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The Official Quarterly Publication of the TrustTheVote® Project

OSET INSTITUTE

THE V PROJE

Q1/23

IN THIS ISSUE

TRANSPARENCY DELIVERS BELIEF IN DEMOCRACY

GREETINGS MEMBER/SUBSCRIBER—

Welcome to our 2023 Q-1 review. It's shocking to me that a quarter of the year is already in the rear-view mirror. Although time seems to fly by, some things persist. With 2022 behind us, there remain some who refuse to accept results from last November's midterm elections – and now the contagion of election denialism has spread south.

In early January we witnessed election deniers in São Paulo take a page from a U.S. playbook. One thing unique I noted was an unfurled banner—in English no less—demanding disclosure of the election software source code. We released a statement about that situation within hours, which you can read here.

I reiterate that demands to reveal the source code sound reasonable for the sake of transparency in election administration, but the underlying reasons for Bolsonaro's supporters making this call were not. There's no doubt that voting machinery worldwide relies on vulnerable designs that could theoretically compromise an election. That fact is well understood by election technology experts. Yet, what's also true is that actually exploiting those vulnerabilities would require a wholesale breakdown of processes, protocols, and the integrity of election officials. And herein lies a teachable moment.

Just as our CTO shared two lessons in the last issue of the Tabulator, I also have something to offer this time.

It's not entirely new learning; we observe it in our new 15-minute video, "Belief in Democracy" that you can watch here. The new part is the importance of that learning.

For too long the status-quo has been the disingenuous claim of vendors: "Trust us, it works just as we promised." And that's the problem: black-box proprietary technology demands we trust that it performs as they say it does. However, few accept that claim any more (perhaps we never should have). On the other hand, glass-box, open-data, open-source, open-standards technology delivers belief, because seeing is believing. Post-2022 midterms and post-São Paulo it's clear: transparency in the technology is essential. So too, we believe, is public ownership of that underlying technology.

Now, more than ever, building the People's Voting System is a morally imperative project. I ask that if you have not made your 2023 membership commitment, that you please join us to help surge forward to finish this work. Let's do this. Together, we can. ☑

Onward,

Gregory Miller
Co-Founder, Chief Operating Officer

> "POST-2022 MIDTERMS AND POST-SÃO PAULO IT'S CLEAR: TRANSPARENCY IN THE TECHNOLOGY IS ESSENTIAL."

Technology

MISSION PROGRESS

WE LIKE TO REFER TO OUR WORK at the TrustTheVote® Project as a "software foundry." We think the notion of a "foundry" is a good analogy. It evokes images of factories creating molds and precision cast parts. That makes sense because we're building sets of software building blocks used to assemble apps and services to innovate the administration of elections and the voter experience. There are a number of software development efforts underway and not just the **People's Voting System** (ElectOS™). Each quarter we update you on the most important efforts underway at the TrustTheVote Project.

Here is the 1st quarter update, with a priority flag next to each to explain how important your support is to each of them. The big change in Q-1 is the need for increased funding for nearly every project as we reach milestones.

- Green flag means the project is funded and rolling.
- Blue flag means funding should be coming, but needs help to get it done.
- Orange flag means we need funding help to stay on course.
- Red flag means help is needed ASAP as this is a high-priority project.

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Mark-It
This is an absentee ballot marking tool for the 35M voters in the U.S. with disabilities that prevent them from regularly participating in person. The software is in user-acceptance testing for a mobile device such as a tablet. The next major steps include work to support multiple languages, ranked-choice ballots, and open primaries. And on the drawing board is the desktop version for Macs and Windows laptops.

Rocky
This is our oldest technology work—the 3rd party voter registration platform used by Rock The Vote and many others. Work continues in support of absentee ballot request services, and a host of other service additions. The key importance here is the integration of this technology with State voter registration systems so state officials can quickly receive applications and process them without error-prone problems of re-keying in data. A recent development is that we need fresh funding to ensure this open-source project continues and becomes a mobile-first platform.

Grommet
This is the canvassing tools for mobile voter registration services at events, or on campus, for example. Work continues on robust reporting and performance analysis tools, support for the ever-changing flavors of the Android mobile OS as well as continued development on Apple iOS. Grommet is in full use now, and the workload is keeping up with any technical issues in the field.

