

Testimony of Michael I. Shamos
Before the U.S. Senate Committee on Rules and Administration
July 25, 2007

Madame Chairman and members of the Committee: My name is Michael Shamos. I have been a faculty member in the School of Computer Science at Carnegie Mellon University in Pittsburgh since 1975. I am also an attorney admitted to practice in Pennsylvania and before the United States Patent and Trademark Office. Since 1980, I have been an examiner of electronic voting systems for various states. I am currently an examiner for Pennsylvania and have personally performed 121 voting system examinations. I was recently on the task force of the Secretary of State of Florida which examined the source code used in voting machines in Sarasota County during the disputed Buchanan-Jennings congressional election.

Let me say at the outset that I will be addressing only Titles I and II of the proposed bill and I am in wholehearted agreement with objectives of those titles, which is to provide for verified voting in the United States.

The proposed bill, though it makes repeated reference to verification, does not come close to providing it. While a paper trail shows the voter that her choices were properly understood and recorded on at least one medium, it offers no assurance whatsoever that her ballot was counted, that it will ever be counted, or that it will even be present when a recount or audit is conducted. Once the polls have closed, the voter not only has no recourse or remedy, but is powerless to even determine whether her vote is part of the final tally or to object if she believes it isn't. That is not voter verification, regardless how it may be denominated in the text of the bill.

The bill provides for retrofitting of scrolling paper printers to existing DRE machines that do not have them. Even paper trail advocates recognize that scrolled paper trails make it easy, not just possible, to determine how every voter in a precinct voted. The first voter's ballot is first on the tape; the last voter's is last; and everyone else's is sequential order in between. A simple comparison between the paper trail and the poll list gives away everyone's vote, in violation of the Section 201 requirement of a secret ballot. Even if only two percent of the vote is audited, it means that two percent of the voters are at risk of having their votes revealed. This problem is so severe that in Nevada in 2006, when paper trails were in use, the Secretary of State refused to allow an unsuccessful candidate access to the paper trail, citing ballot secrecy as the reason. What good is a paper trail if it can never be used to audit an election?

There is no commercially available DRE voting system which meets the requirements of the bill. All of them either (1) violate privacy, (2) fail to produce records that are clearly readable by voters; or (3) are not accessible to the disabled. Some commercial systems fail on all three grounds. Thus the practical effect of the bill is to outlaw DRE voting in the United States, despite the fact that DREs have been used in the U.S. for 28 years without a single demonstrated incident of tampering in an election. During that same period, literally hundreds of people have been sentenced to jail terms for tampering with paper ballots.

The proposed bill is based on four major assumptions, all of which are false. First, it assumes that paper records are more secure than electronic ones, a proposition that has repeatedly been shown to be wrong throughout history. Second, it assumes that voting machines without voter-verified paper trails are unauditible because they are claimed to

be “paperless,” which is also false. They are neither paperless nor unauditible. Third, it assumes that paper trails actually solve the problems exhibited by DRE machines, which is likewise incorrect. Finally, it is presumed incorrectly that voting machines with paper printers are more reliable than those without them.

The main problem with DRE machines is reliability. Almost 10 percent of machines fail on Election Day. While this does not normally result in loss of any votes, it certainly causes inconvenience, longer waiting times and reduced trust in the voting system. It should be obvious that adding a mechanical component such as a printer to a voting machine only reduces its reliability even further. Indeed, machines with paper printers fail at nearly double the rate of machines without them, with one in five becoming inoperative on Election Day.

While audits of elections are essential, realistically these audits must be conducted using automated equipment. Tests have been conducted to determine how long a hand audit of paper records takes. Extensive experiments conducted in California and Georgia show that, for a ballot of typical length, 20 minutes is required to obtain a reliable count under trustworthy conditions. If anyone on the Committee doubts that it takes this long, I suggest that Congress commission a test before enacting the bill. Counting two percent of the ballots in a state with five million voters will require approximately 16,000 hours, or eight man-years. Because under the bill the audit must be completed before the election is certified, eight man-years must be expended in a typical period of three weeks. This will require the services of over 100 people full-time for three weeks just in one state.

There has to be a better way, and indeed there is. However, if the bill is enacted in its present form, the better way will never reach the market for the simple reason that the requirement of a paper trail forecloses any possibility of continued research and development on methods of voter verification. Once DRE machines have been retrofitted, there can be no benefit to a vendor to offer a better solution since all the available funds will have been expended. Without an incentive, there is no reason to expect a manufacturer to fund research and development.

A competition was held last week at the VoComp conference on electronic voting in Portland, Oregon to see who could present the best voter-verifiable system. It was won by a team from the University of Maryland Baltimore Campus which presented a system designed by David Chaum that allows what is called end-to-end verification. That is, each voter can verify, after the election has been counted, that her vote has been tallied correctly and is part of the final totals. End-to-end verification is the holy grail of voting systems. No such verification is now possible with any commercially available system. I therefore urge the Committee not to mandate any requirements whose effect would be to require some existing system and to discourage research and development into voter-verifiable systems.

I have heard the argument that the requirements of the bill can be satisfied by simply adopting optical scan voting, which has been used since the 1970s. In optical scan voting, there is only a single copy of each voter’s ballot. If anything happens to that copy, the voter’s original choices become irretrievable. No research group has ever done a side-by-side security analysis of optical scan versus DRE voting. Had anyone done so, they would have discovered that there are numerous ways in which an opscan election can be manipulated, many of which are completely undetectable in an audit. There is no

perfect voting system, but it is erroneous to believe that opscan voting is more secure than electronic voting.

The reason that mechanical voting machines were introduced over a century ago was to stop rampant fraud involving paper ballots. S. 1487 would restore us to the year 1890, when anyone who wanted to tamper with an election needed to do no more than manipulate pieces of paper. The very idea that a paper record is secure at all continues to be refuted in every election. A recent example is the May 2006 primary held in Cleveland, Ohio. That state has a VVPAT requirement. When the paper records from the election were examined by an independent study group commissioned by Cuyahoga County, ten percent of the paper records were found to be illegible, defaced or entirely missing.

One admirable provision of the bill is in lifting the shroud of secrecy that surrounds voting system software. But here the bill does not go far enough. One of the reasons that there is so much public suspicion surrounding voting machines is that no voter can determine how they work and cannot verify that their logic is correct and has not been tampered with. There is no reason remaining that election-dedicated software should remain confidential.

If a company voluntarily enters the voting software business, it should abandon any claim to confidentiality of such software. As long as the code in voting systems remains secret, the public will never trust it, nor should it. My comments in this regard do not apply to software that is not election-dedicated, since the vendors of this software have not voluntarily entered the voting system market.

There is one provision of the bill that requires special mention, and that is the authorization of \$1 million for research on how to make voting machines accessible to the disabled, a sadly insufficient amount. Many disabled voters are military personnel who were injured in the Iraq War. This country owes far more to them than \$1 million.

One political motivation for adopting voting machine reform is to avoid embarrassment. Florida and the nation were embarrassed over punched cards in 2000. It was expected that if punched cards were eliminated no more untoward incidents would occur. That was incorrect. After the changeover to DRE machines there was still embarrassment in 2006, so now it is proposed to add clumsy, privacy-destroying printers to the machines. If the objective is to reduce embarrassment, it will have the opposite effect.

