VVSG 2.0
Scope Discussion

Help America Vote Act
Definition of Voting System

▸ Section 301 (b) (1) defines voting system as:

(1) the **total combination** of mechanical, electromechanical, or electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used—

(A) to define ballots;

(B) to cast and count votes;

(C) to report or display election results; and

(D) to maintain and produce any audit trail information
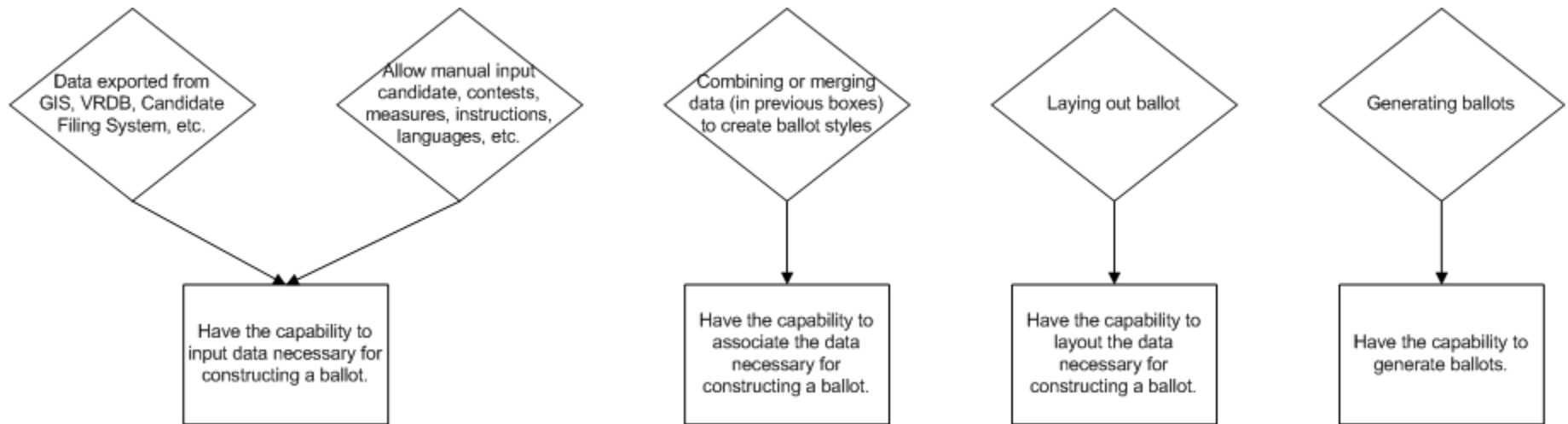
Background
Functional Based Requirements

- 2007 TGDC recommended guidelines – looked at classifications structure for voting systems
- Participation in Working Groups showed focus on process & inputs/outputs
  - Election Working Groups' Process Model
- VVSG 2.0 Project Charter
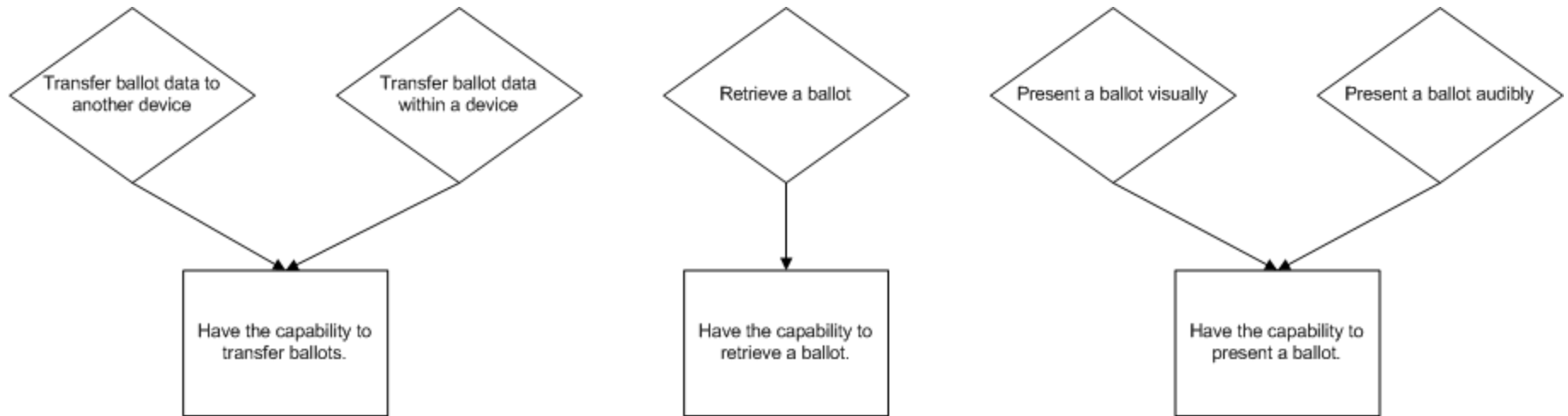 - Specifically Objectives for VVSG 2.0