RCTab
This is the open-source ranked-choice vote tabulator that is rapidly growing in popularity and was used to conduct several RCV elections this past cycle including the Mayoral race in NYC. The TrustTheVote Project through its parent, the OSET Institute, is collaborating with the Ranked-Choice Voting Resource Center and the contributing developer community to provide professional software project management services for the operational continuity of development, as well as structure a risk management framework for the software supply chain to fortify state government trust in open-source software for election administration.

Vanadium™
This is the ground-breaking ledgering system that wraps and "securifies" existing state voter registration database systems with a block-chain class technology to eliminate the risks of external cyber-attacks. Vanadium technology could one day completely redefine voter registration systems, making them faster, more reliable and efficient, as well as providing a tripwire service to detect efforts to compromise the data. Work is underway to deploy several pilot installations in time for the 2024 general election.

VoteTracker+™
This very exciting breakthrough technology is emerging from the lab for some public testing and review next quarter, and while it remains a research & development initiative, and in production, would require some process modifications in the polling place, it shows great promise. Why? Simple: imagine the ability to go to an official secretary of state's web service to verify that your ballot has verifiably been counted just as you marked and cast it after the election has been certified. At a high-level of explanation that's it. We're fund-raising to expand this work and may look to a crowd-sourced funding solution to enable you to help push this forward. Keep an eye on this, as another important election verification tool we can put forth to increase confidence in elections and their outcomes!

VoteReady™
So, if you think VoteTracker+ rocks, hold up, because VoteReady is already rolling out as a back-end service for monitoring changes to voter-rolls, and soon will be available for your own mobile device. VoteReady is like "LifeLock®" for your voter registration. The moment a change occurs or is about to happen to your registration record or status, your mobile device gets an alert. We're now in the depths of development of the Android and iOS app; the service is already essentially built. Your support of this project can help ensure we get this into voter's hands. Contact us to learn more.

Guthrie
One of the most important pieces of technology to trust the vote is apps and services to perform post-election verification using a process called "risk-limiting audit." Guthrie will be a software appliance that operates in the cloud to make freely available to all jurisdictions the software to perform post-election results audits. The project is in collaboration with UC Berkeley and the inventor of RLAs, Dr. Philip Stark. We are raising additional funds to cover engineering costs for the new software development effort, which are likely to be matched by larger donors and grants if we can demonstrate a groundswell of public support. Guthrie is critical to trusting elections and believing in the outcomes going forward, especially for 2024. Contact us to learn more.

ElectOS™
This is our flagship initiative – the People's Voting System – that we need to have substantially complete and ready for federal certification by 2024. We're actively growing funding for this work which is the open-source software platform for the casting and counting of votes. It covers ballot tally and tabulators, the election management system, the ballot printer, and for those who need or want it, a ballot marking device. All of this (and some other components) make-up the "People's Voting System." The underlying hardware, where required, will be off-the-shelf components from American companies like Dell, HP, and Intel with some embedded ElectOS security verification modifications. Current work is focused on the complex trustworthy boot (start-up) and hardware integrity verification. ☑

TINA BARTON

by Genya Coulter

Tina Barton is a Senior Election Expert at The Elections Group. She recently capped a 32-year career as a government employee, serving in various roles at the local and federal levels. The last 16 years of her career have been dedicated to election administration and election safety while appointed as the City Clerk of Rochester Hills, Michigan, and as a Senior Advisor at the U.S. Election Assistance Commission.

Tina, thank you so much for chatting with us. We have been fans of yours since your days as City Clerk of Rochester Hills, Michigan. You've been a huge force for election good at The Elections Group, would you tell us a little about TEG and what you do there?

Thank you for your kind words and all that you do to support, educate, and enlighten election officials and voters.

The Elections Group is an elections consulting partnership founded by Jennifer Morrell and Noah Praetz that provides subject matter expertise and materials to local, state, and federal organizations. Our team includes former election officials who have administered elections nationwide.

