United States
Election Assistance Commission

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EAC Unified Testing Initiative:

Pilot Program and Discussion

Miami, FL   January 29, 2009

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Two Major Objectives for Unified Testing Initiative

Objective 1: Increase Communication Between Federal and State Partners

Proposal for small (6-9 member) EAC working group to facilitate discussions on how we can better communicate in order to change ***Perceptions, Attitudes, & Expectations.***

- •***Perceptions =*** Changing the old NASED/ITA paradigm to fit the new era in which we find ourselves.

- •***Attitudes =*** Delays in certifying products a result of cumbersome and arbitrary administrative process and procedures.

- •***Expectations =*** That *every* system submitted for testing deserves to be certified.

Group should be diverse and include at least one State election official, one local election official, one VSTL representative, one manufacturer representative, one advocate representative.

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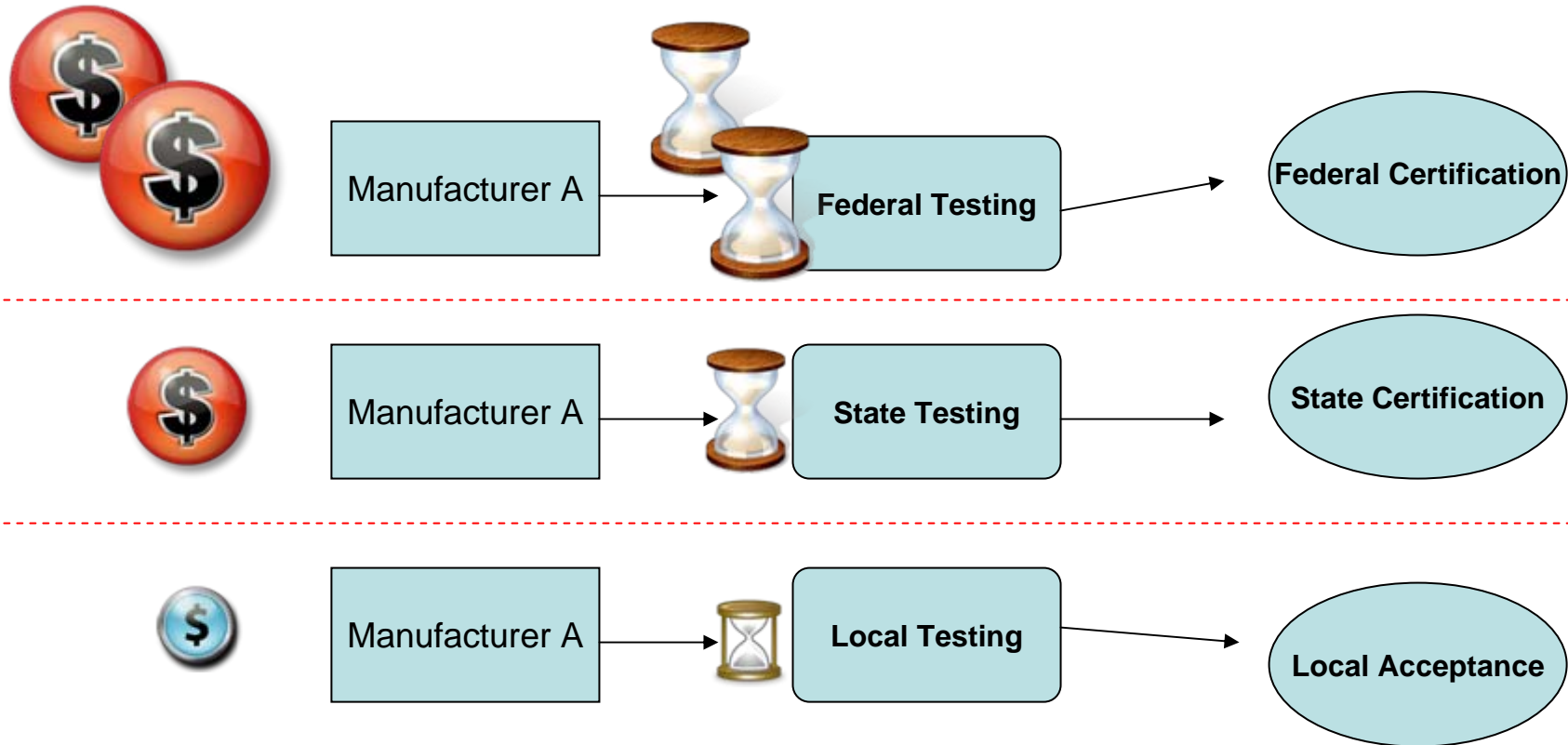## Objective 1: Increase Communication Between Federal and State Partners

- EAC would like you to choose the members of this working group!

