REQUEST FOR INFORMATION
007115B0005741
The City and County of San Francisco’s Voting System

CITY AND COUNTY OF SAN FRANCISCO
Department of Elections
Proposal Manager Name: Shane Burgos,
Telephone Number: (415) 554-4375
E-Mail Address: sandro.burgos@sfgov.org

Prepared by: Steven Bennett
Proposal Due Date: August 28th, 2015 (5:00 PM)
Contents

Contents .............................................................................................................................................. 2

Executive Summary ......................................................................................................................... 3

Summary Statements of Proposed System and References ............................................................... 6

Specific Criteria for New Voting System .......................................................................................... 17

1. Functionality .................................................................................................................................. 17

2. Usability/Transparency .................................................................................................................. 26

3. Results Reports .............................................................................................................................. 33

4. Adaptability ................................................................................................................................... 35

Appendix 1 – California Secretary of State Certification ................................................................. 38

Appendix 2 – Sales Brochures .......................................................................................................... 42
Executive Summary

Dominion Voting Systems Inc. (“Dominion”) appreciates the opportunity to respond to this Request for Information, REG2015-01 System Hardware, Firmware, Software and Service. Dominion’s flagship offering, Democracy Suite®, is a specialized elections technology platform, which provides all the tools, functionalities and features which election officials need to run successful elections. Certified by the Elections Assistance Commission to the current VVSG 2005 standards, **Democracy Suite is also the only VVSG 2005-certified system to have received California state certification since 2008** – it is therefore the only voting system available in California which not only meets the most rigorous security, accuracy and accessibility standards, but it is also the only elections technology solution which was designed to meet current expectations and requirements.

Dominion, an industry-leading elections technology provider, has been developing voting solutions the election community in the United States is asking for. Using valuable customer and real-world feedback, Dominion has been working to ensure that its technology meets current and future requirements of both election officials and voters. Today, it has become imperative for elections technology vendors to provide systems that are more efficient, flexible, scalable, transparent and sustainable than ever. As the long-time vendor for the City and County, Dominion understands that San Francisco is looking to modernize its voting system with these goals in mind, and Dominion is prepared to deliver what is required.

Transparency

Dominion’s proposed system for the City and County of San Francisco is **Democracy Suite, a fully-integrated elections technology platform**. At the heart of the system, we emphasize transparency: every single ballot cast in the election is imaged and appended with the AuditMark®, **Dominion’s exclusive ballot-level audit trail**, which shows how the system interpreted the voter’s intent. The AuditMark allows election officials to audit every single ballot; however, it does not tie a voter to his or her ballot, in order to preserve the anonymity of the vote. In addition to providing election officials a valuable tool for auditing and resolving ballot issues, the AuditMark will support San Francisco’s stated goal of enhancing the transparency of the election process to the public. When ballot images are made publicly available, members of the public will be able to review not only the voter’s selections on the ballot, but also how the system interpreted these marks. **Your voting system will have an unparalleled level of transparency**, with audit capabilities right down to each individual ballot.

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1 Democracy Suite is a registered trademark of Dominion Voting Systems
2 AuditMark is a registered trademark of Dominion Voting Systems
Flexibility & Sustainability

By leveraging today’s COTS technologies to meet the Federal, State and jurisdictional requirements, Dominion is able to ensure its customers, including the City and County of San Francisco, have a lower cost of ownership for the lifetime of the system. In addition, the use of COTS technologies reduce the reliance on proprietary hardware, allowing Dominion to focus on developing new and strengthening existing software-driven, “hardware agnostic” election solutions.

Furthermore, Dominion offers flexible purchasing options. The City and County of San Francisco has the option of either an outright purchase, or participating in Dominion's Managed Service Program (MSP). A true service model, the MSP works like a lease, with the addition of all hardware, software, license, warranties and all elections services needed by the jurisdiction – the MSP even includes software updates. This figure is computed into an annual fee for six, seven or eight years. This way, the jurisdiction does not need to fund the whole system up front. This program would give San Francisco the flexibility to add to or change the components, depending on evolving needs and requirements. At the end of the term, Dominion will work with the City and County of San Francisco to do one of three things: 1. remove the system, so the City is not saddled with legacy, proprietary products; 2. maintain and continue to use and support the system; 3. upgrade to a new or more modern system available at the time.

As legal requirements change, the system must adapt to these changes, and for this reason, Dominion’s MSP allows jurisdictions the flexibility they need to add, remove or modify system components to meet ever-changing rules and regulations. With a software-driven solution such as Democracy Suite, when COTS equipment is end-of-life, we simply migrate to a different hardware platform while retaining the same software. This means that San Francisco doesn’t have the burden of managing complex engineering functions in addition to have to run elections; Dominion is there to ensure that the system you have is the system you need, no matter what.

Efficiency & Scalability

Democracy Suite powers the entire voting system out of a single comprehensive database, with all the tools needed to simplify and streamline the process. All voting channels – whether mail-in ballots, overseas and military ballot delivery, accessible voting, or precinct-based voting – are supported and powered by Democracy Suite.

All pre-election and post-election tasks take place out of the same database – from ballot layout to results reporting on Election Night, Democracy Suite is a complete, end-to-end elections solution. And because the system is integrated, it facilitates transparent access to the ballot images that can be used for canvassing the election or if candidates or voters want to review ballots cast to confirm the legitimacy of the results.

Finally, the use of COTS technologies means that the system can scale, as requirements shift. For example, should the City and County of San Francisco move towards a mail ballot model, where a majority of ballots can be centrally counted, the ImageCast® Central absentee

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3 ImageCast is a registered trademark of Dominion Voting Systems
ballot counting system can easily scale to address the increased ballot scanning demand, by simply adding additional central count workstations, without breaking the bank.

Summary

Dominion believes that election officials need technology solutions that can evolve and adapt to shifts in regulations and requirements that may occur due to technological advances or legislative mandates. Election automation is a highly demanding and rapidly changing discipline, and **Dominion’s Democracy Suite is a solution that can be modified, upgraded, or expanded on a component basis, thus preserving San Francisco’s investment.**

In addition to the experience and expertise acquired while supporting voting systems in over 1,200 election jurisdictions, Dominion has worked with numerous customers making the transition to Dominion’s Democracy Suite. As such, we are keenly aware of the realities involved and what it takes to successfully and efficiently transition to a new voting system platform. **Dominion is committed to working side by side with its valued customers,** to continually improve and refine the products and services we offer, so as to better meet the needs of election officials and their constituents.
Summary Statements of Proposed System and References

A. 1.
Provide organization’s or firm’s legal name and address.

Dominion Voting Response
Dominion Voting Systems Inc.
1201 18th Street, Suite 200
Denver, CO, 80202

A. 2.
Provide the name, title, address, telephone number, and email address of the person(s) who will serve as the contact(s).

Dominion Voting Response (2)
Steven Bennett
Regional Sales Manager
26561 Amherst Court, Loma Linda, CA 92354
909.362.1715
steven.bennett@dominionvoting.com

A. 3.
Provide a letter of introduction with a brief description of the organization or firm, including organizational structure, experience in the industry, number of years providing voting systems and election support services to federal, state, or local governments.

Dominion Voting Response (3)
Dominion Voting Systems, Inc. is a company that has distinguished itself by pursuing excellence in customer service by implementing a technical culture focused on achieving the highest levels of accuracy, reliability and transparency. Founded in 2003, Dominion has grown to roughly 200 employees, consisting of a mix of seasoned election veterans with a solid grasp on technology and engineering experts that understand elections. Dominion works relentlessly to maintain and enhance its best assets: its people, technology and reputation.

With the acquisition by Dominion of assets and employees of Premier Election Solutions, Inc. and Sequoia Voting Systems, Inc. in 2010, the company’s combined history and experience dates back over 100 years. Taken together, the two asset acquisitions created a stable and diversified election solutions provider, offering a complete and innovative product set and a broad geographic reach, to effectively support customers in every region of the United States.

Headquartered in Denver, CO, with offices in San Leandro, CA, Jamestown, NY, Endicott, NY, McKinney, TX, and Toronto, ON, Dominion is strategically positioned in all 4 U.S. continental time zones, currently servicing and supporting over 1,200 jurisdictions in 33 states.
Our company has well over 2,000 years of combined elections experience – as such, Dominion has the knowledge and expertise to support our customers in conducting accurate and successful elections. Dominion’s installation and support resume includes Maricopa County, AZ, and the City of Chicago and Cook County, IL, as well as a strong customer base in California, supporting 35 counties. Our statewide installation and support experience also includes the states of Louisiana, Nevada, Maryland, Georgia, Utah and Mississippi.

Our Democracy Suite platform is certified to EAC VVSG 2005 standards, as well as by the California Secretary of State. It is currently widely deployed and in operation in 19 states, including counties from Colorado, Ohio and Florida, as well as 16 of 21 counties in New Jersey, and 52 of 58 counties in New York. The ImageCast Central absentee counting system is also used statewide in Louisiana.

In 2013, following a competitive and highly demanding bidding process, Dominion Voting Systems was selected as New Mexico’s new electoral technology partner for the next eight years. The installation includes nearly 1,500 precinct tabulators from our ImageCast product line, as well as 31 ImageCast Central units for absentee and mail-in ballots, all powered by Democracy Suite.