By 2008, several counties in Florida will have used three different voting systems in three consecutive Presidential elections. It is folly to mandate nationwide changes to our voting systems each time a problem manifests itself. Voters and election workers need time to adjust to such changes, which used to occur approximately every few decades, not every four years.

My purpose here today is not simply to complain about the bill, but to offer a constructive alternative. As part of my written testimony I have included a complete markup of Titles I and II of the proposed legislation that retains its essential positive features, such as voter verification, but eliminates its ill-advised provisions. I urge the Committee takes these suggested changes into account.

I thank you for the opportunity to testify here today.

Biography of Michael I. Shamos

Michael I. Shamos is Distinguished Career Professor in the Institute for Software Research of the School of Computer Science at Carnegie Mellon University, where he directs graduate programs in eBusiness. He has been associated with Carnegie Mellon since 1975.

Dr. Shamos received an A.B. in Physics from Princeton University, an M.A. in Physics from Vassar College, M.S. degrees from American University in Technology of Management and Yale University in Computers Science, the M.Phil. and Ph.D. in Computer Science from Yale University and a J.D. from Duquesne University. He is a member of the bar of Pennsylvania and the United States Patent and Trademark Office.

From 1980-2000 and from 2004-present he has been statutory examiner of computerized voting systems for the Secretary of the Commonwealth of Pennsylvania. From 1987-2000 he was the Designee of the Attorney General of Texas for electronic voting certification. He has conducted more than 120 voting system examinations. In 2004 he designed and taught a course on electronic voting at Carnegie Mellon University. In 2006 he taught a course on voting system testing for the National Institute of Standards and Technology. In 2007 he served on a task force of the Secretary of State of Florida to examine the source code used in the disputed 2006 congressional election in Sarasota County.

Dr. Shamos has been an expert witness in five recent lawsuits involving electronic voting, including *Wexler v. Lepore* in Florida, *Schade v. State Board of Elections* in Maryland and *Taylor v. Onorato* and *Banfield v. Cortes* in Pennsylvania. He was the author in 1993 of “Electronic Voting — Evaluating the Threat,” and in 2004 of “Paper v. Electronic Voting Records — An Assessment,” both of which were presented at the ACM Conference on Computers, Freedom & Privacy. He also wrote “Voting as an Engineering Problem” for the National Academy of Engineering. He has provided testimony on electronic voting to four state legislatures and to three committees of the U.S. House of Representatives.

Further information is available at <http://euro.ecom.cmu.edu/shamos.html>.

Markup of S. 1487 Titles I and II by Michael I. Shamos, July 22, 2007

[Notes: Following is a summary of the chief benefits of the bill:

- Establishes a requirement for voter verification in elections for Federal office. Because states will not invest in multiple systems in the same polling locations, the practical effect is to require verification in all public elections.
- Sets up a proper system of compensating voting system testing laboratories so that voting system manufacturers do not pay laboratories directly.
- Provides for outside oversight of the voting system testing laboratory process.
- Mandates public disclosure of the reports of voting system testing laboratories.
- Bans wireless components in voting systems and bans connection of vote-capturing machines to the Internet.
- Provides for mandatory audits of the voter-verified records.

The bill suffers from serious deficiencies however, of which these are the most important:

- It mandates paper, the least secure form of record, as the mechanism of verification.
- It provides that the paper record would be the official record of the vote, even if the paper record is illegible, missing or obviously tampered with or defaced. This provision alone would have resulted in the disenfranchisement of 10% of the voters in Cleveland, Ohio in the 2006 primary.
- It imposes a set of technical requirements not currently met by any commercially available DRE system in the United States. Therefore, its *sub rosa* effect is to ban electronic voting entirely.
- It goes too far in requiring disclosure of source code not owned or controlled by voting system vendors, such as operating system code.
- It fails to require adherence to Federal voting system guidelines, which are presently voluntary but should be made mandatory.

The markup I have provided retains the benefits while eliminating the deficiencies. Explanatory boldface notes in brackets are provided throughout. Material that has been struck through ~~thus~~ in red is meant to be deleted. [**Boldface material in blue in brackets is to be added.**]

Analysis: The apparent motivation for S. 1487 is the erroneous assumption that DRE machines without paper trails are unauditable. They are fully auditable if the audit mechanism is tested and found to be working. All DRE machines have the capability of producing an audit trail of complete ballot images. Once it is determined that the audit mechanism has not been compromised and is not defective, voting can proceed with the assurance that the audit trail can be used in the event of any claim of irregularity.

Even if it is believed that electronic records are subject to tampering, all the evidence is that paper records do not even begin to approach the level of security of redundant, encrypted electronic records maintained on separate physical media. The bill rests on the

incorrect assumption that physical ballot security can be maintained in a highly distributed election environment open to all citizens. That is not a solved problem, and there is evidence in every election cycle of lost or mutilated paper records. As recently as May 2006 in Cuyahoga County, Ohio, 10% of the paper records produced in the election were illegible, tampered with or missing entirely.

Nevertheless, voter verification is an important goal because of its positive effect on voter confidence. The VVPAT is a first crude attempt to provide verifiability. Unfortunately, it does so at the expense of security, secrecy, usability and reliability. It is much too early in the development cycle of verifiable systems to mandate a particular solution by statute, thus extinguishing any reason to continue research and development.]

TITLE I--MORATORIUM ON, AND REPLACEMENT AND RETROFITTING OF, CERTAIN DIRECT RECORDING ELECTRONIC VOTING SYSTEMS

SEC. 101. MORATORIUM ON ACQUISITION OF CERTAIN DIRECT RECORDING ELECTRONIC VOTING SYSTEMS AND CERTAIN OTHER VOTING SYSTEMS.

[Section 101 of the Help America Vote Act of 2002 (42 U.S.C. 15301) is amended by adding at the end the following new paragraph:

“(d) **FEDERAL OFFICE DEFINED.**— The term “Federal office” means the office of Senator or Representative in, or Delegate or Resident Commissioner to, the Congress.”]

[Notes: This change is required to preserve the constitutionality of HAVA. The term “Federal office” was used in HAVA but was not defined. Under the Constitution, Congress has highly constrained power to regulate elections for President and Vice-President, being limited essentially to specifying the date on which electors shall be chosen.

The new definition makes it clear that President and Vice-President are not “Federal offices” for purposes of the statute. The practical effect of the change may be minimal, since in regularly scheduled elections, voting for senators and representatives occurs at the same time as choosing electors for President.]

Section 301 of the Help America Vote Act of 2002 (42 U.S.C. 15481) is amended--

- (1) by redesignating subsections (c) and (d) as subsections (d) and (e), respectively; and
- (2) by inserting after subsection (b) the following new subsection:

^ (c) Moratorium on Acquisition of Direct Recording Electronic Voting Systems and Certain Other Voting Systems- Beginning on the ~~date of enactment~~ **[Implementation Date, as defined below]** of the Ballot Integrity Act of 2007, no State or jurisdiction may purchase or otherwise acquire for use in an election for Federal office a direct recording electronic voting system or other electronic voting system that ~~does not produce a voter-verified paper record~~ **[voter-verifiable]** as required by section 301(a)(2) (as amended by such Act).'