My work primarily focuses on the Committee for Safe and Secure Elections, a committee of cross-partisan experts in election administration and law enforcement who aim to support policies and practices that protect election workers and voters from violence, threats, and intimidation. The Committee also works to build relationships and trust between election officials and law enforcement to equip both better to prevent and respond to threats and violence against voters and election workers. We provide resources, give presentations, and facilitate tabletop exercises.

"THE WORK IS NOT JUST ABOUT TODAY OR ONE PERSON— IT'S ABOUT PRESERVING AND PROTECTING THE VERY FOUNDATION OF OUR REPUBLIC."

You were recently honored with the "Public Service for Improved Elections" Award at the 2023 EVN Conference for your contributions to the election community. What motivates you each day to do the amazing work that you do?

I am passionately committed to our elections and our election administrators. The work is not just about today or one person. It's about preserving and protecting the very foundation of our Republic, as well as preparing for the future of our democratic processes. I deeply care about my peers. I understand the incredible work ethic that it takes to be an election administrator. I also know that many of them are doing their jobs without the resources and support they need. I want to do whatever I can to help them.

We appreciate the level of dedication and kindness that you show to everyone in our community each and every day. It's not as if election administration is

FOIA requests have become time-consuming, often requiring so much time that it impacts the election official's ability to address other job duties equally.

One of the most disappointing changes I have seen has been the dehumanization and demonization of election officials. Some people seem to forget or choose not to recognize that we are people. We are human beings doing the absolute best we know how to do to provide safe, fair, and accessible elections. We are your neighbors. We sit in the same church pews. We shop in the same grocery stores. Our kids are on the same sports teams. We are not the enemy.

Misinformation has dangerous consequences, and you and your fellow election officials certainly bore the brunt of that. The election process itself is highly complex, and frequently misunderstood by the public. In your opinion, which part of the election process is most misunderstood or misinterpreted,

"suppression", and "manipulation", to name a few. What this has led to can be summed up in one word – doubt. Voters doubt that their vote counted. They doubt the integrity of election officials. They doubt that the equipment is programmed correctly. They doubt that our elections are not being tampered with. Many states currently have some audit processes in place. A Risk Limiting Audit provides whether votes were counted as cast. Did the program recognize the ballot markings correctly? Did the winner win? Are we confident in our count? The procedure is designed to detect irregularities, including intentional cyberattacks or unintentional errors that would change the reported election outcomes. Risk Limiting Audits provide evidence-based data.

The recent exodus of dozens of election officials has resulted in the loss of significant institutional knowledge. How do we best support new election officials when they start out in the position?

New election officials are being thrust into a contentious environment, where they must learn as much as they can about election administration in just a matter of months. We must provide them with best practices, resources, support, and encouragement. We must do what we can to set them up for success. Their success will be the country's success.

We couldn't agree with you more on that subject. Election officials deserve our protection and support, and we salute all of your efforts on their behalf, while simultaneously paying that goodwill and institutional knowledge forward to the new generation. On our end, we pledge to create and build innovative, verifiable, open source election systems that enable election officials to focus on doing what they do best: conducting safe, well-run elections. Thank you so much for speaking with us. ☑

"WE ARE YOUR NEIGHBORS. WE SIT IN THE SAME CHURCH PEWS. WE SHOP IN THE SAME GROCERY STORES."

an easy or stress-free career! As a longtime election official, how much have the requirements for the job changed over time?

So many things changed in Michigan during the 16 years I was an election administrator. Many of the changes have been brought about by constitutional amendments that expanded voter rights. One of the most impactful changes for us was the passage of no-reason absentee voting. The number of voters choosing to vote absentee has increased by a high percentage. Election officials have had to implement new processes and create best practices related to the changes. Laws are often made without a game plan for implementation or resources to support the needed manpower and equipment to be successful.

and are there ways to change that?

One of the most misunderstood parts of the election process is the period between Election Day and certification. The media often reports and declares winners within hours of the polls closing. However, the count at that moment is not the final count. The canvass period allows the process to be confirmed and corrected, if necessary. The results are final once the election is certified.

