

Roadmap for the Development of Remote Electronic Absentee Voting Guidelines

1. Introduction

This document describes the Election Assistance Commission's (EAC) activities to develop guidelines for remote electronic absentee (i.e., Internet-based) voting systems to support the voting needs of military and overseas citizens. It also contains EAC's "roadmap" for the creation of guidelines for electronic absentee voting systems. EAC created this roadmap in collaboration with the National Institute of Standards and Technology (NIST), and the Federal Voting Assistance Program (FVAP).

This report is being submitted in order to meet the requirements of Section 589(e)(2) of the National Defense Authorization Act of 2009 which requires the EAC to submit a report to Congress within one hundred eighty days of enactment of the act if "...EAC has not established electronic absentee voting guidelines" within that timeframe. To date the EAC has not established those guidelines and is therefore submitting this report in accordance with the Act.

In 2002, Congress directed the Department of Defense to carry out a demonstration project under which absent uniformed services voters would be permitted to cast ballots for the November 2004 general election through an electronic voting system.

In October of 2004, Congress allowed the Department of Defense to delay the implementation of a demonstration project "...until the first regularly scheduled general election for Federal office which occurs after the Election Assistance Commission notifies the Secretary that the Commission has established electronic absentee voting guidelines..."

In 2009, Congress passed the Military and Overseas Voters Empowerment Act (MOVE) instructing FVAP that they may run pilot programs to test the ability of new or emerging technology to better serve UOCAVA voters. MOVE goes on to mandate that should FVAP choose to run a pilot program EAC and NIST are to help support FVAP by providing best practices or standards to support the projects. In addition, MOVE reiterated the 2004 mandate from Congress requiring EAC to create guidelines to be used by FVAP for the development of a remote electronic voting system.

Since Congress first directed the EAC to work on remote electronic absentee voting standards, the agency has taken several significant steps toward that end. In FY 2008 EAC issued a report entitled *UOCAVA Voters and the Electronic Transmission of Voting Materials in Four States* and three case studies describing the experiences of states transmitting ballots electronically and using Internet voting. EAC's web site includes a section dedicated to military and overseas voters featuring links to the voting sites of every branch of the military and other useful resources. These reports, studies and resources are available at www.eac.gov.

EAC is working with NIST to provide best practices to states on the transmittal and receipt of UOCAVA voting materials, including registration information and ballots. NIST completed

the first step of the process with the issuance of the December 2008 EAC-funded report: *A Threat Analysis on UOCAVA Voting Systems*.

The NIST report provided the first extensive look at the security threats associated with current and potential electronic technologies for overseas voting and identified possible ways of mitigating these risks.

In addition, the EAC has undertaken a number of initiatives related to improving the election process for UOCAVA voters. These efforts include:

- September 21, 2004 – EAC issues Best Practices for Facilitating Voting by U.S. Citizens Covered by the Uniformed and Overseas Citizens Absentee Voting Act
- September 14, 2006 – EAC holds a public meeting in St. Louis on UOCAVA voting
- September 12, 2007 – EAC and NIST sign an Interagency Agreement under which the EAC provides NIST with an additional \$500,000 for the development of draft guidelines for the use of electronic technology in military and overseas citizen absentee voting.
- September 24, 2007 – EAC hosts conference in DC on UOCAVA voting
- April 2, 2008 - EAC releases an Election Management Guidelines Quick Start Guide on UOCAVA voters
- July 2010 - *Wounded Military Personnel Civic Research Initiative*. For this initiative, the EAC is collaborating with the U.S Department of Defense Federal Voting Assistance Program to better understand the voting needs of wounded military personnel and enhance the military's election processes for supporting this important constituency. The research will result in a better understanding of how to enhance, augment, and develop voting equipment and improve election processes and voting technology needed for wounded military personnel.

Notwithstanding EAC and many other groups' efforts, UOCAVA voters still do not participate in elections at the same rate as the general population. For example, EAC's 2008 Election Day survey shows that in the 2008 General Election, approximately 1 million UOCAVA ballots were transmitted by States to overseas voters. While some 680,000 of these ballots were returned and submitted for counting by voters, over 300,000 remained unreturned, returned as undeliverable or spoiled, or were otherwise unaccounted for.

