SF Open Source Voting System Project

March 24, 2016

About me

Chris Jerdonek, PhD

- San Francisco Elections Commission, VP

- Software developer (including open source)

Elections Commission Resolution

Unanimous (6-0) on November 18, 2015:

"Resolution to support the development and certification of an open source voting system running on commercial off-the-shelf hardware; and to request that the Mayor and Board of Supervisors initiate and fund a project to develop and certify such a system for use in San Francisco."

(from http://sfgov.org/electionscommission/motions-and-resolutions)

History

2005(?)	Activists first suggest idea in SF
2008 Sept	Board of Supervisors creates Voting Systems Task Force
2011 June	Voting Systems Task Force issues final report
2013	State Legislature enacts SB 350
2014 Dec	Board of Supervisors <u>unanimously</u> passes resolution
2015 Aug	Department of Elections issues voting system RFI
2015 Oct	Commission holds hearing on open source voting
2015 Oct	LAFCo issues final report

(Some) Supporters

(GitHub)

(SF Brigade)

(Open Source Initiative)

Open Source RFI Respondents

CAVO — CALIFORNIA ASSOCIATION OF VOTING OFFICIALS

OVC OPEN VOTING CONSORTIUM

(Mr. Alan Dechert)

Digital Foundry

IDEO

UF | UNIVERSITY of FLORIDA

(Dr. Juan Gilbert)

|galois|

(now Free & Fair)

OSET FOUNDATION | TRUST THE VOTE PROJECT

What is the project?

To develop and certify an open source paper-ballot voting system in time for the June 2020 election.

What does open source mean?
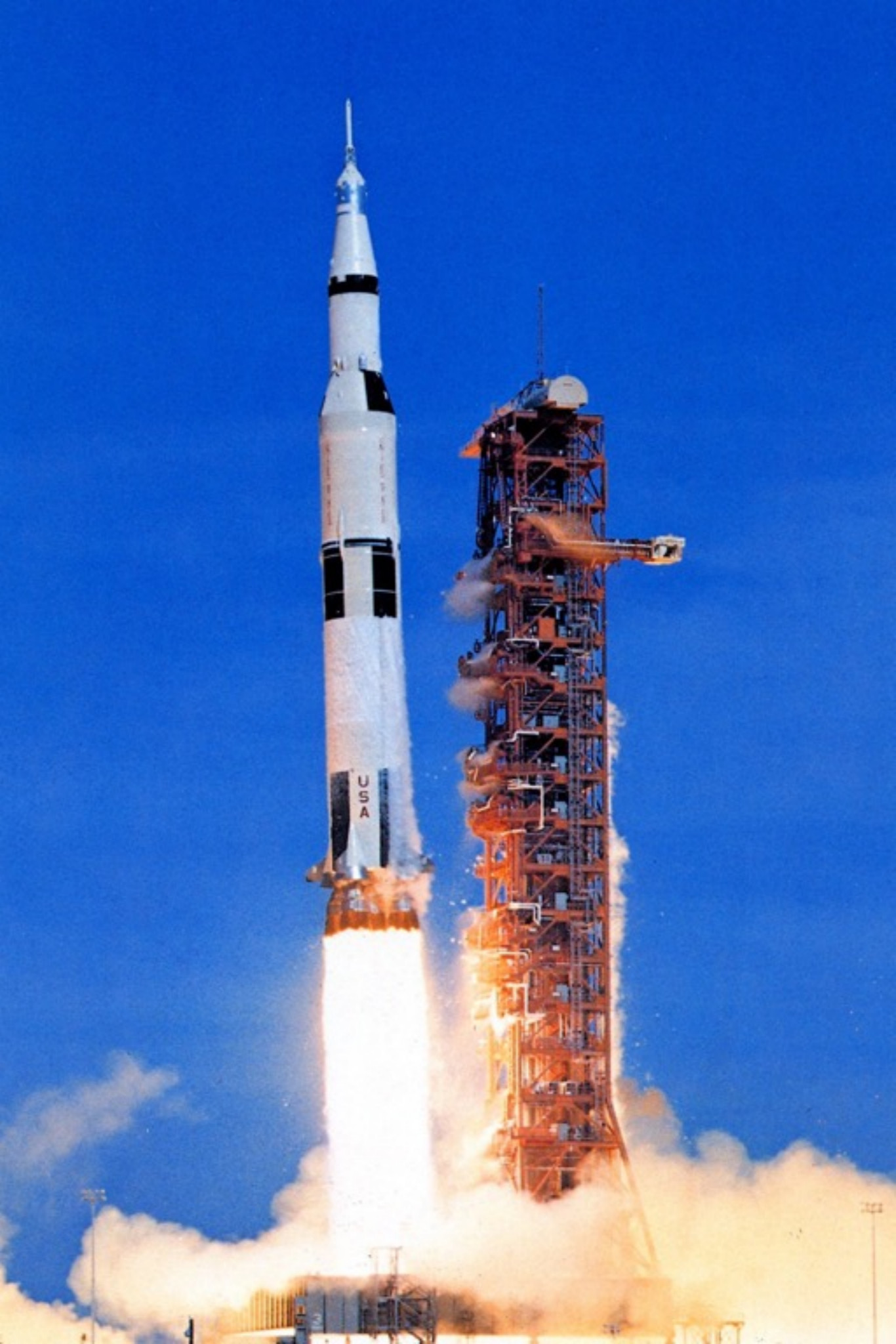
Software that is free for anyone to—