Questions to TGDC

- EAC sent a list of 30 questions regarding functions and methods/modes for fulfilling those functions.
- EAC received feedback and questions from members and groups represented.
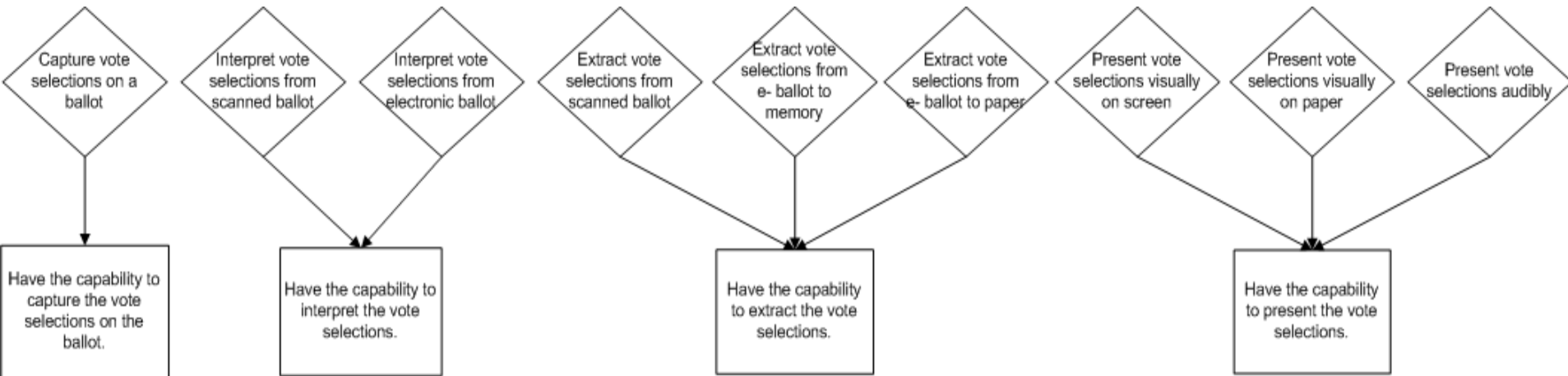- Determined that methods/modes were too low-level. Which led to the $1M question:
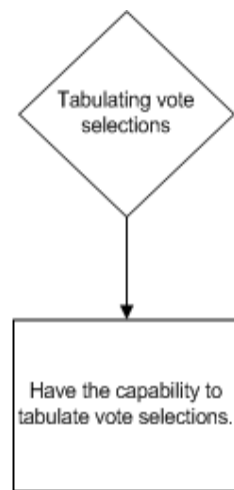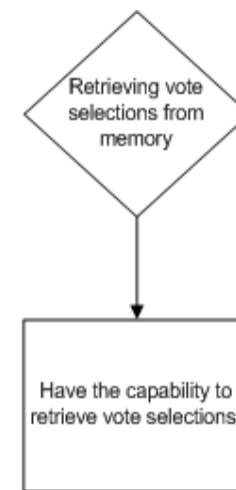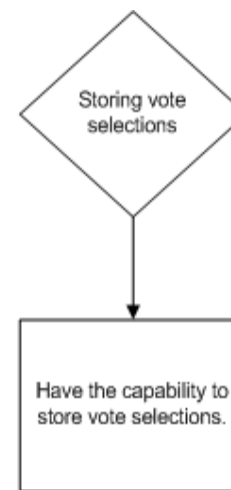 ## What are the core functions?

Ballot Construct/Development

Data exported from GIS, VRDB, Candidate Filing System, etc.

Allow manual input candidate, contests, measures, instructions, languages, etc.

Combining or merging data (in previous boxes) to create ballot styles

Laying out ballot

Generating ballots

Have the capability to input data necessary for constructing a ballot.

Have the capability to associate the data necessary for constructing a ballot.

Have the capability to layout the data necessary for constructing a ballot.

Have the capability to generate ballots.

Ballot Display

Transfer ballot data to another device

Transfer ballot data within a device

Retrieve a ballot

Present a ballot visually

Present a ballot audibly

Have the capability to transfer ballots.

Have the capability to retrieve a ballot.