[Notes: It is unrealistic to mandate voter verifiability before a viable commercial system becomes available. Therefore, setting specific calendar deadlines is unworkable. The definition of “Implementation Date” below ties the date to release of a suitable commercially available system.]

The bill repeatedly uses the term “voter-verified,” which means a ballot that has actually been verified by a voter. Studies have shown that only a small percentage of voters (less than 10%) actually verify their ballots. Therefore, I have replaced the term “voter-verified” with “voter-verifiable” throughout.]

SEC. 102. GRANT PROGRAM TO REPLACE OR RETROFIT DIRECT RECORDING ELECTRONIC VOTING SYSTEMS.

(a) In General- Subtitle D of title II of the Help America Vote Act of 2002 (42 U.S.C. 15401 et seq.) is amended by adding at the end the following new part:

^ PART 7--GRANTS FOR REPLACING OR RETROFITTING DIRECT RECORDING ELECTRONIC VOTING SYSTEMS AND CERTAIN OTHER VOTING SYSTEMS

^ SEC. 297. GRANTS FOR REPLACING OR RETROFITTING DIRECT RECORDING ELECTRONIC VOTING SYSTEMS AND CERTAIN OTHER VOTING SYSTEMS.

- ^ (a) Establishment of Program-
 - ^ (1) IN GENERAL- The Election Assistance Commission shall make payments in an amount determined under subsection (c) to each State which meets the conditions described in subsection (b).

^ (2) USE OF FUNDS- A State shall use the funds provided under a payment under this section for (either directly or as reimbursement, including as reimbursement for costs incurred on or after January 1, 2007, under multiyear contracts) replacing or retrofitting any nonqualified voting systems in remedial precincts within that State with voting systems (by purchase, lease, or such other arrangement as may be appropriate) that--

^ (A) meet the requirements of section 301 (as amended by the Ballot Integrity Act of 2007); and

^ (B) are not inconsistent with the requirements of the laws described in section 906.

^ (b) Eligibility-

^ (1) IN GENERAL- A State is eligible to receive a payment under this section if it submits to the Commission, not later than 1 year after the ~~date of the enactment~~ **[Implementation Date]** of the Ballot Integrity Act of 2007--

^ (A) a notice (in such form as the Commission may require) certifying the number of remedial precincts in the State; and

^ (B) a statement made by the chief executive officer of the State, or designee, in consultation and coordination with the chief State election official--

^ (i) describing the State's need for the payment and how the State will use the payment to meet the requirements of section 301(a)(2) (as amended by such Act);

^ (ii) certifying that the State will continue to comply with the laws described in section 906;

^ (iii) certifying that any voting systems which are replaced or retrofitted will meet the requirements of section 301 (as amended by such Act); and

^ (iv) containing such other information and certifications as the Commission may require.

^ (2) COMPLIANCE OF STATES THAT REQUIRE CHANGES TO STATE LAW- In the case of a State that requires State legislation to carry out an activity covered by any certification submitted under this subsection, the State shall be permitted to make the certification notwithstanding that the legislation has not been enacted at the time the certification is submitted and such State

shall submit an additional certification once such legislation is enacted.

ˆ (c) Amount of Payment-

ˆ (1) IN GENERAL- Subject to paragraph (3), the amount of payment made to a State under this section shall be equal to the product of--

ˆ (A) the total amount appropriated for payments for the year pursuant to the authorization under subsection (e); and

ˆ (B) the State allocation percentage for the State (as determined under paragraph (2)).

ˆ (2) STATE ALLOCATION PERCENTAGE DEFINED- The 'State allocation percentage' for a State is the amount (expressed as a percentage) equal to the quotient of--

ˆ (A) the number of remedial precincts in the State; and

ˆ (B) the total number of remedial precincts in all States.

ˆ (3) MINIMUM AMOUNT OF PAYMENT- The amount of a payment under this section made to a State for a year may not be less than--

ˆ (A) in the case of any of the several States or the District of Columbia, one-half of 1 percent of the total amount appropriated for requirements payments for the year under subsection (e); or

ˆ (B) in the case of the Commonwealth of Puerto Rico, Guam, American Samoa, or the United States Virgin Islands, one-tenth of 1 percent of such total amount.

ˆ (4) PRO RATA REDUCTIONS- The Commission shall make such pro rata reductions to the allocations determined under paragraph (1) as are necessary to comply with the requirements of paragraph (3).

ˆ (5) CONTINUING AVAILABILITY OF FUNDS AFTER APPROPRIATION- Any payment made to a State under this part shall be available to the State without fiscal year limitation.

ˆ (d) Definitions- For purposes of this section:

ˆ (1) NONQUALIFIED VOTING SYSTEM- The term

'nonqualified voting system' means a direct recording electronic voting system or other electronic voting system which does not meet the vote verification and audit capacity requirements of section 301(a)(2), as amended

by the Ballot Integrity Act of 2007 **[or has not been certified by the Commission to comply with**

applicable Voluntary Voting System Guidelines, where are hereby made mandatory].

[Notes: Much effort has gone into having NIST develop voting system guidelines and to revamping the voting system testing laboratory program to test compliance. The new guidelines will ensure important security and reliability characteristics and should be made mandatory.]

ˆ (2) REMEDIAL PRECINCT DEFINED- The term 'remedial precinct' means any precinct (or equivalent location) within the State for which the voting system used to administer the regularly scheduled general election for Federal office held in November 2006--

ˆ (A) was a nonqualifying voting system; or

ˆ (B) did not provide that the entire process of vote verification was equipped for individuals with disabilities.

ˆ (e) Authorization of Appropriations-

ˆ (1) IN GENERAL- There are authorized to be appropriated ~~\$300,000,000~~ **[\$600,000,000]** for each of fiscal years 2008 and 2009 for grants under subsection (a).

ˆ (2) AVAILABILITY- Any amounts appropriated pursuant to the authority of paragraph (1) shall remain available without fiscal year limitation until expended.'

(b) Rule of Construction Regarding States Receiving Other Funds for Replacing Punch Card, Lever, or Other Voting Systems- Nothing in the amendment made by subsection (a) or in any other provision of the Help America Vote Act of 2002 may be construed to prohibit a State which received or was authorized to receive a payment under title I or II of such Act for replacing punch card, lever, or other voting systems from receiving or using any funds which are made available (either directly or as reimbursement) under the amendment made by such subsection.

(c) Clerical Amendment- The table of contents of the Help America Vote Act of 2002 is amended by inserting after the item relating to section 296 the following:

ˆ Part 7--Grants for Replacing or Retrofitting Direct Recording Electronic Voting Systems and Certain Other Voting Systems

ˆ Sec. 297. Grants for replacing or retrofitting direct recording electronic voting systems and certain other voting systems.'

SEC. 103. GRANTS FOR RESEARCH ON VOTING TECHNOLOGY IMPROVEMENTS FOR THE DEVELOPMENT OF COMPLETELY ACCESSIBLE VOTING SYSTEMS.