Military and overseas voters face significant challenges in receiving and returning absentee ballots in time to be counted. These challenges are the result of several factors unique to members of the military and citizens living overseas. Primarily among them are 1) delays in mailing absentee ballots to voters, 2) inherently slow postal mail delivery times, and 3) the difficulty of maintaining current addresses for voters who live other than in their voting districts and move frequently.

One solution states have explored to assist this population is to distribute election materials through alternative methods, which are intended to decrease time and make the process of obtaining and returning ballots more efficient and expedient. Many states currently transmit unmarked ballots electronically, which will become a federal legislative requirement under UOCAVA for all federal elections starting with the November 2010 general election. Some

states have also implemented targeted pilot programs to facilitate the return of marked, or voted ballots. EAC's remote electronic absentee voting guidelines will be an important tool to assist states with these efforts.

To help improve UOCAVA voter participation rates, EAC's remote electronic absentee voting guidelines will include innovative approaches tailored to this unique population, including the use of non-specific mobile computing devices¹, such as personal computers. These technologies should enable UOCAVA voters to more easily vote and return their electronic ballots. To date, security concerns have delayed the implementation of general purpose personal computers for casting electronic ballots via the Internet; however, remote electronic absentee voting systems can integrate specific security protocols intended to address these concerns. For example, DoD's Common Access Card (CAC) would provide a high level of authentication for voters. This card issued to members of the military and contains secure identification information that could be used to authenticate a voter electronically prior to voting.

The goal of this project is to develop EAC certified guidelines to aide FVAP's development of an absentee voting system to serve uniformed service voters in a demonstration project administered by the Department of Defense. In addition, the EAC hopes to provide election officials with a resource to improve services for UOCAVA voters, with the ultimate goal of improving voter participation rates in this population. This roadmap moves us closer to that goal by providing for (a) nearer-term guidance for electronic distribution of UOCAVA voting materials (b) guidelines for a manned-kiosk demonstration project which will serve as an initial step towards the development of the final guidelines and (c) guidelines for remote UOCAVA voting systems that would include the capability for electronic return of marked ballots.

EAC and its partners, FVAP and NIST, have made significant progress toward assisting election officials with providing services to UOCAVA voters. However, solutions to the challenges that face UOCAVA voters will also require a broad community effort with participation from state and local election officials, computer science researchers, experts in fields such as usability and accessibility, industry representatives, and other federal agencies charged with improving the remote UOCAVA voting process. To that end, EAC will continue to solicit input from its statutory boards and the public; and work with NIST and FVAP to ensure that the remote electronic absentee voting guidelines are considered and robust.

¹ A non-specific mobile computing device is a general-purpose machine that is designed to carry out a variety of functions one of which could be running a voting platform. An example of such a device could be a laptop computer that can be carried on troop deployments.

Roadmap Timeline for the Development of Remote Electronic Absentee Voting Guidelines in Support of the UOCAVA Act