Have the capability to present a ballot.
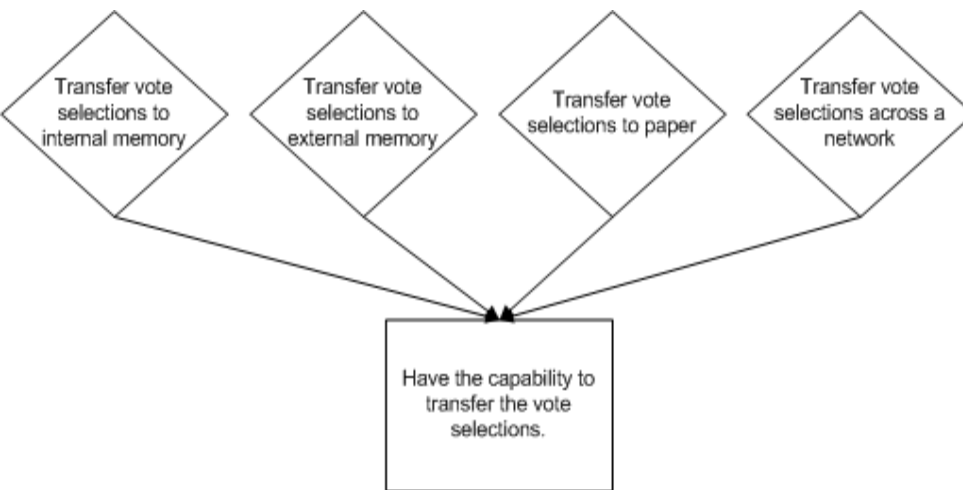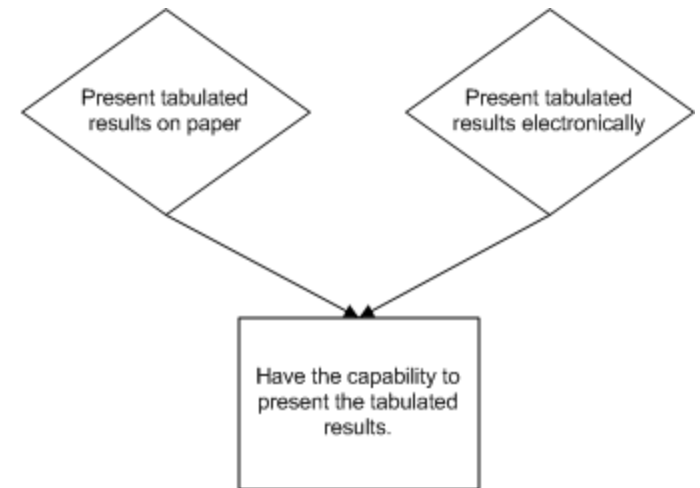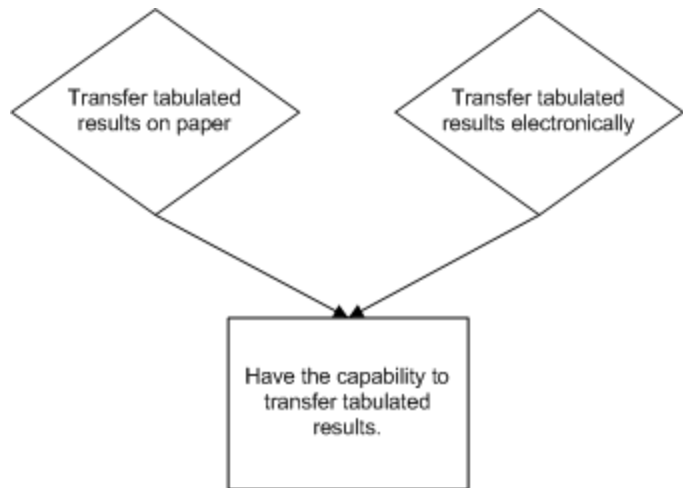
Vote Selection/CVR Creation

Tally Process

Reporting Results

Voting Systems
17 Core Functions

- Input Data for Ballot Construct
- Associate Data for Ballot Construct
- Ballot Layout
- Ballot Generation
- Ballot Transfer
- Ballot Retrieval
- Ballot Presentation

- Capture Vote Selections
- Interpret Vote Selections
- Extract Vote Selections
- Present Vote Selections
- Transfer Vote Selections
- Store Vote Selections
- Retrieve Vote Selections
- Tabulate Vote Selections
- Transfer Results
- Present Results

Help America Vote Act
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Device-Based Model (Current VVSGs)

