# Proposal for a Ballot Sorting and Scanning System

# Washoe County Elections

Quotation Submitted By:

Craig Chapel

Regional Sales Director

Fluence Automation

July 8, 2020

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# 1. EXECUTIVE SUMMARY & COVER LETTER

Mr. Michael Mulreany                                                           July 10, 2020
Department Systems Specialist
Washoe County Registrar of Voters
1001 E. Ninth St. Reno, NV 89512

Dear Mr. Mulreany:

We are pleased to offer our proposal for a **Criterion® ElevateTM** Vote by Mail (VBM) sorting system.  The quoted configuration(s) represent the most advanced Vote by Mail processing capabilities available today.  This scalable solution will help you better manage the expected increase in mail in ballots you anticipate this fall while laying the foundation to expand the functionality and capabilities for future elections.

At Fluence Automation (formally Bell and Howell Sorting), we have a long tradition of industry-leading high-speed sorting equipment for various applications across several decades.  We have the largest commercial sorting installation base in the industry with an unmatched service and support network.  In 2007 we adapted our platforms to serve the Vote by Mail market and have steadily grown our presence in this space over the last 13 years.  We have customers ranging from under 50,000 returns for an election to those with over 1,300,000 returns for a General Election.  As a result, our product platforms and our support team are well tuned to the needs of a wide variety of counties.

What makes us unique in this industry is that Fluence Automation designs and manufactures our sorters and sorting software, and therefore owns the product direction.  **We are not a reseller**.  We have brought several innovations to the Vote by Mail market – including inline Automated Signature Verification in 2007, various processing and work flow improvements over the years, extensive item level tracking, and inline tab removal in 2014-15, successfully installed on multiple systems.  We strive to be a partner for counties and states to help them grow and adapt to future needs.

Our products are supported by a nationwide service network of full-time employees with an extremely low turnover rate, supporting critical production equipment in various industries.  We provide a qualified, responsible and committed team at a very affordable price.  For each election, our service team ensures that there is good coverage for all counties, including onsite service where needed and remote support from specialists as needed.

As we've discussed, timing is critical if you expect to have this in place by mid-September, so we look forward to working with you to get this order processed as quickly as possible.  Please let us know if you have any questions on the above details, and we look forward to hearing from you.

Sincerely,

**Craig Chapel, Regional Sales Director**
Fluence Automation, LLC

# 2. EQUIPMENT SPECIFICATIONS, BOTH HARDWARE AND SOFTWARE

This section describes the proposed solution, including the configuration, specifications, specific to the State of Rohde Islands request.

## 2.1 SYSTEM CONFIGURATION

The quoted configuration provides the best VBM processing capabilities available today. The system will consist of the following:

- **Criterion® ElevateTM** small footprint front-end with a processing speed of **18,000 envelopes/hour** for #10 envelopes, including a friction feeding mechanism to handle a wide range of letter mail.

- **X-Class bins,** 16 modular bins (8 on each side) + 2 spare (one for each side), single tier with slide out trays for one to one bin/tray storage of ballots in process.  Additional bin sections can be added for more finite precinct sorting if needed.

- **MMT SABRE® VBM** capable of reading barcodes and signatures at high speed, matching them to your EMS database for fast verification.

- **Integrity package:** This consists of a **doubles detector** and a **thickness detector** as described below:

  o **Doubles detector**: This device is located below the mail path and will analyze an image of the edge of the envelope to identify any envelopes that are stuck together. Any such double feeds will be sorted to the reject bin to ensure that the second envelope is separated and processed correctly.

  o **Thickness detector**: A laser based thickness detector to identify envelopes that are too thick or too thin, and therefore may have the incorrect number of ballots. Common scenarios that contribute to these conditions are members of a household putting all their ballots into one envelope, and a voter forgetting to include the ballot when sealing the envelope. The thickness detector will outsort these envelopes to the reject bin, so that they can be investigated and correctly handled.

- **Optional Inline selective opener with chip collection:** Opening the envelopes is a processing step that can be a bottleneck especially as volumes increase over time on Election Day. An inline selective opener will open the envelopes by milling the bottom of the envelope typically concurrent with the final sort pass, eliminating the additional staging, monitoring and manual effort required to run all the envelopes through a batch opener. A vacuum collector will also be provided to ensure efficient removal of paper chips.

- **Optional Automated Signature Verification (ASV):**  If this option is selected, the system can perform automated signature verification concurrent with other sorting tasks, maximizing the overall performance possible, without any drop in throughput. We have proven installations with inline ASV since 2007.

- **Optional Inline Privacy Tab Removal:**  Our unique in-line privacy tab removal system uses a very accurate laser to cut and remove a specified area of the envelope to reveal the voter signature so the sorter can capture that image in the same pass as the barcode verification which save valuable time.  This also enable the Automated Signature Verification software to further enhance that capability in the next phase of implementation.

## 2.2 EQUIPMENT SOLUTION: CRITERION ELEVATE SORTER

Elections offices are being asked to process more mail in ballots than ever before, and that has now been accelerated with the challenges brough on by the recent COVID-19 pandemic. These return ballots must also be processed in a short time frame depending on the processing window and timing of the ballots being returned. This requirement creates the need for high speed sorters that can achieve greater throughputs in a shorter amount of time while maintaining integrity in the process.

Fluence Automation has several options for our customers and based on our preliminary discussions we think the Criterion Elevate would accomplish everything that you are looking to do today and allow for growth or changes in the future.



The Criterion® Elevate sorter is a flexible sorter with the smallest footprint in the industry for its speed and handles a wide range of mail types very effectively with an advanced friction feeder.