Risk limiting audits are something you feel very passionate about. How would you describe their benefits to people outside of the election community?
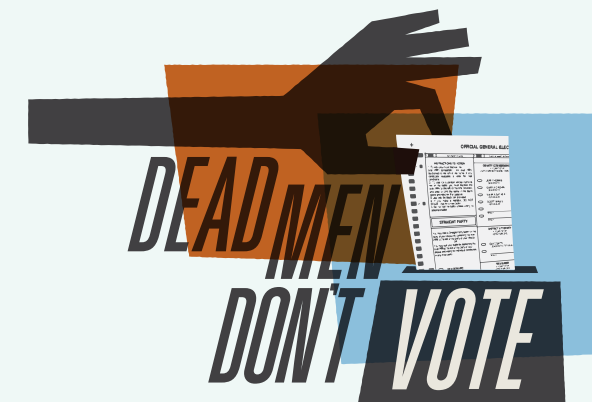
We are bombarded by social media, the press, and politicians with words like "fraud", "infiltration",

The Official Podcast of the TrustTheVote Project

Gregory Miller   Cameron Quinn   John Sebes

Join Us!

"The OSET Institute is bringing a strong voice for the people to its TrustTheVote® Project with their 'Dead Men Don't Vote' podcast. This will be the show for important and timely conversation about how America conducts elections—the good and not so good—and how to make it work better."

– Joe Trippi, Host of "That Trippi Show"

TRUSTTHEVOTE.ORG/PODCAST

Developer Spotlight

NEIL JOHNSON

by Gregory Miller

Neil Johnson joined the team in June 2017, and is a Senior Member of Technical Staff for the TrustTheVote® Project. Neil is leading efforts in ballot design and layout tools to support the ElectOS™ People's Voting System and co-manages Internet and web operations.

Neil, you've been with the OSET Institute for several years as a senior member of technical staff—from web engineering to core components of ballot administration, you're one of our key technical contributors. What has so captured your passion for the TrustTheVote Project?

I signed up to help with the TrustTheVote website back in 2017, because I had just heard a news story about a group of hackers who worked for another nation's military, who showed up at the office at 9 AM local time, launched attacks against US democracy all day — presumably with a break for lunch – and then went home to their families at 5 PM. The server logs clearly showed all this traffic coming from the same IP addresses, during local working hours. I thought that we could do better, that there must be a community of open source developers out there who wanted to make our democratic systems stronger, more transparent and accountable. So, I began searching, and that's how I found OSET.

Sure enough, I've met some of the most amazing, capable software developers and democracy advocates. Unlike those who work for the anti-democratic government and spend their day at the office trying to hack our democracy and pollute our public discourse, at OSET, the people are all motivated by a sense of mission to make democracy work better. It's a privilege, and its own reward, to be part of such an incredible team.

Why do you believe public technology or open-source is important for democracy administration in general, and election administration technology in particular?

Open source software is an essential part of election administration technology precisely because it's open. If our elections are a "black box" where registrations and ballots go in one end and an election result pops out the other, as if by magic, that process doesn't inspire trust.

Even worse, it opens up space for people who want to undermine our democratic process, for whatever reason, to insinuate that the process is corrupt or "rigged."

Obviously, not everyone can read and understand source code. But, if enough people from all parts of the political spectrum can have their preferred expert look at the same source code and say, "Yes, this code

> ## "AT OSET, THE PEOPLE ARE ALL MOTIVATED BY A SENSE OF MISSION TO MAKE DEMOCRACY WORK BETTER. IT'S A PRIVILEGE, AND ITS OWN REWARD, TO BE PART OF SUCH AN INCREDIBLE TEAM."

does what is claimed, and we can trust it," that goes a long way to establishing the validity and integrity of the democratic system.

One of our CTO's top priorities, as you know, is administering our internal software lifecycle infrastructure, policies, and practices to ensure that while our software foundry work can benefit from public contribution, at the same time, there is a software supply chain risk management framework to provide governments the confidence to adopt, adapt, and deploy what we make. So, can you tell us a little bit (to the limits of what you can disclose for security purposes) about your role in building that internal infrastructure?

I've been fortunate to work with some real experts in the area of repository management and code security. Instead of trying to obscure what we're doing, we use the publicly available tools to ensure the integrity of our codebase. For example, public encryption technologies like SSH, GPG; protected branches on our repos; automated testing and security audits – all of these tools help us ensure, as part of our daily workflow, that the code we're working with is secure. At the same time, we want to make the code accessible to new contributors. I've worked with this incredibly talented team to design and document a code production workflow that's efficient and accountable.

