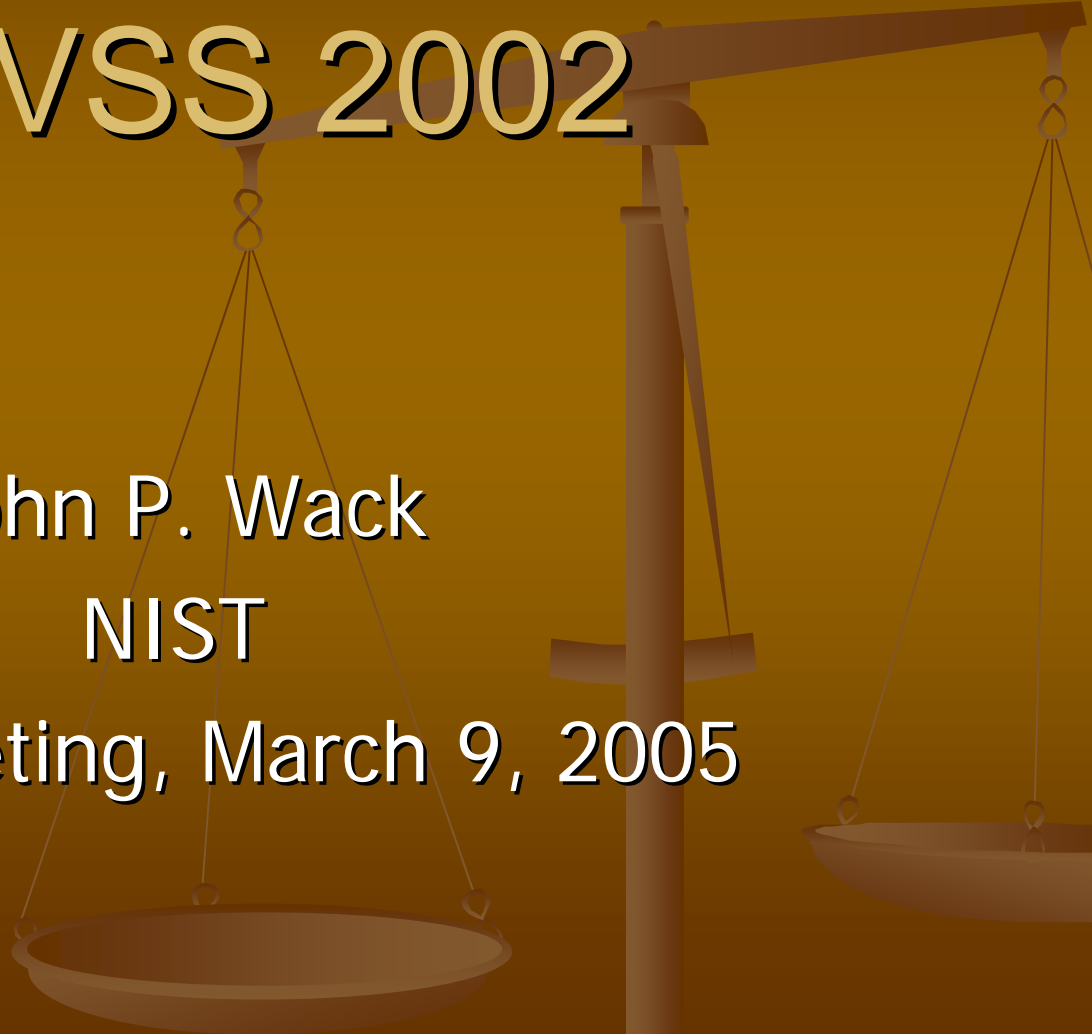# VVPAT Addendum to the VSS 2002