- 3:15pm session this afternoon will allow you time to break up into your groups and provide us with a list of potential volunteers.

- Depending upon interest, we may need to either limit the list of participants, or "nominate" additional "volunteers"

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**Current Process: Separate Federal & State Testing & Certification Efforts**

Manufacturer A → Federal Testing → Federal Certification

Manufacturer A → State Testing → State Certification

Manufacturer A → Local Testing → Local Acceptance

Objective 2: Unified Testing Initiative: Combine Federal & State Certification Efforts

(To the largest extent practical)

Manufacturer A	→	Federal & State Testing	→	Federal &State Certification

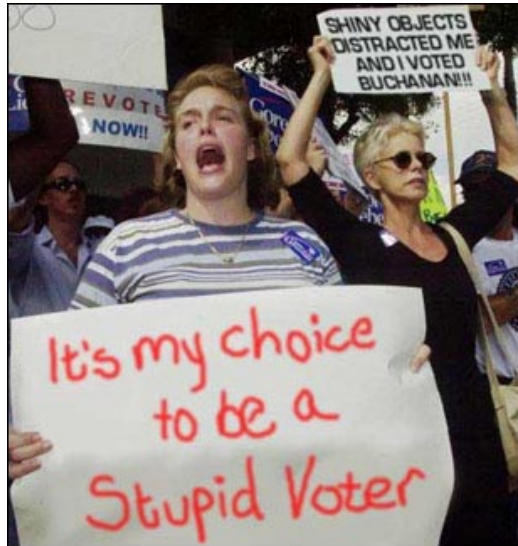| Manufacturer A	→	Local Testing	→	Local Acceptance
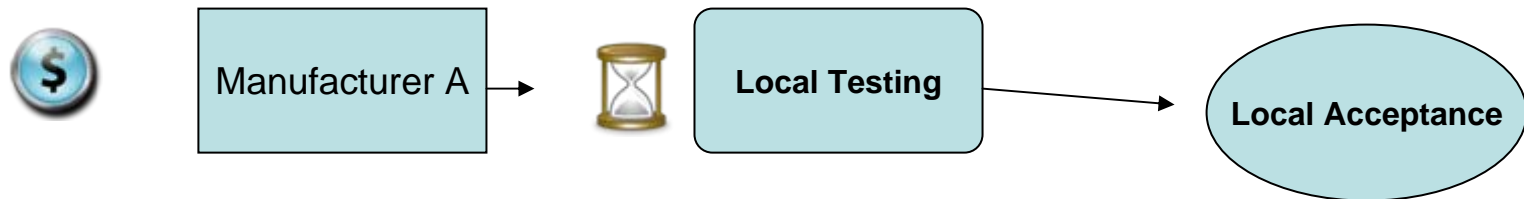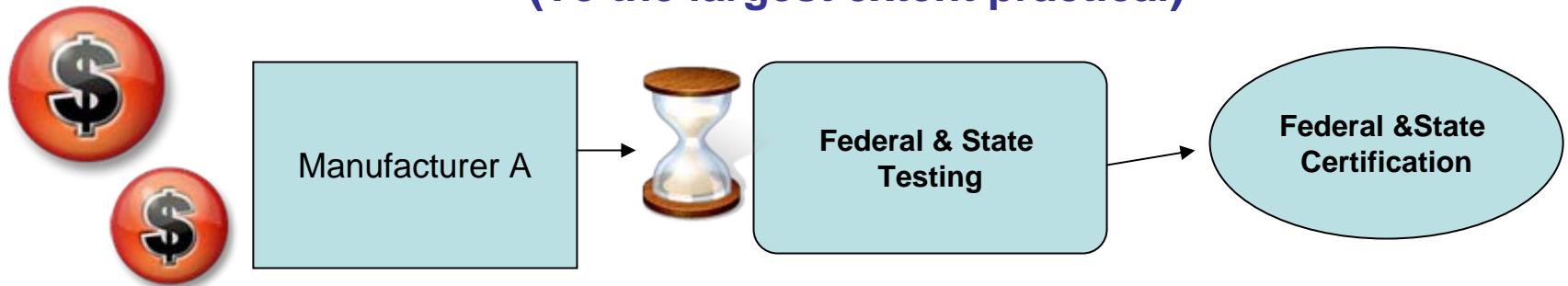
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Result?

Happy Voters!

Happy Election Officials!

