



# Alameda County Uses RFID to Speed Election Results



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- Dave Macdonald, Alameda County Director of IT and Registrar of Voters

## **Situation: Improve the process of tracking nearly 3,000 pieces of voting equipment**

After Alameda County's 810 polling places close on Election Day, delivering the voting equipment quickly to the county's vote count facility in Oakland requires an efficient, secure, tightly-run process. Volunteers must collect three critical components including a memory pack holding vote results scanned from paper ballots; a paper index of every person who voted at that polling place; and the PCMCIA card from the touch screen machine. Volunteers put each piece into tamper-proof canvas bags and deliver the bags to the county's 27 intermediate return centers. At the return centers, the 810 bags are then manually opened to verify that all three components are present. With hundreds of bags delivered at the same time, the process causes massive logjams and critical delays if even one piece of equipment is missing. As a result, final election results can be delayed by several hours.

## **Solution: RFID-enabled SecureVote™**

Working closely with Alameda County, Motorola partner RFID Global Solution developed the SecureVote solution. SecureVote provides RFID tags for each piece of voting equipment, matching it to the ID tag on the outside of the bags. County employees, using Motorola MC9000-G RFID handheld readers, can quickly scan the RFID tag on the outside of the bag, as well as the items inside without opening the bag, to verify that all equipment is present.

## **Results: Equipment verification process time reduced by up to five hours**

Since the launch of Alameda County's SecureVote solution in November of 2007, county employees have been able to read and verify that all voting equipment is accounted for in less than 90 minutes (compared to four to five hours with the old process). SecureVote provides a clear picture of the voting equipment supply chain and tracks where, when, and how each movement occurs throughout the system.

## **Products**

- Portable RFID-enabled SmartTable™
- Motorola-powered XR400 portal readers
- Motorola MC9000-G RFID handheld

## **Partners**

- RFID Global Solution

## **Benefits**

- Electronic confirmation of voting equipment
- Increased speed of collection process
- Faster vote count
- Reduced overhead costs



“This year (2008), I watched in amazement on February 5th as volunteers delivered the equipment after the polls closed. Everything was calm, organized, and in stark contrast to the process in place in 2006.”

- Guy Ashley, County Registrar Spokesman for Alameda County

### **Alameda County looks for a better tracking mechanism for voting equipment**

Occupying most of the East Bay region of the San Francisco Bay Area, Alameda County is California's seventh largest county with a population of nearly 1.5 million and home to the University of California, Berkeley. This highly active, resident electorate closely monitors the integrity and security of the election process and with more than 800 polling places, Alameda County wanted to assure the public that their vote was safe.

However, tracking thousands of pieces of voting equipment to ensure all elements are delivered to the polls and then returned to 27 intermediate collection centers for verification before delivering them to the centralized vote count facility in Oakland at the end of the day requires an efficient, secure process. This process starts before the polls open when volunteers pick up serialized canvas bags from the distribution warehouse and deliver them to each polling place. The bags have a tamper-proof seal and each contain three bar coded elements—a memory pack to hold the voting results scanned from the paper ballots; a paper index of every person who voted at the polling place that day; and a PCMCIA card to hold the voting results from the touch screen provided for disabled voters. After the polls close, volunteers collect the components and drop off the bags at the return centers, where the bags are physically opened to determine if all three components are present.

While bar code reading in many other applications provides optimal data collection efficiency, the RFID solution was a better alternative that met the customer's stringent requirements. “Historically, all the bags came in at the same time,” says Dave Macdonald, Alameda County Director of IT and Registrar of Voters. “Because the bar code process is slow, the bags stack up and if something was missing, we may not know until after midnight.”

### **Missing items cause several hours delay in vote count process**

At that point, the polling location would already be locked up and volunteers had gone home. Election officials would have to dispatch a sheriff's deputy to find someone to open up the building, look for the missing piece, and take it to the return center, potentially causing that polling place's vote tally to be delayed by several hours.

“It was a difficult experience,” says Guy Ashley, County Registrar Spokesman for Alameda County. “We needed a better way to track those crucial components from point-to-point to avoid any security breach or delay in the vote count process.”

