Total	55,665		20,312	12,717	11,554	1,109	9,973
Over Votes	286		19	22	122	18	105
Under Votes	158		26	33	46	9	44

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Worcester County, Maryland November 3, 2020					UNOFFICIAL RESULTS	
Run Date:11/13/20 06:00 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 20)	20	100.00						
REGISTERED VOTERS - TOTAL	40,635							
BALLOTS CAST - TOTAL	31,910		13,171	7,669	2,914	1,238	6,918	
BALLOTS CAST - BLANK	4	.01	0	0	0	1	3	
VOTER TURNOUT - TOTAL		78.53						
VOTER TURNOUT - BLANK		.01						
President - Vice Pres (VOTE FOR) 1								
Trump-Pence (REP)	18,571	58.60	9,333	5,357	696	615	2,570	
Biden-Harris (DEM)	12,560	39.63	3,638	2,123	2,137	565	4,097	
Jorgensen-Cohen (LIB)	336	1.06	102	116	21	15	82	
Hawkins-Walker (GRN)	80	.25	21	23	8	3	25	
Segal-de Graaf (BAR)	20	.06	3	7	2	2	6	
WRITE-IN	124	.39	36	27	6	6	49	
Total	31,691		13,133	7,653	2,870	1,206	6,829	
Over Votes	138		14	9	33	22	60	
Under Votes	81		24	7	11	10	29	

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Talbot County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date:11/13/20 04:48 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 12)	12	100.00							
REGISTERED VOTERS - TOTAL	27,809								
BALLOTS CAST - TOTAL	22,793		10,407	2,902	5,988	518	2,978		
BALLOTS CAST - BLANK	3	.01	0	1	0	0	2		
VOTER TURNOUT - TOTAL		81.96							
VOTER TURNOUT - BLANK		.01							
President - Vice Pres (VOTE FOR) 1									
Trump-Pence (REP)	10,946	48.53	6,435	1,972	1,255	200	1,084		
Biden-Harris (DEM)	11,062	49.04	3,684	810	4,552	297	1,719		
Jorgensen-Cohen (LIB)	274	1.21	119	64	36	7	48		
Hawkins-Walker (GRN)	83	.37	43	14	13	2	11		
Segal-de Graaf (BAR)	35	.16	20	6	6	0	3		
WRITE-IN	155	.69	49	14	40	0	52		
Total	22,555		10,350	2,880	5,902	506	2,917		
Over Votes	115		23	4	55	9	24		
Under Votes	123		34	18	31	3	37		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary	Presidential General Election Wicomico County, Maryland November 3, 2020					UNOFFICIAL RESULTS			
Run Date: 11/13/20 06:58 PM						Report EL45A	Page 001		
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 54)	54	100.00							
REGISTERED VOTERS - TOTAL	64,255								
BALLOTS CAST - TOTAL	46,704		19,228	10,640	8,713	2,716	5,407		
BALLOTS CAST - BLANK	2		1	0	0	0	1		
VOTER TURNOUT - TOTAL		72.69							
VOTER TURNOUT - BLANK									
President - Vice Pres									
(VOTE FOR) 1									
Trump-Pence (REP)	22,940	49.64	11,294	6,972	2,101	924	1,649		
Biden-Harris (DEM)	22,054	47.72	7,382	3,220	6,311	1,659	3,482		
Jorgensen-Cohen (LIB)	538	1.16	186	185	53	35	79		
Hawkins-Walker (GRN)	292	.63	115	99	37	14	27		
Segal-de Graaf (BAR)	147	.32	66	64	6	2	9		
WRITE-IN	245	.53	67	63	45	15	55		
Total	46,216		19,110	10,603	8,553	2,649	5,301		
Over Votes	371		87	17	134	54	79		
Under Votes	117		31	20	26	13	27		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Cecil County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date:11/13/20 01:27 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 28)	28	100.00							
REGISTERED VOTERS - TOTAL	68,926								
BALLOTS CAST - TOTAL	47,746		15,949	16,509	7,200	1,108	6,980		
BALLOTS CAST - BLANK	2		0	0	0	0	2		
VOTER TURNOUT - TOTAL		69.27							
VOTER TURNOUT - BLANK									
President - Vice Pres									
(VOTE FOR) 1									
Trump-Pence (REP)	29,439	62.03	11,162	12,852	2,054	572	2,799		
Biden-Harris (DEM)	16,809	35.42	4,408	3,156	4,912	499	3,834		
Jorgensen-Cohen (LIB)	706	1.49	182	288	79	11	146		
Hawkins-Walker (GRN)	229	.48	94	80	17	3	35		
Segal-de Graaf (BAR)	90	.19	45	29	6	1	9		
WRITE-IN	189	.40	26	51	44	5	63		
Total	47,462		15,917	16,456	7,112	1,091	6,886		
Over Votes	173		13	24	63	16	57		
Under Votes	111		19	29	25	1	37		

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary	Presidential General Election Allegany County, Maryland November 3, 2020	UNOFFICIAL RESULTS
Run Date: 11/13/20 01:00 PM		Report EL45A Page 001
	TOTAL VOTES % EV ED MB1 MB2	Prov MB2
PRECINCTS COUNTED (OF 37)	37 100.00	
REGISTERED VOTERS - TOTAL	43,452	
BALLOTS CAST - TOTAL	29,896	
BALLOTS CAST - BLANK	2 .01	
VOTER TURNOUT - TOTAL	68.80	
VOTER TURNOUT - BLANK		
President - Vice Pres		
(VOTE FOR) 1		
Trump-Pence (REP)	20,441 68.89	7,342 9,513 1,703 0 1,883
Biden-Harris (DEM)	8,651 29.16	1,839 1,888 2,876 0 2,048
Jorgensen-Cohen (LIB)	301 1.01	56 174 30 0 41
Hawkins-Walker (GRN)	114 .38	23 46 20 0 25
Segal-de Graaf (BAR)	39 .13	6 20 8 0 5
WRITE-IN	125 .42	28 43 23 0 31
Total	29,671	9,294 11,684 4,660 0 4,033
Over Votes	119	27 22 42 0 28
Under Votes	106	16 42 26 0 22