Often adding more security makes things less convenient, and certainly more complicated. I'm particularly focused on writing clear and useful documentation, and using automated tools whenever possible to ensure that committing secure, reliable code is as easy as possible, all without sacrificing the integrity of the codebase.

I'm a huge advocate of automated testing: a well-written test suite means other developers can jump in and contribute, confident that their changes aren't breaking anything that's already working. Plus, I've found that writing testable code usually means that you're writing better code.

How would you describe to our readers the importance of the Institute's work and what it can do to ensure a stronger, more stable democracy?

It's easy to feel like your vote doesn't matter, that your political system is broken, and there's nothing you can do. It can feel good to get angry at the "other

people" who are supposedly ruining everything for everyone else. But as long as we live in a free country, each and every one of us has a chance to make a positive difference to improve our democracy.

When I first started, I was a volunteer working on the TrustTheVote website. I wasn't writing code, or making secure commits on GitHub – at least not in the beginning. But quickly, I had the chance to work with some incredibly talented people, who shared my goals of improving our democracy. And as I became exposed to more and more of what is being worked on, I quickly realized the moral imperative of this work.

When I see the kinds of innovation underway in our software foundry compared to what is commercially available, it is clear to me that if this work can result in broadly available public technology that is truly verifiable, accurate, secure, and transparent, then I have to believe its adoption, adaptation, and deployment will become inevitable. And that can take the administration of democracy a long way toward increased confidence in elections and their outcomes. That's an amazing opportunity that I feel privileged to be a part of making happen.

Last question: What excites you the most about the

projects you're working on at the OSET Institute, and what are the untapped potentials to do even more?

Every time I work on a project, I learn more in a few months than I would in years of work anywhere else. Plus, I'm working on something that's meaningful to me, and I'm trying to make the world a better place, even if only by a little bit.

Let's be honest, the tech industry hasn't exactly covered itself in the glory of improving society over the last few years. Social media, for instance, has proven to be divisive, dangerous, depressing, and damaging to democracy. That wasn't the plan, and it seems like little is being done to course correct. But look, the tech sector is not all about Google buses and outlandish parties or spending. It's about genuinely giving back and that's what we're doing with the TrustTheVote Project. So, it's invigorating and meaningful to be given the chance to direct my passion for software development towards something positive, and that's the most exciting thing. How often do you get a chance to save democracy – or even a tiny part of it? Arguably, that's living the dream. ☑

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ElectOS™ "Suite-Spot" of Neil's Work

"THE TECH SECTOR IS NOT ALL ABOUT GOOGLE BUSES AND OUTLANDISH PARTIES OR SPENDING. IT'S ABOUT GIVING BACK AND THAT'S WHAT WE'RE DOING WITH THE TRUSTTHEVOTE PROJECT."

BUILDING TRUST WHILE BLAZING TRAILS

A Recap of The Election Verification Network 2023 Conference in Washington D.C.

by Genya Coulter

The first election event of Q1 for much of the election security community is the annual conference held by the **Election Verification Network**, more commonly referred to as EVN. OSET Institute has been a proud sponsor of the EVN conference for a decade, supporting EVN's tireless pursuit of verifiable elections, with a laser-like focus on paper ballots as the "gold standard" of election verifiability. EVN prides itself on bringing together experts, advocates, and stakeholders from across the country, and increasingly around the world to discuss and explore critical issues related to election integrity, transparency, and security.

This year's conference was held at Gallaudet University in Washington D.C. a historic college dedicated to higher education for deaf students, and they graciously welcomed EVN attendees to their campus. Student ambassadors and sign language interpreters conducted a tour of the college, and everyone who took part in the tour gained new perspectives on how best to facilitate more accessible and positive voting experiences for voters who sign to communicate.

On opening evening, attendees gathered in the Swindell Auditorium to hear this year's Keynote Speaker, **Arizona Secretary of State Adrian Fontes**. Secretary Fontes delivered a dynamic address that took no prisoners and showcased his passion for election security and integrity. Later, the Welcome Reception provided a chance for attendees to catch up on election developments and rekindle old friendships in an emerging post-pandemic environment.