The highlights of the Elevate Sorter are:

- Single vendor comprehensive solution providing you with full sorting functionality
- Criterion® Elevate sorting system with a throughput of up to 18,000- 20,000 pieces/hour
- Modular and ergonomic bin sections available in one or two tier and single or double-sided.
- Self-contained, highly configurable bins with as few as 16 or as many 128 bins per sorter.
- Industry Leading BCR & MLOCR Technology
- A state-of-the-art controlled gap friction feeder that ensures that the increase in speed is used optimally, ensuring the largest throughput without losing the integrity of the mail processed. This reduces unnecessary stoppages and maximizes up-time.
- Greater variety of mail (postcards, self-mailers, mixed mail, flats etc.) processed due to the feeder and the improved paper path, providing increased cost savings due to discounts from additional mail types, and reduction of manual sorting.
- Places operator closer to bins allowing him/her to efficiently sweep the bins
- More bins per square foot providing optimal use of available floor space
- Simple to use, meaning minimal user training required

## 2.3 X-CLASS MODULAR SORT BINS

Fluence Automation's bin sorting system is modular and provides exceptional productivity and increased efficiency in a space-saving design, while offering superior investment protection. Available in one or two-tier designs for the Elevate, the system can be readily reconfigured to adapt to changes to operational needs. A host of optional features, including tray tag printers, above-bin tray racks and below-bin tray drawers, add to the increased functionality offered over other systems.



Some of the key features include:

- Operators are located adjacent to the first bins. This allows the operator to quickly and easily identify miss-fed and out of scheme mail. Additionally, it allows the operator to efficiently sweep the machine of finished mail.

- Uni-Directional transport means that mail spends the least amount of time from the time its fed until it reaches the bin. This lessens the opportunity to jam and the amount of mail in the machine in the event of a jam.

- Down-Stream Diverts deflect mail into a bin seamlessly avoiding hard impacts leading to jams and mutilated mail.

- Indicators at each bin (and a display above the machine) notify operators when the bins are nearly full and completely full.

- Integrated bin displays provide easy identification of the accounts in the bin and minimize sweeping errors.

- The removable bins also provide easy access to electronic components for routine and emergency maintenance.

- The design maximizes operator productivity, while minimizing fatigue, physical stress and errors.

- Above-bin tray racks and below-bin tray drawers allow operators to comfortably sweep mail from bins into trays. Additionally, this insures that operators are always facing the bins while sweeping and are not required to turn around or visually scan racks to the right for swept mail.
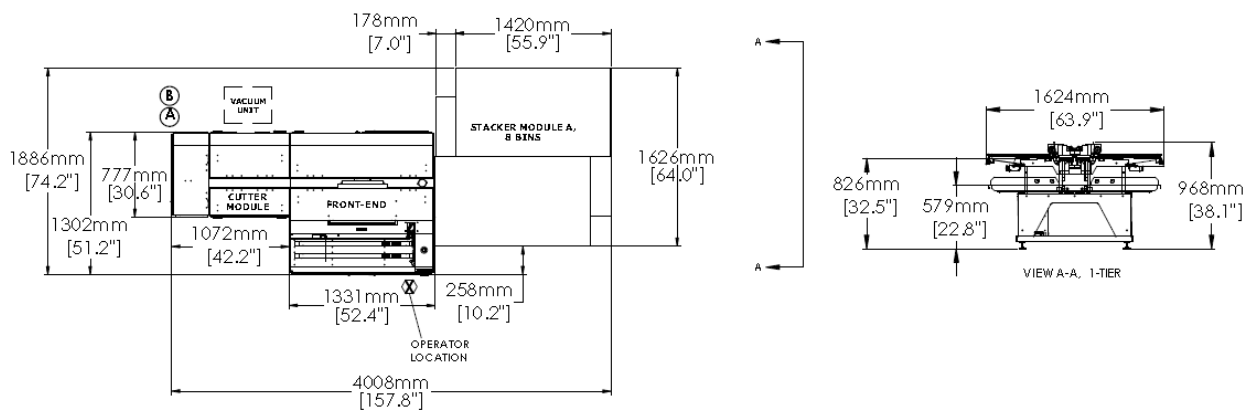
## 2.4 NETWORK DIAGRAM

The diagram below shows a typical network setup for the Vote by Mail sorter, and we are open to discuss and accommodate County IT needs wherever possible.
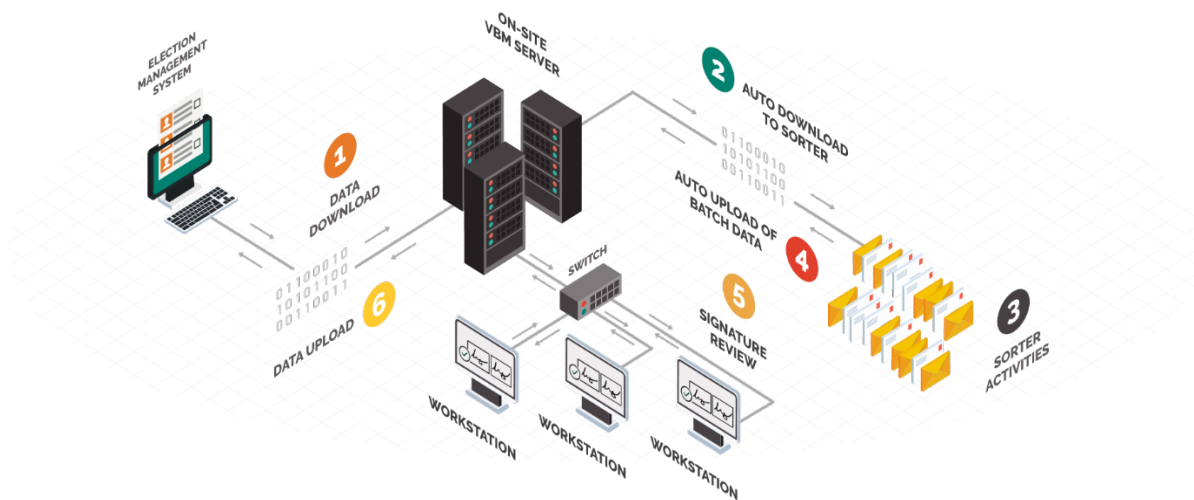


## 2.5 EQUIPMENT FOOTPRINT & ELECTRICAL (SAMPLE)



NOTES:

POWER REQUIREMENTS INCLUDE LINE QUALITY SUITABLE FOR COMPUTER EQUIPMENT, HARD WIRE GROUND TO BUILDING GROUNDING POINT AND COMPLIANCE WITH LOCAL AND NEC WIRING CODES.