- §301 (b) (1) (A): to define ballots
  - Device: Election Management System
- §301 (b) (1) (B): to cast and count votes
  - Devices: Ballot Marking Device, DRE & Scanners
- §301 (b) (1) (C): to report or display election results
  - Device: Election Management System
- §301 (b) (1) (D): to maintain and produce any audit trail information
  - Devices: ALL
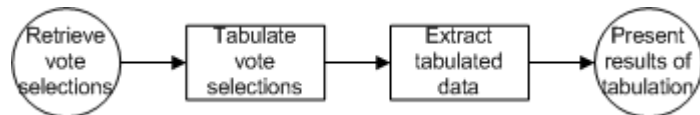
Device-Based Model (By Functions)
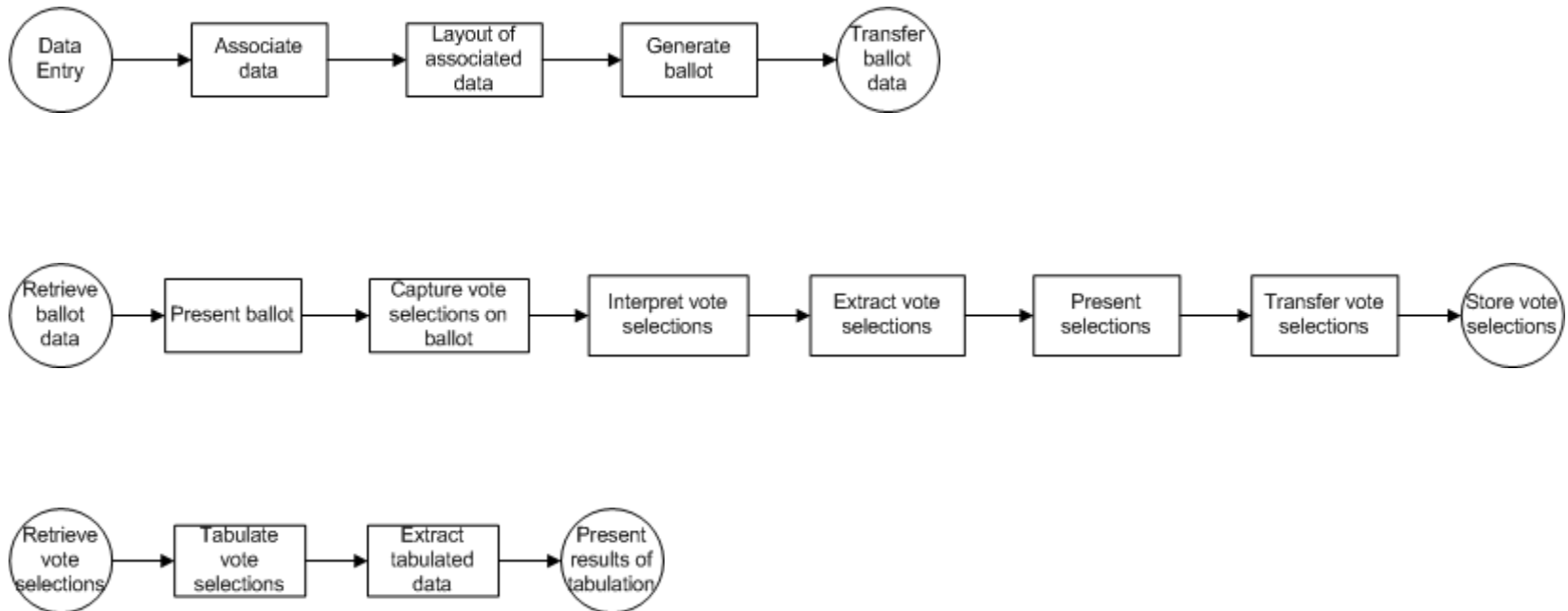
EMS – to define ballots [§301 (b) (1) (A)]:
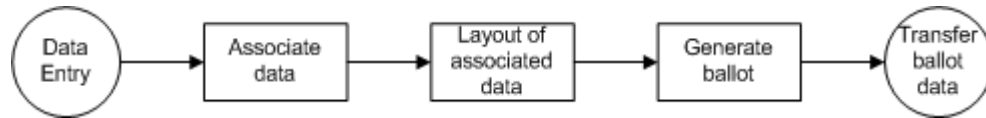
EBM & scanner or DRE – to cast and count votes [§301 (b) (1) (B)]:
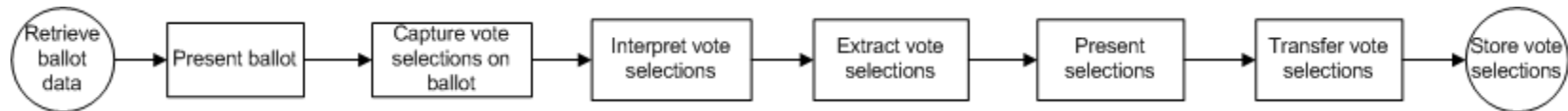
EMS – to count and report/display results [§301 (b) (1) (C)]:

VVSG 2.0 Voting System Model

VVSG 2.0 Objectives
Project Charter

- To assess the ability of the election systems to correctly execute secure, usable and accessible elections in order to provide assurance to voters that the election is an accurate reflection of the voters' will.

- To enable, not obstruct or impede, innovation and needed response to changing statutes, rules, jurisdictional and voters' needs.

- To create a set of implementable guidelines that allows effective deployment of systems by jurisdictions constrained by election calendars, schedules and budgetary restrictions.

VVSG 2.0 Objectives (continued)
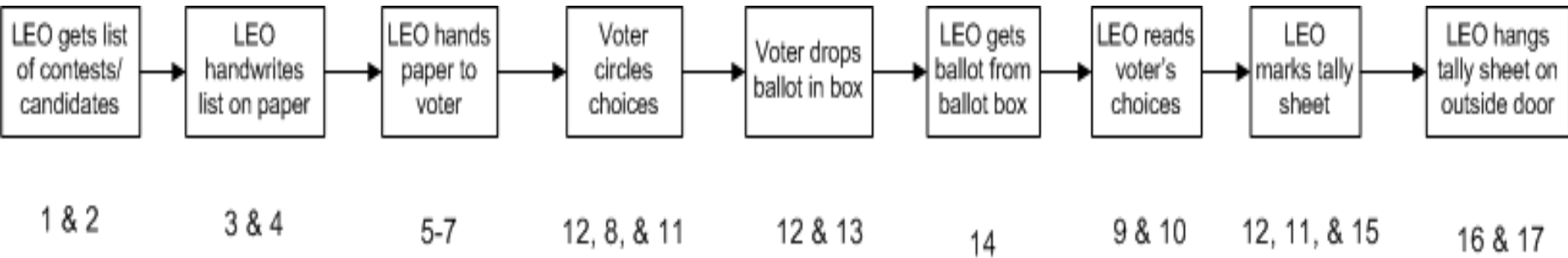## Project Charter