Dominion has further implemented and serviced country-wide elections in Mongolia and the Philippines using Democracy Suite. The Philippines featured the largest ever deployment of ImageCast tabulators, involving over 80,000 ImageCast Precinct tabulators spread across 7,000 islands.

A. 4.

Provide a summary of the products and services offered, including annual license fees, annual support fees, and/or annual subscription fees. Include third party applications that are being recommended. List prices are acceptable.

Dominion Voting Response (4)

Products

All of the products listed below are fully integrated into the Democracy Suite platform:

<table>
<thead>
<tr>
<th>Product</th>
<th>Unit List Price</th>
<th>Annual license fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Democracy Suite EMS</td>
<td>$365,000</td>
<td>$73,000</td>
</tr>
<tr>
<td>2. ImageCast Central</td>
<td>$40,000</td>
<td>$2,581</td>
</tr>
<tr>
<td>3. ImageCast Adjudication</td>
<td>$75,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>4. ImageCast Evolution</td>
<td>$8,500</td>
<td>$228</td>
</tr>
<tr>
<td>5. ImageCast X</td>
<td>$5,200</td>
<td>$185</td>
</tr>
<tr>
<td>6. Rank Choice Voting module</td>
<td>$450,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>7. Mobile Ballot Printing module</td>
<td>$25,000</td>
<td>$5000</td>
</tr>
<tr>
<td>8. ImageCast Remote (UOCAVA)</td>
<td>n/a</td>
<td>$25,000</td>
</tr>
<tr>
<td>9. Automated Test Deck module</td>
<td>$7,000</td>
<td>$1,400</td>
</tr>
</tbody>
</table>
Services

Dominion is pleased to provide its customers a full range of support services to ensure a smooth transition to the new voting system, as well as ongoing maintenance, support and operation of the system.

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project Management</td>
<td>$2,000 per day on or off site</td>
</tr>
<tr>
<td>2. Training</td>
<td>$2,500 per day* class size not to exceed 10 people</td>
</tr>
<tr>
<td>3. Election Day Support</td>
<td>$4,500 per three days*</td>
</tr>
<tr>
<td>4. Election Database Creation</td>
<td>$52,000 per election</td>
</tr>
<tr>
<td>5. Election Consultant</td>
<td>$350 /hour</td>
</tr>
<tr>
<td>6. Drayage</td>
<td>$300 per stop</td>
</tr>
<tr>
<td>7. Warehouse Management</td>
<td>$2,000 per day*</td>
</tr>
<tr>
<td>8. Technical Repair</td>
<td>$2,000 per day*</td>
</tr>
</tbody>
</table>

*Includes travel

A. 5.

Describe any election-related services that the organization or firm offers, including, without limitation, integration assistance, training, and ongoing support. Provide a rate structure or other costing information (i.e. hourly rate or pricing methodology) for the professional services offering. List prices are acceptable.

Dominion Voting Response (5)

Dominion provides a full range of professional services to ensure the successful implementation of the voting system. Our services include complete project oversight, from establishing and monitoring timelines right down to the management of third-party contractors for services such as drayage. Overseen by a project manager, our expert team of election professionals is prepared to handle key tasks such as ballot layout, audio recording, acceptance and logic & accuracy testing, mail-ballot processing, as well as comprehensive Election Day support. The Dominion service team will assist and support San Francisco from project kick-off right through post-election activities, including a full Election Day report to help identify areas for improvement and ensuring that all equipment is fully functional – before, during and after the election. Depending on the task, Dominion assigns product specialists, technicians, and/or professional staff to ensure the best possible level of service and support for our valued customers. Dominion has provided pricing for these services in response to question A.4 above.
A. 6. 

Describe the different implementation approaches (i.e. big bang vs phased roll out) that the organization or firm can offer to the City to fully implement a particular solution. Include the benefits and/or risks of each.

Dominion Voting Response (6)

Both implementation approaches have their pros and cons; however, based on our experience in the jurisdiction and understanding of their requirements we believe that our product offering for this jurisdiction is best suited with a full cutover.

When implementing a newly certified solution in California, Dominion believes that with proper planning and time, a full “Big Bang approach” is appropriate. In fact, we employed the same strategy during our initial implementation in the City and County of San Francisco where we did this in less than half the time typically required to upgrade to a new voting system.

Due to State requirements and the direction of Dominion’s Democracy Suite, removing legacy systems and starting fresh with new technology makes for a clean change. Because of the integrated nature of Dominion’s Democracy Suite platform, we can interchange components of the solution as change comes to the City and County of San Francisco and the State of California.

Dominion has the capability to add new voting channels as needed. Our flexible contracting options allow our customers to make changes to the components as needed.

A. 7. 

Provide a brief description of the overall software and architectural design of applicable products.

Dominion Voting Response (7)

Dominion develops all of its software and firmware products, including all of the applications of the Democracy Suite Election Management System, which are designed and developed by Dominion using Visual C# object-oriented programming language on the .NET Framework 4.0 platform. Source code bases are held within industry standard source code repositories, helping to keep track of changes.

The firmware and applications associated with our ImageCast product line are also developed in-house by Dominion, ensuring that Dominion has complete control over the source code, and directly manages any upgrades, enhancements or necessary modifications. This means that the City of San Francisco can have complete confidence that any software issues will be handled expeditiously by Dominion’s expert team of programmers.

The ImageCast series of optical scan voting systems are designed and developed around the uClinux operating system and written with standardized C and C++ object-oriented programming languages. The software design objective is to design the framework around a hierarchical modular structure. That is, the software is split into multiple modules that exist as entities in a hierarchical structure. Each entity is a different sub-system/module.
This modular design objective allows for efficient maintainability and for future portability. The logical structure used to accomplish the design objective is multi-threading and real-time event driven. The only algorithms used are security-based.

One of the key benefits of this hierarchical modular structure for our customers is that it enables Dominion to shorten the amount of time between development and the time a customer can utilize the new feature, as only the modified module will need to be recertified - not the entire system.

The Democracy Suite EMS platform uses MS SQL Server 2008 R2 Standard Edition. In its default setup, the only redundancy provided is based on a RAID hard disk management within the single physical server. For a greater level of redundancy, the EMS platform can work on the two physically remote data centers. In that way, a variety of configurations are possible and utilized in practice depending on the requirements. In all cases, the EMS platform is deployed without a public internet connection as all system components reside on a Local Area Network. The ImageCast device instances (ImageCast Precinct, ImageCast Evolution and ImageCast Central) are logically and physically connected to the EMS platform using memory cards and administrative security tokens (iButton security keys).

Below is a diagram showing the high-level system architecture of the Democracy Suite platform.
A. 8.

*Describe the recommended operating environment(s) required to install and use any relevant systems and the minimum system requirements necessary to run such systems. Include any suggested production, development/test, and disaster recovery environments.*

**Dominion Voting Response (8)**

The Democracy Suite Election Management System (EMS) is a set of applications for all pre-voting and post-voting groups of activities used for defining and managing elections. The EMS and Adjudication server applications run on a Dell T620 server with a Rocsecure encrypted NAS device for storage of election data. The EMS and Adjudication client applications run on one or more Dell Latitude E6530 laptop workstations. The server and workstation(s) are connected via a closed, wired Local Area Network (LAN).

EMS Server consists of the following components:
- Dell PowerEdge T620
- Intel Xeon E5 series
- 32 GB RAM
- 2 x 500 GB hard disk in RAID1
- Rocstor Rocsecure NAS, 4 x 1 TB in RAID10
- Windows Server 2008 R2 SP1 64-bit
- Microsoft SQL Server 2008 R2 Standard SP2

EMS Workstation consists of the following components:
- Dell Latitude E6530
- Intel Core i5 or higher
- 8 GB RAM
- 500 GB hard disk
- Windows 7 Professional SP1 64-bit

The ImageCast Central Ballot Counter, is a commercial off the shelf high speed scanner, the Canon DR-X10C, coupled with a ballot processing application which runs on a Dell OptiPlex 9010 All-in-One PC workstation. The system is designed for use in a central scanning location, to process mail-in ballots. The ImageCast Central workstation is connected to the EMS Local Area Network for uploading results to the EMS server and the Adjudication module.

The ImageCast Central workstation consists of the following components:
- Dell OptiPlex 9010 All-in-One
- Intel Core i3 or higher
- 4 GB RAM
- 500 GB hard disk
- Windows 7 Professional SP1 64-bit

Both the Democracy Suite EMS system and the ImageCast Central scanning system should be operated in secure rooms with key-card access. It is recommended that all systems be connected to an uninterruptable power supply (UPS) to prevent data loss in the event of a power failure.
The ImageCast Evolution system is a precinct optical scan ballot tabulator designed to scan marked paper ballots, interpret voter marks on a paper ballot, communicate these interpretations back to the voter, and upon the voter's acceptance, securely deposit the ballots into the secure ballot box. The ImageCast Evolution also provides enhanced accessibility voting, accomplished via an ATI unit, LCD screen and integrated ballot printer.

ImageCast Evolution tabulators are deployed at precinct voting locations and early voting locations, following County and State procedures.

A. 9.  
Describe how the organization or firm envisions its software and hardware solutions changing over the next five to ten years.

