

Testimony of

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“National Institute of Standards and Technology’s Research Efforts to Improve the
Election Process for Military and Overseas Voters”

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National Institute of Standards and Technology's Research Efforts to Improve the Election Process for Military and Overseas Voters

Introduction

Chair Beach, Commissioners Davidson and Hillman, EAC staff, and assembled members of the public, thank you for the opportunity to appear before you today to provide an update on NIST's research efforts to improve the election process for military and overseas voters. Our nation's service members and citizens living abroad are having significant problems obtaining and returning absentee ballots, and NIST recognizes the importance of using technology to make overseas voting more efficient, reliable and secure. Today, I will discuss NIST's role in improving the voting process for those voting under the Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA). I will provide a brief summary of our research efforts thus far, and a description of our current efforts, which includes the development of three documents on the use of technology in the UOCAVA voting process.

The Help America Vote Act of 2002, the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, and the recent Military and Overseas Voting Empowerment Act have tasked the EAC with helping to improve the voting process for overseas citizens with the use of electronic technologies.

NIST has been conducting research on the use of electronic technology in UOCAVA voting in support of the EAC's efforts in this area. As the nation's measurement and standards institute, the agency has earned a reputation as an impartial, technically knowledgeable third party with a long history of working collaboratively with industry, academia and other government agencies. We have worked closely with the EAC and the Technical Guidelines Development Committee (TGDC) on research and requirements related to the development of the Voluntary Voting System Guidelines (VVSg).

Summary of UOCAVA Threat Analysis

The first phase of NIST's research in this area was completed in December of 2007. At that time we released NISTIR 7551: *A Threat Analysis on UOCAVA Voting Systems*. This report documents threats to UOCAVA voting systems using electronic technologies for all aspects of the overseas voting process.

The report divides the UOCAVA voting process into three stages: voter registration and ballot request; blank ballot delivery to voters; and voted ballot return to local election officials. For each of these stages, we considered the use of five methods for transmitting election materials between voters and election officials: postal mail, telephone, fax, electronic mail, and web-based methods, such as using web sites to post or submit materials. The report identified threats and potential mitigating security controls for the

use of these technologies for each of the three phases of the voting process. The full report can be obtained on the NIST voting website at <http://vote.nist.gov>.

That report was intended to inform future work on UOCAVA voting by NIST, the TGDC, and the EAC. It took a very broad look at technologies to support the UOCAVA voting process. The second phase of NIST's work on UOCAVA voting is now more focused, researching specific technologies for specific election processes, and providing mitigating security controls whenever possible.

Current Efforts and Deliverables

Over the past year, NIST has worked with members of the elections community to support our UOCAVA efforts. We requested and obtained UOCAVA election procedures from jurisdictions around the country, including Arizona, Florida, and Washington. We held a meeting at NIST to discuss security objectives for UOCAVA voting systems, which was attended by representatives from NIST, the EAC and the Federal Voting Assistance Program (FVAP), and included state and local election officials, election security experts, and manufacturers of UOCAVA voting solutions.

Based on the security objectives discussed at that meeting, NIST is currently in the process of developing three documents on the use of technology in the UOCAVA voting process. These documents include research efforts and the development of best practices. I will now describe these three documents.

IT System Security Best Practices for UOCAVA Supporting Systems

One of NIST's responsibilities under the Federal Information Security Management Act of 2002 is the development of standards and guidelines for securing non-national security agency information systems. As such, NIST has a large collection of cyber security resources in the form of standards, guidelines, tools and metrics.

To make use of these resources, the first document NIST is developing is *IT System Security Best Practices for UOCAVA Supporting Systems*. The goal of this document is to take the relevant standards and guidelines and summarize them for people making decisions about UOCAVA voting systems. Thus, those people will have, in one document, a summary of NIST's best practices for cyber security, including best practices for user authentication, cryptography, system hardening, and network security. The best practices are intended for any type of UOCAVA election system, whether it is used for voter registration and ballot request, electronic ballot delivery, or ballot return. It documents a set of minimal security controls and practices that would be appropriate for any system. It does not include best practices or guidelines for protecting against UOCAVA system-specific threats, such as those that would be unique to ballot delivery or return systems. Mitigations to those threats will be discussed in our other two

documents. Jurisdictions will need to augment the best practices described in this document to adequately protect against those threats.

We expect to release a draft of this document for public comment in the first quarter of 2010.

Best Practices for Securing the Electronic Transmission of Election Materials

The next document that we are producing is *Best Practices for Securing the Electronic Transmission of Election Materials*. This document will provide best practices for using e-mail and web sites to allow voters to request blank absentee ballots, and to deliver blank ballots to overseas voters. It will include election procedures and technical controls aimed at protecting the confidentiality and integrity of election materials in transit and after being received by officials. This document is intended to help state and local election officials develop their own procedures and security controls for handling overseas voters and ballots, augmenting the EAC's existing best practices for facilitating UOCAVA voting.

We expect to release a draft of this document for public comment in the second quarter of 2010.

Security Considerations for Remote Electronic UOCAVA Voting Systems

The third document we are producing is a research document titled *Security Considerations for Remote Electronic UOCAVA Voting Systems*. This document identifies security objectives of remote electronic voting systems, including Internet voting from personal computers or kiosks. It will define the security objectives for these systems, and identify associated security issues that can or cannot be solved with current technology as known in industry and academia.

We expect to release this report in the second quarter of 2010.

Summary

NIST is pleased to be working on this important issue with the EAC. We hope that our work will lead to more efficient, reliable and secure election systems for our military personnel and other citizens living aboard. Thank you for the opportunity to testify. I would be happy to answer any questions the Commission might have.