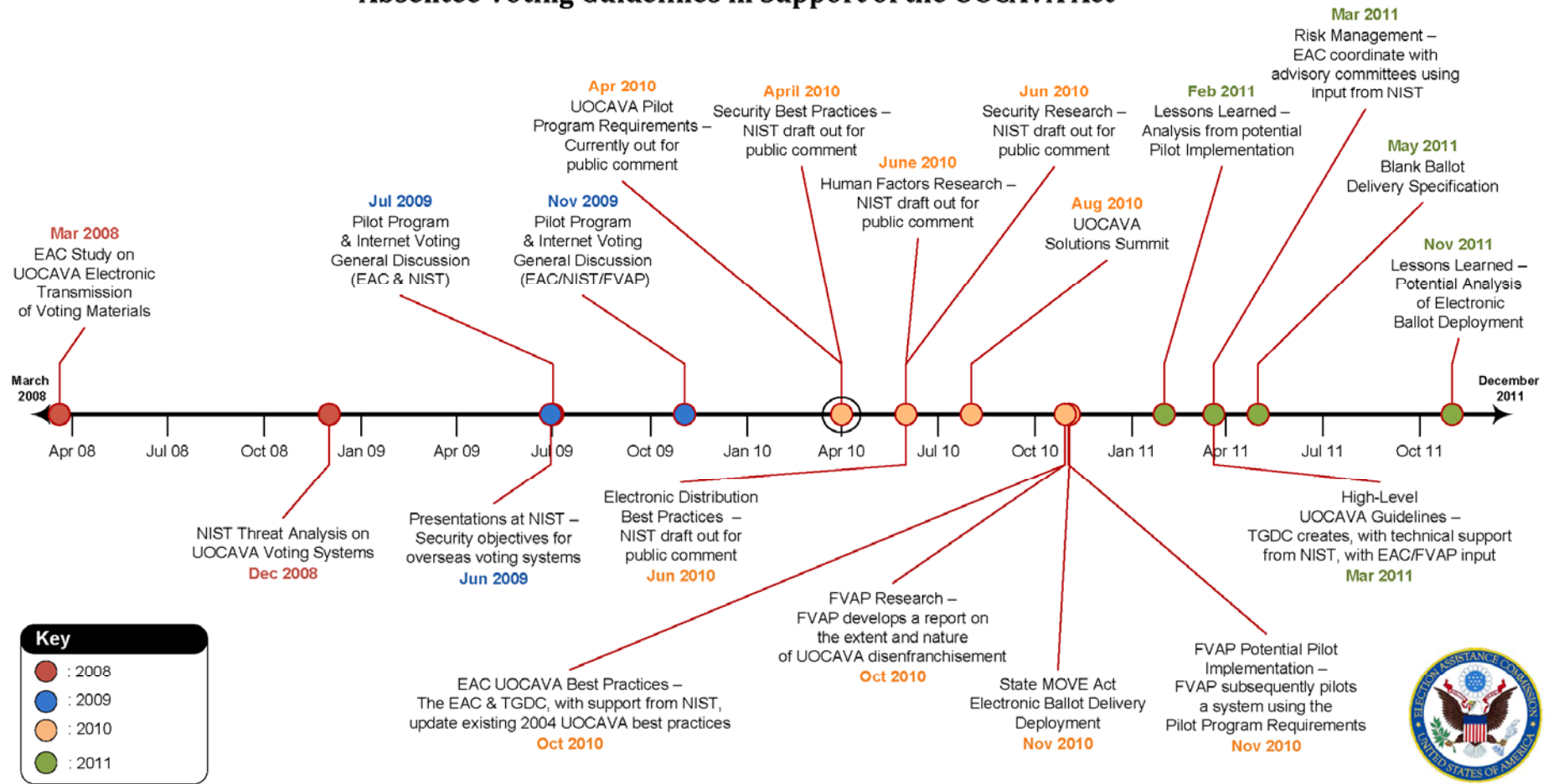


Figure 1 – Roadmap Timeline

2. Overview of Activities to Establish Guidelines

The development of remote electronic absentee voting guidelines must take into account a number of factors that are unique to this method of voting. As such, EAC intends to use a deliberative and iterative approach in the guidelines' creation and implementation which includes working closely with NIST and FVAP on the recommended steps outlined in this document. EAC has identified four major milestones in the roadmap to developing guidelines for remote electronic absentee voting. They are:

1. Perform initial research and create initial guidance including establishment of a baseline level of security assurance necessary;
2. Create a current specification for a kiosk pilot remote electronic absentee voting system to analyze the scalability and challenges posed by a multi-jurisdictional kiosk system, and to collect data on the impact of more widespread use of such a system compared to the previously modest pilot programs done in this area;
3. Identify and specify aspects of remote electronic absentee voting that election officials can implement now (e.g., blank ballot distribution); and
4. Implement a phased, iterative approach for remote electronic absentee voting pilots to determine approaches that best meet the needs of UOCAVA voters and provide adequate security precautions.

Because significant challenges to remote electronic absentee voting exist, there are also a number of interim actions outlined in this roadmap, including:

1. Facilitate sending blank ballots electronically to improve UOCAVA voter participation rates; and
2. Investigate secure platforms for transmitting electronically marked ballots for testing and pilot projects.