Dominion Voting Response (9)

Dominion’s Democracy Suite platform is designed as a comprehensive solution for election officials who seek modern, efficient, accurate, accessible and secure voting technology. Dominion has developed a stable portfolio of elections technology solutions developed based on customer and market demand. This portfolio is enhanced through continuous product improvement whereby we often develop new features and update our products based on customer feedback. Dominion has been listening to its customers – including the City and County of San Francisco – and developing new modules to streamline the entire election process. Recently, for instance, Dominion added UOCAVA voting and Mobile Ballot Printing modules as part of this dynamic process. Another example of customer feedback-driven innovation is our ImageCast Evolution, all-in-one tabulator and ballot marking device, which allows jurisdictions to deploy one – rather than two – pieces of equipment in a polling location to serve the needs of all voters, regardless of ability. The ImageCast Evolution has been deployed in jurisdictions across the United States, and feedback from these installations is driving the next stage of this product’s evolution – Dominion will be adding touchscreen functionality to the 19” color LCD monitor, thereby further enhancing the options available to voters using this voting terminal.

In line with this philosophy, over the next five to ten years, Dominion intends to focus on the development of new products to meet the evolving needs of our customers. As an example, Dominion is currently focusing on augmenting its well-established ImageCast product line with software-driven, “hardware agnostic”, COTS-based voting terminal, the ImageCast X. A highly flexible voting device, the ImageCast X can be deployed as a ballot-marking device or a direct record electronic with voter verifiable paper trail, and can print and/or directly record ballot selections.

In addition to always working towards enhancing our existing ImageCast product line, moving forward - and, again, in line with market demand - Dominion will be focusing on leveraging COTS-based technologies for our new product offerings. Increasingly, election officials and voters alike expect to be able to leverage modern, every day technologies. Dominion is gradually leveraging more commercially available off-the-shelf hardware to deliver greater convenience, transparency, and accessibility to voters – as well as sustainability and greater efficiency for election officials – ultimately leading to significant cost-savings for constituents.
Elections are Dominion’s only business, and, as such, the strategic direction of our business is focused on these core values: relevant and timely product innovation, as well as exemplary customer service. Dominion believes that, combined, these values make us the partner of choice for election officials across the United States, and globally.

A. 10.

If applicable, submit at least two (2) references of federal, state or local governments equal in size or larger than the City and County of San Francisco that have implemented the proposed system, or, a similar system, within the last five (5) years. Include:

**Dominion Voting Response (10)**

**REFERENCE 1**

**Name of the client**
Leon County, Florida

**Contact information (name, address, phone, email)**

Ion Sancho, Leon County Supervisor of Elections
315 South Calhoun Street, Suite 110
Tallahassee, FL 32314
Phone: (850) 606-8683
ion@leoncountyfl.gov

**Date system fully implemented**
2014 Primary and General Election cycle.

**Total # of employees**
18

**Technical environment, i.e. commercial off-the-shelf (COTS), proprietary, mixture of COTS and proprietary. If your organization’s or firm’s voting system is a combination of elements that are COTS and proprietary, note which items are COTS and those that are proprietary.**

Leon County recently replaced their AccuVote System with a Democracy Suite Voting System in preparation for use in their 2014 Primary and General Election Cycle. The County’s initial ImageCast Evolution system purchase was to support their 133 precincts, 192,000 Registered Voters, 7 early voting sites along with absentee voting, and included 250 ImageCast Evolution units, two ImageCast Central absentee ballot scanner units, and our Democracy Suite EMS Software. Services included on-site implementation and project management, as well as on-site election support.

The system implemented in Leon County includes COTS components. The ImageCast Central system purchased by the County includes a commercial DRS scanner component.

**REFERENCE 2**

**Name of the client**
State of Louisiana
Contact information (name, address, phone, email)
Angie Rogers, Commissioner of Elections
8585 Archives Avenue
Baton Rouge, Louisiana 70809
(225) 922-0900
angie.rogers@sos.louisiana.gov

Date system fully implemented
2011

Total # of employees
Approximately 150

Technical environment, i.e. commercial off-the-shelf (COTS), proprietary, mixture of COTS and proprietary. If your organization’s or firm’s voting system is a combination of elements that are COTS and proprietary, note which items are COTS and those that are proprietary.
In 2011, Louisiana bought the ImageCast Central absentee ballot counting system for all parishes in the State. The ImageCast Central system is a software-driven central count solution. For the State of Louisiana, the ImageCast Central software was paired with a Kodak Sidekick COTS scanner.
REFERENCE 3

Name of the client
City & County of Denver

Contact information (name, address, phone, email)
Amber McReynolds, Director of Elections
Denver Elections Division
200 W 14th Ave #100
Denver, CO 80204
720.865.4850
amber.mcreynolds@denvergov.org

Date system fully implemented
2015

Total # of employees
20

Technical environment, i.e. commercial off-the-shelf (COTS), proprietary, mixture of COTS and proprietary. If your organization’s or firm’s voting system is a combination of elements that are COTS and proprietary, note which items are COTS and those that are proprietary.

The City and County of Denver streamlined their election processes by replacing their voting system - which required three vendors and seven different databases - with a single database to power the entire election – Democracy Suite. Denver, a primarily vote-by-mail jurisdiction, selected the ImageCast Central to tabulate paper ballots, more than 90% of which came from
ballots received by mail. Denver also implements the ImageCast X, a tablet-based in-person voting device, which prints a paper ballot for tabulation by the ImageCast Central. Both the ImageCast Central and ImageCast X are software-driven voting system components, which rely on COTS hardware. The ImageCast Central system used in Denver is powered by Canon G1130 scanners, and the ImageCast X used in Denver relies on Android-powered Samsung tablets.
Specific Criteria for New Voting System

1. Functionality

1. a

Approved by the Secretary of State for use in California before the City obtains the new system.

Dominion Voting Response (a)
Dominion’s Democracy Suite received approval from the California Secretary of State in April 2015. Please see documentation provided in Appendix 1.

1. b

Designed for votes to be cast and tabulated using paper ballots.

Dominion Voting Response (b)
Dominion’s ImageCast Evolution and ImageCast Central tabulators are paper ballot-based systems, and are designed for votes to be cast and tabulated using paper ballots.

1. c

Designed so that all or part of the system’s software operates using open source software.

Dominion Voting Response (c)
Dominion’s Democracy Suite is designed so that parts of the system’s software operates using open source software, such as the use of Linux for the development of ImageCast optical scan tabulators. In addition, due to the fact that many COTS components form part of the voting system, additional system components operate on open source software, such as the Android platform used in conjunction with the ImageCast X voting terminal.

1. d

Assigns the least restrictive software license so that third parties may also utilize the code.

Dominion Voting Response (d)
Our software license allows for the jurisdiction to utilize the system to meet their needs in supporting their constituents, including authorized third parties, based on the terms of that agreement. Our software license is one of the least restrictive, and Dominion has worked with third parties in the past to satisfy the needs and requirements of the jurisdiction.

1. e

Incorporates ranked-choice voting and allows for the formatting and tabulation of ballots that list the same number of selections as there are candidates, including qualified write-in candidates.
Dominion Voting Response (e)

As the City of San Francisco’s current elections technology provider, Dominion understands the City’s requirements as they relate to ranked-choice voting (RCV). Below is a non-exhaustive list of the RCV features and functionality of the Democracy Suite:

1. Error messages for irregular pattern of ranking candidates
2. System will capture images of all votes cast
3. Able to accept Write-ins
4. Results tape shows how many votes for each ranking
5. Adjudicate RCV Ballots
6. Round by Round processing by algorithm
7. System runs until a candidate has 50% plus 1 vote
8. Allow simultaneous elimination
9. Report round by round for each candidate
10. Reporting show round by round including, total votes, write-ins, under votes, over votes, exhausted ballots.

We have gathered input from our customers utilizing RCV and have improved the functional requirements of voting on RCV with better ballot layout and ballot placement, improved round by round advancement, and improved the reporting module to increase transparency for the public to better understand RCV.

Dominion is committed to our customers and has a history of adding functionality that our customers need. RCV is no exception. In the months and years ahead, Dominion will continue to refine and enhance the RCV capabilities of Democracy Suite.

Dominion continues to look at ways to increase the ability to rank all candidates running on a static piece of paper and adhere to the State of California’s as well as the City and County of San Francisco’s ballot requirements.

1. Accommodates the formatting of multiple-language ballots and is designed to integrate additional languages with minimal preparation of and modification to the overall system.

Dominion Voting Response (f)

Dominion’s Democracy Suite system has the capability to handle any language based off of the UTF-8 standardized character set. Democracy Suite is currently certified to format and integrate all languages required in California, and has the capability and flexibility to add languages as necessary.
The Election Event Designer module of the Election Management System is designed to incorporate multiple translated languages for presentation on the ballots and to configure the election in multiple languages, for both paper and audio ballots. Furthermore, the Audio Studio application in Election Event Designer allows human voice audio files to be recorded in any language.

1. g

*Requires the staging of one piece of equipment per precinct for each polling place and supports all voters.*

**Dominion Voting Response (g)**

Dominion’s ImageCast Evolution is the only universal tabulator and ballot marking device on the market, allowing the City of San Francisco to stage only one piece of equipment per precinct. It is the only optical scan tabulator using a single ballot path which does not require the voter to have to go to an additional unit to cast their vote.

The all-in-one ImageCast Evolution universal voting technology reduces the number of ancillary components in the precincts when compared to the competition. This not only reduces up-front equipment costs, but makes the ImageCast Evolution solution easier and less expensive to store, maintain, transport and deploy. The training on and deployment of a single unit in the precinct also reduces poll worker anxiety while promoting a positive voting experience for all.