- View ("100% transparent")
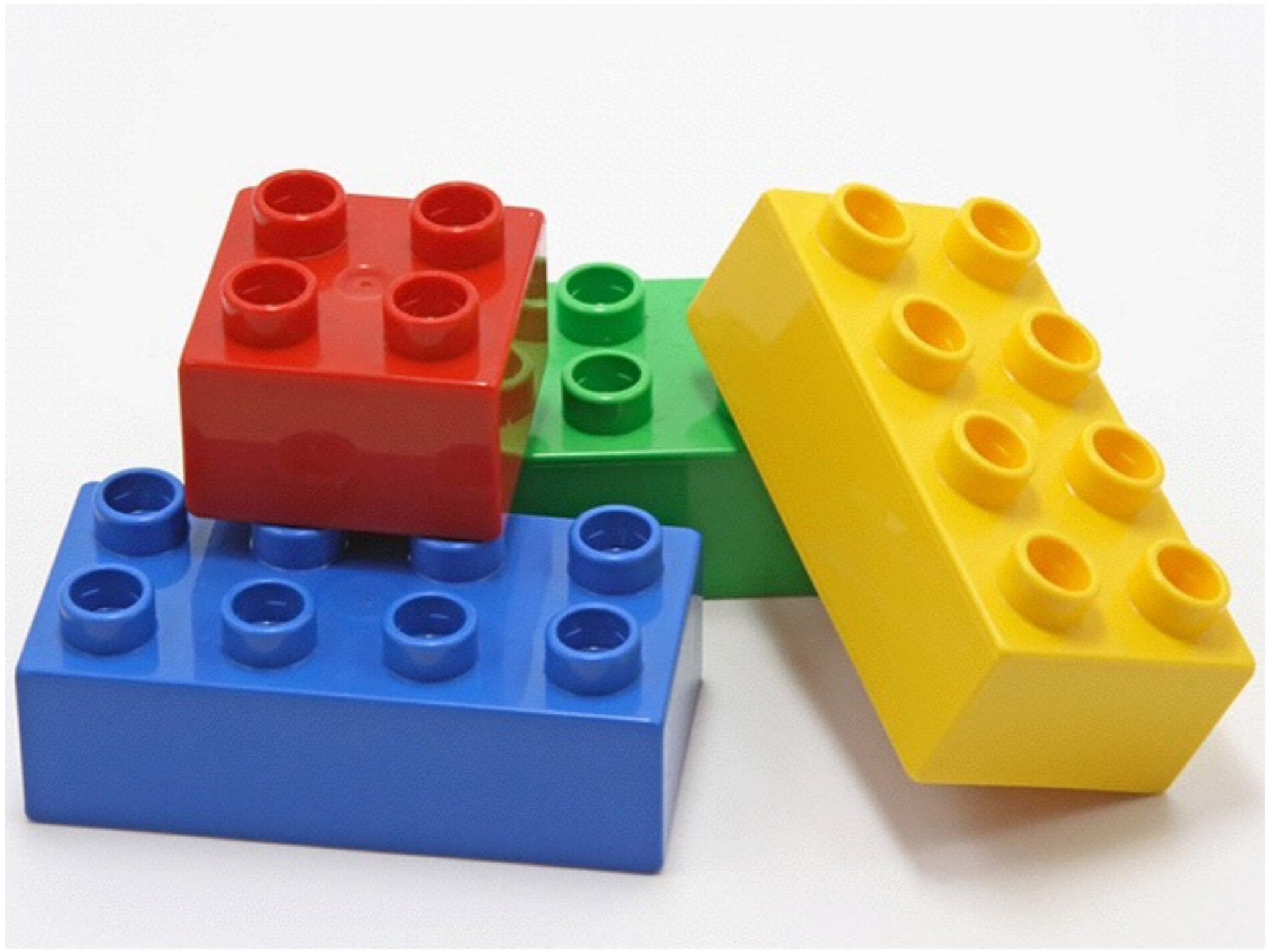
- Use ("no cost")

- Modify or improve

Hardware would be commercial-off-the-shelf (COTS).

The system would be a <u>shared, public resource</u>: part of our "democracy infrastructure."