- (a) In General- Section 271 of the Help America Vote Act of 2002 (42 U.S.C. 15441) is amended--
- (1) in subsection (b), in the matter preceding paragraph (1), by striking `An entity' and inserting `Subject to subsection (c), an entity';
 - (2) by redesignating subsections (c), (d), and (e) as subsections (d), (e), and (f), respectively; and
 - (3) by inserting after subsection (b) the following new subsection:
` (c) Deemed Eligibility for Development of Completely Accessible Voting Systems-
` (1) IN GENERAL- An entity shall be deemed to be eligible to receive a grant under this part if the entity submits a grant application to conduct research and develop voting systems that meet the verification and audit requirements of section 301(a)(2) using a voting system that is completely accessible for all individuals, including individuals with disabilities, language minorities described in section 203 of the Voting Rights Act of 1965, and individuals with difficulties in literacy.
` (2) NUMBER OF ENTITIES RECEIVING A GRANT- The Commission, in consultation with the Technical Guidelines Development Committee, shall make grants to not less than 3 entities, including academic, non-profit, and public and private entities, that are deemed to be eligible to receive a grant under paragraph (1).'.
(b) Authorization of Appropriations- Section 273 of the Help America Vote Act of 2002 (42 U.S.C. 15443) is amended--
 - (1) by redesignating subsection (b) as subsection (c); and
 - (2) by inserting after subsection (a) the following new subsection:
` (b) Accessible Voting Systems- There are authorized to be appropriated for grants to entities deemed eligible under section 271(c) \$3,000,000 for fiscal years 2008 and 2009.'; and
 - (3) in subsection (c), as redesignated by paragraph (1), by striking `authorization under this section' and inserting `authorizations under subsections (a) and (b)'.

SEC. 104. AUTHORIZATION OF APPROPRIATIONS FOR ELECTION ASSISTANCE COMMISSION; ETC.

(a) Authorization of Appropriations- Section 210 of the Help America Vote Act of 2002 (42 U.S.C. 15330) is amended by striking `for each of the fiscal years' through the end and inserting `for fiscal year 2008 and each fiscal year thereafter such sums as are necessary for the Commission to carry out this title.'

(b) Budget Requests-

(1) IN GENERAL- Part 1 of subtitle A of title II of the Help America Vote Act of 2002 (42 U.S.C. 15321 et seq.) is amended by inserting after section 209 the following new section:

` SEC. 209A. SUBMISSION OF BUDGET REQUESTS.

` Whenever the Commission submits any budget estimate or request to the President or the Office of Management and Budget, it shall concurrently transmit a copy of such estimate or request to Congress and to the Committee on House Administration of the House of Representatives and the Committee on Rules and Administration of the Senate.'

(2) CLERICAL AMENDMENT- The table of contents of such Act is amended by inserting after the item relating to section 209 the following new item:

` Sec. 209A. Submission of budget requests.'

(c) Exemption From Paperwork Reduction Act- Paragraph (1) of section 3502 of title 44, United States Code, is amended by redesignating subparagraphs (B), (C), and (D) as subparagraphs (C), (D), and (E), respectively, and by inserting after subparagraph (A) the following new subparagraph:

` (B) the Election Assistance Commission;'

TITLE II--BALLOT INTEGRITY

SEC. 201. PROMOTING ACCURACY, INTEGRITY, AND SECURITY THROUGH INDIVIDUAL, DURABLE, ~~VOTER-VERIFIED-PAPER~~ [VOTER-VERIFIABLE] RECORDS.

(a) Vote Verification and Audit Capacity-

(1) ~~VOTER-VERIFIED-PAPER~~ [VOTER-VERIFIABLE] RECORDS-

(A) IN GENERAL- Section 301(a)(2) of the Help America Vote Act of 2002 (42 U.S.C. 15481(a)(2)) is amended to read as follows:

` (2) VOTE VERIFICATION AND AUDIT CAPACITY-

^ (A) ~~VOTER-VERIFIED PAPER~~ [VOTER-VERIFIABLE] RECORDS-

^ (i) IN GENERAL- The voting system shall require the use of or produce an individual, durable, ~~voter-verified paper~~ [voter-verifiable] record of the voter's vote that shall be created by or made available for inspection and verification by the voter before the voter's vote is cast and counted. For purposes of this subclause, examples of such a record include a paper ballot marked by the voter for the purpose of being counted by hand or read by an optical scanner or other similar device, a paper ballot prepared by the voter to be mailed to an election official (whether from a domestic or overseas location), a paper ballot created through the use of a ballot marking device or system, or a paper record or ballot produced by a touch screen or other electronic voting system, [or a non-paper mechanism], so long as in each case the voter is permitted to verify the vote ~~in a paper form~~ in accordance with this subparagraph.

[Notes: This change makes it clear that paper is not required for a record to be voter-verifiable.]

^ (ii) VERIFICATION- The voting system shall provide the voter with an opportunity to correct any error made by the system in the voter-verified ~~paper~~ record before the individual, durable, ~~voter-verified~~ [voter-verifiable] ~~paper~~ record is preserved in accordance with subparagraph (C).

^ (iii) MAINTENANCE OF SECRET BALLOT- The voting system shall not preserve the ~~voter-verified paper~~ [voter-verifiable] records in any manner that makes it possible, at any time ~~after the vote has been cast, to associate a voter with the record of the voter's vote~~ [, to determine from the voting system how a particular voter voted.]

[Notes: These edits retain the essential requirement of voter verifiability, but do not mandate a specific technology (e.g.

paper records) by which it must be accomplished. Once paper is mandated, no other solution can be expected to evolve.]

˘ (B) DURABILITY AND READABILITY REQUIREMENTS-

˘ (i) DURABILITY REQUIREMENTS- The individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** record produced in accordance with subparagraph (A) shall be marked, printed, or recorded ~~on durable paper~~ **[so as to be]** capable of withstanding multiple counts and recounts without compromising the fundamental integrity of the records, and capable of retaining the information marked, printed, or recorded on them for the full duration of a retention and preservation period of 2 years.

˘ (ii) READABILITY REQUIREMENTS FOR MACHINE-MARKED OR PRINTED ~~VOTER-VERIFIED PAPER~~ **[VOTER-VERIFIABLE]** RECORDS- All ~~voter-verified paper~~ **[voter-verifiable]** records marked or printed through the use of a marking or printing device shall be **[displayed or communicated to the voter and shall be]** clearly readable by both the voter and by a scanner or other device equipped for voters with disabilities and for voters who are language minorities described in section 203 of the Voting Rights Act of 1965.

˘ (C) PRESERVATION- The individual, durable, ~~voter-verified paper~~ **[voter-verified]** record produced in accordance with subparagraph (A) shall be used as the official ballot for purposes of any recount or audit conducted with respect to any election for Federal office in which the voting system is used and shall be preserved in the following manner:

˘ (i) In the case of votes cast at the polling place on the date of the election, within the polling place in the manner or method in which ~~paper~~ **[all other]** ballots are preserved within such polling place. **[Such manner or method shall protect such records against alteration, substitution or loss.]**

[Notes: Many jurisdictions in the country are notoriously lax in their handling of paper ballots, so requiring that they maintain voter-verifiable records in the same manner is no improvement. For example, in some places ballots are transported from polling places by a taxicab driver.]