Among the many tangible benefits of this cutting edge all–in-one solution:

- Significantly reduce the training burden for poll workers, who, instead of having to learn how to set up and operate two separate devices will only need to be trained on one, user-friendly device.
- The City of San Francisco will have to program, test, develop procedures, store and transport one, instead of two, pieces of equipment, thereby substantially reducing their operations and elections costs.
- With a single device type, the City of San Francisco will also be able to reduce the risk of programming errors or inconsistencies, and eliminate the need for an additional backup set of equipment.

The ImageCast Evolution enables voters with accessibility needs to independently and privately mark, review and cast their paper ballot on the same device as all other voters. All voters use the same paper ballot on the same device to cast their vote, truly making it an all-in-one solution for everyone.

1. h

*Utilizes high-speed scanners to tabulate vote-by-mail ballots.*

**Dominion Voting Response (h)**
Dominion’s ImageCast Central vote-by-mail tabulation system was designed with efficiency in mind. Most central count solutions that exist in the market today are large, expensive, proprietary solutions that are not scalable, efficient or easy to use or maintain. ImageCast Central makes use of industry-leading COTS hardware – namely, the Canon G1130 and X10C high-speed scanner - to decrease capital costs, minimize risk of hardware failure, and provide jurisdictions the flexibility and scalability they need. Our solution is designed to increase efficiency by making the process of tabulating mailed ballots easier to complete.

While all units are running constantly, the system evaluates each ballot and outstacks ballots for review in Dominion's ImageCast Adjudication. While operators continue to tabulate ballots, others can review and adjudicate outstacked ballots, thereby eliminating the need for purchasing additional ballots, physically duplicating and rerunning ballots. This saves time and money, without compromising transparency in the process.

This system is also fully auditable. Each and every ballot tabulated in the Democracy Suite system is imaged and appended with the single cast vote record, the AuditMark. While the AuditMark allows ballot-level auditing, it is never tied to the voter and is not timestamped when scanned in a precinct scanner, in order to preserve voter anonymity.

1. i

*Creates a digital image of all (paper) ballots cast and facilitates the posting of the images on the Department’s website while allowing for quick referencing between the paper ballot and its digital image.*

**Dominion Voting Response (i)**

A duplex image is captured for each and every paper ballot that is scanned through an ImageCast tabulator. These images, small files in TIFF format, are also appended with an AuditMark, Dominion’s exclusive ballot-level audit trail. Through this patented feature, not only does the ballot image show the voted ballot, but it also shows how the tabulator interpreted the voter’s marks, removing any doubt or uncertainty about how the ballot was counted. Again, as mentioned above, the ballot image and the AuditMark do not identify in any way the identity of the voter.

Dominion developed this exclusive visual audit trail feature - which makes it possible to audit results down to each individual ballot, clearly captures voter intent and vote interpretation - to increase the transparency of the voting process, and to augment stakeholder confidence.

1. j

*Meets or exceeds the most recent security standards set as minimum requirements for voting systems by the Election Assistance Commission and the California Secretary of State.*

**Dominion Voting Response (j)**

Dominion’s Democracy Suite is designed to ensure a high level of security that meets the latest EAC VVSG requirements, as well as the security standards set forth by the California Secretary of State, while maintaining ease of use.
1. k

*Allows for automated formatting of ballots with minimal manual manipulation of content by importing candidate information from the Department’s existing election management system.*

**Dominion Voting Response (k)**

The Democracy Suite EMS has features to facilitate the transition from your current platform. Instead of having to manually import the data from your legacy system, Democracy Suite EMS has tools to make sure your transition is as seamless as possible, reducing the amount of time and effort required.

1. l

*Includes auxiliary battery power to run polling place equipment for at least two hours of continuous use.*

**Dominion Voting Response (l)**

The ImageCast Evolution tabulator has an internal battery which provides at least 2 hours of continuous scanning capacity. In addition, the ImageCast Evolution is compatible with commercial-off-the-shelf UPS units, should the City require additional auxiliary battery capacity.

1. m

*Designed with minimal moving parts to reduce maintenance and associated costs of any mechanical operations.*

**Dominion Voting Response (m)**

The ImageCast Evolution is a durable, rugged unit, which was designed to be able to withstand transport and storage conditions without incurring damage or becoming inoperable as a result of such transport.

1. n

*Includes clearly written documentation available before implementation for both hardware and software functions and provides instruction and reference materials for all system-related processes.*

**Dominion Voting Response (n)**

As part of implementation, Dominion will provide documentation and procedures for both hardware and software functions, as well as instructions and reference materials for all system-related processes.

1. o

*Permits the auditing of ballot cards at multiple points in the tabulation process and with minimal disturbance of operations to reduce the reliance on post-Election Day audits and to affirm the system is operating successfully.*
Dominion Voting Response (o)

Dominion’s Democracy Suite EMS includes the ImageCast Adjudication module, a Microsoft Gold software application, which allows officials and observers to audit and clarify voter intent in real-time. As ballots are being scanned on the ImageCast Central, ballots with conditions – which are customizable by the jurisdiction – will be automatically sent to the ImageCast Adjudication module for review and adjudication. This allows minimal disturbance of operations, as the ImageCast Central will continuously scans ballots without stopping.

In ImageCast Adjudication, users can see the full ballot image, and the AuditMark showing the tabulator interpretation at the bottom, thereby confirming that the system is operating successfully. If an adjudication decision is made, the adjudication decision will be appended to the original ballot image, producing a transparent, easy to read chain of custody and activity log (as illustrated here).

1.p

*Produces easily customizable reports containing any audit data or other information collected by the system.*

Dominion Voting Response (p)

The Results Tally & Reporting module of the Democracy Suite EMS produces default reports, which contain a set of filtering parameters, including counting group, tabulator, polling location, contest, subdivision type, etc. In other words, if a value is selected from the filtering options, a report will be created for these exact parameters. This flexibility allows comprehensive reporting capability.

Auditing reports can also be displayed from the EMS client applications. The reports found in the Audit Log Report Group are associated with the logon account usernames that have been created within the EMS (e.g. Admin, Techadvisor, and RTRAdmin). The produced reports will
log each action that a specific user performed at a certain point in time. These reports show
details such as User Name, Report for Time Period, Time and Action details. The report is
generated in simple text format and can be exported into PDF, HTML or MS Excel format. The
created report is stored on the EMS server and signed using the election project key to ensure
its authenticity. Reports are created with the assigned date, and multiple reports can be
generated and printed.

1.q

Logs all normal and abnormal events and ensures that event logging cannot be disabled or altered.

Dominion Voting Response (q)

Tabulator audit log:
Audit logs from the ImageCast Evolution can be transferred to the Democracy Suite EMS.
Election results (including the scanned ballot images and log files) are stored on the compact
flash memory cards on each individual ImageCast Evolution tabulator. Each file type (result
files, ballot images and log files) may be imported into the Results Tally & Reporting application
of EMS together or separately. All ImageCast log files are visible through the Results Tally &
Reporting application and are stored in the EMS database. In EMS, a directory of audit files is
accessed in the graphical user interface, and can be printed. Operators with Administration
privileges can access these files at any time.

EMS audit log:
The Democracy Suite EMS creates and maintains detailed audit logs of all activities performed
on the EMS system, as well as all actions performed by the EMS system itself, including any
system errors. Audit logs provide information about all activity, including any error conditions,
that occurs before, during, and after the processing of ballots. These logs can be analyzed in
the event that an error condition warrants it.

Audit log records cannot be deleted nor modified. Users with proper authorization levels can
generate and view the audit report. Audit reports cannot be deleted.

1.r

 Seamlessly supports risk limiting auditing of results by generating random samples,
reconstructing electronic records for comparison, and handling statistics.

Dominion Voting Response (r)

During the certification of Dominion’s Democracy Suite 4.14 system, the California Secretary of
State certified that the official record of the election is the Ballot Image with the AuditMark. This
allows the counties to utilize the ballot image for the canvas of the election, increasing the
efficiency of the system. Jurisdictions can now call up the appropriate ballot images for precinct-
based canvassing, ballot based canvassing, or even Risk Limiting Audits and view the images
on screen, reducing the time to find and distribute the paper ballots.
Dominion is currently working with industry experts on the development of a Ballot Audit Module to better assist in this process. This module will be available to the City and County of San Francisco by the implementation of a new voting solution in 2017.

1.s

*Facilitates the review of voted ballots or contests by election personnel using digital images to resolve issues when possible using a digital interface, and subsequently facilitates the posting of such actions on the Department's website.*

**Dominion Voting Response (s)**

As described in response to question 1.o, Dominion’s ImageCast Adjudication provides a digital interface which allows authorized users to review voted ballots or contests, and resolve issues – such as write-ins, marginal marks, overvotes or other outstack conditions defined by the City of San Francisco – in real-time, as ballot batches are being scanned on the ImageCast Central. In order to facilitate posting on the Department's website, the ballot images are saved in a standard (.tiff) format.

1.t

*Allows for reporting results in near real time in such manner that does not require elections personnel to manually prepare and post results-related information.*

**Dominion Voting Response (t)**

Democracy Suite’s Results Tally & Reporting module allows for reporting results in near real time. As results flow into the system, election officials verify and validate these results, at which time they are immediately released to a pre-determined folder location on the network. Results files are exported in XML, a standard file format which can be easily and efficiently read by
news media, if they wish to import the XML files into their own display program. Dominion also offers an integrated Election Night Reporting module, which provides a customizable web display for the City of San Francisco to update and display results in near real-time as they become available on Election Night.