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Dorchester County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date: 11/13/20 02:29 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 39)	39	100.00							
REGISTERED VOTERS - TOTAL	22,157								
BALLOTS CAST - TOTAL	16,135		7,308	3,699	2,508	380	2,240		
BALLOTS CAST - BLANK	2	.01	1	1	0	0	0		
VOTER TURNOUT - TOTAL		72.82							
VOTER TURNOUT - BLANK		.01							
President - Vice Pres									
(VOTE FOR) 1									
Trump-Pence (REP)	8,764	54.85	4,749	2,405	650	151	809		
Biden-Harris (DEM)	6,857	42.92	2,398	1,153	1,744	217	1,345		
Jorgensen-Cohen (LIB)	174	1.09	59	61	23	2	29		
Hawkins-Walker (GRN)	97	.61	55	29	6	0	7		
Segal-de Graaf (BAR)	42	.26	18	21	0	0	3		
WRITE-IN	43	.27	7	10	10	1	15		
Total	15,977		7,286	3,679	2,433	371	2,208		
Over Votes	114		9	8	65	8	24		
Under Votes	44		13	12	10	1	8		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Garrett County, Maryland November 3, 2020					UNOFFICIAL RESULTS		
Run Date: 11/13/20 02:22 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2		
PRECINCTS COUNTED (OF 19)	19	100.00							
REGISTERED VOTERS - TOTAL	20,272								
BALLOTS CAST - TOTAL	15,708		9,362	2,320	2,148	457	1,421		
BALLOTS CAST - BLANK	2	.01	2	0	0	0	0		
VOTER TURNOUT - TOTAL		77.49							
VOTER TURNOUT - BLANK		.01							
President - Vice Pres (VOTE FOR) 1									
Trump-Pence (REP)	12,000	76.87	7,972	2,060	880	280	808		
Biden-Harris (DEM)	3,281	21.02	1,167	202	1,204	165	543		
Jorgensen-Cohen (LIB)	212	1.36	113	39	20	3	37		
Hawkins-Walker (GRN)	64	.41	42	4	11	0	7		
Segal-de Graaf (BAR)	20	.13	14	4	1	0	1		
WRITE-IN	34	.22	16	4	7	1	6		
Total	15,611		9,324	2,313	2,123	449	1,402		
Over Votes	41		16	2	11	4	8		
Under Votes	56		22	5	14	4	11		

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Calvert County, Maryland November 3, 2020				UNOFFICIAL RESULTS	
Run Date:11/13/20 02:25 PM						Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
PRECINCTS COUNTED (OF 23)	23	100.00					
REGISTERED VOTERS - TOTAL	68,139						
BALLOTS CAST - TOTAL	49,437		14,322	13,464	12,270	685	8,696
BALLOTS CAST - BLANK	1		1	0	0	0	0
VOTER TURNOUT - TOTAL		72.55					
VOTER TURNOUT - BLANK							

President - Vice Pres
(VOTE FOR) 1

Trump-Pence (REP)	25,346	51.61	9,115	9,980	2,757	350	3,144
Biden-Harris (DEM)	22,587	45.99	4,956	3,064	9,117	306	5,144
Jorgensen-Cohen (LIB)	733	1.49	159	247	141	13	173
Hawkins-Walker (GRN)	127	.26	14	43	31	2	37
Segal-de Graaf (BAR)	39	.08	8	10	8	1	12
WRITE-IN	280	.57	41	67	77	3	92
Total	49,112		14,293	13,411	12,131	675	8,602
Over Votes	189		4	20	105	10	50
Under Votes	136		25	33	34	0	44

% = % of Total

EV = Early Voting

ED = Election Day

MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

JURISDICTION WIDE SUMMARY			Presidential General Election Queen Anne's County, Maryland November 03, 2020					UNOFFICIAL RESULTS	
Run Date: 11/13/20 01:05 PM								Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	PROV	MB2		
PRECINCTS COUNTED (OF 11)	11	100.00							
REGISTERED VOTERS - TOTAL	37,870								
BALLOTS CAST - TOTAL	30,495		16,044	4,706	4,791	948	4,006		
BALLOTS CAST - BLANK	0		0	0	0	0	0		
VOTER TURNOUT - TOTAL		80.53							
VOTER TURNOUT - BLANK									
President - Vice Pres (VOTE FOR) 1									
Trump-Pence (REP)	18,741	61.87	11,705	3,651	1,347	484	1,554		
Biden-Harris (DEM)	10,709	35.35	3,885	859	3,306	418	2,241		
Jorgensen-Cohen (LIB)	411	1.36	193	96	29	21	72		
Hawkins-Walker (GRN)	164	.54	84	40	12	2	26		
Segal-de Graaf (BAR)	54	.18	38	9	2	0	5		
WRITE-IN	211	.70	76	36	32	5	62		
Total	30,290		15,981	4,691	4,728	930	3,960		
Over Votes	103		18	2	43	16	24		
Under Votes	102		45	13	20	2	22		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Presidential General Election Caroline County, Maryland November 3, 2020					UNOFFICIAL RESULTS	
Run Date:11/13/20 05:00 PM							Report EL45A	Page 001
		TOTAL VOTES	%	EV	ED	MB1	Prov	MB2
PRECINCTS COUNTED (OF 8)	. . . . .	8	100.00					
REGISTERED VOTERS - TOTAL	. . . . .	21,003						
BALLOTS CAST - TOTAL	. . . . .	15,914		7,334	4,475	1,416	458	2,231
BALLOTS CAST - BLANK	. . . . .	0		0	0	0	0	0
VOTER TURNOUT - TOTAL	. . . . .		75.77					
VOTER TURNOUT - BLANK	. . . . .						
President - Vice Pres								
(VOTE FOR) 1								
Trump-Pence (REP)	. . . . .	10,283	65.11	5,305	3,523	409	251	795
Biden-Harris (DEM)	. . . . .	5,095	32.26	1,819	794	959	196	1,327
Jorgensen-Cohen (LIB)	. . . . .	229	1.45	93	85	11	5	35
Hawkins-Walker (GRN)	. . . . .	90	.57	48	29	4	1	8
Segal-de Graaf (BAR)	. . . . .	32	.20	14	15	2	0	1
WRITE-IN	. . . . .	65	.41	20	17	5	1	22
Total	. . . . .	15,794		7,299	4,463	1,390	454	2,188
Over Votes	. . . . .	74		19	2	18	3	32
Under Votes	. . . . .	46		16	10	8	1	11