3. Policymaking Framework

Federal, state and local officials share responsibility for making policy decisions concerning improving UOCAVA voter participation rates through remote electronic absentee voting. Technical stakeholders -- including NIST, researchers and industry representatives -- also play an important role by providing policymakers with accurate information about challenges and possible solutions to remote electronic absentee voting. EAC will collaborate with these groups to ensure that the guidelines adequately address the factors that may impact remote electronic absentee voting, such as varying state laws, voter interests, and technological capabilities. EAC and its partners are making progress toward completing initial research and guidance; and finalizing documents that take these factors into account. EAC and its partners intend to provide ample opportunity for interested parties to participate in the development of the guidelines.

Activities:

- **April 2010 - *Security Best Practices***: NIST will release a draft of *Information System Security Best Practices to Support UOCAVA Voting* for public comment. This document will outline some general IT best practices for securing systems that utilize the internet. These are not the same as actual electronic absentee voting guidelines, and should not be viewed as such, but may help stakeholders and the three agencies involved in this roadmap identify key requirements for the final certified guidelines.
- **May 2010 - *FVAP Research***: Included in its 2008 Post-Election Survey Report, FVAP will detail the extent and nature of UOCAVA voter success, the applicability of historical programs to addressing the causes of the lower success rates.
- **June 2010 - *Electronic Distribution Best Practices***: NIST will release a draft of *Security Best Practices for the Electronic Distribution of UOCAVA Election Materials* for public comment. This document will highlight specific steps jurisdictions can take to better secure the distribution of blank ballots or other election materials.
- **June 2010 - *Security Research on Remote Voting***: NIST will release a draft of *Security Considerations for Remote Electronic UOCAVA Voting* for public comment. This document will focus on the security risks associated with remote electronic voting systems, including national level threats, and discuss possible mitigation of those risks.
- **June 2010 - *Human Factors Research on Remote Voting***: NIST will release a draft of *Accessibility and Usability Considerations for Remote Electronic UOCAVA Voting* for public comment. This document will highlight steps that can be taken to make a UOCAVA remote electronic voting platform more useable and accessible for voters.
- **August 2010 - *Research on Previous International Internet Voting Efforts***: Australia, Estonia, the UK, and a number of other nations have already conducted numerous elections using Internet-based voting systems. These experiences can provide useful information and best practices concerning Internet-based systems in real-world elections. EAC will institute a research effort to collect and compile information from these countries to better educate stakeholders.
- **August 2010 - *UOCAVA Solutions Summit***: NIST, EAC and FVAP will host an academic and scientific summit on the benefits and challenges of remote electronic absentee voting. Election officials, experts in computer security, and vendors of remote electronic absentee voting systems will discuss how technology can facilitate UOCAVA voters' participation. Participants will discuss desirable characteristics for remote electronic absentee voting systems by focusing on possible threats faced by remote electronic voting, approaches that can be implemented now, and technology solutions that aren't ready today but could have an impact in the future. This discussion will inform the TGDC's work on the high-level guidelines and inform the creation of a document detailing desired properties for an electronic absentee voting system which will inform the development of the final guidelines.

- **December 2010 - EAC UOCAVA Best Practices:** EAC and the TGDC, with technical support from NIST, will update their existing document on UOCAVA best practices for election jurisdictions to use in their efforts to better serve UOCAVA voters.
- **December 2010 - FVAP Metrics:** Based upon FVAP's 2008 and 2009 annual reports, the NIST and EAC Best Practice documents, and the outcomes of the August 2010 Summit, FVAP will update its recommended metrics for UOCAVA voter success.
- **Spring 2011 - High-Level Guidelines:** EAC and the TGDC, with technical support from NIST, and input from FVAP, will identify high-level, non-testable guidelines for remote electronic absentee voting systems. This effort will focus on the desirable characteristics of such systems and serve as a needs analysis for future pilots and research; and for the purposes of driving industry to implement solutions.
- **Spring 2011 - Risk Management:** EAC will coordinate with its advisory boards (Board of Advisors, Standards Board, and Technical Guidelines Development Committee), and get technical input from NIST (coordinating with the Department of Defense and the National Intelligence Community, where possible), to apply the NIST Risk Management Framework and other methods in identifying security controls and technologies to mitigate security concerns. EAC will use this information to compare the current process UOCAVA voters use to vote with potential remote electronic absentee voting processes and assess the desired security protocols for both. This analysis will be used to guide future pilots and guidelines development.