Happier Manufacturers!
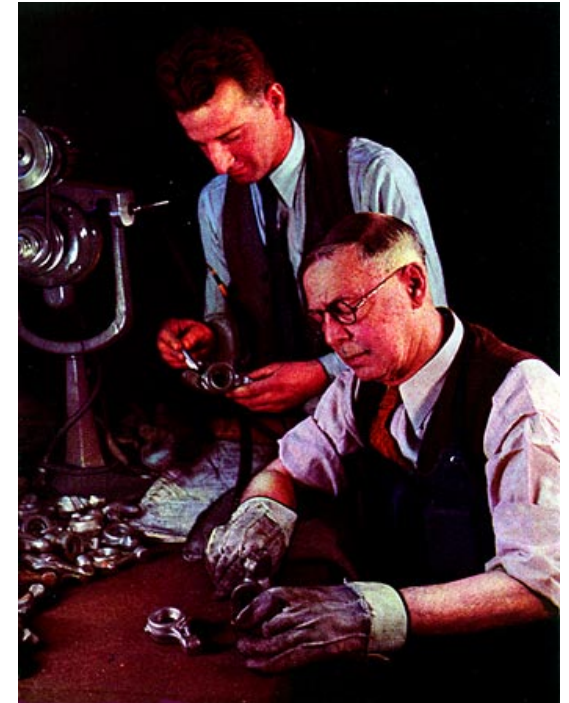
Example: Potential Testing Under this Program

California Volume Reliability Testing

General Applicability:

In all instances, EAC will search for a State partner with the most rigorous test requirement. We will then work with the State to outline acceptable (or existing) test protocols and ask the other participating States if they would accept this testing to meet their State certification requirements. If so….

- State Certification officials would work with EAC Voting System Test Laboratories (VSTLs) and be present during testing if required by State law or if desired by Chief State election official.

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Example 1: California Volume Reliability Testing

Criteria for automatically passing the volume test (DRE): The volume test shall be deemed successful if no more than 1% of the machines experience a failure that affects the record of the vote on the DRE or the VVPAT and if no more than 3% of the machines experience a substantive failure. Substantive failures will include, but not be limited to:

- Errors that require the equipment to be powered off for resolution;
- Errors that require a pollworker to take the DRE out of election mode to resolve;
- Paper jams that are not automatically managed gracefully by the operating system;
- Failures that require equipment to be taken out of service or replaced;
- Errors, other than an operator error, that require a ballot to be cancelled and restarted;
- Errors that prevent the paper audit trail from being fully displayed to the voter;
- Errors resulting in an error message (not including voter warnings regarding improperly cast ballots);
- Errors resulting in improper display of the ballot or the ballot image on the paper audit record;
- Battery failure at a point in time that is more than twenty percent less than published specifications for battery life.

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Example 1: California Volume Reliability Testing

Testing of Precinct Ballot Optical Scanners

- A minimum of 50 machines will be tested, each equipped and configured as presented in the application for certification. Each such device will be labeled with a clearly visible machine number (from 1 to 50) for identification during the test. The numbers on the labels will be at least three inches tall and will be readily visible from the front of the machine.

- The test will be based on the standard California primary test election that is used for state certification testing. All odd-numbered test machines will be programmed for precincts 1, 2-1 and 2-2. All even-numbered machines will be programmed for precincts 3, 4 & 5.

- A minimum of 400 ballots will be scanned and read on each precinct tabulator. The vendor will supply sufficient identical test decks of ballots, pre-marked in a pattern approved by the Secretary of State. The Secretary of State may optionally mark additional ballots to approximate typical markings made by real voters.

- A minimum of ten persons will be assigned to scan the ballots into the test readers. None of these "test voters" may be a direct employee of the vendor.

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Example 1: California Volume Reliability Testing

Criteria for automatically passing the volume test: The volume test shall be deemed successful if no more than 1% of the machines experience a failure that affects the record of the vote (or fail to read all ballots cast on the machine with 100% accuracy) and if no more than 3% of the machines experience a substantive failure. Substantive failures will include, but not be limited to:

- Errors that cause the equipment to be powered off for resolution;
- Errors that require the poll worker to take the scanner out of election mode to resolve;
- Paper jams that are not automatically managed gracefully by the operating system;
- Failures that require equipment to be taken out of service or replaced;
- Failure to correctly identify and warn of an overvoted ballot;
- Errors resulting in a system error message (not including routine warnings regarding improperly read ballots that provide the opportunity to rescan the ballot);
- Incorrect diverting or sorting of ballots within the ballot box; and
- Battery failure at a point in time that is more than twenty percent less than published specifications for battery life.

Other specifications are listed by California relate to Video Recording, Error handling, Observers, Security, and Confidentiality.

