

Notes for 20190514 Agenda item in response to questions from Linda Gerull, from Carl Hage

1. Define Open Source Voting: what is it and what is its value?

- Elections where the software in electronic equipment is made visible to the public as source-code. The term “Open” usually also means a license to be able to copy and use that software.

“Open Hardware” could also apply, where the electronic/hardware designs are published and licensed for use by others, or is a system configuration that uses standard COTS parts.

“Open Data” might also apply to OSV-- besides software, the data files used in an election that are made public enable the public to reproduce and audit used for voting and ballot counting, as well as provide information services to the public. Open data might include election definition files, scanned ballot images, cast vote records, detailed count subtotals, and intermediate files used in processing these.

[Value is in the benefits.]

2. Set a vision for OSV: what does success look like?

- Open source software/hardware is certified and in use for elections. The software is used by multiple jurisdictions.
- To be useful for multiple jurisdictions, the system must be supported by commercial vendors, ideally multiple competitive vendors.
- OSV software is scrutinized by the public including security experts, and considered state of the art in secure elections.
- OSV software is well documented including code comments, and other people and organizations can easily contribute to additions/improvements.
- OSV code is highly modular enabling components to be replaced and additional components integrated to the whole system.
- Open data and code allows independent replication/validation of the software and auditing of results with independent processing.
- Phased development process (“agile”) to minimize risk and build confidence.

3.Key Considerations: who or what must be considered as we work to achieve our vision?

- There must be a plan to organize a means to publish plans, architectural definitions, data exchange formats, etc. and collect comments from the public. Likewise, there should be a plan to publish ongoing software development for voting system components. (Be open about the development as well, not just after-the-fact.)
- There should be a plan to create a collection of test data, both typical of real elections, and a smaller set of data that can test all special conditions.

4.What are the potential benefits of open source voting?

- Transparency and Trust: Translucent plastic ballot boxes seen in pictures of third-world voting allow the public to see the collection process and see that there are no mysterious things inside the box. Open Source voting software provides an analogous transparency to the computer processing used in elections. Transparency is also the greatest protection against fraud, tampering, or just mistakes.
- Enhanced Security/Integrity from public scrutiny: Published open software can be inspected by everyone, including computer security specialists. Any flaws/limitations can then be corrected. Ideally, members of the public can independently reproduce digitally signed executable files from it's open source code. With open data, members of the public can audit and reproduce the processing of election data. Open source software allows independent processing of open data.
- Shared cost and collaborative development: Most significant software systems are now open source. Companies often develop software to meet some internal need, then publish it as open source software, and the large user community adds to the original project. A larger user base finds and fixes errors faster than typical proprietary software.
- Support for generic COTS hardware and escape from vendor lock-in.