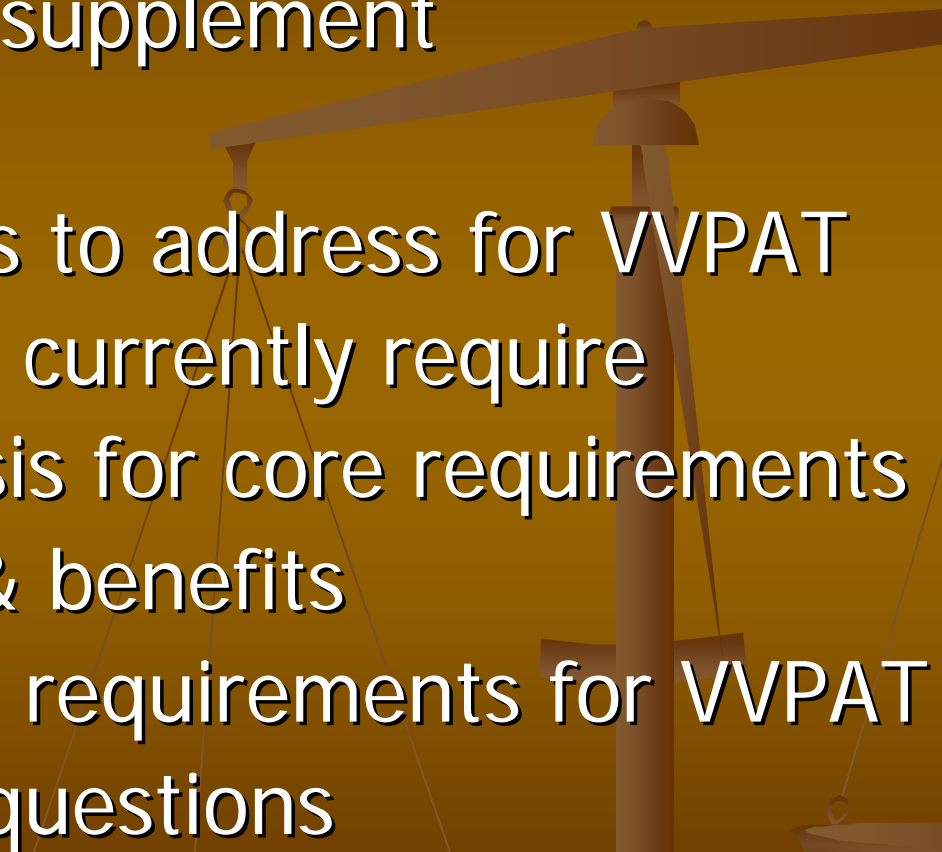
John P. Wack
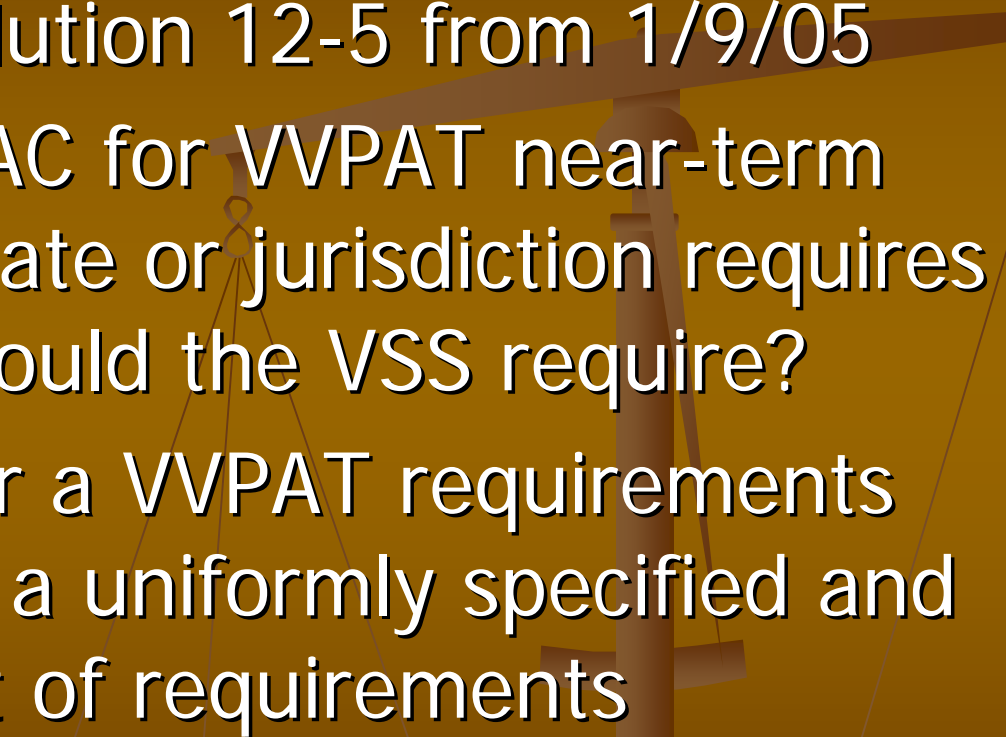
NIST