Both days of conference sessions covered a wide-range of topics, including the harsh realities of digital ballot return, voter privacy vulnerabilities in voting systems, accessibility for voters with disabilities, and post-election audits. Attendees heard from leading experts in the field, participated in engaging panel discussions, and did not hesitate to press presenters with tough questions that brought no easy answers.

The Institute delivered two conference sessions. The first was "Recent Evaluations of Remote Ballot Return" moderated by Professor Audrey Malagon from Virginia Wesleyan University, featuring research and analysis by OSET CTO John Sebes and Dr. Stephanie Singer from Campaign Scientific (who is also a consulting election scientist to the OSET Institute), as well Maurice Turner, a well-known election integrity advocate. The panel focused on the challenges of balancing security and accessibility in remote voting, which is a pressing issue for the election security and administration community. Key takeaways were discussed from recent reports on electronic ballot return methods, including reports from the Government Blockchain Association and the University of California, Berkeley. They also shared their own insights on remote voting methods. This panel was an informative discussion on the current state of remote voting and the challenges that exist in ensuring secure and accessible elections.

The other session was a notable highlight of the conference thanks to our very own Senior Director of Stakeholder Relations and Social Media, Genya Coulter, with her buzzworthy EVN presentation on ballot printing errors: "Black & White & Wrong All Over". Her already-legendary introduction dedicated to the inner workings of laser printers became the most-discussed topic of the conference, and her unique approach to exploring the technology behind printers captivated audiences and brought attention to an important but sadly overlooked issue in the processes of voting. Genya's research revealed that many ballots are printed with errors that can potentially lead to miscounts and inaccuracies in results. Through her presentation, Genya highlighted the need for verifiability and accountability in ballot creation, file transfer protocols, the printing process, and emphasized the importance of accuracy and transparent exchanges of information in order to detect printing and proofing errors before ballots are issued to voters.

Throughout the conference, attendees emphasized the importance of collaboration and information sharing across different stakeholder groups, including election officials, advocates, technologists, and researchers.

Overall, the EVN's annual conference was another of their informative, engaging, and thought-provoking events highlighting the critical role of election integrity in democratic societies. The conference provided a platform for experts and stakeholders to share their knowledge and expertise, exchange ideas, and identify opportunities for collaboration and action. As we look ahead to the 2024 election cycle, the insights and recommendations generated by this conference will be invaluable in helping to ensure that our elections are fair, transparent, and secure. ☑

"JIM H."

Jim (last name withheld by request) is a newer member of the TrustTheVote Project who made a significant contribution to the "Giving Tuesday" event in November 2022. He is a senior-level executive working in the electronics industry. He considers himself a moderate in all things. Jim is an engaged voter, agrees with the label "pro-democracy" and is concerned about the lack of transparency in modern "black box" voting systems and the potential for violence in polling places on Election Day. Genya Coulter, Senior Director of Stakeholder Relations and Social Media, caught up with Jim to chat about his support of the OSET Institute and TrustTheVote Project.

Jim, it's great to have an opportunity to learn some more about your support; thanks for agreeing to chat with us. What made you first decide to support the OSET Institute and TrustTheVote Project?

I have been following you for several years on Twitter. When OSET institute and TrustTheVote Project brought you on board, I knew they were serious about improving elections. After reading the websites, I was certain. Full disclosure, I contribute to OSET Institute financially

We appreciate that a great deal. In your opinion, what part of the American election process do you think runs very well overall?

The grass roots of the American election system runs very well. I know some of my local volunteers and my local supervisor of elections. They work hard to make the elections go off smoothly. Lack of funds and interference with this system from higher up causes issues.

What currently concerns you the most about the state of election security?

Threats of violence. I have voted continuously from the time of my 18th birthday. I cannot remember a time where safety of local volunteers was an issue.

With that in mind, why do you believe that giving to the Institute and TrustTheVote Project is so important?

I hope the OSET Institute and the TrustTheVote Project can make a difference in election security and transparency. That is why I contribute.

From the perspective of an electronics expert, are there technical aspects of the election ecosphere that you believe should be prioritized more than they currently are?