˘ (ii) In any other case, including any case where no such manner or method has been established under clause (i), in ~~the [a]~~ manner ~~or method which is consistent with the manner employed by the jurisdiction for preserving paper ballots in general~~ **[that will protect such records against alteration, substitution or loss.]**

˘ (D) MANUAL AUDIT CAPACITY- Each ~~paper~~ record produced pursuant to subparagraph (A) shall be suitable for a manual audit equivalent to that of a paper ballot voting system, and shall be counted in any recount or audit conducted with respect to any election for Federal office.

˘ (E) INCONSISTENCIES BETWEEN RECORDS AND ELECTRONIC VOTE TALLIES-

˘ (i) IN GENERAL- Subject to clause (ii), in the event of any inconsistencies or irregularities between any electronic vote tallies and the vote tallies determined by counting by hand the individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** records produced pursuant to subparagraph (A), the individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** records shall be the true and correct record of the votes cast **[unless subparagraph (ii) below shall apply]**.

˘ (ii) SPECIAL RULE FOR TREATMENT OF DISPUTES WHEN ~~VOTER-VERIFIED PAPER~~ **[VOTER-VERIFIABLE]** RECORDS HAVE BEEN SHOWN TO BE COMPROMISED- If, with respect to any recount, audit, or contest proceeding with respect to an election for Federal office--

˘ (I) there is any inconsistency between any electronic vote tallies and the vote tallies determined by counting by hand the individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** records

produced pursuant to subparagraph (A);
and
(II) it is determined that a sufficient number of ~~voter-verified paper~~ [voter-verifiable] records were [missing, illegible or otherwise] compromised (by damage or mischief or otherwise) before the start of such recount, audit, or contest proceeding such that the result of the election would be changed, the electronic vote tallies in the precincts in which ~~voter-verified paper~~ [voter-verified] records were [so] compromised may, to the extent provided under State law, be taken into consideration as a factor, but not the only factor, in determining the true and correct count of the votes.'.

[Notes: It is important to provide thorough provision for what is to happen in the event of discrepancy, regardless of how the discrepancy may have occurred. The original text did not allow use of electronic totals to replace missing paper records.]

(B) CONFORMING AMENDMENTS- Section 301(a)(1) of such Act (42 U.S.C. 15481(a)(1)) is amended--

- (i) in subparagraph (A)(i), by striking `counted' and inserting `counted, in accordance with paragraph (2)(A)(i)';
- (ii) in subparagraph (A)(ii), by striking `counted' and inserting `counted, in accordance with paragraph (2)(A)(ii)'; and
- (iii) in subparagraph (A)(iii)(III), by striking `counted' and inserting `counted, in accordance with paragraph (2)'.

(C) SPECIAL CERTIFICATION OF ~~VOTER-VERIFIED PAPER~~ [VOTER-VERIFIABLE] RECORD DURABILITY AND READABILITY REQUIREMENTS FOR STATES NOT CURRENTLY USING ~~VOTER-VERIFIED PAPER~~ [VOTER-VERIFIABLE] RECORDS- If any of the voting systems used in a State for the regularly scheduled 2008 general elections for Federal office did not operate by having voters cast votes on paper ballots or otherwise produce or use a ~~voter-verified paper~~ [voter-verifiable] record, the State shall certify to the Election Assistance Commission not

later ~~than July 1, 2009~~, **[one year after the Implementation Date]** that the State will be in compliance with the requirements of section 301(a)(2)(B) of the Help America Vote of 2002, as added by subparagraph (A), in accordance with the deadline established under this Act, and shall include in the certification the methods by which the State will meet the requirements.

(2) ACCESSIBILITY AND VOTE VERIFICATION FOR INDIVIDUALS WITH DISABILITIES-

(A) MODIFICATION OF ACCESSIBILITY REQUIREMENT-

(i) IN GENERAL- Section 301(a)(3)(B) of such Act (42 U.S.C. 15481(a)(3)(B)) is amended to read as follows:

` (B)(i) satisfy the requirement of subparagraph (A) through the use of at least one voting system equipped for individuals with disabilities at each polling place; and

` (ii) meet the requirements of subparagraph (A) and paragraph (2)(A) by using a system that--

` (I) allows the voter to privately and independently verify the individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** record produced in accordance with paragraph (2)(A) through the conversion of the ~~human-readable printed~~ vote selections into accessible form;

` (II) ensures that the entire process, including vote verification and vote casting, is equipped for individuals with disabilities; and

` (III) does not preclude the supplementary use of Braille or tactile ballots; and'

(ii) CONFORMING AMENDMENT- Section 301(a)(3)(C) of such Act (42 U.S.C.

15481(a)(3)(C)) is amended by striking `January 1, 2007' and inserting `January 1, 2010'.

(B) SPECIFIC REQUIREMENT OF STUDY, TESTING, AND DEVELOPMENT OF ACCESSIBLE VOTE VERIFICATION MECHANISMS-

(i) STUDY AND REPORTING- Subtitle C of title II of such Act (42 U.S.C. 15381 et seq.) is amended--

- (I) by redesignating section 247 as section 248; and
- (II) by inserting after section 246 the following new section:

SEC. 247. STUDY AND REPORT ON ACCESSIBLE VOTE VERIFICATION MECHANISMS.

(a) Study and Report- The Commission shall study, test, and develop best practices to enhance the accessibility of vote verification mechanisms for individuals with disabilities, for language minorities described in section 203 of the Voting Rights Act of 1965, and for individuals with difficulties in literacy, including best practices for the mechanisms themselves and the processes through which the mechanisms are used. In carrying out this section, the Commission shall specifically investigate existing and potential methods or devices that will assist such individuals in creating ~~voter-verified paper~~ **[voter-verifiable]** records and in presenting or transmitting the information printed or marked on such records back to such individuals for purposes of verification.

(b) Coordination With Grants for Technology Improvements- The Commission shall coordinate the study conducted under subsection (a) with the research conducted under the grant program under section 271 to the extent that the Commission determines necessary to provide for the uniform advancement of accessible voting technology.

(c) Deadline- The Commission shall complete the requirements of subsection (a) not later than January 1, 2010.

(d) Authorization of Appropriations- There are authorized to be appropriated to carry out subsection (a) ~~\$1,000,000~~ **[\$20,000,000]**, to remain available until expended.'

[\$1 million is insufficient, especially in view of research overhead charges. The right of disabled Americans to vote is worth more than \$1 million.]

- (ii) CLERICAL AMENDMENT- The table of contents of such Act is amended--
 - (I) by redesignating the item relating to section 247 as relating to section 248; and
 - (II) by inserting after the item relating to section 246 the following new item:

Sec. 247. Study and report on accessible voter verification mechanisms.'

(C) CLARIFICATION OF ACCESSIBILITY STANDARDS UNDER VOLUNTARY VOTING SYSTEM GUIDANCE- In adopting any voluntary guidance under subtitle B of title III of the Help America Vote Act of 2002 with respect to the accessibility of the vote verification requirements under section 301(a)(2)(A)(ii) of such Act for individuals with disabilities, the Election Assistance Commission shall include and apply the same accessibility standards applicable under the voluntary guidance adopted for accessible voting systems under such subtitle.