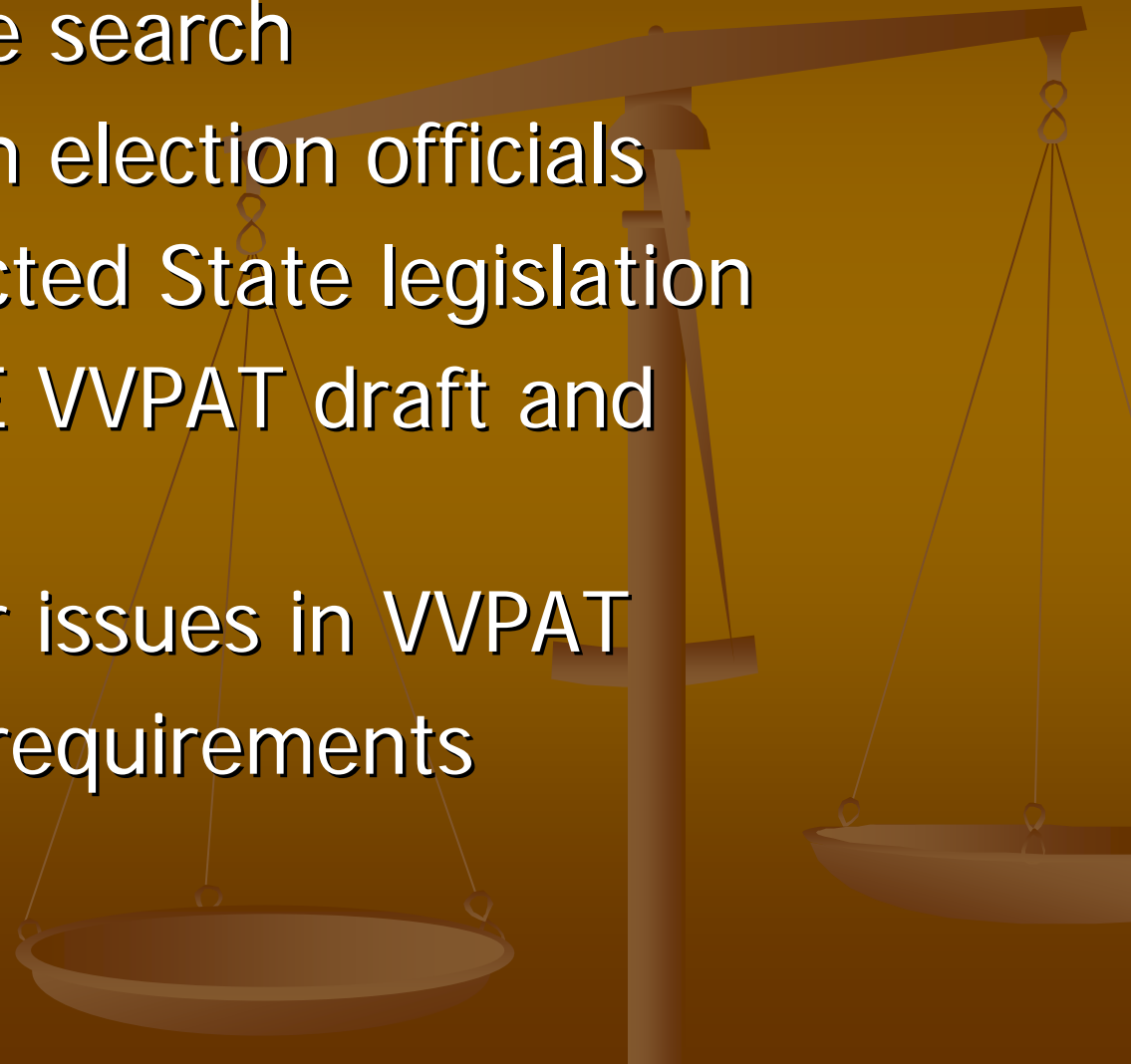TGDC Meeting, March 9, 2005

Presentation Overview

- Genesis for this supplement
- Methodology
- Important issues to address for VVPAT
- What the States currently require
- Resultant analysis for core requirements
- Major features & benefits
- Preliminary core requirements for VVPAT
- Discussion and questions