1.u

*Designed so that the Department can transport equipment using minimal resources and requires a small footprint inside delivery vehicles.*

**Dominion Voting Response (u)**

Dominion understands that the logistical demands of elections technology deployments can create additional pressures for election officials. With this in mind, Dominion designed voting system components that are easily transportable and robust. Dominion’s ImageCast Evolution all-in-one tabulator and integrated ballot marking device will cut by half the number of units which need to be deployed to polling locations – instead of having to transport two separate pieces of equipment for ballot scanning and accessible voting, drayage costs and logistical efforts are reduced by having only one unit to deploy. Additionally, Dominion’s ballot box, which has four wheels on casters for ease of movement, was designed so that it can be nested up to three boxes deep, reducing the footprint inside delivery vehicles.

By eliminating a costly second piece of hardware in the precinct, the all-in-one ImageCast Evolution not only reduces up-front equipment requirements, but also makes it easier for the Department to maintain, store and transport; easier for the poll workers to understand and deploy; and easier for all voters to use.
1. v

*Allows elections personnel to set voting patterns when preparing logic and accuracy testing.*

**Dominion Voting Response (v)**

Democracy Suite has an optional, stand-alone test deck generation utility, the Automated Test Deck module, which can be employed by certified printers, or sold separately to the City of San Francisco for the automated creation of pre-marked test decks. This module allows elections personnel to set voting patterns – without having to hand-mark ballots – when preparing for logic and accuracy testing, thereby saving the City of San Francisco time and resources.

1. w.

*Operates in a manner that is compatible with the Department’s existing election management system from DFM Associates.*

**Dominion Voting Response (w)**

The proposed Democracy Suite system operates in a manner that is compatible with the Department’s existing election management system from DFM Associates. Dominion continues to work with DFM on compatibility and is currently able to import the Voter Registration information regarding an election.

1. x.

*Allows elections personnel to meet the pre-election testing requirements for automated reporting established by the California Secretary of State in such a manner that does not require manual results generation.*

**Dominion Voting Response (x)**

The Democracy Suite system allows elections personnel to meet the pre-election testing requirements for automated reporting established by the California Secretary of State in such a manner that does not require manual results generation.

2. Usability/Transparency

2.a

*Accessible to all voters to cast ballots in an independent and confidential manner.*

**Dominion Voting Response (a)**

With the roll-out of the ImageCast Precinct (ICP) Optical Scan Precinct Tabulator back in 2003, Dominion was the first to create direct ADA functionality within an optical scan tabulator, and has spent each of the last twelve years perfecting its design, reliability and ease of use via feedback from election officials using the product in live elections. This iterative development process took a giant leap forward with the recent inclusion of the ImageCast Evolution (ICE) into our Democracy Suite product line.

Dominion’s Democracy Suite was designed to include a high level of accessibility, enabling all voters – regardless of ability – to vote in a private, independent and confidential manner. The
ImageCast Evolution tabulator and ballot marking device allows all voters to cast the same paper ballot on the same device. With the ImageCast Evolution, voters with accessibility needs don’t need to use a different, separate device from all other voters. To further ensure the confidentiality of the vote for persons with disabilities, Dominion uses a library of human hand marks and writing to mark a ballot via the accessible voting session, which makes machine-marked ballots indistinguishable from hand-marked ballots, truly protecting the privacy of disabled voters.

2.b

Provides fully accessible and intuitive features for all voters and includes connections and ports to fit all currently known types of assistive devices.

Dominion Voting Response (b)

The ImageCast Evolution is built to meet strict ADA standards, as well as HAVA provisions for accessible voting. Voters with accessibility needs are able to obtain a full audio ballot, which can be navigated using an audio-tactile interface (ATI), binary paddles or even sip n’ puff type devices. The ImageCast Evolution supports a wide range of commercial, standard assistive devices used by persons with accessibility needs, which connect to the unit via an RJ45 port.

2.c

Promotes intuitive setup and operation of equipment in the polling places so that poll workers do not require specialized training on the equipment.

Dominion Voting Response (c)

The ImageCast Evolution is a true plug and play system for poll workers. With its intuitive user interface and 19” color LCD screen, it promotes ease of use and operation for poll workers. The instructions and messages that appear on the screen to guide poll workers through the steps of opening and closing polls, as well as to start an accessible voting session or perform a variety of basic functions, are simple and straightforward, and can be customized to meet the specific needs of the City of San Francisco. Again, due to the integrated, universal nature of the optical scan tabulator and ballot marking device, poll workers only have to train on one single piece of equipment. This allows poll workers to develop confidence and familiarity with the equipment, and reduces the training burden for the City of San Francisco.
Indicates how the system tallied each vote on every ballot card and indicates if any votes were unreadable while ensuring the confidentiality of each voter's ballot.

**Dominion Voting Response (d)**

The system can be set up in full review for the above mentioned scenario or only second chance voting, which will warn the voter of any errors that might have been made when marking the ballot. Either way, the voter in both situations has the ability to review their ballot and make changes before casting.

Dominion has designed the ImageCast Evolution to ensure that voters have the ability to clarify and confirm their intent as they are casting their ballot. The system implements several features which enable voters to have a “second chance vote”, which not only ensures that the voter has the opportunity to confirm how the system is tallying each vote on the ballot card, but can also clarify (or positively confirm) their intent while casting a ballot.

1. To ensure the confidentiality of each voter’s ballot, the ImageCast Evolution has an integrated privacy shield, which protects the screen from being viewed by by-standers during ballot review and ballot casting. Furthermore, ballots can be fed into the tabulator in any orientation, including face down, thus providing another layer of confidentiality for the voter. In an accessible voting session, the paper ballot, once marked, never needs to exit the tabulator in order to be reviewed and cast, thus preserving the confidentiality of votes marked by the ballot marking device.
2. The ImageCast Evolution can be configured to provide all voters a chance to review their ballot selections on the 19” LCD screen (or via audio for voters with accessibility needs), giving the voter the possibility of either returning their ballot for corrective action, or confirming their selection and casting their ballot.

3. When a ballot is fed into an ImageCast tabulator a complete duplex image is created and then analyzed for tabulation by evaluating the pixel count of a voter mark. The pixel count of each mark is compared with two thresholds (which are defined through the Election Management System by the Election Official) to determine what constitutes a vote. If a mark falls above the upper threshold, it’s a valid vote. If a mark falls below the lower threshold, it will not be counted as a vote. However, if a mark falls between the two thresholds (known as the “ambiguous zone”), it will be deemed as a marginal mark and the ballot will be returned to the voter for corrective action (please see diagram below). In a central count scenario, ballots with marginal marks are electronically out-stacked for digital adjudication, as described in response to question 1.s. It is important to note that ballot images are neither timestamped nor kept in sequential order, thereby preserving the confidentiality of each voter’s ballot.

With this feature, the voter is given the ability to determine his or her intent at the time they cast their ballot, not an inspection or recount board after the fact, when it is too late. The chart below illustrates the Marginal Mark threshold interpretation.
2.e

Indicates any action taken for every ballot card or contest that elections personnel reviewed and generates a digital audit log for posting on the Department’s website that records such actions.

Dominion Voting Response (e)

Tabulator audit log

During the final results tally audit activity, the automated audit log of each optical scanner is input into the EMS Results Tally and Reporting system for a consolidated record. This tabulator Audit trail file will include:

- System startup messages (recorded by Application Loader).
- System self-diagnostic messages (module initializations, security verifications).
- All administrator operations (messages include “security key” id names).
- All ballots cast, rejected and diverted.
- All voter notifications (undervotes, overvotes).
- All system errors (paper jams, power failures, hardware failures, data errors, etc.).
- Source and disposition of system interrupts resulting in entry into exception handling routines.
- All messages generated by exception handlers.
- Notification of system login or access errors, file access errors, and physical violations of security as they occur, and a summary record of these events after processing.
- Non-critical status messages that are generated by the machine's data quality monitor or by software and hardware condition monitors.

Every action, event, and operation that occurs on ImageCast tabulators is permanently logged to an audit log file that exists on both memory cards. Every event and operation that occurs on the election management system is kept on the election project audit within the EMS Database. This file is signed and encrypted.

All audit logs are digitally signed. If there is tampering of the audit data or logs, this is detected by the operating unit. The unit reports ‘Election file mismatch’ and will not operate since modifying the audit files can only indicate malicious usage.

Audit logs are available to operators at all times. On the optical scanners, these can be accessed from the Administration menu, and printed. In EMS, a directory of audit files is accessed in the graphical user interface, and can be printed. Operators with Administration privileges can access these files at any time.

Audit log records cannot be deleted nor modified. Users with proper authorization levels can generate and view the audit report. Audit reports cannot be deleted.

**Adjudication audit log**

ImageCast Adjudication also offers a robust, ballot-level audit trail. When a ballot is reviewed in the ImageCast Adjudication module, and a user makes an adjudication decision, the ballot image is appended with a record of that decision: which user took what action at what time. This allows election officials to ensure that adjudication decisions made by authorized users can be further scrutinized and reviewed, and reversed if necessary, with a clear audit trail of which decisions were made concerning a particular ballot. The image shown on the right shows a ballot scanned on the ImageCast Central – when scanned centrally, the ballots are timestamped to further enhance the audit capability of the system.
2.f

Issues all result reports, ballot tally files, audit logs, in open data formats (machine-readable) and human-readable formats to increase the scope of election transparency.