(3) MODIFICATION OF ALTERNATIVE LANGUAGE ACCESSIBILITY REQUIREMENTS- Paragraph (4) of section 301(a) of such Act (42 U.S.C. 15481(a)) is amended to read as follows:

(4) ALTERNATIVE LANGUAGE ACCESSIBILITY- The voting system (including the individual, durable, ~~voter-verified paper~~ **[voter-verifiable]** record produced under paragraph (2))--

(A) shall provide alternative language accessibility to individuals who are language minorities described in section 203 of the Voting Rights Act of 1965 in a manner that provides the same opportunity for access, participation, and private and independent inspection and verification as for other voters; and
(B) shall be subject to the requirements of section 203 of the Voting Rights Act of 1965 to the extent such section is applicable to the State or jurisdiction in which such voting system used or in which such record is produced.'

(4) REQUIREMENT FOR RESIDUAL VOTE BENCHMARK- Section 301(a)(5) of such Act (42 U.S.C. 15481(a)(5)) is amended to read as follows:

(A) IN GENERAL- The error rate of the voting system in counting votes (determined by taking into account only those errors which are attributable to the voting system and not attributable to an act of the voter) shall not exceed the error rate standards established under the voting systems standards issued and maintained by the Commission.

~~(B) RESIDUAL BALLOT PERFORMANCE BENCHMARK- In addition to the error rate standards~~

~~described in subparagraph (A), the Commission shall issue and maintain a uniform benchmark for the residual vote error rate that States may not exceed. For purposes of the preceding sentence, the residual vote error rate shall be equal to the combination of overvotes, spoiled or uncountable votes, and undervotes cast in all Federal election contents on the ballot, but excluding an estimate, based upon the best available research, of intentional undervotes. The Commission shall base the benchmark issued and maintained under this subparagraph on evidence of best practices in representative jurisdictions.~~

~~“(C) HISTORICALLY HIGH INTENTIONAL UNDERVOTES-~~

~~“(i) FINDING- Congress finds that there are certain distinct communities in certain geographic areas that have historically high rates of intentional undervoting in elections for Federal office, relative to the rest of the Nation.~~

~~“(ii) TREATMENT OF CERTAIN DISTINCT COMMUNITIES- In establishing the benchmark described in subparagraph (B), the Commission shall--~~

~~“(I) study and report to Congress on the occurrences of distinct communities that have significantly higher than average rates of historical intentional undervoting; and~~

~~“(II) promulgate for local jurisdictions in which that distinct community has a substantial presence either a separate benchmark or an exclusion from the national benchmark, as appropriate.”.~~

[The preceding sections appear to be based on the incorrect premise that undervotes are caused by a voting system. Even if this were true, it is simply impossible to know in advance what the residual vote will be in an election not yet conducted, so it is impossible for any state or manufacturer to comply with a specified requirement. There is also no penalty specified for non-conformance, nor any remedy to any voter or candidate for a violation.]

(b) Additional Voting System Requirements-

(1) IN GENERAL- Section 301(a) of such Act (42 U.S.C. 15481(a)) is amended by adding at the end the following new paragraphs:

^ (7) CERTIFICATION AND DISCLOSURE OF SOFTWARE-

^ (A) CERTIFICATION-

^ (i) IN GENERAL- No voting system shall at any time contain or use any software which has not been certified--

^ (I) in the case of systems used in Federal elections before January 1, 2010, by the Commission or by the State under section 231; and

^ (II) in the case of systems used in Federal elections on and after January 1, 2010, by the Commission under section 231.

^ (ii) EMERGENCY SOFTWARE CERTIFICATION- The Commission shall establish guidelines for the expedited and secure certification of any software additions or patches to existing voting systems--

^ (I) that are necessary for the secure and accurate counting of ~~voter-verified paper~~ [voter-verifiable] records; and

^ (II) the certification of which cannot be completed through the ordinary certification process in adequate time to allow the secure and accurate use of the voting system in the next election for Federal office.

^ (iii) EXCEPTION- The Commission may exempt commercial off-the-shelf software that is not election-dedicated software from the certification requirements of this subparagraph if the Commission determines such an exemption is appropriate.

^ (B) DISCLOSURE-

^ (i) DISCLOSURE OF ELECTION-DEDICATED SOFTWARE-

^ (I) IN GENERAL- No voting system shall at any time contain or use any election-dedicated software unless such software has been disclosed as provided under subclause (II).

˘ (II) DISCLOSURE- Software disclosed under this clause shall be disclosed ~~to the Commission and to any State using such voting system~~ **[publicly]** in electronic form and shall include such information as necessary to assess the integrity and efficacy of such software.

[Much of the uncertainty surrounding the use of electronic voting and the cause of contested DRE election is the fact that vote software has been protected as a trade secret and is inaccessible to the public and even to litigants in election contests. The day has come to eliminate secret source codes. Any manufacturer who voluntarily enters the election software business must make the business decision that it is willing to reveal that software.]

˘ (ii) DISCLOSURE OF OTHER SOFTWARE- No voting system shall at any time contain or use any software other than election-dedicated software unless the manufacturer of such software discloses in electronic form such information as the Commission determines appropriate to the Commission, the National Institute of Standards and Technology, and the Chief State election official of any State using such voting system.

[I agree that third-party software that is not election-dedicated need not be revealed to the public. The manufacturers of such software have no voluntarily entered the election software business and should not be required to give up their trade secrets merely because a voting system vendor has chosen to use their software.]

˘ (iii) STORAGE OF SOFTWARE- The Commission shall transmit the information disclosed under clauses (i) and (ii) to an entity selected by the National Institute of Standards and Technology for the purpose of holding such information.

˘ (iv) USE OF INFORMATION-

˘ (I) IN GENERAL- Information disclosed under ~~this~~ subparagraph **[(ii)]** may not be provided to any person except as provided in this clause.

˘ (II) DISCLOSURE TO GOVERNMENTAL ENTITIES- Information disclosed under ~~this~~ subparagraph [(ii)] may be provided to the Commission, the National Institute of Standards and Technology, the Chief State election official of any State using such electronic voting software in an voting system, or any other Federal or State governmental entity responsible for the administration or enforcement of election laws, but only for the purposes of administering or enforcing election laws, or for review, analysis, and reporting as provided in clause (v).

˘ (III) DISCLOSURE TO PARTIES IN LITIGATION- Information disclosed under ~~this~~ subparagraph [(ii)] may be provided to a party involved in litigation with respect to an election in which such electronic voting software is used, but only if such information is disclosed to all parties involved in such litigation and only to the extent necessary for the review and analysis of such information (as provided in clause (v)) for use in such litigation **[and under such conditions as may be imposed by the court for the protection of any confidential information]**.

˘ (IV) DISCLOSURE TO OTHER PERSONS- Information disclosed under this subparagraph may be provided to independent technical experts and other persons and entities consistent with standards established by the Commission, but only for purposes of reviewing, analyzing, and reporting on the operation of such software as provided in clause (v) **[under such conditions as may be imposed by the court for the protection of any confidential information]**.