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary			Presidential General Election Kent County, Maryland November 3, 2020				UNOFFICIAL RESULTS	
Run Date:11/13/20 01:02 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MB1	Prov	MB2	
PRECINCTS COUNTED (OF 10)	10	100.00						
REGISTERED VOTERS - TOTAL	13,476							
BALLOTS CAST - TOTAL	10,883		4,506	2,082	1,726	353	2,216	
BALLOTS CAST - BLANK	0		0	0	0	0	0	
VOTER TURNOUT - TOTAL		80.76						
VOTER TURNOUT - BLANK								
President - Vice Pres (VOTE FOR) 1								
Trump-Pence (REP)	5,195	48.13	2,643	1,466	269	160	657	
Biden-Harris (DEM)	5,329	49.37	1,736	524	1,403	173	1,493	
Jorgensen-Cohen (LIB)	117	1.08	46	33	8	6	24	
Hawkins-Walker (GRN)	68	.63	33	21	5	2	7	
Segal-de Graaf (BAR)	31	.29	18	12	1	0	0	
WRITE-IN	54	.50	19	11	10	2	12	
Total	10,794		4,495	2,067	1,696	343	2,193	
Over Votes	57		2	7	24	8	16	
Under Votes	32		9	8	6	2	7	

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election					Unofficial Results		
		Prince George's, Maryland							
Run Date: 12/01/22 10:20 AM		November 8, 2022					Report EL45A Page 001		
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 327)	327	100.00							
REGISTERED VOTERS - TOTAL	598,407								
BALLOTS CAST - TOTAL	243,065		52,135	111,829	23,677	10,498	44,926		
BALLOTS CAST - BLANK	22,453	9.24	4,076	10,176	1,911	2,250	4,040		
VOTER TURNOUT - TOTAL		40.62							
VOTER TURNOUT - BLANK		3.75							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	20,045	8.32	3,458	12,227	1,426	788	2,146		
Moore-Miller (DEM)	214,971	89.23	47,286	95,449	21,519	9,202	41,515		
Lashar-Logansmith (LIB)	1,314	.55	185	707	115	63	244		
Wallace-Elder (GRN)	1,995	.83	411	1,071	136	141	236		
Harding-White (WCP)	2,194	.91	473	1,335	110	101	175		
WRITE-IN	389	.16	55	188	41	21	84		
Total	240,908		51,868	110,977	23,347	10,316	44,400		
Over Votes	745		111	301	174	35	124		
Under Votes	1,412		156	551	156	147	402		

- % = % of Total**
- EV = Early Voting**
- ED = Election Day**
- MB1 = Mail in Ballot 1**
- Prov = Provisional**
- MB2 = Mail in Ballot 2**

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvas	Gubernatorial General Election					UNOFFICIAL RESULTS		
	Montgomery County, Maryland							
	November 8, 2022							
Run Date:12/05/22 02:19 PM						Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 258)	258	100.00						
REGISTERED VOTERS - TOTAL	673,373							
BALLOTS CAST - TOTAL	346,763		55,948	159,390	41,604	13,595	76,226	
BALLOTS CAST - BLANK	20,098	5.80	1,878	8,676	3,001	1,385	5,158	
VOTER TURNOUT - TOTAL		51.50						
VOTER TURNOUT - BLANK		2.98						
Governor / Lt. Governor								
(VOTE FOR) 1								
Cox-Schifanelli (REP)	64,507	18.79	10,610	40,164	4,503	2,255	6,975	
Moore-Miller (DEM)	269,072	78.36	43,861	112,838	35,596	10,723	66,054	
Lashar-Logansmith (LIB)	3,993	1.16	502	2,101	417	144	829	
Wallace-Elder (GRN)	2,948	.86	370	1,460	318	144	656	
Harding-White (WCP)	1,936	.56	248	1,141	167	99	281	
WRITE-IN	915	.27	114	471	91	39	200	
Total	343,371		55,705	158,175	41,092	13,404	74,995	
Over Votes	468		29	220	75	51	93	
Under Votes	2,924		214	995	437	140	1,138	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass

Governatorial General Election
Baltimore City, Maryland
November 8, 2022

UNOFFICIAL RESULTS

Run Date: 11/20/22 09:22 AM

Report EL45A Page 001

	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2
PRECINCTS COUNTED (OF 296)	296	100.00					
REGISTERED VOTERS - TOTAL	395,134						
BALLOTS CAST - TOTAL	146,655		22,405	69,589	33,249	7,880	13,532
BALLOTS CAST - BLANK	6,506	4.44	853	2,518	1,376	1,088	671
VOTER TURNOUT - TOTAL		37.12					
VOTER TURNOUT - BLANK		1.65					
Governor / Lt. Governor							
(VOTE FOR) 1							
Cox-Schifanelli (REP)	12,309	8.56	1,486	7,818	1,903	508	594
Moore-Miller (DEM)	126,768	88.11	20,080	58,211	29,450	6,778	12,249
Lashar-Logansmith (LIB)	1,452	1.01	131	829	282	83	127
Wallace-Elder (GRN)	1,420	.99	164	762	258	102	134
Harding-White (WCP)	1,648	1.15	234	919	244	134	117
WRITE-IN	270	.19	23	147	64	7	29
Total	143,867		22,118	68,686	32,201	7,612	13,250
Over Votes	806		99	206	369	73	59
Under Votes	1,982		188	697	679	195	223

% = % of Total

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary			Gubernatorial General Election Anne Arundel County, Maryland November 8, 2022				UNOFFICIAL RESULTS		
Run Date: 11/21/22 09:50 AM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 195)	195	100.00							
REGISTERED VOTERS - TOTAL	406,492								
BALLOTS CAST - TOTAL	218,344		38,931	113,815	11,398	5,844	48,356		
BALLOTS CAST - BLANK	4,157	1.90	519	1,741	391	198	1,308		
VOTER TURNOUT - TOTAL		53.71							
VOTER TURNOUT - BLANK		1.02							
Governor / Lt. Governor (VOTE FOR) 1									
Cox-Schifanelli (REP)	83,821	38.80	15,566	55,006	2,234	1,795	9,220		
Moore-Miller (DEM)	123,928	57.37	21,952	53,029	8,662	3,733	36,552		
Lashar-Logansmith (LIB)	4,538	2.10	633	2,626	187	103	989		
Wallace-Elder (GRN)	1,324	.61	174	713	61	54	322		
Harding-White (WCP)	1,608	.74	193	1,007	47	54	307		
WRITE-IN	804	.37	115	411	47	20	211		
Total	216,023		38,633	112,792	11,238	5,759	47,601		
Over Votes	544		44	260	59	27	154		
Under Votes	1,777		254	763	101	58	601		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS			
	Harford County, Maryland								
	November 8, 2022								
Run Date: 11/18/22 04:02 PM						Report EL45A		Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 72)	72	100.00							
REGISTERED VOTERS - TOTAL	189,160								
BALLOTS CAST - TOTAL	104,446		22,509	61,330	9,997	4,280	6,330		
BALLOTS CAST - BLANK	1,892	1.81	349	972	301	115	155		
VOTER TURNOUT - TOTAL		55.22							
VOTER TURNOUT - BLANK		1.00							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	53,962	52.21	11,783	36,335	2,947	1,408	1,489		
Moore-Miller (DEM)	45,222	43.76	9,832	21,830	6,477	2,612	4,471		
Lashar-Logansmith (LIB)	2,202	2.13	380	1,395	173	114	140		
Wallace-Elder (GRN)	667	.65	110	417	71	25	44		
Harding-White (WCP)	968	.94	160	630	96	40	42		
WRITE-IN	325	.31	55	177	51	10	32		
Total	103,346		22,320	60,784	9,815	4,209	6,218		
Over Votes	275		48	127	53	22	25		
Under Votes	825		141	419	129	49	87		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

Jurisdiction Wide Summary		Gubernatorial General Election					UNOFFICIAL RESULTS		
Run Date:11/18/22 05:23 PM		Howard County, Maryland					Report EL45A Page 001		
		November 8, 2022							
	TOTAL VOTES	%	EV	ED	MIB1	PROV	MIB2		
PRECINCTS COUNTED (OF 118)	118	100.00							
REGISTERED VOTERS - TOTAL	229,524								
BALLOTS CAST - TOTAL	131,917		26,563	68,358	27,696	8,206	1,094		
BALLOTS CAST - BLANK	1,770	1.34	290	959	307	154	60		
VOTER TURNOUT - TOTAL		57.47							
VOTER TURNOUT - BLANK		.77							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	34,514	26.49	6,680	22,727	3,703	1,273	131		
Moore-Miller (DEM)	91,031	69.87	18,895	42,060	22,735	6,506	835		
Lashar-Logansmith (LIB)	2,657	2.04	430	1,546	488	173	20		
Wallace-Elder (GRN)	882	.68	125	518	159	72	8		
Harding-White (WCP)	758	.58	113	478	122	42	3		
WRITE-IN	449	.34	77	248	94	28	2		
Total	130,291		26,320	67,577	27,301	8,094	999		
Over Votes	230		35	97	74	19	5		
Under Votes	1,396		208	684	321	93	90		