How big is this project?

<u>Not</u> a monolithic / all-or-nothing project

A voting system is <u>modular</u>:

- Made up of simpler, interchangeable pieces

- Interact with one other using open formats

- Can be developed and tested in parallel

- Can even be combined with other systems (aka "blended" system)

This <u>decreases risk and permits partial success</u>.

Hardware components

- Precinct ballot scanner

- Central ballot scanner

- Accessible ballot-marking device

Software components

(One possible listing)

- Voting system database / management

- Paper-ballot layout

- Scanner hardware drivers

- Scanner ballot image capture

- Ballot image interpretation

- Results tabulation and reporting

- Accessible ballot-marking interface

Estimated Cost

$6 million(?) over three years

(dollar amount is average of advocate estimates)

But compare to our current system:

$13.8 million for first four years

(in 2007 dollars)

Year	Hardware*	Software**	Other	Election Services	Yearly Total	Total (cumulative)	Years	Yearly Total (cumulative)
Initial	$6,528,933.25	$1,400,000.00	$1,708,000.00		$9,636,933.25			
2008***	$0.00	$0.00		$994,800.00	$994,800.00	$10,631,733.25	1	$10,631,733.25
2009	$203,800.00	$182,500.00		$497,400.00	$883,700.00	$11,515,433.25	2	$5,757,716.63
2010	$203,800.00	$182,500.00		$994,800.00	$1,381,100.00	$12,896,533.25	3	$4,298,844.42
2011	$203,800.00	$182,500.00		$497,400.00	$883,700.00	$13,780,233.25	4	$3,445,058.31
2012	$203,800.00	$182,500.00		$994,800.00	$1,381,100.00	$15,161,333.25	5	$3,032,266.65
2013	$203,800.00	$182,500.00		$497,400.00	$883,700.00	$16,045,033.25	6	$2,674,172.21
2014	$203,800.00	$182,500.00		$994,800.00	$1,381,100.00	$17,426,133.25	7	$2,489,447.61
2015	$203,800.00	$182,500.00		$497,400.00	$883,700.00	$18,309,833.25	8	$2,288,729.16
2016	$203,800.00	$182,500.00		$994,800.00	$1,381,100.00	$19,690,933.25	9	$2,187,881.47
Total	$8,159,333.25	$2,860,000.00	$1,708,000.00	$6,963,600.00	$19,690,933.25			

Open Source Cost Advantages

- No annual license fees

- <u>Any</u> company can service (not limited to vendor)

- COTS hardware cheaper than custom

- <u>Next</u> time around: need only pay for improvements

- Additionally, get improvements by others for free

Possible Phases

Phase 1: Planning & Assessment

• July 2016 - April 2017 (10 months)

Phase 2: Development & Certification

• May 2017 - Aug 2019 (2 years 4 months)

Possible Timeline

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2016							Start Planning & Assessment Phase. Start hiring process for Project Director.		Hire Project Director. Start work on system architecture and RFPs.	Form citizen advisory body.		
2017			Start issuing RFP(s) for development of system components.	Finish Planning & Assessment Phase.	Start Development & Certification Phase.							
					Start development of first components from RFPs.							
2018			Start integration testing.								Nov 2018 election: start piloting some components in select precincts?	
			Finish initial development of first components. Start integration development.									Finish initial development of all components.
	Start state and federal certification for some components.											
2019							Finish Development & Certification Phase.	Project Director continues to assist with pilot.			Nov 2019 election: pilot some or all components.	Project Director position ends, with option to continue to assist with full deployment.
							Finish integration development for all components.					
							Finish state and federal certification for all components.					
2020						June 2020 election					Nov 2020 election	
2021												

Phase 1: Planning & Assessment

- $300K professional services / Project Director

- Form citizen advisory committee(s)

- Develop requirements, design, architecture, and Phase 2 plan

- Identify organizational collaborators

- Identify additional funding sources

- Issue initial RFPs

- Develop cost estimates (e.g. based on RFP responses)

Phase 2: Development & Certification

- Continue citizen engagement

- Develop components "in the open" from day one

- Integration development

- Acceptance testing

- State and/or federal certification

- Start piloting in Nov 2018?

- Prep for comprehensive piloting in Nov 2019

The Department of Elections requested $2.3 million for the first year of the project:

- $300K for all of Phase 1.

- $2 million to let Phase 2 development start once Phase 1 completes.

- Additional Phase 2 funds can be requested in next year's budget based on findings in Phase 1.

November 10, 2015: CA Secretary of State Alex Padilla publicly said he thought it "quite possible" and "very likely" that an open source voting system would be certified by his office during his current term.
https://www.youtube.com/watch?v=GfzWt1TJ3qQ&t=35m00s

San Francisco Elections Commission

http://sfgov.org/electionscommission

@SFElectionsComm

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