Macdonald recognized that the bar-code process could not provide the level of security and capability of Radio Frequency Identification (RFID) technology. RFID can be adapted to monitor and track the location of each piece of equipment at any point in the cycle. Macdonald and his team reached out to RFID Global Solution, a Motorola partner, to help the county design a solution.

“RFID Global Solution really picked up quickly on our needs and understood from the get-go how their technology could mesh with the election process... In combination with the Motorola hand-held readers, which were very easy to use, the SecureVote solution helped us add a new layer of security and efficiency onto our existing process.”

– Guy Ashley, County Registrar Spokesman for Alameda County

#### RFID technology provides secure, authenticated automation

Working closely with Alameda County to thoroughly understand the issues, RFID Global Solution developed SecureVote™, based on RFID technology. SecureVote consists of fixed and portable read points that facilitate the quick deployment and return of voting equipment and consists of three primary RFID components:

1. Portable RFID-enabled SmartTable™ —Patented by RFID Global Solution and powered by Motorola’s XR400 fixed RFID reader, this interactive kitting table enables the county to quickly and accurately assemble multiple RFID tagged items into designated kits.
2. Motorola powered (XR400) portal readers—The readers provide unattended, unimpeded bulk reading of passed-through items at Alameda County’s central processing facility.
3. RFID Global Solution designed software—With RFIDGS’ software, Motorola’s MC9000-G RFID handheld readers facilitate a portable, economical receiving and accounting solution used at Alameda County’s intermediate processing facilities.

SecureVote creates a clear picture of the voting equipment supply chain and tracks where, when and how each movement occurs throughout the system. Today, volunteers at the return centers use Motorola MC9000-G RFID handhelds to scan the RFID tag on the outside of the bags, as well as the tagged items inside the bags, without breaking the tamper-proof seal. Once the items are verified, the bags are released to the vote count facility.

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Motorola MC9000-G RFID handheld



Motorola-powered XR400 portal readers



## About RFID Global Solution

*RFID Global Solution, a Motorola partner, provides complete system solutions that utilize both active and passive RFID, as well as GPS, cellular and camera-based technologies for use by both government and commercial customers. The company develops end-to-end wireless asset and personnel management solutions that provide real-time visibility at both the site and enterprise levels.*

*For more information about RFID Global Solution, call 1-866-RFID123 or go to [www.rfidgs.com](http://www.rfidgs.com)*

## Equipment verification process time reduced by up to five hours

On November 6, 2007, Alameda County held a preliminary election with 75 polling places using the RFID-based tracking system. The polls closed at 8 p.m. and by 8:40 p.m., the bags began to arrive at the return centers. Only two items were missing, flagged by the RFID readers, but were quickly located. When the bags reached the vote count facility, county employees were able to read and verify that all of the voting equipment was accounted for in less than 90 minutes (compared to four to five hours using bar codes). With that success and several other smaller trials behind them, on February 5th, 2008 (Super Tuesday), all of Alameda County's 800+ polling places and volunteers were armed with the RFID-enabled equipment and the process flowed without incident.

"This year (2008), I watched in amazement on February 5th as volunteers delivered the equipment after the polls closed," Ashley says. "Everything was calm, organized, and in stark contrast to the process in place in 2006."

SecureVote has given Alameda County the ability to:

- **Manage an electronic chain of custody process** which confirms that key components returned to the central tally facility are readily available for vote processing
- **Increase efficiency and speed of the collection process** and reduce the potential for vote fraud
- **Reduce the amount of labor** by requiring fewer personnel to perform the collection process, potentially saving thousands of dollars in labor and overhead costs

## Real-time tracking and security strengthens 'chain of custody'

"Since we rolled out our SecureVote solution, we have established a highly efficient, electronic chain of custody, have had no breaches in security, and are able to turn in our vote count much faster," Ashley says. "Even the tone of the discussion from our electorate has been favorable. Having this extra level of protection has really bolstered public confidence."

Alameda County, like counties across the United States, continuously look for ways to improve the voting process and provide accountability in case of a recall. SecureVote provides a solution that not only increases efficiency but also ensures the integrity of the voting process.

"We have a low-tech front-end with paper and pencil voting, but a high-tech back-end with real-time tracking and security that accounts for each and every piece of equipment," says Macdonald. "With the RFID solution, we can achieve our goal of ensuring that every person's vote is counted."



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