% = % OF TOTAL

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MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election						UNOFFICIAL RESULTS	
	Frederick County, Maryland							
	November 8, 2022							
Run Date:11/18/22 08:40 PM							Report EL45A	Page 001
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 83)	83	100.00						
REGISTERED VOTERS - TOTAL	195,785							
BALLOTS CAST - TOTAL	107,788		16,012	64,205	10,024	3,889	13,658	
BALLOTS CAST - BLANK	1,187	1.10	130	593	174	86	204	
VOTER TURNOUT - TOTAL		55.05						
VOTER TURNOUT - BLANK . . . . .		.61					
Governor / Lt. Governor								
(VOTE FOR) 1								
Cox-Schifanelli (REP)	46,040	43.19	6,957	33,486	1,947	1,067	2,583	
Moore-Miller (DEM)	56,992	53.46	8,574	27,697	7,682	2,617	10,422	
Lashar-Logansmith (LIB)	1,856	1.74	183	1,249	114	69	241	
Wallace-Elder (GRN)	602	.56	51	406	50	25	70	
Harding-White (WCP)	790	.74	75	529	59	31	96	
WRITE-IN	328	.31	39	203	35	14	37	
Total	106,608		15,879	63,570	9,887	3,823	13,449	
Over Votes	211		17	115	31	17	31	
Under Votes	969		116	520	106	49	178	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election Wicomico County, Maryland November 08, 2022					UNOFFICIAL RESULTS		
Run Date:11/18/22 06:18 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 63)	63	100.00							
REGISTERED VOTERS - TOTAL	65,277								
BALLOTS CAST - TOTAL	31,029		6,138	18,139	4,149	1,699	904		
BALLOTS CAST - BLANK	911	2.94	136	436	220	73	46		
VOTER TURNOUT - TOTAL		47.53							
VOTER TURNOUT - BLANK		1.40							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	15,361	50.70	2,743	10,731	1,138	510	239		
Moore-Miller (DEM)	13,873	45.79	3,089	6,390	2,734	1,055	605		
Lashar-Logansmith (LIB)	426	1.41	87	269	32	26	12		
Wallace-Elder (GRN)	196	.65	35	116	20	19	6		
Harding-White (WCP)	392	1.29	61	252	45	22	12		
WRITE-IN	48	.16	10	26	10	2	0		
Total	30,296		6,025	17,784	3,979	1,634	874		
Over Votes	116		15	58	23	14	6		
Under Votes	617		98	297	147	51	24		

% = % of Total

EV = Early Voting

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election Washington County, Maryland November 8, 2022	UNOFFICIAL RESULTS
Run Date:11/18/22 06:46 PM		Report EL45A Page 001
	TOTAL VOTES % EV ED MIB1	Prov MIB2
PRECINCTS COUNTED (OF 55)	55 100.00	
REGISTERED VOTERS - TOTAL	99,137	
BALLOTS CAST - TOTAL	49,477	7,383 31,204 5,999
BALLOTS CAST - BLANK	871 1.76	105 499 149 862 4,029
VOTER TURNOUT - TOTAL	49.91	
VOTER TURNOUT - BLANK . . . . .	.88	
Governor / Lt. Governor		
(VOTE FOR) 1		
Cox-Schifanelli (REP)	28,547 58.43	4,337 20,784 1,822 379 1,225
Moore-Miller (DEM)	18,726 38.33	2,792 9,096 3,835 416 2,587
Lashar-Logansmith (LIB)	688 1.41	68 467 79 13 61
Wallace-Elder (GRN)	284 .58	46 163 43 11 21
Harding-White (WCP)	522 1.07	61 331 80 18 32
WRITE-IN	86 .18	15 47 9 2 13
Total	48,853	7,319 30,888 5,868 839 3,939
Over Votes	133	6 64 44 8 11
Under Votes	491	58 252 87 15 79

- % = % of Total**
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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election Carroll County, Maryland November 8, 2022					UNOFFICIAL RESULTS		
Run Date:11/18/22 02:07 PM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 50)	50	100.00							
REGISTERED VOTERS - TOTAL	127,605								
BALLOTS CAST - TOTAL	72,925		14,211	43,065	10,558	4,745	346		
BALLOTS CAST - BLANK	3		0	1	2	0	0		
VOTER TURNOUT - TOTAL		57.15							
VOTER TURNOUT - BLANK									
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	40,683	56.59	8,097	28,082	2,791	1,605	108		
Moore-Miller (DEM)	28,117	39.11	5,375	12,710	7,070	2,752	210		
Lashar-Logansmith (LIB)	1,642	2.28	311	982	222	121	6		
Wallace-Elder (GRN)	502	.70	79	273	84	58	8		
Harding-White (WCP)	626	.87	94	378	89	62	3		
WRITE-IN	317	.44	79	166	55	16	1		
Total	71,887		14,035	42,591	10,311	4,614	336		
Over Votes	65		13	23	16	12	1		
Under Votes	973		163	451	231	119	9		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election Talbot County, Maryland November 8, 2022	UNOFFICIAL RESULTS
Run Date:11/18/22 05:01 PM		Report EL45A Page 001
	TOTAL VOTES % EV ED MIB1	Prov MIB2
PRECINCTS COUNTED (OF 12)	12 100.00	
REGISTERED VOTERS - TOTAL	28,500	
BALLOTS CAST - TOTAL	17,896	
BALLOTS CAST - BLANK	476 2.66	
VOTER TURNOUT - TOTAL	62.79	
VOTER TURNOUT - BLANK	1.67	
Governor / Lt. Governor (VOTE FOR) 1		
Cox-Schifanelli (REP)	7,935 44.97	
Moore-Miller (DEM)	9,116 51.66	
Lashar-Logansmith (LIB)	326 1.85	
Wallace-Elder (GRN)	84 .48	
Harding-White (WCP)	134 .76	
WRITE-IN	51 .29	
Total	17,646	
Over Votes	45	
Under Votes	205	
	5,195 8,074 2,748	103 206 10 1 0 321 1,308
	2,390 4,553 554	1 6 7 5 7 6 24
	2,658 3,218 2,113	1 1 1 1 1 1 1
	83 165 41	1 1 1 1 1 1 1
	21 40 9	1 1 1 1 1 1 1
	34 71 23	1 1 1 1 1 1 1
	9 27 8	1 1 1 1 1 1 1
	11 16 11	1 1 1 1 1 1 1
	54 89 38	1 1 1 1 1 1 1