4. Support Electronic Blank Ballot Delivery Projects

Some remote electronic absentee voting technologies can be implemented immediately and will likely improve UOCAVA voter participation rates. Most prominently among them is the electronic transmission of blank ballots, which allows UOCAVA voters to receive their ballots more quickly than through traditional delivery methods. Additionally, electronic registration would permit non-registered UOCAVA voters to register remotely and ultimately receive a ballot without the delays that can occur within the current framework. EAC and its partners' activities to support the wider adoption of electronic blank ballot delivery include:

Activities:

- **April 2010 - Federal Postcard Application Wizard:** Developed by FVAP and to be available at FVAP.gov, this tool is designed to assist UOCAVA voters with filling out and submitting the Federal Post Card Application.
- **June 2010 - Online Federal Write-in Absentee Ballot Wizard:** Developed by FVAP and to be available at FVAP.gov, this wizard is designed to assist UOCAVA voters filling out and submitting the Federal Write-in Absentee Ballot.

- **Fall 2010 - *Online Ballot Delivery and Marking Wizard*:** Developed by FVAP and to be available at FVAP.gov, this wizard will provide a State-specific online ballot delivery and online marking capability for UOCAVA voters from participating states. It will still require the voter to print the ballot, hand sign and return the ballot to the appropriate jurisdiction by postal mail unless an alternative delivery technique is specifically authorized by the participating State.
- **Fall 2011 - *Common Data Format Development*:** For electronic transmission of blank ballots to be successful, they should be implemented in a manner that allows multiple states to participate. To assist in this the TGDC, with technical support from NIST, will develop common data format specifications for ballots and ballot definition that can be used by FVAP and the states. FVAP is also planning on assisting States in 2010 with data conversion services and tools to Common Data Formats.
- **Spring, 2011 - *Lessons Learned Analysis*:** After the 2010 General Election, FVAP has agreed to provide information to EAC and its advisory committees on the results of the electronic ballot delivery projects, including the success and shortcomings of their projects and lessons learned.
- **April 2011 - *Review of 2010 state activities for UOCAVA Voters*:** FVAP and EAC will review and evaluate the effectiveness of state initiatives undertaken for the 2010 Federal election related to blank ballot distribution and delivery.

5. Conduct Kiosk-Based Remote Voting Pilot Project

EAC is currently developing intermediate testable guidelines that leverage the successes achieved to date by jurisdictions with electronic absentee voting systems. These guidelines will be used to pilot remote electronic absentee voting systems implemented as a manned kiosk with printable paper ballots for audit capability. Election jurisdictions and FVAP will be able to use these guidelines to run pilot programs for UOCAVA voters should they choose to do so. The information gained from the pilot projects will be used to help inform the final guidelines development process by providing valuable information regarding the security and logistical challenges of a remote electronic voting system.

Activities:

- **April 2010 - *Testable Guidelines*:** The intermediate testable guidelines will be available for public review and subsequent update.
- **November 2010 - *Pilot Implementation*:** As indicated in the MOVE Act, FVAP or jurisdictions may choose to lead a voluntary pilot project for election jurisdictions that wish to use equipment that meets the interim testable guidelines in the General Election. The initial target for the pilot may be the 2010 general election.
- **Spring 2011 - *Lessons Learned Analysis*:** FVAP and participating election jurisdictions will provide information to EAC and its advisory committees on the results of the pilot project, including the success and shortcoming of the pilot as well as lessons learned.

6. A Phased Approach for Additional Pilot Projects

EAC, NIST and FVAP will employ a phased, iterative approach to develop guidelines tailored to the specific needs of UOCAVA voters, especially members of the military as the voter population legislatively mandated to be provided this electronic absentee voting demonstration project. The phased approach, utilizing pilot projects, allows policymakers to look at relevant technical information and implement improvements that can be deployed incrementally with existing technology. The results of the pilot projects will supply important information on what barriers have been addressed and what problems require additional research or guidelines development. Pilot projects can be conducted with existing technology that has the potential to make substantial improvements to the remote electronic absentee voting process, as well as provide important information to stakeholders working towards solutions for remote electronic absentee voting.