- To facilitate the interoperability of election systems.
- To facilitate an open and transparent process that allows voters and election jurisdictions to assess the performance and capability of the election systems.
- To provide a set of testable requirements that a jurisdiction can understand and use to evaluate the performance of election systems and to procure new systems.
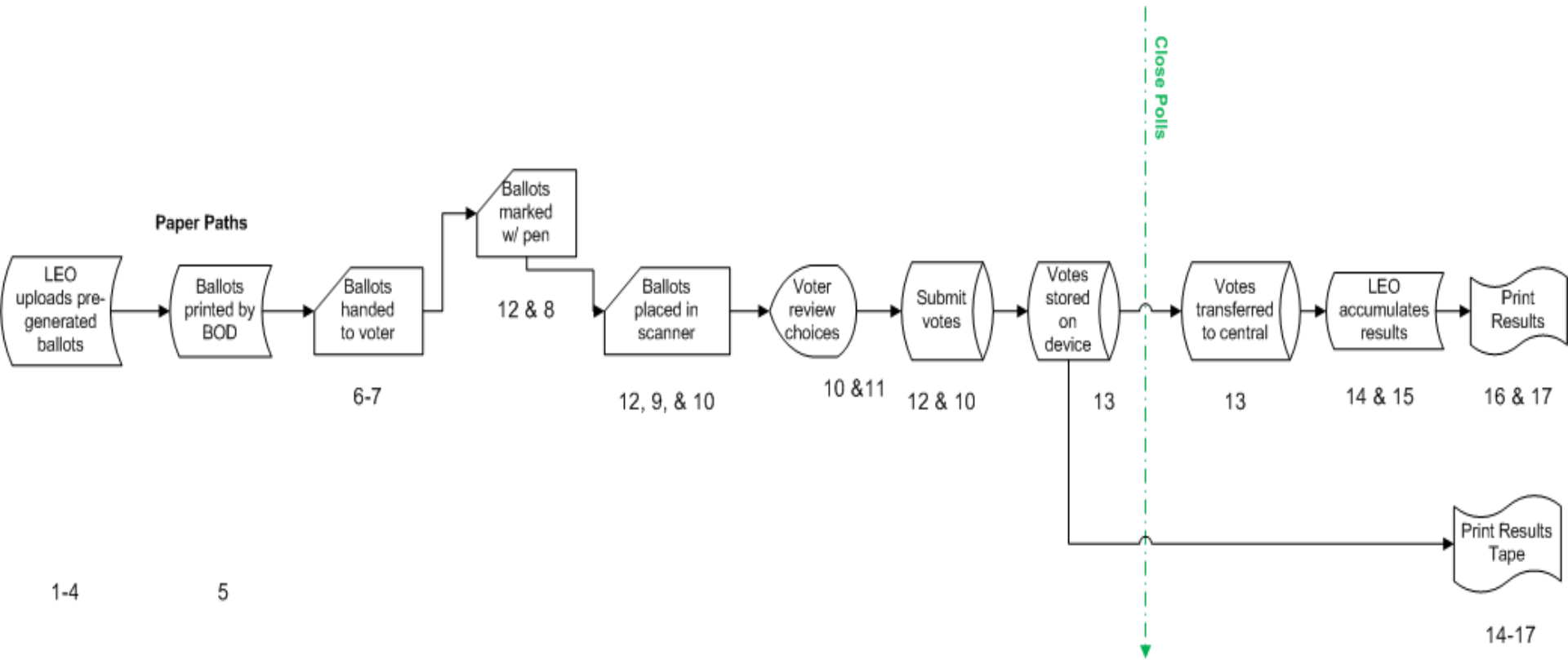
Voting System
(VVSG 2.0)