Dominion Voting Response (f)

Dominion’s Democracy Suite can issue all result reports, ballot tally files, audit logs, in open data formats (machine-readable) and human-readable formats.

2.g

Creates and facilitates the posting of ballot image files on the Department’s website so that members of the public can tabulate the same vote information that the Department uses when tallying the official results.

Dominion Voting Response (g)

For each ballot scanned on the Democracy Suite platform, a complete duplex image is created. These images are generated and stored in a standard format (.tiff), and can be saved in a specified folder location on the network to allow the Department to easily post these images to their website.

2.h

Collects and then converts the election information in a manner that facilitates the Department’s ability to provide reports in data formats and styles requested from other agencies, the media, and members of the public.

Dominion Voting Response (h)

The Results Tally and Reporting module of the Democracy Suite EMS exports election results in XML format by default. The Results Tally & Reporting module can also define XML transformations, thus allowing election results to be presented in any format. XSL (XML Style-sheet Language) transformations make this function possible because XSLT is structured around the W3C standards for transformation. W3C defines a language that transforms XML files into more readable formats, such as clear text files, HTML, XHTML, other XML formats, SVGPDF, etc. Any number of XSLT transformations can be defined. When an XSLT transformation is created, it is automatically attached to all transfer points set within the system. This means that, in addition to the XML results file, the system will create other output file formats defined by the XSLT transformations.
3. Results Reports

3.a

*Produces rapid, versatile, and easily customizable reports, including in real-time, when issuing results reports on Election Night.*

**Dominion Voting Response (a)**

The Democracy Suite Results Tally & Reporting module produces rapid, versatile, and easily customizable reports, including in real-time, when issuing results reports on Election Night. Once vote data is uploaded into the Results Tally & Reporting module, consolidated results are verified, tabulated, and published.

Flow of results to the public and media can be controlled. Many election officials like to review the results before releasing them, and the system provides a number of ways and reporting methods, including but not limited to a precinct-level electronics result report, number of provisional ballots cast, ballots cast during early voting, on election day, and by mail. Alternatively, the results can automatically be released for public view, bypassing the review stage entirely.

3.b

*Provides easily customizable reports for a wide variety of purposes, including the reporting of partial election returns throughout Election Night, final unofficial election returns, and canvass reports.*

**Dominion Voting Response (b)**

The Democracy Suite Results Tally & Reporting module provides easily customizable reports for a wide variety of purposes. Election officials are able to select which fields should appear on the report, using the intuitive user interface.
3.c

Organizes and exports data in a variety of formats including but not limited to TXT (delimiter-separated), CSV, XLSX, PDF, and XML/EML that the Department can upload to its website and provide to the Secretary of State, the media, etc. with minimal intervention.

Dominion Voting Response (c)

The Results Tally and Reporting module of the Democracy Suite EMS provides a flexible and extendable reporting mechanisms – in addition to built-in reports, new reports can be added on-demand.

The new reports define which query and XSLT transformation to utilize when generating a report. In this way, reports can be generated in XML (default), PDF, TXT, HTML, CVS and Excel (XLS/XLSX) file formats.

Finally, premium graphical reporting is provided using the Adobe Flash/Flex/AIR platform driven by the dynamically generated XML reports. These kinds of report presentations can contain maps, charts, and other animated elements for local, web or media presentations.

4. Adaptability

4.a

Anticipates the City modifying its use of the system or the system’s components in response to changes in law such as the possible implementation of Senate Bill 450 that would allow the City to conduct mail-ballot elections with voting centers staged at multiple locations in the City.

Dominion Voting Response (a)

Dominion’s Democracy Suite is a comprehensive elections technology platform, designed to provide election officials with the flexibility they need as mandates, laws, expectations and requirements evolve.

Democracy Suite’s voting systems are designed to function together in a holistic way, allowing Election Officials to implement complementary voting channels to enhance access to the ballot for voters. Furthermore, many of the system’s components are software-driven and use COTS components, providing flexibility, scalability and options for Election Officials.

Democracy Suite, as a versatile suite of components, will ensure that Election Officials are poised for upcoming legal changes. For instance:

4. The ImageCast Evolution, with its consistent scan speed and large capacity to handle volume, can be used for both precinct and vote center locations.

5. The ImageCast Central, a software-driven solution, relies on compact but powerful COTS scanners. If mail ballot elections are implemented, or if there is simply additional central count volume to contend with, adding additional scanners to meet increased ballot scanning demands is both straightforward and cost-efficient. With the flexibility to
scale, the system is designed to provide options for Election Officials seeking a resilient and long-lasting technology solution.

6. Dominion’s Democracy Suite is the most efficient, cost-effective solution available today with software and hardware engineering concepts designed to meet the City of San Francisco’s present and future needs. Developed from the ground up as an integrated voting system, Democracy Suite was created specifically to meet present as well as future customer needs. It is not wrapped around a legacy platform nor outdated software and hardware engineering.

7. Dominion believes that election officials need a solution that can evolve and adapt to shifts in regulations and requirements that may occur due to technological advances or legislative mandates. Election automation is a highly demanding and rapidly changing discipline, and Dominion’s Democracy Suite is a solution that can be modified, upgraded, or expanded on a component basis, thus preserving the City’s investment.

4.b

*Implemented in the City under a possible final agreement that institutes a purchase, lease, lease-to-own, or any other mechanism that best suits the City’s interests in obtaining a new system.*

**Dominion Voting Response (b)**

In addition to traditional purchase or lease options, which Dominion would be pleased to discuss with the City, Dominion offers an industry-first program to make your election system maintenance and upgrade stress-free, the Dominion Managed Services Program.

The Dominion Managed Services Program packages all equipment, licensing, warranty, supplies, services and support into an annual budgetary number paid over a multiple year term. It is the first of its kind in the industry and has several benefits:

- Spreads the investment and payments by the county over a long term contract by making it an annual operational cost instead of an upfront capital investment
- Eliminates the ownership of legacy equipment
- Includes the complete system and services: hardware, software, licenses, maintenance agreements, and election services in one annual payment.

4.c

*Allows the City to obtain the new system and its components and also provides the City with the flexibility throughout the term of the agreement to upgrade components, including software, when improvements to the new system become available, including an option to fully replace the new system.*

**Dominion Voting Response (c)**

As mentioned in the Executive Summary, one of the core principles behind Dominion’s Democracy Suite is that it is a solution that can be modified, upgraded, or expanded on a
component basis, thus preserving the City’s investment. Dominion will allow the City to obtain
the new system and its components and also provides the City with the flexibility throughout the
term of the agreement to upgrade components, including software, when improvements to the
new system become available, including an option to fully replace the new system.

4.d

*Allows the Department to continue to select how all voting-related services are obtained such as for ballot printing and translations without restrictions from the design of the new system.*

**Dominion Voting Response (d)**

With Democracy Suite, the Department will be able to continue to select how all voting-related
services are obtained such as for ballot printing and translations without restrictions from the
design of the new system.
Appendix 1 - California Secretary of State Certification

Whereas, pursuant to Elections Code section 19201, no voting system, in whole or in part, may be used unless it has received the approval of the Secretary of State; and

Whereas, Dominion Voting Systems, Inc. submitted an application for the Democracy Suite 4.14-A.1 with Adjudication 2.4 voting system, which is comprised of Election Management System Software version 4.14.2301; ImageCast Evolution Software version 4.14.10.A1; ImageCast Central Software version 4.14.4; and Adjudication 2.4.1.3201; and

Whereas, during a series of tests conducted by the Secretary of State’s office, the voting system performed in a manner consistent with California law; and

Whereas, the voting system was able to successfully and accurately execute all test cases, scenarios, and scripts developed by the Secretary of State’s office; and

Whereas, the software of the Adjudication 2.4 component improperly permits an adjudication judge to inadvertently and erroneously change vote selections while maneuvering the ballot image during the adjudication process; and

Whereas, Dominion Voting Systems, Inc. has recognized this deficiency and has developed an updated version of the software for the Adjudication component to prevent adjudication judges from inadvertently and erroneously changing vote selections; and

Whereas, Dominion Voting Systems, Inc. received conditional approval of the Democracy Suite 4.14-A.1 with Adjudication 2.4 voting system, not allowing it to be sold in California until such time that the Secretary of State’s office examined, tested, and, if appropriate, subsequently certified the updated version of the software for the Adjudication component that prevents adjudication judges from inadvertently and erroneously changing vote selections during the adjudication process; and
Whereas, Dominion Voting Systems, Inc. submitted an application for the modified Adjudication version 2.4.1.14601 component that prevents adjudication judges from inadvertently and erroneously changing vote selections during the adjudication process; and

Whereas, the Dominion Voting Systems, Inc. Democracy Suite 4.14-A.1 voting system with the modified Adjudication version 2.4.1.14601 component was able to successfully and accurately execute all test cases, scenarios, and scripts developed by the Secretary of State’s office; now

Therefore, I, Alex Padilla, Secretary of State for the State of California, find and determine, pursuant to Division 19 of the Elections Code, as follows:

For the reasons set forth above, Dominion Voting Systems, Inc. Democracy Suite 4.14-A.1 with the modified Adjudication 2.4.1.14601 voting system is hereby conditionally approved.