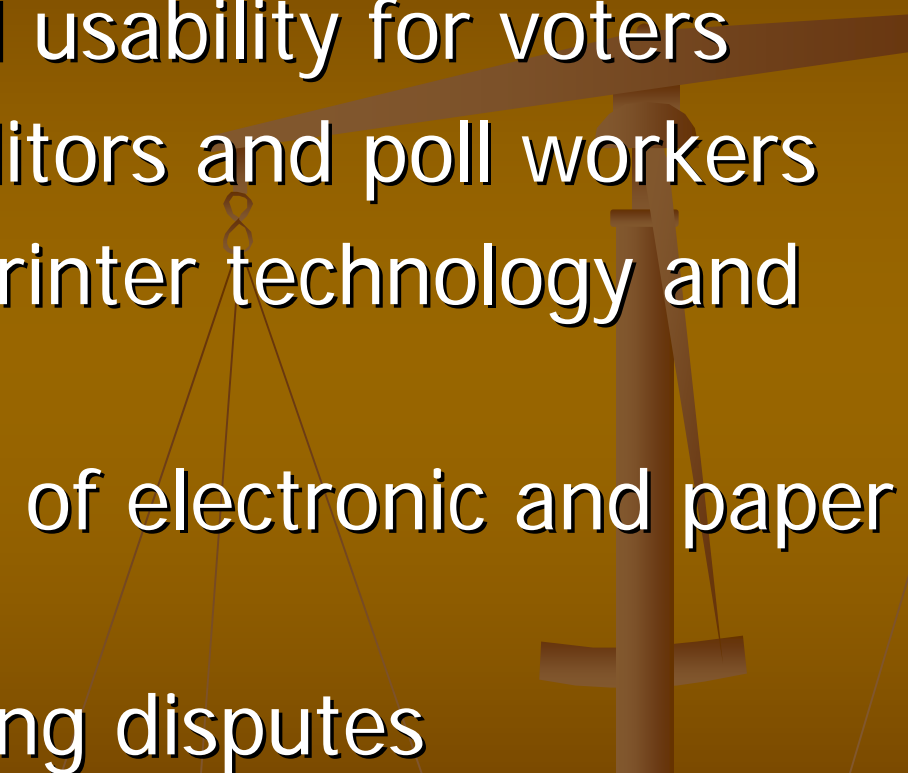# Genesis for this Supplement

- Related to Resolution 12-5 from 1/9/05

- Request from EAC for VVPAT near-term guidance: if a state or jurisdiction requires VVPAT, what should the VSS require?