- What constitutes a voting system?
  - A combination of devices that fulfills all of the functions.
- Could any combination of all the functions be tested by the EAC?
  - No, the combination of devices would also have to meet all of the requirements set forth in the Help America Vote Act.
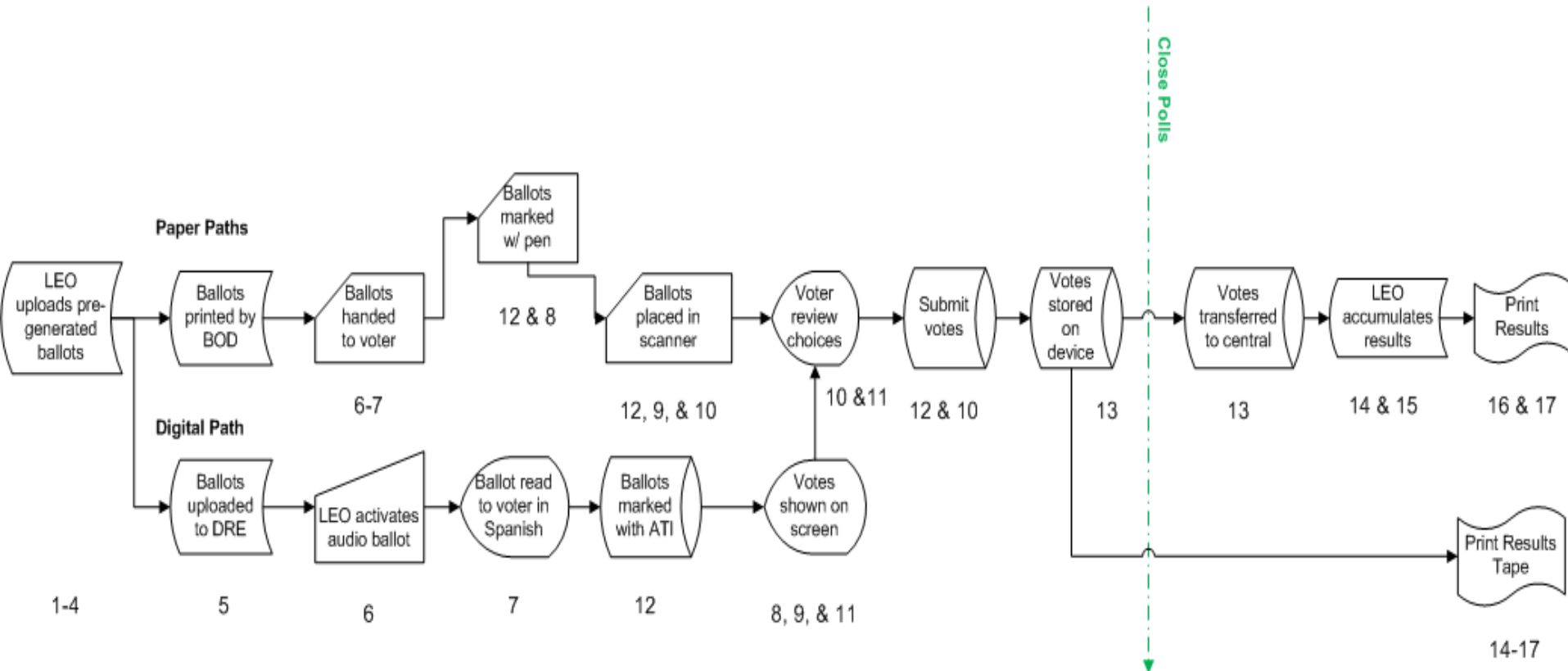
No Tech Solution