Activities:

- **March 2011 - *Framing the Issues*:** EAC, NIST and FVAP will provide EAC's advisory boards with background information about the legal, technical, and policy issues associated with implementing remote electronic voting systems. This includes information on security related to remote electronic absentee voting systems, potential mitigating technologies, and challenges faced by UOCAVA voters and election jurisdictions that wish to deploy new technologies.
- **Spring 2011 - *Implementation of Pilot Project*:** EAC, in consultation with its advisory boards, will consider the information described above, and structure an interim pilot project that takes existing technology--including limitations--into account. The pilot will have a specific set of stated goals that advance the guidelines and existing technology toward the goals and objectives stated in the previous section of this roadmap. Possible interim pilot projects could include:
 - Unmanned kiosk remote voting systems;
 - Remote electronic voting systems with specialized hardware, such as the Common Access Card and smartcard readers; and
 - Remote electronic voting systems without specialized hardware or software.
- **Spring 2012 - *Develop Supporting Materials*:** The TGDC, with technical support from NIST, will develop supporting materials for the pilot project. Depending on the interim pilot project, this could involve developing testable requirements, guidelines, or best practices.
- **November 2012 - *Conduct Pilot Project*:** FVAP may coordinate with state and local election jurisdictions to deploy and use a pilot system in the General Election. EAC will assist with pilot projects by utilizing its pilot certification process including the possible development of specific requirements for these pilot systems.
- **Spring, 2013 - *Lessons Learned Analysis*:** After the 2012 election, FVAP and participating jurisdictions will provide information to EAC and its advisory boards on the results of the pilot, including the success and shortcomings of the pilot and

lessons learned. The EAC through the TGDC will provide technical support to FVAP as it works to conduct these evaluations.

Additional Phases:

FVAP will compile the results of the pilot projects in the participating jurisdictions. Thereafter, EAC and its advisory boards will analyze the information to determine if the results of the pilot projects indicate that the guidelines sufficiently take into account practical considerations or another set of pilot projects is necessary. If additional phases of interim pilot projects are required, EAC, NIST and FVAP will again identify the items policymakers will need to address before additional pilots, then work to implement them.

7. Development of Final Guidelines

After collecting and synthesizing all of the information from pilot projects and conducting the necessary associated research, EAC will finalize its remote electronic absentee voting system guidelines.

Activities:

- ***Development of Guidelines:*** The TGDC, with technical support from NIST, will develop draft guidelines for remote electronic absentee voting systems and submit them to EAC for consideration.
- ***Issuance of TGDC Draft Guidelines for Public Comment:*** EAC will release the draft guidelines for public comment. EAC will update the public on its progress throughout the comment period at public meetings and through its newsletter.
- ***Issuance of EAC Draft Guidelines for Public Comment:*** After the completion of the public comment period for the TGDC draft version of the guidelines EAC will resolve all public comments and make appropriate policy decisions. EAC will then update the guidelines to reflect these decisions and publish the EAC draft version of the guidelines for public comment.
- ***Finalization of Guidelines:*** After the completion of the comment period on EAC's draft version of the guidelines EAC will resolve all remaining public comments and make policy decisions. EAC will then update the document to reflect those decisions and publish the final version of the guidelines.
- ***Establishment of Guidelines and Certification to Department of Defense:*** After the final publication of the guidelines, and in accordance with the 2005 National Defense Authorization Act, the EAC will notify the Secretary of Defense that the Commission has established electronic absentee voting guidelines and certify that it will assist the Secretary in carrying out the demonstration project.
- ***Deployment and Use:*** FVAP will coordinate with state and local election officials to deploy systems certified with the remote electronic absentee voting system guidelines. The process to design, develop and deploy systems to the guidelines will take 24-60 months from the availability of the certified guidelines from EAC.

8. Conclusion

EAC appreciates the opportunity to update Congress on its continuing work to improve the services for UOCAVA voters. The research, technical resources, and draft requirements EAC has produced provide the foundation for the final development of FVAP's remote electronic voting system that will improve success for UOCAVA voters.

EAC has created an iterative approach, striking a balance between protecting the privacy of the ballot, ensuring the security of the system, and instilling transparency throughout the development process. EAC looks forward to continuing to work with its partners, FVAP and NIST, as well as the public to deliver work products that produce tangible results for UOCAVA voters.