- General need for a VVPAT requirements analysis and for a uniformly specified and agreed upon set of requirements
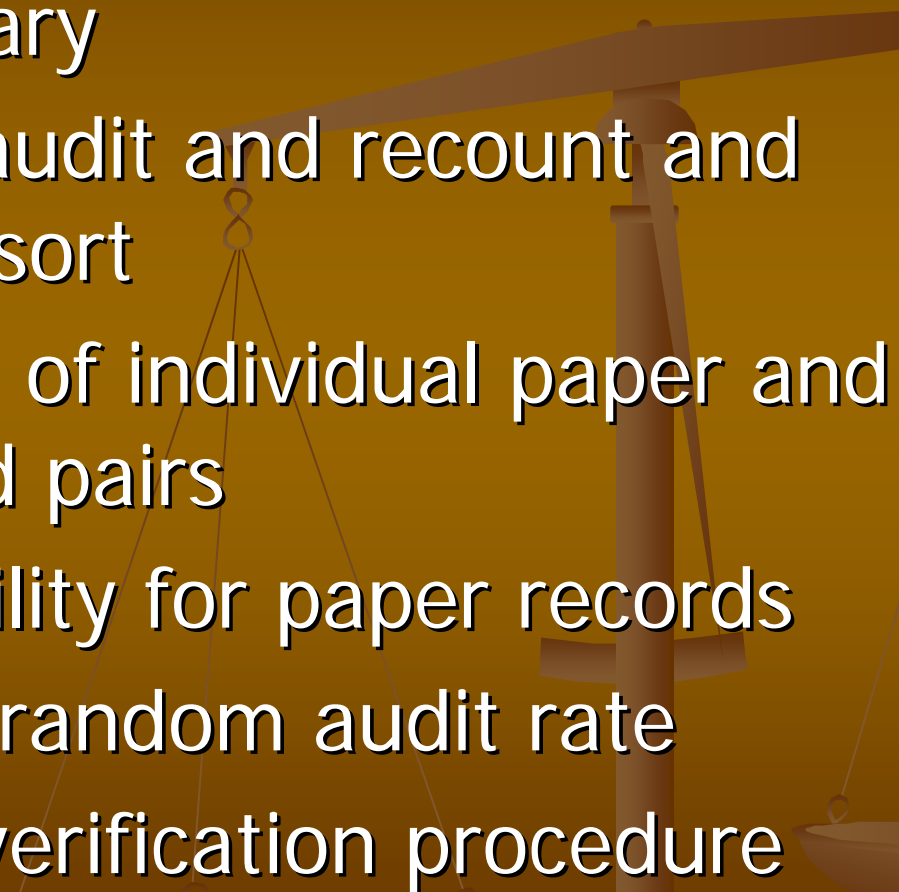
Methodology

- VVPAT literature search
- Discussions with election officials
- Analysis of enacted State legislation
- Analysis of IEEE VVPAT draft and discussion
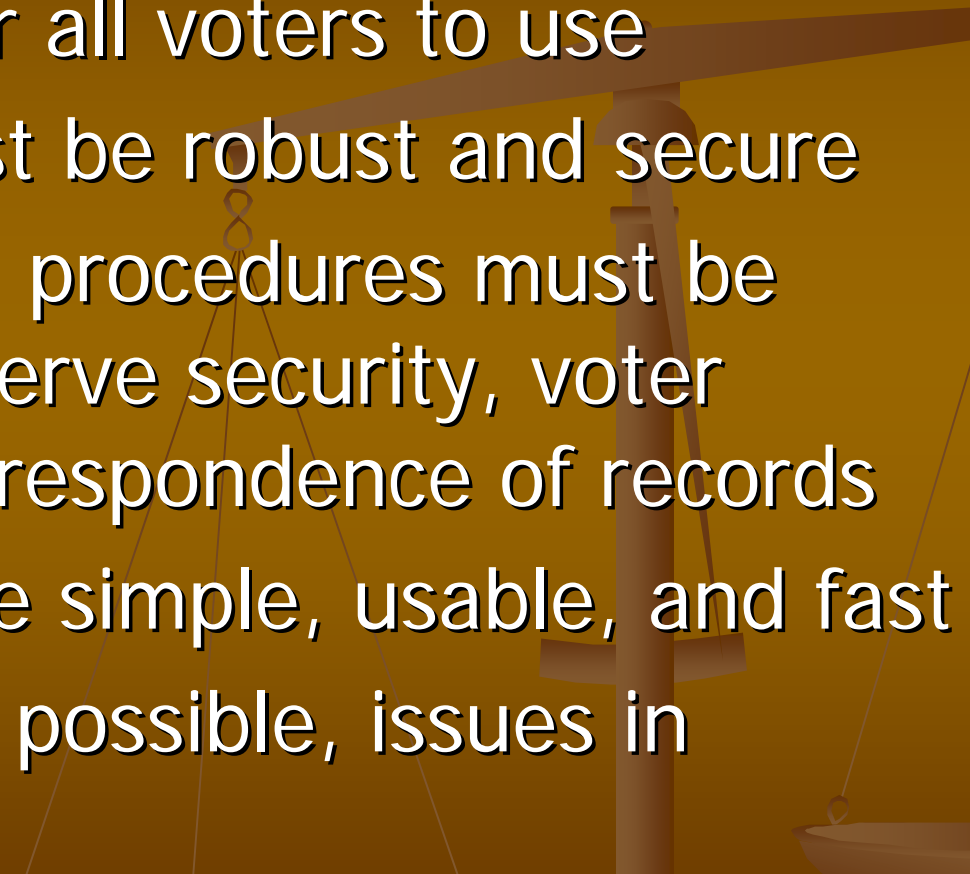- Identified major issues in VVPAT
- Identified core requirements