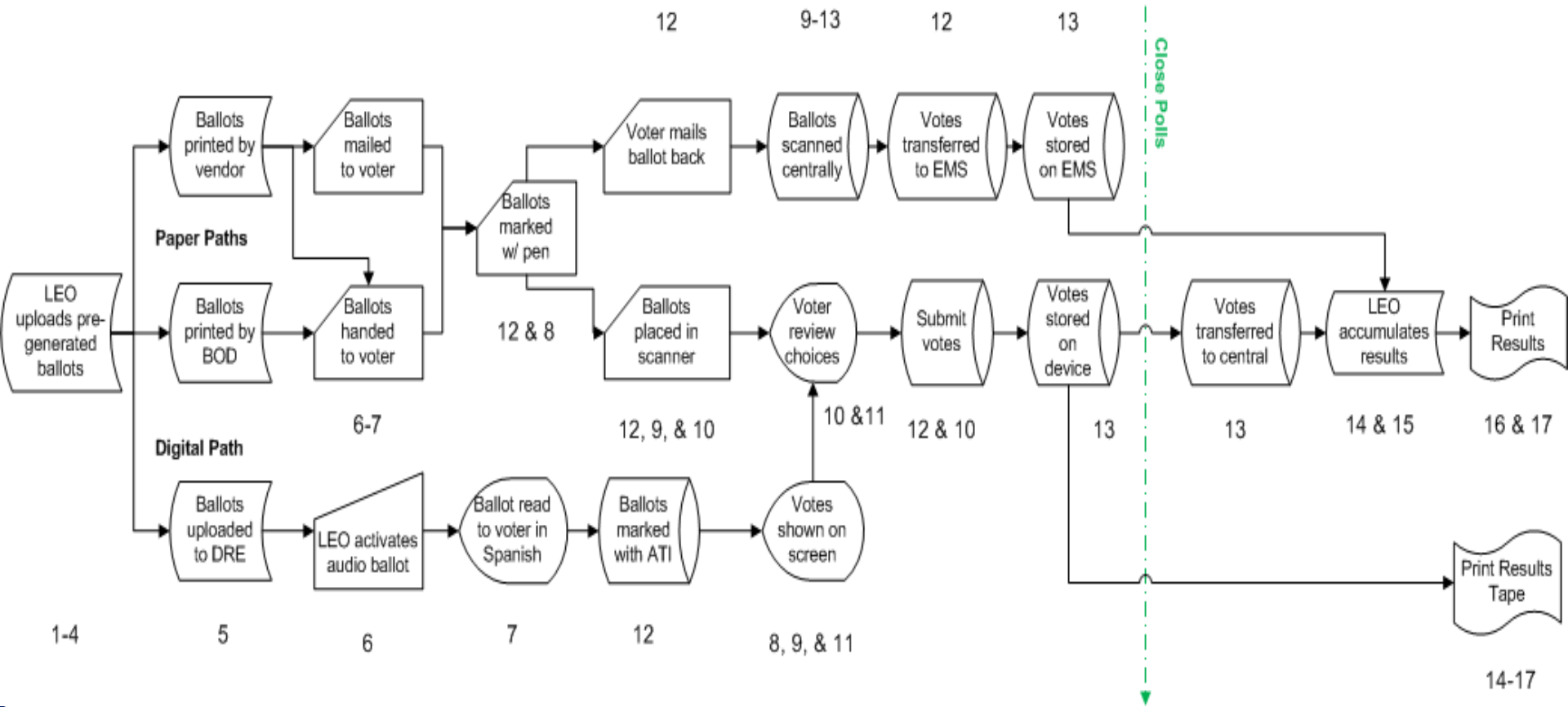| LEO gets list of contests/ candidates	LEO handwrites list on paper	LEO hands paper to voter	Voter circles choices	Voter drops ballot in box	LEO gets ballot from ballot box	LEO reads voter's choices	LEO marks tally sheet	LEO hangs tally sheet on outside door
1 & 2	3 & 4	5-7	12, 8, & 11	12 & 13	14	9 & 10	12, 11, & 15	16 & 17

Voting System
(All paper)

Voting System
(Paper and Digital)
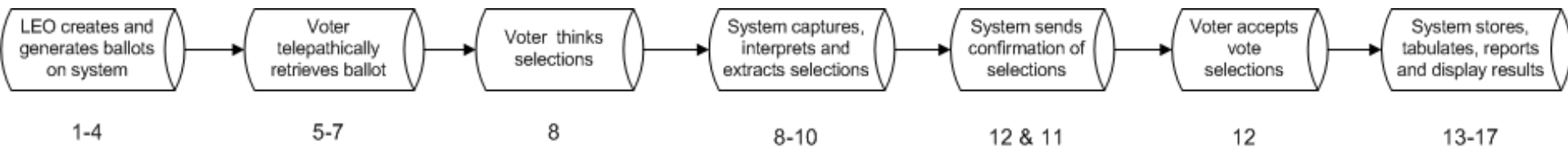
Typical Voting System
Paper (in-person and mail) and Digital

# Futuristic Voting System
(Hypothetical & Sci-Fi System)

LEO creates and generates ballots on system	Voter telepathically retrieves ballot	Voter thinks selections	System captures, interprets and extracts selections	System sends confirmation of selections	Voter accepts vote selections	System stores, tabulates, reports and display results
1-4	5-7	8	8-10	12 & 11	12	13-17