ELECTRICAL SERVICE REQUIREMENTS:
208VAC 60Hz 3 PHASE 5 WIRE
ELEVATE FRONT END + CUTTER AND 8 BINS       =    30A
ADDITIONAL DROP OF 120VAC 60Hz FOR VACUUM   =    20A

SPECIFICATIONS:
> TEMPERATURE 55° TO 85° F.
> OPERATING HUMIDITY 20 TO 80% RH NON-CONDENSING.
> NOISE 75 DB AVERAGE.
> AIR CONDITIONING LOAD APPROXIMATELY 14,000 BTU/HR

## 2.5 REPORTS

The following is a partial list of reporting capability. These reports are customized to provide needed data points for various elections offices and continue to be updated based on customer feedback.

1. **Total By Challenge Type:**

   a. Lists the number of ballots for each Challenge Code.

   b. The counts for this report are based on unique IDs, with the expectation that any duplicates have been handled whenever found.

2. **Counts By Batch:**

   a. Shows the Group Number, Bin Number, Sort (Precinct) Code, Challenge Code, and Count.

   b. The counts for this report are based on the number of pieces physically run, Therefore duplicates will be counted as many times as they are run. If duplicate instances are deleted, this report will need to be regenerated to reflect the final counts.

3. **End of Day report**

   a. This is a simple summary report to show total pieces fed by First Pass bin for the whole day

4. **Duplicates report**

   a. Shows how many envelopes in the batch have the same Ballot ID.

   b. A duplicate check is performed each time the run screen is exited, and this report is generated each time.

5. **Batch Snapshot report**

   a. Shows various summary metrics for a quick understanding of the First Pass to Fine Sort processing

   b. User selects a desired First Pass batch to investigate and the report shows the counts of unique IDs seen in First Pass, and the quantity run in Fine Sort.

6. **Difference report**

   a. This is similar to the Batch Snapshot report but a simpler format

7. **Limit report**

   a. Shows cumulative numbers by Ballot Style for First Pass and Fine Sort, and helps with ensuring that there is always a minimum quantity of ballots for each ballot style (has associated functionality to accomplish this)

8. **Not Verified report:**

   a. Lists the Sort Code, Serial ID, Ballot ID, and Challenge Code for envelopes that are ready for validation, but have not been validated.

   b. This is useful to identify Ballot IDs that may have missed being reviewed for any reason.

9. **Missing Reference Signatures:**

a. Lists the Mailing ID, Batch ID, Ballot ID, and Image name for captured images that do not have corresponding reference images.

b. This report can be generated from the Maint tab on the Inbound Server, and then clicking on "Check for Missing Reference Images"

10. **ASV Report**

a. Lists sorter result (ASV Result) and the Reviewed Result, to monitor the performance of ASV for different confidence thresholds.

11. **Audit Log**

a. An Audit log can be generated from the Data Review Server web pages, by going to Data Lookup/Reports, then clicking on Audit Log, and then Generate Report. A CSV file will be generated with all the changes made to all ballot IDs along with the username, date and time stamps.

# 3. ANNUAL MAINTENANCE (HARDWARE AND SOFTWARE)

We have many maintenance options available and look forward to review those with you. The following is a summary of a typical full-service maintenance contract:

- Fluence shall dispatch a technician to perform, pursuant to the Schedule, pre/post election support and remedial maintenance calls.

- Pre and Post election support shall include the following:

    o Scheduled preventive maintenance (PM) inspection and test of VBM sorter to ensure readiness of election ballot processing. The PM inspection will include the replacement of consumable and non-consumable parts that are deemed necessary to ensure optimal efficiency of the equipment.

    o Operator Training – Will be provided for up to four (4) operators at the time of initial installation.

    o After the election, Fluence will perform post election services to ensure the system is properly prepared to lay idle until the next election processing period. The post-election services ensure the trouble free start-up of the equipment at the next election period.

    o Remedial Maintenance shall include the following at no additional cost to Customer:

        ▪ Access to Fluence's toll free 7x24 Customer Care Center for all Equipment or Software issues.

        ▪ Phone response by a trained Customer Service Engineer (CSE) during normal business hours, to assist Customer with general questions or troubleshooting.

        ▪ 1 Hour on-site response time of a trained CSE during Contract election periods. 2nd business day response during non-contracted periods

        ▪ Replacement of any broken consumable and/or non-consumable parts.

    o The proposal also includes annual software maintenance, that includes software updates that are released every year incorporating product improvements based on feedback from the various installations of the system across various counties.

# 4. OPERATOR TRAINING (INCLUDED)

One session of operator training is provided free of charge for up to four operators for each system at the time of installation. This training covers the operation, use, configuration, and normal daily operator maintenance of the systems, as well as, applicable health and safety issues.

The operator training will cover routine tasks such as paper loading/unloading, recovery from product jams, setup, and adjustments. The training will occur during normal business hours (8:30 AM to 5:00 PM). All training will be conducted at the customer site and will take three to three and one half days.