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS		
	Charles County, Maryland							
	November 8, 2022							
Run Date:11/18/22 06:46 PM						Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 44)	44	100.00						
REGISTERED VOTERS - TOTAL	121,087							
BALLOTS CAST - TOTAL	55,137		11,910	29,965	8,571	1,418	3,273	
BALLOTS CAST - BLANK	436	.79	69	236	66	40	25	
VOTER TURNOUT - TOTAL		45.54						
VOTER TURNOUT - BLANK		.36						
Governor / Lt. Governor								
(VOTE FOR) 1								
Cox-Schifanelli (REP)	15,830	29.04	3,302	10,426	1,368	271	463	
Moore-Miller (DEM)	37,367	68.55	8,276	18,518	6,839	1,064	2,670	
Lashar-Logansmith (LIB)	459	.84	67	262	79	17	34	
Wallace-Elder (GRN)	313	.57	66	181	36	12	18	
Harding-White (WCP)	454	.83	83	273	58	16	24	
WRITE-IN	87	.16	15	42	21	2	7	
Total	54,510		11,809	29,702	8,401	1,382	3,216	
Over Votes	273		33	122	86	6	26	
Under Votes	354		68	141	84	30	31	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election Garrett County, Maryland November 8, 2022				UNOFFICIAL RESULTS		
Run Date:11/18/22 12:11 PM						Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 19)	19	100.00						
REGISTERED VOTERS - TOTAL	20,396							
BALLOTS CAST - TOTAL	11,480		2,390	7,220	1,550	256	64	
BALLOTS CAST - BLANK	357	3.11	77	228	36	12	4	
VOTER TURNOUT - TOTAL		56.29						
VOTER TURNOUT - BLANK		1.75						
Governor / Lt. Governor								
(VOTE FOR) 1								
Cox-Schifanelli (REP)	8,381	74.14	1,688	5,881	626	155	31	
Moore-Miller (DEM)	2,507	22.18	597	988	817	80	25	
Lashar-Logansmith (LIB)	207	1.83	46	125	23	10	3	
Wallace-Elder (GRN)	54	.48	8	31	13	2	0	
Harding-White (WCP)	141	1.25	25	90	23	2	1	
WRITE-IN	15	.13	1	10	4	0	0	
Total	11,305		2,365	7,125	1,506	249	60	
Over Votes	34		3	19	10	2	0	
Under Votes	141		22	76	34	5	4	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election					UNOFFICIAL RESULTS		
		St. Mary's, Maryland							
		November 8, 2022							
Run Date:11/18/22 03:10 PM							Report EL45A	Page 001	
		TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 38)	. . . . .	38	100.00					
REGISTERED VOTERS - TOTAL	. . . . .	75,342						
BALLOTS CAST - TOTAL	. . . . .	38,114		9,076	20,932	5,247	985	1,874
BALLOTS CAST - BLANK	. . . . .	320	.84	51	137	98	10	24
VOTER TURNOUT - TOTAL	. . . . .		50.59					
VOTER TURNOUT - BLANK	. . . . .		.42					
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	. . . . .	21,150	56.10	5,530	13,177	1,572	392	479
Moore-Miller (DEM)	. . . . .	15,057	39.94	3,197	6,743	3,351	520	1,246
Lashar-Logansmith (LIB)	. . . . .	754	2.00	134	429	98	26	67
Wallace-Elder (GRN)	. . . . .	274	.73	57	164	32	9	12
Harding-White (WCP)	. . . . .	378	1.00	89	205	52	14	18
WRITE-IN	. . . . .	90	.24	13	46	20	2	9
Total	37,703		9,020	20,764	5,125	963	1,831	
Over Votes	118		12	40	47	11	8	
Under Votes	293		44	128	75	11	35	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election					UNOFFICIAL RESULTS			
		Allegany County, Maryland								
Run Date: 11/18/22 01:00 PM		November 8, 2022					Report EL45A		Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2			
PRECINCTS COUNTED (OF 37)	37	100.00								
REGISTERED VOTERS - TOTAL	43,616									
BALLOTS CAST - TOTAL	22,028		2,315	15,320	3,614	718	61			
BALLOTS CAST - BLANK	271	1.23	18	190	53	8	2			
VOTER TURNOUT - TOTAL		50.50								
VOTER TURNOUT - BLANK		.62								
Governor / Lt. Governor										
(VOTE FOR) 1										
Cox-Schifanelli (REP)	14,145	65.19	1,463	11,024	1,346	280	32			
Moore-Miller (DEM)	6,796	31.32	783	3,566	2,041	384	22			
Lashar-Logansmith (LIB)	298	1.37	20	209	50	18	1			
Wallace-Elder (GRN)	153	.71	11	101	31	10	0			
Harding-White (WCP)	286	1.32	17	205	45	17	2			
WRITE-IN	19	.09	0	13	4	2	0			
Total	21,697		2,294	15,118	3,517	711	57			
Over Votes	90		2	57	27	4	0			
Under Votes	241		19	145	70	3	4			