˘ (v) SCOPE OF REVIEW, ANALYSES, AND REPORTING- The review, analysis, and reporting of software permitted under clause (iv) may only consist of the following:

~~˘ (I) In the case of election-dedicated software, performing review and analyses of the software, disclosing reports and analyses that describe operational issues (including vulnerabilities to tampering, errors, risks associated with use, failures as a result of use, and other operational issues), and describing or explaining why or how a voting system failed or otherwise did not perform as intended, but only if the information published does not compromise the integrity of the software or result in the disclosure of trade secrets or other confidential commercial information, or violate intellectual property rights in such software.~~

˘ (H [I]) In the case of software other than election-dedicated software, performing review and analyses of the software, and issuing reports that describe operational issues, but only if the information published does not compromise the integrity of the software or result in the disclosure of trade secrets or other confidential commercial information, or violate intellectual property rights in such software.

[Notes: The original disclosure provisions were too limiting for election-dedicated software.]

˘ (vi) PROTECTION OF INFORMATION PROVIDED THROUGH DISCLOSURE- Any recipient of information disclosed under ~~this~~ subparagraph **[(ii)]**--

˘ (I) shall not compromise the integrity of the software with respect to which such information relates;

˘ (II) shall not disclose any trade secrets or other confidential commercial

information with respect to such software; and

` (III) shall not violate any intellectual property rights in such software.

The Commission shall develop a process with manufacturers and holders of intellectual property to ensure compliance with the requirements of this clause.

` (C) ELECTION-DEDICATED SOFTWARE- For purposes of this paragraph, the term 'election-dedicated software' means software that--

` (i) is specifically designed for use primarily in a voting system; or

` (ii) has been specifically modified for use primarily in a voting system, but only to the extent of such modification.

` (8) PROHIBITION OF USE OF WIRELESS COMMUNICATIONS DEVICES IN VOTING SYSTEMS-

` (A) IN GENERAL- No voting system shall contain, use, or be accessible by any wireless, power-line, or concealed communication device.

` (B) EXCEPTION FOR CERTAIN SYSTEMS USING INFRARED TECHNOLOGY- Subparagraph (A) shall not apply to a voting system that uses software which is loaded using solely infrared technology if the infrared technology is certified as part of the voting system.

` (9) PROHIBITING CONNECTION OF SYSTEM OR TRANSMISSION OF SYSTEM INFORMATION OVER THE INTERNET- No component of any voting device upon which votes are cast shall be connected to the Internet at any time. Nothing in this section shall be construed to prohibit any study on Internet voting required under this Act or any other provision of law.

` (10) SECURITY STANDARDS FOR VOTING SYSTEMS USED IN FEDERAL ELECTIONS-

` (A) IN GENERAL- No voting system may be used in an election for Federal office unless the manufacturer of such system and the election officials using such system meet the applicable requirements described in subparagraph (B).

` (B) REQUIREMENTS DESCRIBED- The requirements described in this subparagraph are as follows:

˘ (i) The chain of custody for the handling of all software, hardware, vote storage media, ballots, and ~~voter-verified paper~~ [voter-verifiable] records used in connection with voting systems is documented by State election officials, under standards developed by the State, and made available to the Commission upon request.

˘ (ii) The manufacturer discloses to the Commission and to the appropriate election official any software or other information required to be disclosed under paragraph (7)(B).

˘ (iii) Except as provided in paragraph (7)(A)(ii), after the voting system software has been certified for use in an election, the manufacturer may not--

˘ (I) alter such software; or

˘ (II) insert or use in the voting system any software not certified for use in the election.

˘ (iv) At the request of the Commission, the appropriate election official submits information to the Commission regarding the State's compliance with this subparagraph.

~~˘ (11) USE OF EMERGENCY PAPER BALLOTS IN CASE OF SYSTEM OR EQUIPMENT FAILURE~~

~~˘ (A) IN GENERAL—In the event of the failure of voting equipment or other circumstance at a polling place that causes a significant disruption of the voting process for voters, any individual who is waiting at the polling place to cast a ballot in an election for Federal office shall be advised immediately of the individual's right to use an emergency paper ballot, and upon request shall be provided with an emergency paper ballot for the election and the supplies necessary to mark the ballot.~~

~~˘ (B) DURABILITY OF EMERGENCY PAPER BALLOTS—Any emergency paper ballot used in a Federal election shall be marked on durable paper capable of withstanding multiple counts and recounts without compromising the fundamental integrity of the ballot, and capable of retaining the information marked on~~

~~it for the full duration of a retention and preservation period of 2 years.~~

~~“(C) COUNTING OF EMERGENCY PAPER BALLOTS- Any emergency paper ballot which is cast by an individual under subparagraph (A) shall be counted and otherwise treated as a regular ballot and not as a provisional ballot, unless the individual casting the ballot would have otherwise been required to cast a provisional ballot if the voting equipment at the polling place had not failed.~~

~~“(D) POSTING OF NOTICE- The appropriate election official shall ensure that at each polling place a notice is displayed prominently which describes the right of an individual under this paragraph to be provided with a paper ballot for voting in the election.”.~~

~~(2) CONFORMING AMENDMENT-~~

~~(A) IN GENERAL- Section 231(a)(2) of such Act (42 U.S.C. 15371(a)(2)), as amended by subsection (c)(2)(B), is amended by striking “and software”.~~

~~(B) EFFECTIVE DATE- The amendment made by subparagraph (A) shall take effect on January 1, 2010.~~

[Notes: The preceding section is unworkable in practice. The use of DREs obviates the need for paper ballots. It is not realistic to require jurisdictions to print emergency paper ballots for all ballot styles and in all alternative languages. The solution is to provide for spare machines and to extend voting at the affected polling place to the extent necessary to allow voters to vote.]

(c) Requiring Laboratories To Meet Standards Prohibiting Conflicts of Interest as a Condition of Accreditation for Testing of Voting System Hardware and Software-

(1) IN GENERAL- Section 231(b) of such Act (42 U.S.C. 15371(b)) is amended by adding at the end the following new paragraphs:

“(3) PROHIBITING CONFLICTS OF INTEREST; ENSURING AVAILABILITY OF RESULTS-

“(A) IN GENERAL- A laboratory may not be accredited by the Commission for purposes of this section unless--

“(i) the laboratory certifies that the only compensation it receives for the testing carried out in connection with the certification,

decertification, and recertification of the manufacturer's voting system hardware and software is the payment made from the Testing Escrow Account under paragraph (4);

` (ii) the laboratory meets such standards as the Commission shall establish (after notice and opportunity for public comment) to prevent the existence or appearance of any conflict of interest in the testing carried out by the laboratory under this section, including standards to ensure that the laboratory does not have a financial interest in the manufacture, sale, and distribution of voting system hardware and software, and is sufficiently independent from other persons with such an interest;

` (iii) the laboratory certifies that it will permit an expert designated by the Commission to observe any testing the laboratory carries out under this section; and

` (iv) the laboratory, upon completion of any testing carried out under this section, discloses **[publicly]** the test protocols, results, and all communication between the laboratory and the manufacturer to the Commission.

` (B) AVAILABILITY OF RESULTS- Upon receipt of information under subparagraph (A), the Commission shall make the information available promptly to election officials and the public. **[Such public disclosure shall not compromise any confidential information embodied in any non-election-dedicated software or component.]**

` (4) PROCEDURES FOR CONDUCTING TESTING; PAYMENT OF USER FEES FOR COMPENSATION OF ACCREDITED LABORATORIES-

` (A) ESTABLISHMENT OF ESCROW ACCOUNT- The Commission shall establish an escrow account (to be known as the ` Testing Escrow Account') for making payments to accredited laboratories for the costs of testing carried out in connection with the certification, decertification, and recertification of voting system hardware and software.

