

FREE & FAIR

To: Oregon Senate Committee On Rules
From: Joe Kiniry, Principal Scientist, Galois and Principled CEO & Chief Scientist, Free & Fair
Re: SB 944-Relating to election audits.
Date: 10 April 2019

SB 944:

I submit these comments on behalf of Galois and Free & Fair.

Free & Fair was established in 2015 as a division of Galois, Inc., a privately held, employee-owned, U.S.-owned and-operated corporation established in 1999 in Portland, Oregon. We are headquartered in Portland with an office in Arlington, VA and currently have just over 100 employees. Our Portland headquarters occupies the third floor, and soon much of the second floor, of the Commonwealth Building in downtown Portland. Our CEO is Dr. Rob Wiltbank.

Galois specializes in the research and development of new technologies that solve the most difficult problems in computer science. Most of our work fits into the classification of R&D for national security. We are passionate about the trustworthiness of critical systems, and work to ensure that systems work as intended, and only as intended. Our team works closely with clients to achieve a balance between the privacy/cost/speed challenges involved in making systems more trustworthy.

We care deeply about real-world use of our R&D efforts and work diligently to transition them into use. Our clients, which are mostly in the U.S. government, derive value working with us as trusted advisors and hold us to high standards for the actual production of algorithms and code that embody our work together.

Key government clients include DARPA, Office of Naval Research, Air Force Research Laboratory, Department of Homeland Security, the Intelligence Community, NASA, and NIST. Key commercial clients include Fortune 100 companies.

Galois-dba-Free & Fair has performed for non-profits (the U.S. Vote Foundation in the authoring and editing of “The Future of Voting” report, the de facto specification of what is critical to the research, development, and adoption of internet/remote voting for public elections¹), state governments (the State of Colorado, in developing the open source, freely available, Colorado Risk-Limiting Audit [CORLA] system used to conduct RLAs of all audits in the State since

¹ See <https://www.usvotefoundation.org/e2e-viv/summary> for a summary of the report as well as the full version.

FREE & FAIR

November 2017²), and the federal government (the Department of Labor, the Intelligence Community, the Department of Defense, the Elections Assistance Commission, NIST, etc.).

I am a Principal Scientist at Galois. I is also the Principled CEO and Chief Scientist of Free & Fair. Since 2002 he has held permanent positions at four universities in Denmark, Ireland, and The Netherlands, most recently a Full Professor and Head of the Software Engineering Section at the Technical University of Denmark. I have has extensive experience in formal methods, high-assurance systems engineering, foundations of computer science and mathematics, and information security. Specific areas that he has worked in include software, firmware, and hardware verification foundations and tools, digital election systems and democracies, cryptography, critical systems for nation states and national security, and asynchronous hardware design. I have nearly twenty years experience in the design, development, support, auditing, and hacking of electronic voting systems. I co-led the DemTech research group at the IT University of Copenhagen and have served as an adviser to the US, Dutch, Irish, and Danish governments in matters relating to electronic voting.

SB 944 represents Oregon's logical next step in being at the forefront nationally in elections. As I summarized in invited talk at the National Association of Secretaries of State (NASS) and the National Association of State Elections Directors (NASSED) conference in 2015 and elsewhere, Risk-Limiting Audits (RLA) continue to be the gold standard for tabulation audits and facilitate ensuring that election outcomes are independent of errors or malice in process, procedure, or technology.

Best,



Dr. Joseph Kiniry

² See <http://bcn.boulder.co.us/~neal/elections/corla/> for a summary of the project and the short film produced by the State of Colorado summarizing the project and its positive impact on elections in Colorado.