- % = % of Total**
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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS			
	Kent County, Maryland								
	November 8, 2022								
Run Date:11/16/22 02:25 PM						Report EL45A	Page 001		
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 10)	10	100.00							
REGISTERED VOTERS - TOTAL	13,869								
BALLOTS CAST - TOTAL	8,609		1,930	4,705	1,739	235	0		
BALLOTS CAST - BLANK	121	1.41	20	52	37	12	0		
VOTER TURNOUT - TOTAL		62.07							
VOTER TURNOUT - BLANK		.87							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	3,791	44.79	694	2,695	329	73	0		
Moore-Miller (DEM)	4,394	51.92	1,164	1,757	1,335	138	0		
Lashar-Logansmith (LIB)	110	1.30	19	76	11	4	0		
Wallace-Elder (GRN)	60	.71	18	35	3	4	0		
Harding-White (WCP)	98	1.16	12	71	10	5	0		
WRITE-IN	10	.12	3	3	4	0	0		
Total	8,463		1,910	4,637	1,692	224	0		
Over Votes	30		5	13	9	3	0		
Under Votes	116		15	55	38	8	0		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass		Gubernatorial General Election Baltimore County, Maryland November 8, 2022					UNOFFICIAL RESULTS		
Run Date:11/19/22 08:32 AM							Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 243)	243	100.00							
REGISTERED VOTERS - TOTAL	563,463								
BALLOTS CAST - TOTAL	277,788		55,877	135,468	25,979	8,221	52,243		
BALLOTS CAST - BLANK	19,678	7.08	3,377	8,732	2,065	1,256	4,248		
VOTER TURNOUT - TOTAL		49.30							
VOTER TURNOUT - BLANK		3.49							
Governor / Lt. Governor (VOTE FOR) 1									
Cox-Schifanelli (REP)	88,971	32.70	18,693	54,879	5,007	1,959	8,433		
Moore-Miller (DEM)	172,492	63.40	34,537	72,778	19,212	5,720	40,245		
Lashar-Logansmith (LIB)	4,887	1.80	817	2,621	352	119	978		
Wallace-Elder (GRN)	2,020	.74	313	1,059	211	80	357		
Harding-White (WCP)	2,790	1.03	501	1,575	230	87	397		
WRITE-IN	894	.33	140	416	79	23	236		
Total	272,054		55,001	133,328	25,091	7,988	50,646		
Over Votes	726		79	288	149	31	179		
Under Votes	5,008		797	1,852	739	202	1,418		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS			
	Queen Anne's County, Maryland								
	November 8, 2022								
Run Date:11/18/22 02:36 PM						Report EL45A		Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 11)	11	100.00							
REGISTERED VOTERS - TOTAL	39,194								
BALLOTS CAST - TOTAL	23,149		6,283	12,647	3,557	492	170		
BALLOTS CAST - BLANK	80	.35	11	27	35	4	3		
VOTER TURNOUT - TOTAL		59.06							
VOTER TURNOUT - BLANK		.20							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	13,123	57.31	3,557	8,332	951	240	43		
Moore-Miller (DEM)	8,913	38.92	2,445	3,729	2,403	219	117		
Lashar-Logansmith (LIB)	437	1.91	106	248	62	17	4		
Wallace-Elder (GRN)	122	.53	31	69	20	1	1		
Harding-White (WCP)	214	.93	56	128	28	2	0		
WRITE-IN	90	.39	28	43	18	1	0		
Total	22,899		6,223	12,549	3,482	480	165		
Over Votes	50		7	23	12	6	2		
Under Votes	200		53	75	63	6	3		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS		
	Caroline County, Maryland							
	November 8, 2022							
Run Date:11/18/22 01:17 PM						Report EL45A	Page 001	
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2	
PRECINCTS COUNTED (OF 8)	8	100.00						
REGISTERED VOTERS - TOTAL	21,585							
BALLOTS CAST - TOTAL	10,895		2,051	7,300	1,202	167	175	
BALLOTS CAST - BLANK	0		0	0	0	0	0	
VOTER TURNOUT - TOTAL		50.47						
VOTER TURNOUT - BLANK								
Governor / Lt. Governor								
(VOTE FOR) 1								
Cox-Schifanelli (REP)	6,869	64.02	1,178	5,165	384	84	58	
Moore-Miller (DEM)	3,447	32.13	772	1,779	725	74	97	
Lashar-Logansmith (LIB)	182	1.70	27	129	20	2	4	
Wallace-Elder (GRN)	60	.56	10	34	12	1	3	
Harding-White (WCP)	145	1.35	28	95	17	1	4	
WRITE-IN	26	.24	4	11	6	1	4	
Total	10,729		2,019	7,213	1,164	163	170	
Over Votes	16		1	11	4	0	0	
Under Votes	150		31	76	34	4	5	

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election Dorchester County, Maryland November 8, 2022	UNOFFICIAL RESULTS
Run Date: 11/18/22 02:17 PM		Report EL45A Page 001
	TOTAL VOTES % EV ED MIB1	Prov MIB2
PRECINCTS COUNTED (OF 44)	44 100.00	
REGISTERED VOTERS - TOTAL	22,674	
BALLOTS CAST - TOTAL	11,676	
BALLOTS CAST - BLANK	3 .03	0 1 1 1 1 0
VOTER TURNOUT - TOTAL	51.50	
VOTER TURNOUT - BLANK . . . . .	.01	
Governor / Lt. Governor		
(VOTE FOR) 1		
Cox-Schifanelli (REP)	6,377 55.49	1,002 4,659 508 150 58
Moore-Miller (DEM)	4,715 41.02	967 2,235 1,139 194 180
Lashar-Logansmith (LIB)	145 1.26	26 94 19 3 3
Wallace-Elder (GRN)	70 .61	11 49 9 0 1
Harding-White (WCP)	165 1.44	28 106 23 5 3
WRITE-IN	21 .18	3 9 7 2 0
Total	11,493	2,037 7,152 1,705 354 245
Over Votes	28	0 12 12 1 3
Under Votes	155	17 76 47 14 1