Operator manuals for each system are supplied at the time of the training class. In addition, each operator is given a training guide which gives clear and concise instructions on how to operate the system and includes pertinent screen shots for clarity.

Upon completion of the training, each operator will receive a certificate verifying that they have successfully completed the training and are qualified to operate the equipment. Class attendees are typically able to perform the routine tasks described upon completion of the training and will become proficient in these tasks within 90 - 180 days experience on the systems, depending on the level of experience.

Additional in depth training after the install will be charged training and will be quoted by the local District Service Manager, however, we do offer a simple refresher training before each election at no additional charge with certain service plans.

# 5. DETAILED COST PROPOSAL FOR INSTALLATION, MAINTENANCE, TRAINING:

The pricing for the new equipment is as follows:

- **Used** Criterion® Elevate Front End
- 16 Single Tier Double Sided Bins with Slide Out Trays
- SABRE™ VBM Reader
- Automated Privacy Tab Removal System
    - Includes secondary camera for tab detection
    - Includes fume extraction system for laser
- Cartridge, Laser Report and Tray Tag Printers
- Inline Selective Opener
- Integrity Package (Thickness and Doubles Detection)
- WinSort Server Computer & spare parts kit
- Interfacing to DIMS (Election Management System)
- VBM Data Review and Image Capture Software
- Shipping, Installation, On-site Testing and Training

Price as per above listed configuration  ………………………………………………..........$332,000

**Shipping**                                                                              **$ TBD**

**Total Price**                                                                          **$332,000**

The pricing for the new equipment is as follows:

- **New** Criterion® Elevate Front End
- 16 Single Tier Double Sided Bins with Slide Out Trays
- SABRE™ VBM Reader
- Cartridge, Laser Report and Tray Tag Printers
- Integrity Package (Thickness and Doubles Detection)
- WinSort Server Computer & spare parts kit
- Interfacing to DIMS (Election Management System)
- VBM Data Review and Image Capture Software
- Shipping, Installation, On-site Testing and Training

Price as per above listed configuration  ………………………………………………..........$221,000

**Shipping**                                                                              **$ TBD**

**Total Price**                                                                          **$221,000**

**Optional:**

**Selective Inline Opener**                                                        **$35,000**

- **Includes in-line Chip Collection Vacuum**

**Inline Automated Signature Verification (ASV)**

- **Pricing models available upon request**


*Annual Software Maintenance (SMA)*                                  *$TBD*

- Final configuration will determine final price
- Estimated between $13,500 - $16,500/yr.


*Annual Preventative Maintenance (PMA)*                          *$TBD*

- Final configuration will determine final price
- Many different levels of service to choose from
- Estimated between $9,500 - $39,500/yr.


## 5.1 PAYMENT TERMS

*This is a preliminary proposal that is meant only to give an estimate of possible costs and to advance further discussions regarding your requirements. As such, this proposal does not constitute a binding offer by Fluence Automation to sell the equipment, software and/or services identified herein. Fluence Automation reserves the right to modify or amend this proposal at any time. Consummation of any transaction resulting from this non-binding proposal is subject to execution of a definitive agreement signed by both parties.*

Fluence is willing to work with and consider any existing and approved County Terms and Conditions.


**Shipping**
Shipping is F.O.B. Point of Origin and actual shipping cost will be determined at time of shipment and invoiced at actual cost.


**Payment Terms**
The following payment terms apply:
- For orders <$25,000:  Payment in full within thirty (30) days after shipment of the Products.
- For orders between $25,000 and $50,000: (i) fifty percent (50%) of the purchase price upon signing the agreement, and (ii) the remainder thirty (30) days after shipment of products.
- For orders >$50,000: (i) forty-five percent (45%) of the purchase price upon signing the agreement, (ii) forty percent (40%) of the purchase price **prior** to shipment of the products, and (iii) the remainder thirty (30) days after shipment of the products.


**Delivery and Acceptance**
Firm delivery dates will be provided after the order is received and processed (typically 90-120 days from order).  During the interim time between order and installation, Fluence Automation will provide a project manager to develop a site readiness, installation and training plan.

**Test Materials**
Fluence Automation will require representative sample test material at the factory at least 30 days prior to shipment (quantities to be determined and a similar quantity is required on site during installation and for operator training).

**Installation and Training**
The pricing specified includes installation as will be defined in the Product Agreement. Also included is Basic Operator Training for 1 to 4 users and is performed on the customer's site during normal working hours directly after installation is complete. Additional training courses are available at an additional cost.

# 6. ABOUT FLUENCE AUTOMATION

Fluence Automation, LLC (Fluence) is a new company with a long history of providing innovative technologies to the mail distribution, logistics and parcel automation markets. We are the former Sorting and Parcels division of Bell and Howell, LLC, with deep technical roots in systems design and integration, vision, imaging, software, applied to mail and parcels automation.

We trace our origins to Bell and Howell's acquisition in 1979 of Stephens Industry, one of the forerunners in the design and manufacturing of high speed letter sorting equipment. Over the last 30+ years, we built out the mailing industry's most robust sorting and high speed imaging product platforms backed by one of the best service teams in this space, earning a dominant position in the commercial sorting segment, and delivering numerous projects for various entities, including the USPS®, the US Government, other national posts, Mailing Service Providers (MSP's) and many of the Fortune 500 in different segments.

In 2007 we adapted our platforms to serve the Vote by Mail market, and have steadily grown our presence in this space over the last nine years. We have customers ranging from under 50,000 returns for an election to those with over 1,300,000 returns for a General Election. As a result, our product platforms and our support team are well tuned to the needs of a wide variety of counties.

We also have evolved our product platform to address a wide range of processing needs, due to varying requirements across counties and states.