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Example 2: Florida Sand and Dust Test

This test is similar to the procedure of *MIL STD 810D, Method 510.2, Procedure I Blowing Dust*. This test is intended to evaluate the ability of the equipment to survive exposure to dust and fine sand that may penetrate into cracks crevices, switches, display surfaces, and electromechanical parts. The equipment shall be in a non-operating, stowed configuration, and a protective cover shall be in place if the system configuration includes one.

Step #1 Arrange the system for normal operation.

Step #2 Turn on power, and allow the system to reach design-operating temperature.

Step #3 Perform any servicing and make any adjustments necessary to achieve operational status.

Step #4 Operate the equipment in all modes, demonstrating all functions and features that would be utilized during election operations.

Step #5 Verify that all system functions have been correctly executed.

Step #6 Install the equipment in a test facility that meets the requirements of MIL-STD-810D, Method 510.2, Section II, and Subsection II-1.1.1.

Step #7 Adjust the test section temperature to 23 degrees C. (73 degrees F.) and the relative humidity to less than 30 percent. Maintain this relative humidity throughout the remainder of the test.

Step #8 Adjust the air velocity to 1.5 meters per second (300 feet per minute).

Step #9 Adjust the dust feed control for a dust concentration of 10.6 ± 7 grams per cubic meter (0.3 ± 0.2 grams per cubic foot).

Step #10 Maintain the conditions of Steps 2 through 4 for at least 6 hours.

Step #11 Stop the dust feed and increase the test section air temperature to 32 degrees C. (90 degrees F.). Maintain this condition until the internal temperature of the equipment has stabilized.

Step #12 Adjust the air velocity as in Step 3. Restart the dust feed to maintain the dust concentration as in Step 4.

Example 2: Florida Sand and Dust Test

Step #13 Continue the exposure for at least 6 hours.
Step #14 Turn off all chamber controls and allow the equipment to return to room temperature.
Step #15 Remove accumulated dust from the equipment by brushing, wiping, or shaking, taking care to avoid introducing additional dust into the equipment. Do not remove dust by air blast or vacuum cleaning.
Step #16 Inspect the interior of the equipment for evidence of dust intrusion and damage.
Step #17 Arrange the system for normal operation.
Step #18 Turn on power, and allow the system to reach design-operating temperature.
Step #19 Perform any servicing and make any adjustments necessary to achieve operational status.
Step #20 Operate the equipment in all modes, demonstrating all functions and features that would be utilized during election operations.
Step #21 Verify that all system functions have been correctly executed.

Example 3: New York (a) – Noise Level

C. Standards for noise level.

(1) Voting systems or equipment to be certified by the State Board shall be constructed in a manner so that noise levels of the system or equipment during operation will not interfere with the duties of the election inspectors or the voting public.

(2) The noise level of write-in components of the system or equipment shall be so minimal that it will be virtually impossible under normal conditions for someone at the table used by the inspectors of elections to determine that a write-in vote is being cast or has been cast.

Example 3: New York (b) - Usability Testing

H. Vendors shall make available to the State Board, in a quantity to be determined by the State Board, voting systems for the purpose of conducting a usability test, which will establish the minimum number of voting machines required in each polling place and the maximum number of voters that can vote on one voting machine during the course of an ordinary 15-hour election day. The ballots to be used for this test shall include both primary and general election ballots, with ample candidate selection options and ballot proposal selections. For the purposes of the usability test, voting shall occur by utilizing all the devices which a voter may use to make their selections. If a vendor has previously performed a usability test on the same or similar voting system which meets the requirements of this section, the State Board may consider the findings of same. Whenever the State Board is satisfied that a voting machine or system's usability analysis has provided adequate and accurate information relative to the requirements of Election Law Section 7-203.2, then the State Board may, in its discretion, accept such documentation as satisfaction of the usability test required by these regulations.

Example 4: North Carolina – System Testing

(c)   Prior to certifying a voting system, the State Board of Elections shall review, or designate an independent expert to review, all source code made available by the vendor pursuant to this section and certify only those voting systems compliant with State and federal law. At a minimum, the State Board's review shall include a review of security, application vulnerability, application code, wireless security, security policy and processes, security/privacy program management, technology infrastructure and security controls, security organization and governance, and operational effectiveness, as applicable to that voting system. Any portion of the report containing specific information related to any trade secret as designated pursuant to G.S. 132-1.2 shall be confidential and shall be accessed only under the rules adopted pursuant to subdivision (9) of subsection (d) of this section. The State Board may hear and discuss the report of any such review under

G.S. 143-318.11(a)(1).

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Questions?, Comments?, Ideas?

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