` (B) SCHEDULE OF FEES- In consultation with the accredited laboratories, the Commission shall

establish and regularly update a schedule of fees for testing carried out in connection with the certification, decertification, and recertification of voting system hardware and software, based on the reasonable costs expected to be incurred by the accredited laboratories in carrying out such testing for various types of hardware and software.

ˆ (C) REQUESTS AND PAYMENTS BY

MANUFACTURERS- A manufacturer of voting system hardware and software may not have the hardware or software tested by an accredited laboratory under this section unless--

- ˆ (i) the manufacturer submits a detailed request for the testing to the Commission; and
- ˆ (ii) the manufacturer pays to the Commission, for deposit into the Testing Escrow Account established under subparagraph (A), the applicable fee under the schedule established and in effect under subparagraph (B).

ˆ (D) SELECTION OF LABORATORY- Upon receiving a request for testing and the payment from a manufacturer required under subparagraph (C), the Commission shall select at random, from all laboratories which are accredited under this section to carry out the specific testing requested by the manufacturer, an accredited laboratory to carry out the testing.

ˆ (E) PAYMENTS TO LABORATORIES- Upon receiving a certification from a laboratory selected to carry out testing pursuant to subparagraph (D) that testing is completed, along with a copy of the results of the test as required under paragraph (3)(A)(iv), the Commission shall make a payment to the laboratory from the Testing Escrow Account established under subparagraph (A) in an amount equal to the applicable fee paid by the manufacturer under subparagraph (C)(ii).

ˆ (5) DISSEMINATION OF ADDITIONAL INFORMATION ON ACCREDITED LABORATORIES-

ˆ (A) INFORMATION ON TESTING- Upon completion of the testing of a voting system under this section, the Commission shall promptly disseminate to the public the identification of the laboratory which carried out the testing.

“(B) LABORATORIES WITH ACCREDITATION REVOKED OR SUSPENDED- If the Commission revokes, terminates, or suspends the accreditation of a laboratory under this section, or if the Commission has credible evidence of significant security failures at accredited laboratories, the Commission shall promptly notify Congress, the chief State election official of each State, and the public.’.

(2) CONFORMING AMENDMENTS- Section 231 of such Act (42 U.S.C. 15371) is further amended--

(A) in subsection (a)(1), by striking ‘testing, certification,’ and all that follows and inserting the following: ‘testing of voting system hardware and software by accredited laboratories in connection with the certification, decertification, and recertification of the hardware and software for purposes of this Act.’;

(B) in subsection (a)(2), by striking ‘testing, certification,’ and all that follows and inserting the following: ‘testing of its voting system hardware and software by the laboratories accredited by the Commission under this section in connection with certifying, decertifying, and recertifying such hardware.’;

(C) in subsection (b)(1), by striking ‘testing, certification, decertification, and recertification’ and inserting ‘testing’; and

(D) in subsection (d), by striking ‘testing, certification, decertification, and recertification’ each place it appears and inserting ‘testing’.

(3) DEADLINE FOR ESTABLISHMENT OF STANDARDS AND ESCROW ACCOUNT- The Election Assistance Commission shall establish the standards described in section 231(b)(3) of the Help America Vote Act of 2002 and the Testing Escrow Account described in section 231(b)(4) of such Act (as added by subparagraph (A)) not later than January 1, 2008.

(d) Effective Date for New Requirements- Section 301(e) of such Act (42 U.S.C. 15481(d)), as redesignated by section 101, is amended to read as follows:

“(e) Effective Date-

“(1) IN GENERAL- Except as provided in this subsection, each State and jurisdiction shall be required to comply with

the requirements of this section on and after January 1, 2006.

ˆ (2) SPECIAL RULE FOR CERTAIN REQUIREMENTS- Each State and jurisdiction shall be required to comply with the requirements of paragraphs (7), (8), (9), and (10) of subsection (a) on and after January 1, 2008.

~~ˆ (3) EMERGENCY PAPER BALLOTS- Each State and jurisdiction shall be required to comply with the requirements of subsection (a)(11) with respect to the regularly scheduled general election for Federal office held in November 2008 and each succeeding election for Federal office.~~

[ˆ (3) IMPLEMENTATION DATE DEFINED. The "Implementation Date" as used herein shall mean a date that is one year following the date on which a voting system that conforms to the requirements of section shall become commercially available in the United States, as the Commission shall determine.]

ˆ (4) VOTE VERIFICATION AND AUDIT CAPACITY REQUIREMENTS- Each State and jurisdiction shall be required to comply with the requirements of this section which are first imposed pursuant to the amendments made by section 201(a) of the Ballot Integrity Act of 2007 on and after ~~January 1, 2010~~ [the Implementation Date, as defined herein].'

SEC. 202. REQUIREMENT FOR MANDATORY MANUAL AUDITS.

(a) Mandatory Manual Audits-

(1) IN GENERAL- Subtitle A of title III of the Help America Vote Act of 2002 (42 U.S.C. 15481 et seq.) is amended by redesignating sections 304 and 305 as sections 305 and 306, respectively, and by inserting after section 303 the following new section:

ˆ SEC. 304. MANDATORY ELECTION AUDITS.

ˆ (a) State Guidelines-

ˆ (1) IN GENERAL- Not later than 90 days before the date of each regularly scheduled general election for Federal office, each State shall establish guidelines and standards for local jurisdictions to utilize in conducting audits under this section.

(3) CLERICAL AMENDMENT- The table of contents of the Help America Vote Act of 2002 is amended by striking the items relating to sections 304 and 305 and inserting the following:

` Sec. 304. Mandatory election audits.

` Sec. 305. Minimum requirements.

` Sec. 306. Methods of implementation left to discretion of State.'

(b) Commission Guidance-

(1) IN GENERAL- Subtitle A of title II of the Help America Vote Act of 2002 (42 U.S.C. 15321 et seq.) is amended by adding at the end the following new part:

` PART 4--MODEL AUDIT GUIDELINES.

` SEC. 223. AUDIT GUIDELINES DEVELOPMENT TASK FORCE.

` (a) Establishment- The Commission shall establish an Audit Guidelines Development Task Force (hereafter in this part referred to as the ` Task Force').

` (b) Membership-

` (1) IN GENERAL- The Task Force shall be composed of individuals who are experts in the fields of election audits, recounts, computer technology, and election management. The composition of the Task Force shall (to the extent possible) reflect the demographic composition of the voting age population of the United States.

` (2) CONSULTATION- The Commission shall consult with the Technical Guidelines Development Committee on--

` (A) the composition of the Task Force; and

` (B) the appointment of members to the Task Force.

` (c) Duties-

` (1) IN GENERAL- The Task Force shall assist the Commission in developing model audit guidelines for administrative and procedural practices to ensure efficient, transparent, and accurate audits and recounts of ballots cast in Federal elections.

` (2) DEADLINE FOR INITIAL SET OF RECOMMENDATIONS- The Task Force shall provide its first set of recommendations under this section to the Executive Director of the Commission not later than 10 months after the Task Force is established.