We have brought several innovations to the Vote by Mail market – including inline Automated Signature Verification in 2007, various processing and work flow improvements over the years, extensive item level tracking, and inline tab removal in 2014-15, successfully installed on multiple systems. We strive to be a partner for counties for both their current and future needs.

Our products are supported by a nationwide service network of full-time employees with an extremely low turnover rate, supporting critical production equipment in various industries. Therefore, we are able to provide a very well qualified, responsible and committed team at a very affordable price. For each election, our service team ensures that there is good coverage for all counties, including onsite service where needed and remote support from specialists as needed.

The Federal Tax ID number for Fluence Automation is 82-2146471.

# 7. REFERENCES

References of at least 5 customers, who have been using the system for a minimum of 3 years.  More reference are available upon request.

**Solano County**
**John Gardner**
**Asst. Registrar of Voters**
**675 Texas St. Ste 2600**
**Fairfield, CA 94533**
**(707) 731-9653**
jhgardner@solanocounty.com

**Tulare County – Elections Office**
**Emily Oliveira**
**Elections Manager**
**5951 S Mooney Blvd**
**Visalia, CA 93277**
**(559) 624-7300**
MBaldwin@co.tulare.ca.us

**Washington County - Elections**
**Mickie Kawai**
**Elections Manager**
**3700 SW Murray Blvd. Ste 101**
**Beaverton, OR 97005**
**(503) 846-5822**
Mickie_Kawai@co.washington.or.us

**City and County of Denver**
**Stuart Clubb**
**Elections Ballot Coordinator**
**200 W 14th Ave, Suite 100**
**Denver, CO 80204**
**(720) 865-4821**
stuart.clubb@denvergov.org

**Jackson County – Elections Office**
**Christine Walker**
**Jackson County Clerk**
**1101 W. Main St, Suite 201**
**Medford, OR 97501**
**(541) 774-6125**
WalkerCD@jacksoncounty.org

# 8. EQUIPMENT BROCHURE

# Overview and Benefits

Fluence Automation offers affordable, practical solutions based on our advanced sorting platforms, that solve many of the most difficult mail ballot processing challenges. Unlike others, we design, build, and support our systems, and therefore control the long-term product direction.

Our solutions deliver valuable capabilities, developed over years of working with county officials, built on platforms proven through decades of heavy-duty production mail processing.

## SAVE PROCESSING TIME AND SPACE

- Consolidate multiple steps into fewer automated steps, including tab removal
- Efficiently handle high volumes on peak election days at throughputs from 18,000 to 45,000/hour
- With a two – pass operation, it is possible to sort to 196 separations with a 16-bin sorter

## MINIMIZE ERRORS, ACCELERATE INVESTIGATIONS & TROUBLESHOOTING

- Various concurrent validations – ID validation, duplicate checks, thickness, double feeds, etc.
- Item level tracking with easy lookup for processing history, with images for each run, designed for detailed investigation
- Efficient image review with tiered access rights, for initial and subsequent verification
- Detailed audit log captures all key processing steps and status changes

## SIMPLIFY TRAINING AND STAFFING

- Automation of manual tasks reduces amount of temporary staffing needed
- Fewer manual tasks reduces training needs, structured process supports quick learning
- System generated reports simplifies tallying, monitoring and other processing

## INDUSTRY LEADING SERVICE

- One of the widest and well-run nationwide service networks available today
- Local service supported by specialized remote support
- Extensive experience maintaining 24 X 7 production equipment
- Protects investment and maximizes performance

# Process Steps

## FIRST PASS

- Feed ballot envelopes
- System automatically:
+ Verifies barcode ID, confirming current election
+ Checks for thickness and doubles*
+ Detects duplicates within & across batches
+ Detects and removes tab*
+ Automatically verifies signature*
+ Prints date and time stamp*
+ Sorts based on precincts, ballot styles, other parameters
+ Diverts challenges & verification failures

## REVIEW IMAGES

- Operator reviews 1 up to 4 scanned images at a time
- Review the signature only or complete envelope
- Initial review by Reviewer role
- Subsequent reviews by Supervisor or Admin roles
- Select from among configurable drop-down choices for specific conditions

## RE-PASS

- Re-run previously run ballots if necessary without impacting counts
- Re-run challenges after they are cured, to sort into the correct groups prior to Fine Sort
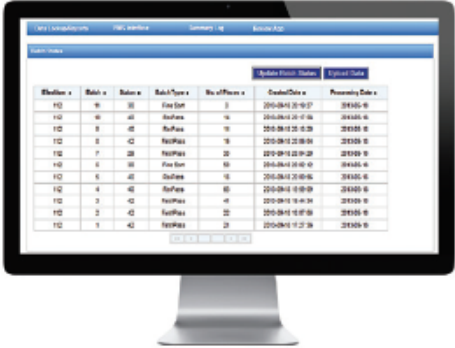- Detect duplicates within the batch for accurate counts tracking

## FINE SORT

- Sort ballots to desired separation level (precinct/ ballot style/other)
- Operator feeds individual groups of ballots
- Selectively open only accepted ballots*
- Detect duplicates within and across all Fine Sort batches
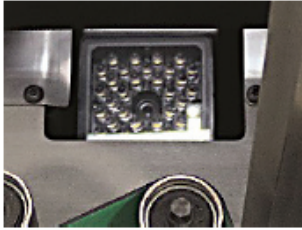
Note: *Indicates optional features

# Dashboard and Admin Functions

- Summary dashboard of all batches delivers quick overview of overall processing status
- Advanced lookup options provide full processing history by ID and current status
- Duplicate resolution feature includes hyperlinks to images for further investigation
- Freeform Notes field for each batch simplifies communication with broader team
- Tiered access rights may be configured for each process step
- Multiple export options available to suit individual process needs
- Audit log may be exported at any time
- User configurable features support workflow changes without code changes/ custom software versions