Important Issues to Address for VVPAT

- Accessibility and usability for voters
- Usability for auditors and poll workers
- Robustness of printer technology and paper records
- Correspondence of electronic and paper records
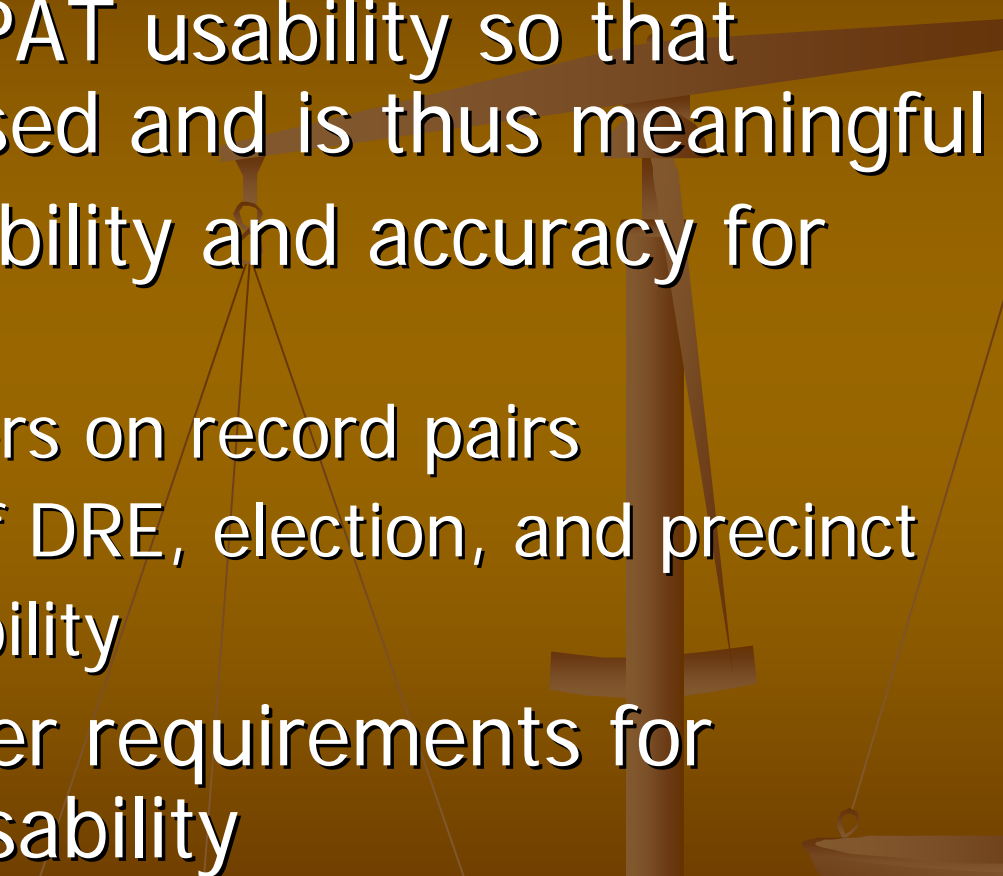- Issues in resolving disputes