- % = % of Total**
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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election					UNOFFICIAL RESULTS			
	Somerset County, Maryland								
	November 8, 2022								
Run Date:11/18/22 01:34 PM						Report EL45A	Page 001		
	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2		
PRECINCTS COUNTED (OF 23)	23	100.00							
REGISTERED VOTERS - TOTAL	14,112								
BALLOTS CAST - TOTAL.	6,958		1,397	4,318	827	256	160		
BALLOTS CAST - BLANK.	1	.01	0	0	0	0	1		
VOTER TURNOUT - TOTAL		49.31							
VOTER TURNOUT - BLANK . . . . .		.01							
Governor / Lt. Governor									
(VOTE FOR) 1									
Cox-Schifanelli (REP)	4,128	60.45	886	2,808	280	99	55		
Moore-Miller (DEM)	2,491	36.48	450	1,318	486	144	93		
Lashar-Logansmith (LIB).	72	1.05	16	44	7	2	3		
Wallace-Elder (GRN)	47	.69	8	31	7	1	0		
Harding-White (WCP)	84	1.23	12	56	13	1	2		
WRITE-IN.	7	.10	1	3	2	0	1		
Total	6,829		1,373	4,260	795	247	154		
Over Votes	22		0	12	8	1	1		
Under Votes	107		24	46	24	8	5		

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**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass

Gubernatorial General Election
Worcester County, Maryland
November 8, 2022

UNOFFICIAL RESULTS

Run Date: 11/18/22 04:04 PM

Report EL45A Page 001

	TOTAL VOTES	%	EV	ED	MIB1	Prov	MIB2
PRECINCTS COUNTED (OF 20)	20	100.00					
REGISTERED VOTERS - TOTAL	42,116						
BALLOTS CAST - TOTAL	24,231		4,172	14,726	4,063	537	733
BALLOTS CAST - BLANK	0		0	0	0	0	0
VOTER TURNOUT - TOTAL		57.53					
VOTER TURNOUT - BLANK							
Governor / Lt. Governor							
(VOTE FOR) 1							
Cox-Schifanelli (REP)	13,967	58.68	2,484	9,646	1,303	270	264
Moore-Miller (DEM)	9,196	38.64	1,562	4,450	2,538	228	418
Lashar-Logansmith (LIB)	293	1.23	38	183	52	6	14
Wallace-Elder (GRN)	130	.55	20	76	25	6	3
Harding-White (WCP)	181	.76	17	116	28	11	9
WRITE-IN	34	.14	5	17	9	2	1
Total	23,801		4,126	14,488	3,955	523	709
Over Votes	59		3	38	16	0	2
Under Votes	371		43	200	92	14	22

% = % of Total

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MB1 = Mail in Ballot 1

Prov = Provisional

MB2 = Mail in Ballot 2

**MARYLAND ZUCKERBUCK GRANT AMOUNTS
AND MARYLAND BLANK BALLOTS CAST- EL45A DATA**

EXHIBIT Y2

By Canvass	Gubernatorial General Election Calvert County, Maryland November 8, 2022	UNOFFICIAL RESULTS
Run Date: 11/18/22 01:23 PM		Report EL45A Page 001
	TOTAL VOTES % EV ED MIB1	Prov MIB2
PRECINCTS COUNTED (OF 20)	20 100.00	
REGISTERED VOTERS - TOTAL	67,778	
BALLOTS CAST - TOTAL	38,035	
BALLOTS CAST - BLANK	85 .22	
VOTER TURNOUT - TOTAL	56.12	
VOTER TURNOUT - BLANK . . . . .	.13	
Governor / Lt. Governor (VOTE FOR) 1		
Cox-Schifanelli (REP)	19,668 52.34	4,938 11,939 1,570 324 897
Moore-Miller (DEM)	16,757 44.59	3,643 6,751 3,842 386 2,135
Lashar-Logansmith (LIB)	601 1.60	106 330 68 24 73
Wallace-Elder (GRN)	174 .46	19 88 35 5 27
Harding-White (WCP)	277 .74	36 164 42 11 24
WRITE-IN	100 .27	16 48 25 3 8
Total	37,577	8,758 19,320 5,582 753 3,164
Over Votes	78	9 28 22 9 10
Under Votes	380	78 187 58 9 48

- % = % of Total**
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- MB2 = Mail in Ballot**

EXHIBIT W – UG RTR USER GUIDE 5.11

According to the Colorado Dominion manual, it is the "Machine Report," provided the "Include blank ballots" parameter is set to true.

Here is the manual page:

UG_RTR_UserGuide_5.11_CO.pdf

1. Machine Report

Allows the user to create summary reports **per tabulator** optionally broken down per precinct.

Global project settings:

Not effected by any global project settings. **Report parameters:**

- Show page number: if set true the page number will be included in the report
- Show printed time: if set true the date and time of when the report was produced will be included in the report.
- Extra Vertical Space: if set true there will be extra vertical space between each line of content.
- Page orientation: selects whether the report is oriented in portrait or in landscape mode. Will not affect the preview.
- Page size: select the page length: Letter, Legal, Ledger. Will not affect the preview.
- Add party to candidate names: if set to true the party abbreviation is included in the choice name. For example, "John Doe" vs. "PTY – John Doe".
- Display blank totals: if set to true, none of the votes will be shown in the report, the turnout section if included will show all relevant content.
- Split tabulator per precinct: if set to true results per tabulator will be broken down per precinct.
- **Include blank ballots: if set to true the number of blank ballots cast containing the contest will be shown.**

END OF DOCUMENT