# Optional Features



### Doubles Detector

- Useful for diverting envelopes that maybe stuck together, ensuring all pieces are correctly handled
- Image-based detection of double edges identifies true double-feed conditions



### Thickness Detector

- Useful for diverting envelopes with more than the expected number of ballots
- Laser based thickness detector identifies differences down to one sheet of paper
- User-configurable thresholds
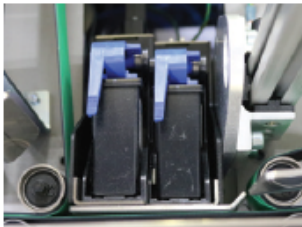


### Inkjet Printer

- Print date, time and custom message on the envelope with no loss in throughput
- Minimal maintenance and easy cartridge replacement
- Optional continuous inkjet for very high volume applications
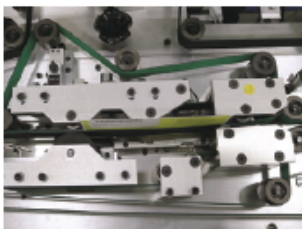


### Inline Opener

- Inline opening without content damage
- Ultra-fine depth adjustment
- Selective opening allows both good and challenged envelopes to be fed with only good envelopes opened
- Includes dust collector to minimize dust and efficiently collect paper chips



### Inline Tab Remover

- Detect and remove privacy tabs at up to 8,000/hr (for 1" x 3" tabs), concurrent with sorting
- Ergonomic collection of removed tabs
- Advanced laser technology cuts single layer of paper, without damaging contents (Class 1 laser product)

# ⌖ Specifications

| Item | Criterion **Elevate** | Criterion **Apex** |
|------|----------------------|-------------------|
| Cycle Speed (Throughput stated is for #10 envelopes, and will vary up/ down based on envelope size) | 18,000/hr for #10 envelopes 8,000/hr (in tab removal mode) | 45,000/hr for #10 envelopes |
| Footprint with 16 2-Tier bins (not including cutter or tab removal module) | 14.3' x 6.2' | 17.4' x 6.6' |
| Incremental length for additional 16 bin sections | 56" | 56" |
| Power | 208V 3-phase, amperage requirements vary depending on configuration | 208V 3-phase, amperage requirements vary depending on configuration |
| Air | No air required with cartridge printers | Air required for continuous inkjet, 100psi, 5 CFM |
| Envelope sizes | Height: 3.5" – 7.0" (up to 13" with optional flats kit) Length: 5.0" – 11.5" Thickness: 0.007" – 0.250" | Height: 3.5" – 7.0" Length: 5.0" – 11.5" Thickness: 0.007" – 0.250" |
| VBM Data Review Client Software for image review | Yes | Yes |
| VBM Server Software (Data Review and Inbound) for EMS interface, audit logs, detailed lookups | Yes | Yes |
| SABRE with optional Automated Signature Verification | Yes | Yes |
| First Pass, Repass and Fine Sort operations | Yes | Yes |
| Integrity Package (Thickness and Doubles Detector) | Yes | Yes |
| Selective inline opener with vacuum | Yes | Yes |
| Printer | Cartridge or Continuous inkjet | Continuous Inkjet |
| Inline Tab Removal (Uses a laser in a Class 1 enclosure for safe use) with fume extraction | Yes | No |

# APPENDIX A – SOLUTION OVERVIEW

The Fluence Vote by Mail Sorting System is very flexible, supporting a wide range of processing modes, evolved over actual experiences and feedback from multiple counties since our initial mail ballot sorting installation in 2007 (when we were part of Bell and Howell). While we have worked with variations in processes between counties, we have also identified underlying common characteristics that do not vary significantly across counties. Our system is built with these common characteristics as a basis, with additional functionality that can be configured to best meet the unique needs of each county. A possible scenario with the quoted system is described in the sections below.

**Processing modes are covered by three jobs:**

- **First Pass:** As the name implies, this is the first time an envelope will be run on the system. A batch number is automatically assigned and if chosen, inline tab removal and/ or automated signature verification (ASV) will be performed during this processing mode. The sort scheme typically consists of a few bins dedicated to challenge codes and the remaining bins assigned to groups of sort codes (precincts in most cases).

- **Re-Pass (Optional):** This processing mode will use the same sort scheme as the First Pass, but only envelopes that have been processed in First Pass are eligible to be run in Re-Pass. This mode is very useful to re-run pieces that were originally challenged by ASV, and then accepted during image review. This is also useful where a county may desire to outsort envelopes challenged during the image review process prior to Fine Sort.

- **Fine Sort:** This mode is used to sort the groups of sort codes in the First Pass & Re-Pass schemes down to individual sort codes. Inline opening (the bottom of the envelopes) is typically done during this mode. For counties that do not need to sort down to precincts/ sort codes, it is possible to run the mail directly from First Pass in Fine Sort, where envelopes will be sorted based on review results (or optional ASV results).

