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RABET-V: From Pilot to Program

The Problem

State and local election offices deal with a growing number of peripheral technologies that aren't directly involved with the casting and tabulating of votes but are nonetheless essential to the election process.

Twenty years ago, the Help America Vote Act required standards, testing and certification for voting systems and as a result these systems are more reliable and more thoroughly vetted than ever. Yet, here is no standard process for verifying the security, reliability, accessibility, and usability of non-voting election technology like electronic poll books, election night reporting systems, and voter registration databases. This means that states often have to re-invent the wheel when developing procurement requirements and evaluating these types of products for use in elections.

Some states have responded by developing their own processes for verifying election technology. These programs typically use traditional testing processes, similar to voting system testing, that are lengthy, expensive, and do not incentivize updating products at the same pace as technology changes and security threats.

In addition, if every state has different requirements and a different process for verifying non-voting technology it burdens vendors with extra costs, which are passed on to election offices. The election community needs a better way—an efficient and cost-effective approach to verifying these technologies, improving outcomes, lowering costs, and getting more up-to-date products into the field more quickly.

The Solution

With significant input from the election community, The RABET-V™ (Rapid Architecture Based Election Technology Verification) Program* was developed to meet this need. RABET-V builds on traditional cybersecurity testing methods by adding concepts from modern software development and assessment, helping deliver incremental improvements to users on a regular basis. It does so by providing technology providers with holistic assessments of their product development process, a product's architecture, and the product's performance, and then using these assessments to rapidly evaluate the impact of changes to a product.

RABET-V uses the term "technology providers" generically, to include traditional technology vendors and "homegrown" systems used by states. Quality assessment processes should be able to handle both.

RABET-V's holistic approach answers three questions:

- "Does the product perform as intended?" This product verification step is what many in the election administration field are most familiar with, as it has the most similarities with voting system testing. During product verification, RABET-V analyzes the product's performance against a baseline set of security, accessibility, and usability requirements.
- "How good is the technology provider at developing technology products?" This organizational assessment

* Patent pending

measures how management of the organization, including its supply chain, can lead to better or worse product performance over time as conditions change and products evolve.

- "How well-designed is the architecture underlying the product?" This architecture assessment measures the strength of a product's design through a comprehensive picture of the product—and its dependencies—at both the system and software levels. This analysis provides an understanding of how resilient the product will be when changes occur.

Assessing an election technology product is a bit like inspecting a brand-new house. It's good to check that the doors and windows operate, the water runs hot and cold, and the attic, roof, and basement look good. You'll have a much better idea of whether it's a castle or a money pit when you know that the builders were well-qualified and used best practices. Seeing the plans and knowing what materials were used will help you understand if the structure will stand up in the long run. The upshot: a point-in-time inspection is important, but we can do better. And you need different types of inspections to be confident that you're getting what you paid for.

Evaluating Changes More Quickly

RABET-V encourages election technology providers to engage in continuous improvement and seeks to mature of the market for non-voting election software products over time. RABET-V reports are detailed and provide meaningful feedback on ways to improve. After a product has gone through the program once, products with scores can subsequently be evaluated more quickly. Faster testing means a lower cost for technology providers and quicker deployment of the most recent patches and features. The end result is higher quality election technology products that have been verified more rapidly and at a lower cost than traditional testing methods.

Conclusion

Through RABET-V, technology providers get more feedback and a roadmap for improvement. Election officials get more detailed reporting of a technology provider's organization, security, and reliability to make better investment decisions. Both technology providers and election offices alike get a more efficient verification process.