Use Case Example:
Election Management System
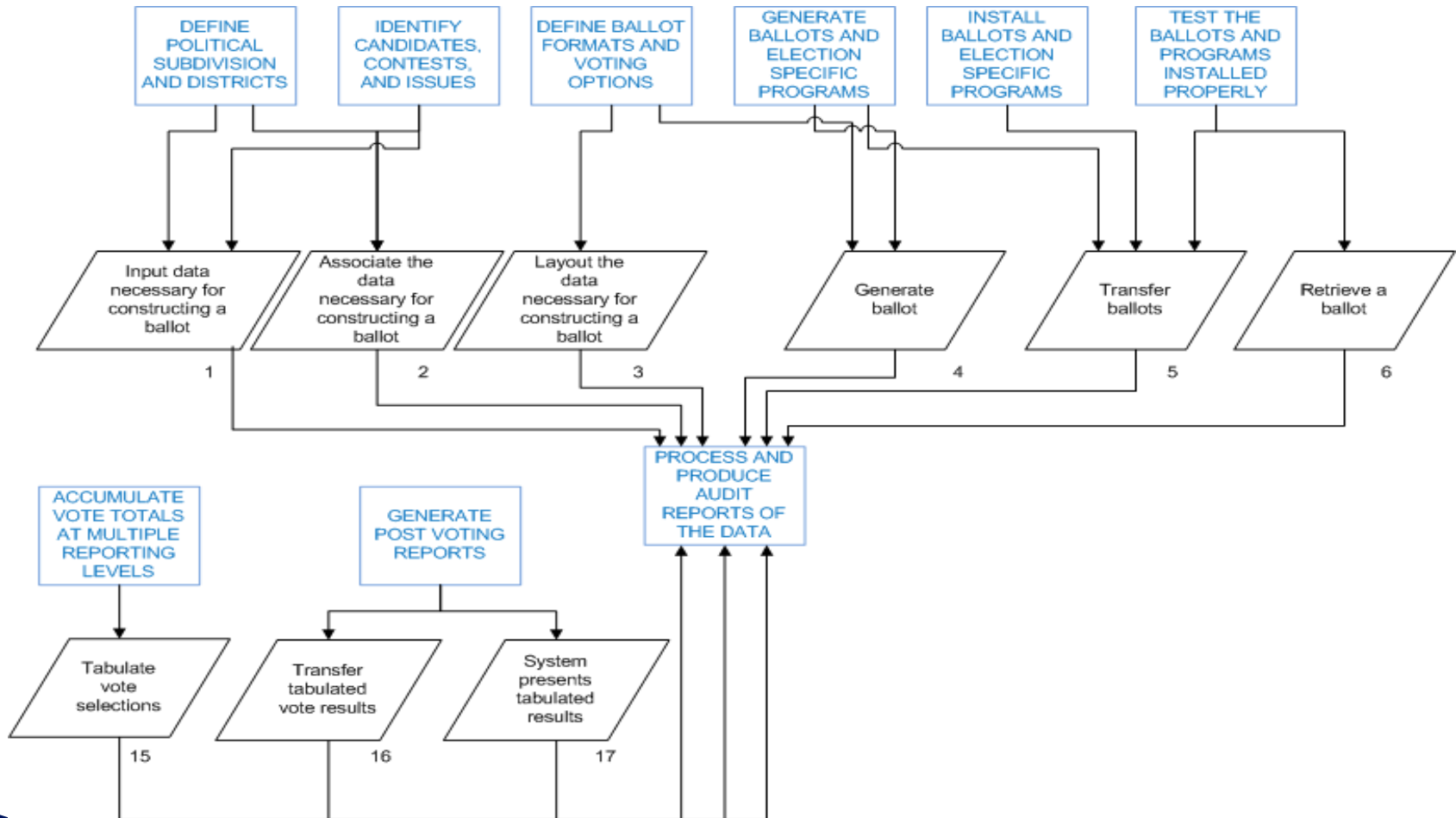
Use Case Example:
Electronic Ballot Marker (EBM)

EBM in Vote Location
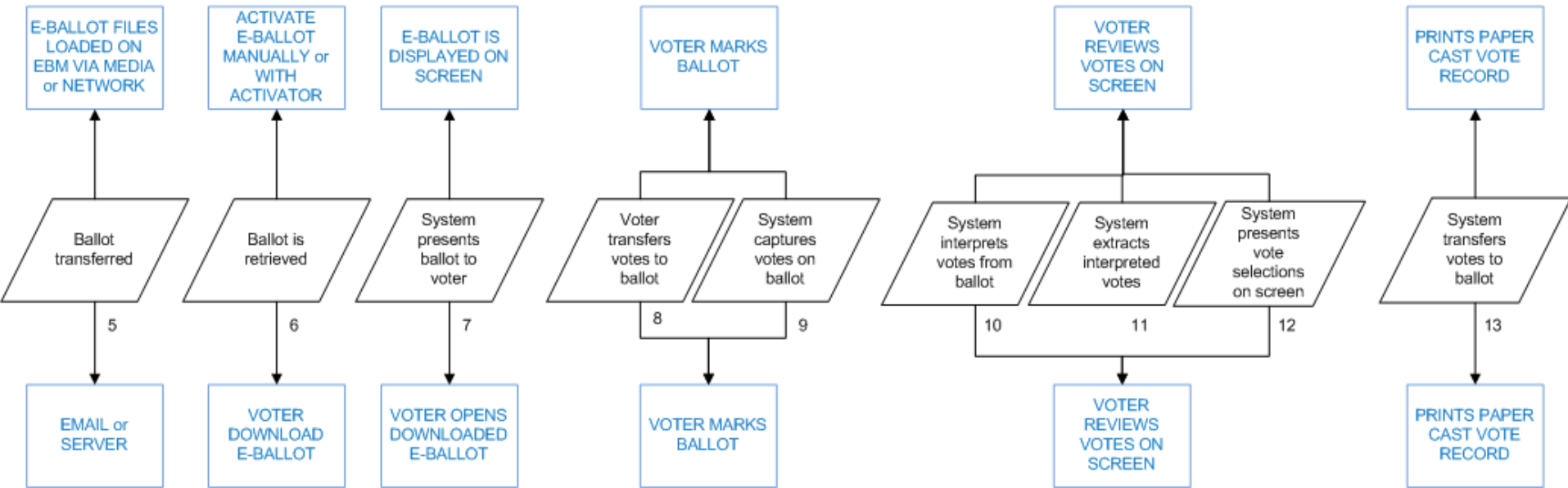
Remote EBM

Questions???

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