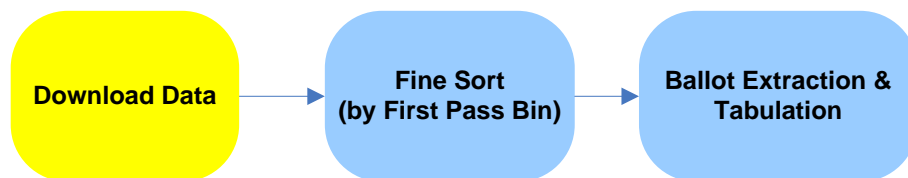**First Pass and Re-Pass Description**



---
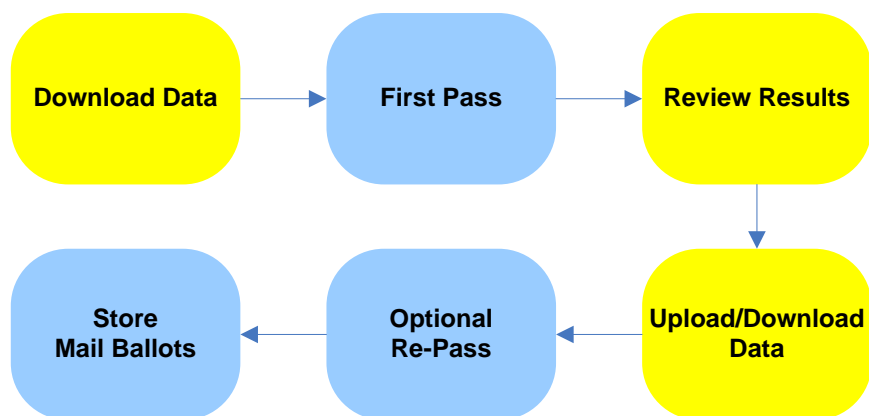
- **Download Data:** Typically, there is an initial download from the County's voter registration/ election management system for all the data and reference signatures for the upcoming election. Additionally, there is a daily and/or on-demand download prior to processing each day's volume so that all verification and sorting is performed based on the latest data.

- **First Pass:** Mail that has just arrived from USPS/ picked up from drop-off locations should be run on the sorter in First Pass mode. The sorter will automatically create a batch, verify the barcode on each mail ballot, compare it to the most recent downloaded data, perform inline ASV (if the option is purchased) and sort all in one pass, with no loss in throughput.

  - If a challenge code already exists for a specific mail ballot, it will be sorted based on that code. If there is no pre-existing challenge code it will be sorted based on the automated verification result and the precinct (or district style) (depending on how the scheme is setup and if precinct (or district style) sorting is desired).

  - Bin displays on the bin ensure that the user is aware of the contents of the bin without having to lookup the sort scheme.

  - The user can print a tray tag that includes the batch number and description of the bin contents by pressing an on-demand print button on each sort bin.

  - Drop location information can be associated with the mail ballots being run for improved tracking of mail that maybe dropped off by voters rather than sent through the USPS. This capability can also be used to identify different methods of ballot receipt (email, fax etc.) – provided the ballot is enclosed in an envelope with the appropriate unique identifier on it.

  - Envelopes returned from the USPS as undeliverable (UAA) can also be processed in First Pass as a separate batch to eliminate manual data entry and processing.

- **Review results:** This is a step to be performed on the county's computers with the supplied software. ASV results can be reviewed along with the signature image from the envelope and the reference signature, along with associated data available for the piece. The ASV result can be updated by authorized users. Typically, the threshold level is established with trials to ensure that incorrect signature pairs are not accepted. After validating the settings, the county may choose to focus the review effort only on the signatures that were below the threshold level.

- **Upload/Download or Validate Data:** After the review, data should be uploaded to the county's election management system. If there is no EMS being used, the county can use other standard checks prior to releasing the mail to the next steps.

- **Optional Re-Pass:** This is an optional processing mode that some counties use to out-sort envelopes from the First Pass that need to be physically pulled out for immediate processing or for an audit. Other counties prefer to directly go to the final precinct (or district style) sort and allow the challenged mail to be out-sorted as part of that process. Multiple First Pass batches can be accumulated and run as a single Re-Pass batch to

optimize the processing effort while still physically separating out the unaccepted/ challenged pieces. Only envelopes run in First Pass will be processed on Re-Pass. If some envelopes were accidentally fed directly in Re-Pass, the system will out-sort them to avoid incorrect processing.

- **Store Mail Ballots:** The sorted mail is recommended to be stored by batch and bin, to allow easy location of specific pieces at any time, and to maximize efficiencies for the Fine Sort process.

## Fine Sort Description

This step is to sort the reviewed pieces to individual precincts (or district styles) if desired, or just to challenged and good envelope categories if precinct sorting is not required.

```
┌──────────────┐     ┌──────────────────┐     ┌──────────────────────┐
│              │     │    Fine Sort     │     │ Ballot Extraction &  │
│ Download Data│ ──► │ (by First Pass   │ ──► │     Tabulation       │
│              │     │      Bin)        │     │                      │
└──────────────┘     └──────────────────┘     └──────────────────────┘
```

**Download Data:** A data download is necessary right before Fine Sort to ensure that any mail ballots that may have changed status during storage are sorted correctly. This may coincide with the data download right after the review process.

- **Fine Sort:** Only mail that has completed First Pass sort and whose data have been successfully uploaded to the county's election management system or validated is expected to be run on the sorter in Fine Sort mode. The operator will feed mail from specific First Pass sort bins (per a system-generated report) and the system will sort the mail down to individual precincts (or district styles). If some envelopes are accidentally fed directly in Fine Sort (before the data has been uploaded and downloaded from the county's Election Management System), the sorter will out-sort them to avoid incorrect processing.

- **Ballot Extraction & Tabulation:** Depending on the county's process and the number of days to Election Day, envelopes that have been sorted to individual precincts (or district styles) are handed over for ballot extraction and tabulation.

## Image Review & Individual Status Updates

VBM Data Review software is included in the base system, and can be installed on the county's computers to utilize the following key features:

- Display up to four pairs of signature images (each pair consisting of the signature image captured from the ballot envelope and the corresponding image of the official signature record on file).

- Enable authorized users to review the ASV results and update the status of the envelope. Authorized users are categorized as Reviewers (least access), Supervisors (can handle data export and import) and Administrators (all functionality). There are two review modes:

  - **Review New:** For the initial review only (typically by users with Reviewer privileges).