What States Currently Require

- Requirements vary
- Paper used for audit and recount and record of last resort
- Correspondence of individual paper and electronic record pairs
- Machine readability for paper records
- Generally a 1% random audit rate
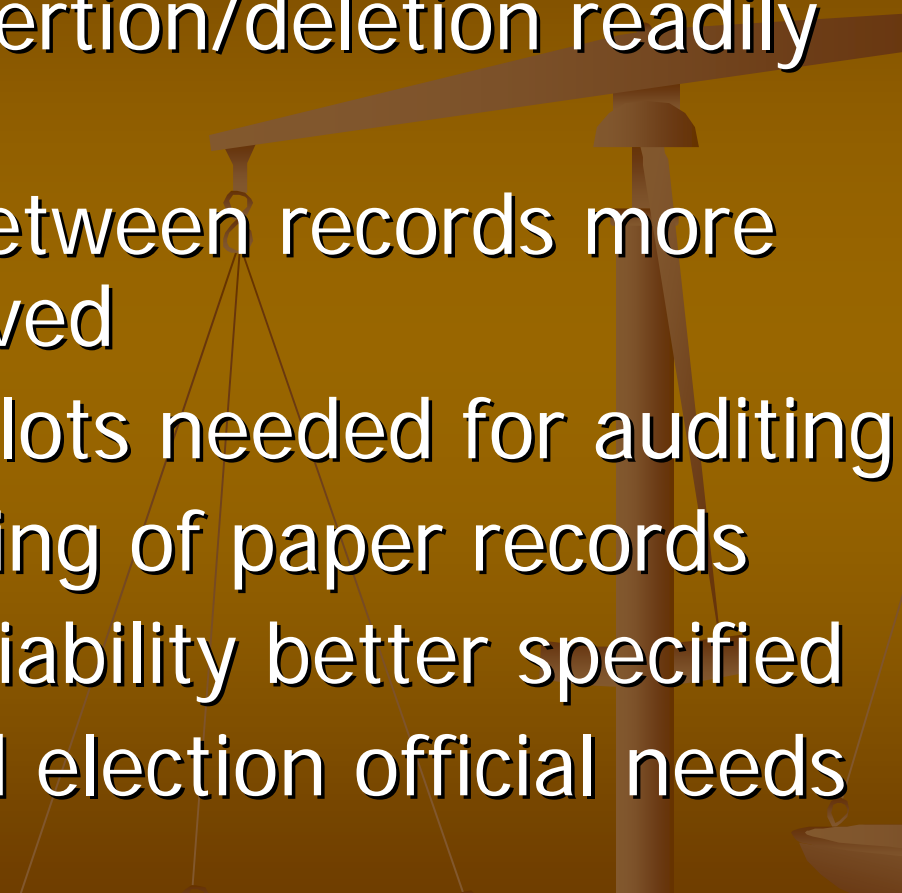- Accessibility of verification procedure

Resultant Analysis for VVPAT Core Requirements

- Must be easy for all voters to use
- Technology must be robust and secure
- Record handling procedures must be followed to preserve security, voter privacy, and correspondence of records
- Auditing must be simple, usable, and fast
- Must reduce, as possible, issues in handling paper

Major Features

- Emphasizes VVPAT usability so that verification is used and is thus meaningful
- Emphasizes usability and accuracy for auditing
  - Unique identifiers on record pairs
  - Identification of DRE, election, and precinct
  - Machine readability
- Printer and paper requirements for reliability and usability

Major Benefits

- Makes ballot insertion/deletion readily apparent
- Discrepancies between records more accurately resolved
- Reduction in ballots needed for auditing
- Improved handling of paper records
- Usability and reliability better specified
- Voter needs and election official needs both addressed

Preliminary Core Requirements for VVPAT

1. The DRE-VVPAT shall show the voter a paper record of the voter's electronic ballot choices which constitutes a distinct record of the voter's ballot choices.
2. The DRE-VVPAT shall permit the voter to compare the paper and electronic records with maximum ease according to established accessibility and usability guidelines.
3. The method for voter verification shall be accessible to all voters.
4. The DRE-VVPAT shall permit the voter to accept or reject the paper record and reenter ballot choices at the DRE-VVPAT.
5. The voter's privacy and anonymity shall be preserved during the process of recording, verifying, and auditing ballot choices.
6. The DRE-VVPAT shall permit robust auditing, forensics analysis, and full recount capability of its electronic and paper records.
7. The DRE-VVPAT equipment shall be secure and resistant to failures, and shall be usable in its administration.
8. Trained personnel, procedures, and consumables shall be in place during elections to handle all aspects of VVPAT capability.

Discussion and Questions