Use of Dominion Voting Systems, Inc. Democracy Suite 4.14-A.1 with Adjudication version 2.4.1.14601 must comply with all applicable state and federal requirements, including, but not limited to, those voting system requirements as set forth in the California Elections Code, the Help America Vote Act of 2002 and the California Code of Regulation and is also subject to the following terms and conditions:

1. The Dominion Democracy Suite 4.14-A.1 voting system shall not be purchased without the use of the Adjudication version 2.4.1.14601 component. Any jurisdiction purchasing the system shall be required to implement and use the Adjudication 2.4.1.14601 component with the Dominion Democracy Suite 4.14-A.1 voting system, specifically in conjunction with the EMS.

2. The vendor, its users, and the Secretary of State shall create a Use Procedure document for the Adjudication version 2.4.1.14601 component. The Use Procedures shall address the implementation of the two person rule for canvassing boards, timelines for the usage of the Adjudication 2.4.1.14601 component, and guidelines to allow the public observation of the resolution process.

3. Dominion Voting Systems, Inc. shall provide a copy of the updated trusted build files, including the modified Machine Behavior Settings (MBS) and Device Configuration Files (DCF). Within 10 business days, these build files along with the source code and all associated software and firmware shall be escrowed in a California approved source code escrow facility, pursuant to California Elections Code section 19212. Pursuant to California Code of Regulations section 20641, within five working days, the vendor shall certify to each affected election jurisdiction, with a copy to the Secretary of State, that it has placed the software in escrow.

4. No substitution or modification of the voting system shall be made with respect to any component of the voting system, including the Use Procedures, until the Secretary of State has been notified in writing and has determined that the proposed change or modification does not impair the accuracy or efficiency of the voting system sufficient to require a re-examination and approval.
5. Jurisdictions are prohibited from installing any software applications or utilities on any component of the voting system that have not been identified by the vendor and approved by the Secretary of State.

6. Immediately after any repair or modification of any voting system component that requires opening the housing, the integrity of the firmware and/or software must be verified using an automated mechanism, or all software must be reinstalled by the jurisdiction from a read-only version of the approved firmware and/or software supplied directly by the federal testing laboratory or Secretary of State before the equipment can be put back into service.

7. Upon request, members of the public must be permitted to observe and inspect, without physical contact, the integrity of all externally visible security seals used to secure voting equipment in a time and manner that does not interfere with the conduct of the election or the privacy of any voter.

8. Where voting equipment is used to record and tabulate vote results in a polling place, upon close of the polls, the poll workers are required to print two copies of the accumulated vote results and one audit log from each device. Each poll worker must sign every copy. One copy of the vote results from each device must be publicly posted outside the polling place. The second copy, along with the audit log, must be included with the official election material that is returned to the jurisdiction headquarters on election night.

9. Poll workers are not permitted to participate in any post-election manual count auditing of precinct results from a precinct in which they were a poll worker.

10. Elections officials must develop appropriate security procedures for use when representatives of qualified political parties and bona fide associations of citizens and media associations, pursuant to their rights under Elections Code section 15004, check and review the preparation and operation of vote tabulating devices and attend any or all phases of the election. The security procedures must permit representatives to observe at a legible distance the contents of the display on the vote tabulating computer or device. This requirement may be satisfied by positioning an additional display monitor or monitors in a manner that allows the representatives to read the contents.

11. With respect to any piece of voting equipment for which the chain of custody has been compromised or experiences a fatal error from which it cannot recover gracefully (i.e., the error is not handled through the device’s internal error handling procedures with or without user input), such that the device must be rebooted or the device reboots itself to restore operation, the following actions must be taken:
   - The chief elections official of the jurisdiction must be notified immediately;
   - The equipment must be removed from service immediately and replaced if possible;
   - Any votes cast on the device prior to its removal from service must be subject to a 100% manual tally, by the process described in Elections Code section 15360, as part of the official canvass. Notice to the public of this manual tally may be combined
with the notice required by any other manual tally required in this order or by
Elections Code section 15360;
• Any memory card containing data from that device must be secured and retained for
the full election retention period;
• An image of all device software and firmware must be stored on write-once media
and retained securely for the full election retention period; and
• All device software and firmware must be reinstalled from a read-only version of the
approved firmware and software supplied directly by the federal testing laboratory or
the Secretary of State before the equipment is placed back into service.

12. The Secretary of State reserves the right, with reasonable notice to the vendor and to the
jurisdictions using the voting system, to modify the Use Procedures used with the voting
system and to impose additional requirements with respect to the use of the system if the
Secretary of State determines that such modifications or additions are necessary to
enhance the accuracy, reliability or security of any of the voting system. Such
modifications or additions shall be deemed to be incorporated herein as if set forth in full.

13. The Secretary of State reserves the right to monitor activities before, during and after the
election at any precinct or registrar of voters’ office, and may, at his or her discretion, test
voting equipment.

14. Voting system manufacturers or their agents shall assume full responsibility for any
representation they make that a voting system complies with all applicable state and
federal requirements, including, but not limited to, those voting system requirements as
set forth in the California Elections Code and the Help America Vote Act of 2002. In the
event such representation is determined to be false or misleading, voting system
manufacturers or their agents shall be responsible for the cost of any upgrade, retrofit or
replacement of any voting system or its component parts found to be necessary for
certification or otherwise not in compliance.

15. The vendor must establish a California County User Group and hold at least one annual
meeting where all California users and Secretary of State staff are invited to attend and
review the system.

IN WITNESS WHEREOF, I hereunto set my hand
and affix the Great Seal of the State of California, this
29th day of April 2015.

ALEX PADILLA
Secretary of State
Appendix 2 - Sales Brochures

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Democracy Suite is Dominion’s fully integrated voting system solution, and the engine that powers your entire election. This technology platform delivers an improved experience for the voter, long-term sustainability, operational efficiencies, transparency, and cost savings.

**EFFICIENT**

Dominion developed Democracy Suite with efficiency in mind. From election programming and ballot creation to results consolidation and reporting, your entire election takes place end-to-end out of a single database, making additional third-party tools optional. Democracy Suite has been built to help you streamline your process, increase productivity, and save you time and money.

**FLEXIBLE & SCALABLE**

Democracy Suite is a highly scalable, flexible system, making it ideal for elections of any size and in any environment. It has been deployed in jurisdictions with as few as 5,000 voters, and in national-level elections with over 50 million voters. Democracy Suite offers a diverse range of voting terminal devices with flexible configurations to meet jurisdictional needs.

**SIMPLE**

With easy-to-use, intuitive user interfaces across the entire Democracy Suite product line, your staff and poll workers are able to confidently carry out the tasks in their workflow, and your voters have a user-friendly experience. Democracy Suite reduces complexity for your election officials as election event definition and results reporting all take place out of a single, unified database.

**SECURE**

Security is a big factor when you choose an election solutions provider. Democracy Suite is designed to ensure a high level of security that meets the latest EAC VVSG requirements while maintaining ease of use. The Democracy Suite system also features Dominion’s patented, exclusive ballot-level audit trail, AuditMark®, which not only creates a digital image of every ballot cast, but also appends to that image a record of how the voter’s intent was interpreted by the voting system. You can rest assured that the integrity of your election data is fully maintained at all times.

**SUSTAINABLE**

Dominion is committed to producing the highest quality election automation tools and to listening to our customers. Developed from the ground-up as an integrated system, Democracy Suite was created with present and future customer needs in mind. Dominion is listening to the market and focusing on innovative software solutions to deliver secure elections that are sustainable and cost-efficient. As modern technologies evolve, we will continue to innovate.
Dominion’s ImageCast® Evolution provides both ballot scanning and accessible ballot marking solutions in one universal integrated device.

ImageCast® Evolution
Optical Scan Tabulator & Ballot Marking Device:
Redefining the Standard for Poll-Based Voting

- Integrated accessible voting - everyone uses the same ballot on the same machine
- Designed for simple, hassle-free election preparation
- 19” touchscreen display for an intuitive user experience
- Can mark and scan ballots up to 22 inches
STANDARD FEATURES & ADVANTAGES

**Easy to use for all**
- Intuitive touch screen interface for:
  - Accessible, audio-visual ballot marking interface, supporting a range of assistive input devices, including an ATI (Audio-Tactile Interface), sip & puff, or paddles

**STANDARD FEATURES**
- High resolution scanning technology
- Automatic detection of fraudulent ballots
- Ultrasonic multi-feed detector that prevents the device from accepting more than one ballot at a time
- Ballot scanning and tabulation, ballot review and second chance voting, as well as ballot marking functionality - all in one device to allow “no-touch” accessible voting
- Dual, removable commercial memory cards for redundancy
- Internal diverter for simplified ballot sorting
- Patented AuditMark® image technology

**BENEFITS**
Dominion has invested in the development of proprietary technology that truly sets its products apart from the competition. Focusing on two key aspects of the electoral process – risk-limiting auditing and voter intent – Dominion’s technology improves the transparency and integrity of the election process.