  - **Review Verify:** For additional review (only by users with a Supervisor or Administrator privileges).

- Accept all displayed pairs simultaneously to maximize productivity, with the ability to change individual results.

- View additional piece detail of individual envelopes for further investigation as necessary. Detail includes a full envelope image in addition to the signature image as well as the associated data (sort history, batch, sort bin and image names).

- Review **undeliverable mail** and assign processing codes electronically. Instead of signatures, the yellow undeliverable label can be reviewed.

- Multiple users can work simultaneously with the same server, enabling the simplest possible system, maximum use of existing county computers and the ability to ramp up the number of users depending on processing needs that may change over time. The software has been proven to work with more than 15 simultaneous users at a single site.

**Duplicate Identification and Handling**

The system automatically checks for duplicate instances of the same Ballot ID at various processing stages. Duplicates that are found across First Pass batches can be easily reviewed using the included Data Review Server web pages, which includes links to the full envelope image for ease of investigation (please refer to the screenshot below).



After investigating the root cause of the duplicate and removing the duplicate envelope (if any), the instance can be deleted from the same user interface. Each instance that is deleted will be logged in the Audit Log (along with the user name and time stamp). Reports that are generated after the instance is deleted will reflect the changed counts due to the deleted instance.

Along with the Doubles Detector and Thickness Detector, the functionality to investigate and handle duplicates helps to maintain accurate system counts that match the actual physical piece counts.

**Batch Status**

As the election processing progresses, the number of batches keeps increasing, and it can be challenging to keep track of the batches. A status screen displays all the batches run to date, including the type of batch and a status code associated with it to identify conditions such as:

- A duplicate in a batch (in which case it cannot proceed to review until the duplicate has been addressed).

- Batch waiting for review.

- Review completed and the batch can be exported.

- Batch export is successful.

**A sample screenshot is shown below:**

| Data Lookup/Reports | EMS Interface | Summary Log | Review App |
| --- | --- | --- | --- |

**Batch Status**

Update Batch Status    Upload Data

| Election ⇕ | Batch ⇕ | Status ⇕ | Batch Type ⇕ | No. of Pieces ⇕ | Created Date ⇕ | Processing Date ⇕ |
| --- | --- | --- | --- | --- | --- | --- |
| 112 | 11 | 30 | Fine Sort | 0 | 2013-09-18 20:19:27 | 2013-09-18 |
| 112 | 10 | 40 | Re-Pass | 14 | 2013-09-18 20:17:58 | 2013-09-18 |
| 112 | 9 | 40 | Re-Pass | 14 | 2013-09-18 20:13:20 | 2013-09-18 |
| 112 | 8 | 42 | First Pass | 16 | 2013-09-18 20:06:04 | 2013-09-18 |
| 112 | 7 | 29 | First Pass | 33 | 2013-09-18 20:04:20 | 2013-09-18 |
| 112 | 6 | 30 | Fine Sort | 59 | 2013-09-18 20:02:12 | 2013-09-18 |
| 112 | 5 | 40 | Re-Pass | 18 | 2013-09-18 20:00:56 | 2013-09-18 |
| 112 | 4 | 40 | Re-Pass | 63 | 2013-09-18 19:59:09 | 2013-09-18 |
| 112 | 3 | 42 | First Pass | 41 | 2013-09-18 19:44:34 | 2013-09-18 |
| 112 | 2 | 42 | First Pass | 22 | 2013-09-18 18:07:06 | 2013-09-18 |
| 112 | 1 | 42 | First Pass | 21 | 2013-09-18 17:27:56 | 2013-09-18 |

«« « » »»

**Challenge/ Flag Codes and Priority**

The VBM system can sort based on various codes associated with the Ballot ID. Some codes are provided by the EMS, some are generated on the sorter based on certain conditions, and others result from validation checks across the data from the envelopes run on the sorter.

**The codes can be grouped into one of the following categories:**

- **Primary Codes** - associated with the primary status of the Ballot ID and represent conditions such as Accepted, No Signature Match, and No Signature. The majority of these codes are updated through the

EMS or the Data Review client, but some codes, such as No Sig Match and No Signature, can also be updated by the ASV process at the sorter.

- **Flag Codes**—used in addition to the primary codes and indicates the need to perform additional processing steps. Some flag codes are determined by the EMS, such as VOID and ID Required (can vary depending on the EMS at the site). Some flag codes are determined by the VBM system (Sorter Duplicates, EMS Duplicates, and LIMIT/Reserved). Some codes are based on the VIP ballot style definition. Whereas Ballot IDs have primary codes and flag codes, the VBM system sorts on one code, which is determined by the priority such as described below:

    1. VOID—a flag code that is based on the value in a specific field in the EMS export file (depends on the EMS).

    2. Duplicate—a flag code that can be for an EMS duplicate (if there is already a received date in the EMS export file) or for a Sorter duplicate (if the same Ballot ID was run within the same batch or across any other First Pass batch).

    3. ID Required—a flag code that is based on the value in a specific field in the EMS export file.

    4. Primary Challenge Codes—primary codes that are received through the latest EMS export file, as well as any BH (Bell and Howell) code from the sorter processing.

    5. VIP—a flag code that is driven by whether or not the ballot style associated with the Ballot ID is part of the VIP file.

    6. Limit/Reserved—flag codes that are determined by a calculation at the server during analysis, based on the First Pass and Fine Sort counts and the specified threshold setting.

**Note:** At the analysis step for RePass and Fine Sort, you can clear (turn off) specific flag codes, which results in the codes being reassigned based on the priority described earlier. For example, if you clear the ID required check box, the analysis process ignores the ID required code and checks for the Duplicate flag code.