Yes, we need open source firmware for our electronic vote tallying system. I am not opposed to allowing the vendors to have proprietary firmware that protects their intellectual property, but the important vote tallying firmware needs to be visible to all and fully audit friendly.

What is it about the work of the OSET Institute and TrustTheVote Project that you believe can change that?

"IMPORTANT VOTE TALLYING FIRMWARE NEEDS TO BE VISIBLE TO ALL AND FULLY AUDIT FRIENDLY."

The big thing OSET Institute and TrustTheVote Project can contribute are unassailable logical reasons to have open source voting firmware. Keep pushing this. Push it hard.

Jim, the support of passionate, pro-democracy people like you enables us to develop and build

innovative open source election technology that lives up to our VAST mandate: Verifiable, Accurate, Secure, and Transparent. Thank you for your support, and thanks for taking the time to speak with us about your support for the OSET Institute and the TrustTheVote Project. You're a cherished supporting member of the Project and your name will join all of those who support this work— recorded in the master copy of the ElectOS software source, which we intend to be stored in the U.S. National Archives when complete. ☑

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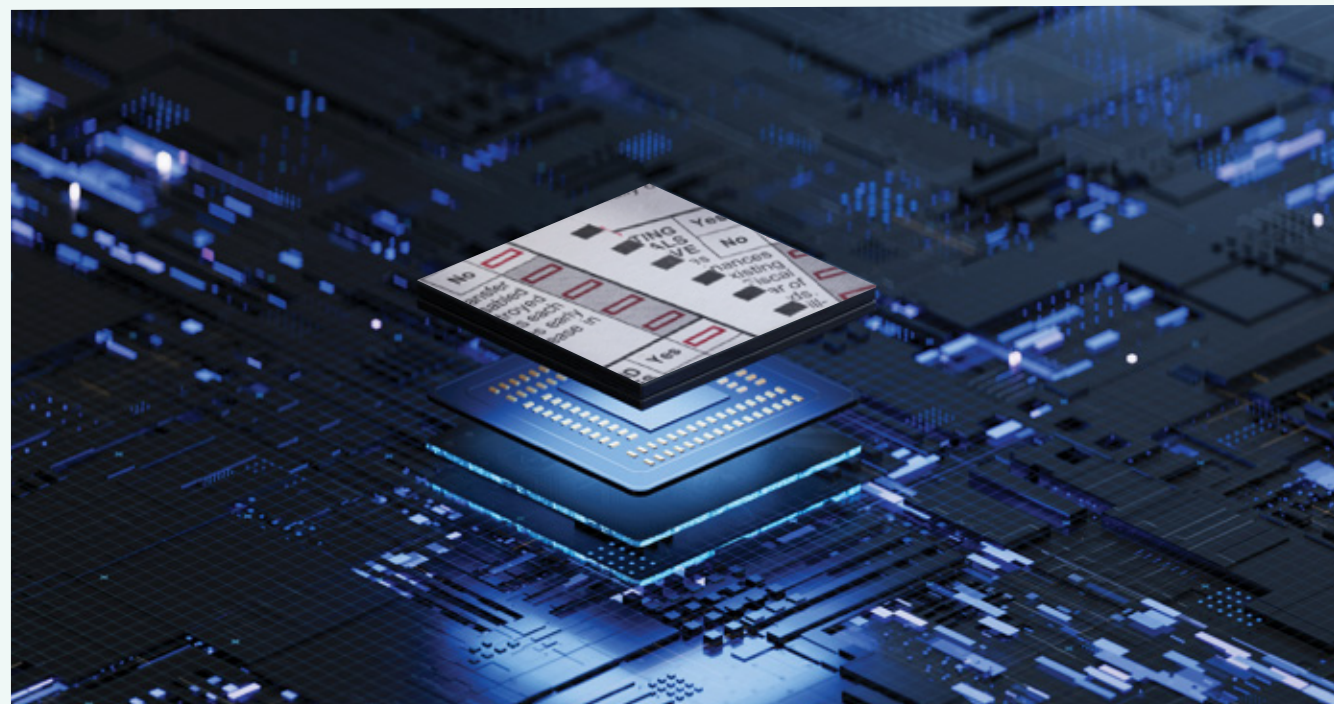
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