- **AuditMark® technology**: Each digital ballot image has an AuditMark® appended at the bottom, showing a record of how that ballot was interpreted by the tabulator on Election Day. Why bother purchasing a scanner if it can’t tell you what it read?
- **Marginal Mark detection**: This feature makes it possible for voters to clarify their intent when they cast their ballot. Thresholds can be configured to jurisdictional requirements.
- **Complete end-to-end system auditability**: Every action taken on the tabulator and the election management system is recorded in a permanent, unalterable digital log.
- **Engineered simplicity**: Dominion’s voting systems are designed to be easy-to-use for voters, poll workers and election officials.

**EXPERIENCE**
Dominion team members are leaders in the industry in project management services and support for voting system implementations. With nearly 200 professional staff - including 60 individuals dedicated to Customer Service & Delivery - and over 2,000 years in combined elections experience, Dominion has the expertise to deliver on all your election needs.

**EXPERTISE**
Dominion staff leverage their broad implementation experience with Dominion, Sequoia as well as Premier/Diebold product lines to deliver the best professional services in the industry. This cornerstone in project management has been the key to the success of voting system implementations ranging in scale from large statewide projects to small scale election events. As a Dominion customer, you know you can rely on Dominion’s state-of-the-art technology, vast engineering resources and expertise - all of which are mobilized to ensure that your needs, and those of your voters, are fully met.

**STATE OF THE ART INNOVATION & INTEGRATION**

**WHAT YOU NEED, WE DELIVER**

- Planning & Scheduling
- Risk Management
- Resource Management
- Equipment Procurement & Deployment
- Customer Interface & Communications
- Training Management
STATE-OF-THE-ART TECHNOLOGY, EXPERTISE & EXPERIENCE.
DEDICATED TO MAKING YOUR ELECTION A SUCCESS.

Newest Members of the ImageCast® Evolution Family:
- Monroe County, Florida
- Baker County, Florida
- City of Ottawa, Ontario
- Guernsey County, Ohio
- State of New Mexico
- Hamilton County, Tennessee

SECURE
STATE-OF-THE-ART SECURITY TO SATISFY THE NEEDS AND EXPECTATIONS OF VOTERS, AND FOR YOUR ADDED PEACE OF MIND
EAC VVSG 2005 certified, featuring the highest security standards - with symmetric and asymmetric encryption - while preserving transparency through end-to-end system auditability.
Integrated ballot security features.
Encryption and security protocols are designed to meet the drafted Next Iteration requirements of the VVSG.
Extensive internal security monitoring to ensure data integrity and maintain public confidence.

EFFICIENT
SPECIFICALLY DESIGNED TO HELP YOUR ELECTION RUN EFFICIENTLY
All in one tabulator and accessible ballot marking device.
AuditMark® ballot image auditing capability retains a secure digital image of every ballot cast in your election.
Meets EAC VVSG 2005 standards with superior accessibility for all voters; designed to meet the drafted Next Iteration requirements of the VVSG.

ACCESSIBLE
PRESERVING THE INTEGRITY, PRIVACY AND DIGNITY OF VOTERS WITH ACCESSIBILITY NEEDS
A single unit to service all voters, featuring an integrated printer for ballot marking.
Randomized oval marking patterns and writing make the machine-marked ballots indistinguishable from hand-marked ballots, ensuring voter privacy.
Integrated privacy shield and screen cover.
Multi-lingual audio-visual support for all voters.

Please contact us for more information:
sales@dominionvoting.com
1.866.654.VOTE
ImageCast® Central: Unparalleled Scalability & Flexibility

- Driven by Dominion’s powerful Democracy Suite® software, with flexibility to meet jurisdictional needs
- Use of industry-leading commercial hardware to decrease capital costs and minimize risk of hardware failure
- Digital ballot review allows election officials to adjudicate ballots efficiently

No matter the size of your jurisdiction, Dominion’s reliable central count solution is scalable to your needs.
Dominion has invested in the development of proprietary technology that truly sets its products apart from the competition. Focusing on two key aspects of the electoral process – risk-limiting auditing and voter intent – Dominion’s technology improves the transparency and integrity of the election process.

- **AuditMark® technology**: Each digital ballot image has an AuditMark® appended at the bottom, showing a record of how the voter’s intent was interpreted by the tabulator. Why bother purchasing a scanner if it can’t tell you what it read?

- **Marginal Mark detection**: This feature identifies ballots with marginal marks. The system digitally out-stacks them, so that voter intent can be clarified. Thresholds can be configured to jurisdictional requirements.

- **Complete end-to-end system auditability**: Every action taken on the tabulator and the election management system is recorded in a permanent, unalterable digital audit log.

- **Engineered simplicity**: Dominion’s voting systems were designed to be easy-to-use for end-users and election officials.

**Benefits**

- The out-stacked ballots can be automatically sent to ImageCast® Adjudication for digital review.
- The software allows users to select and sort ballots that need to be reviewed; such as over-votes, under-votes, blank ballots, blank contests, marginal marks, and write-ins.
- Manual, automated or digital out-stacking:
  - The software allows users to select and sort ballots that need to be reviewed; such as over-votes, under-votes, blank ballots, blank contests, marginal marks, and write-ins.
  - The out-stacked ballots can be automatically sent to ImageCast® Adjudication for digital review.

**What You Need, We Deliver**

- **Scalable & Flexible to Meet the Needs of Jurisdictions Large & Small**

- **Different Capacity Hardware for Unique Customer Needs**

- **Scalable & Cost-Efficient**

- **Simple & Flexible**

- **Proven in Elections Big & Small**

- **A Tried & Proven System Designed Around Customer Feedback & Backed by Our Dedicated Dominion Team**
ImageCast® Central: A Scalable System to Meet Your Specific Needs

ImageCast® Central is the most cost-effective system which offers efficiency, scalability and flexibility; no matter the size or complexity of the jurisdiction.

**SECURE**

**STATE-OF-THE-ART SECURITY TO SATISFY THE NEEDS AND EXPECTATIONS OF VOTERS, AND FOR YOUR ADDED PEACE OF MIND**

- EAC VVSG 2005 certified, featuring the highest security standards - with symmetric and asymmetric encryption - while preserving transparency through end-to-end system auditability.
- Integrated ballot security features.
- Encryption and security protocols are designed to meet the drafted Next Iteration requirements of the VVSG.
- Extensive internal security monitoring to ensure data integrity and maintain public confidence.

**EFFICIENT**

**SPECIFICALLY DESIGNED TO HELP YOUR ELECTION RUN EFFICIENTLY**

- Uses compact commercial scanners to offer high sustained throughputs and worldwide access to a vast pool of readily available replacement parts and certified technicians.
- AuditMark® ballot image auditing capability retains a secure digital image of every ballot cast in your election.
- Meets EAC VVSG 2005 standards.

**SIMPLE**

**ENGINEERED SIMPLICITY**

- Modular and scalable to any size election.
- Flexible with site layouts when space is at a premium.
- Can be used in conjunction with ImageCast® Adjudication digital ballot review application.
- Seamless integration with Dominion’s Democracy Suite®.

Please contact us for more information:
sales@dominionvoting.com
1-866-654-VOTE (8683)
Dominion’s ImageCast® X is a tablet-based precinct voting terminal which combines the flexibility, efficiency and simplicity of modern technology, with an underlying platform of security and performance - Dominion’s robust and reliable Democracy Suite®.

- Driven by Dominion’s powerful Democracy Suite® software, with flexible configurations to meet jurisdictional needs
- Leverages commercially available off-the-shelf hardware, making it cost-effective, flexible and sustainable
- Provides a range of accessible input options, allowing all voters to use the same device to vote
- Intuitive touchscreen interface for poll workers and voters

ImageCast® X: It’s everything you want it to be.
Today, voters and election officials are increasingly looking to leverage everyday technologies to improve the voting process and experience.

We listened to you, and designed a tablet-based precinct voting terminal which combines the flexibility, efficiency, and simplicity of modern technology, with an underlying platform of security and performance - Dominion’s robust and reliable Democracy Suite®.

**FLEXIBLE**

BUILT WITH SUSTAINABILITY IN MIND
- Takes advantage of the latest cutting-edge technology and industry-leading tablet devices, making our system modular and scalable.
- Uses compact tablets that are cost-effective, easy to store, maintain and deploy when space is at a premium.
- Provides a range of accessible input options for tablet voting, giving voters with accessibility needs the ability to vote privately and independently.

**EFFICIENT**

DESIGNED FOR EFFICIENCY
- A software-based system designed around a robust Election Management System and a single database for all critical pre-election and post-election tasks.
- Simplifies Election Day deployment.
- Lowers the total cost of ownership by reducing reliance on proprietary hardware.
- Includes all the tools needed to simplify and streamline the election process, saving time and reducing workload.
- The tablets can be leveraged for other uses by the County.

**SIMPLE**

ENGINEERED SIMPLICITY
- Reduces complexity for election officials, with all voting channels and results tabulation taking place out of a single, unified database.
- Voters and poll workers interface with simple, commonly used technology - improving the voting process and experience.

**SECURE**

STATE-OF-THE-ART SECURITY
- Encryption and security protocols are designed to meet the drafted Next Iteration requirements of the VVSG.
- Preserves transparency through complete end-to-end auditability of the entire system.
- Extensive internal security monitoring to ensure data integrity and maintain public confidence.
- Creates a digital image of every ballot scanned and appends each with our industry-exclusive ballot-level audit trail, the AuditMark®.

Please contact us for more information:
sales@dominionvoting.com
1.866.654.VOTE