



OPEN SOURCE DIGITAL VOTING FOUNDATION

Bringing Transparency to  
Voter Registration and Absentee Voting:  
VA-SBE Use of CDFs in 2012

NIST CDF Workshop 2013



# CDFs in Real Use in 2012

**Why we are here:** to brief the Workshop on real-world use of both standard and proposed common data formats in 2012

**What, Who, Where, When:** In collaboration with Virginia State Board of Elections and others in FVAP-funded project, year long endeavor

**Background:** OSDVF, TrustTheVote Project, who we are, what we do

**Background:** VA 2012 Project

**The Main Event:** Details about the project, CDFs, lessons learned

**New CDF Use Case:** Additional details on a new data format and use case

**What's Next :** continuing work, related work

# The OSDV Foundation: Who We Are

**OSDV Foundation:** California public benefits corporation with pending 501(c)(3) status supporting the election technology reform mission

**OSDV Team:** Directors, Board of Trustees, Domain Expert Advisers, General Counsel, Outside Counsel for IP and licensing, Stakeholder Community of elections experts, LEOs, and SEOs, I.T. services provided by Open Source Labs at Oregon State University

**TrustTheVote (TTV) Project:** Open-source election technology development project supported by OSDV

**TTV Team:** CTO, Project Leaders, UI designers, spec writers, data interchange experts, and software developers

**TTV Stakeholders:** Adopters - U.S. election officials, and:  
Legislators, good-government groups, election integrity advocates,  
Grant making organizations, individual donors

# The TrustTheVote Project

## What We Do

**Mission:** Develop publicly owned technology blueprints and implementations of election technology components

**Scope:** Tech for election administration, ballot casting and counting, the whole electoral process from voter registration to reporting election results

**Transparency:** All work product is open-source, open-data, and supports public access to detailed data recording everything about election administration and results of elections

**Work Product:** White papers, Request for Comments (RFCs), architecture, component specs and requirements, data format definitions, reference implementations of specs; ultimately software

# The TrustTheVote Project

## How We Do What We Do

**Donors:** provide funding for Foundation operations, and for directed development projects

**Stakeholders:** provide responses to white papers, RFCs, spec, etc.

**Collaborators:** stakeholders who help us develop work product

**Volunteers:** Do tech work (spec dev, reference software, ...) on funded and unfunded assignments within the TTV Project

**Contractors:** Do tech work on funded projects

**Adopters:** LEO or SEOs, stakeholders who adopt and adapt open source software, deploy it for internal use or to deliver services to the public

# Virginia State Board of Elections Collaboration in 2012

**SBE:** received one of the first EASE grants from FVAP, to make:

- Online voter services for voting eligibility  
Check whether registered to vote, view voting status and registration info  
Help voters to properly complete voter registration and absentee ballot request forms
- Digital ballot delivery and marking service for UOCAVA voters
- Audit and reporting to FVAP of voter usage and outcomes
- Forms and ballots use existing **print/sign/mail** model

**Participants:** In addition to SBE and OSDVF:

**Democracy Live:** commercial vendor of online ballot product

**Microsoft:** application hosting & system integration of DL with VA

**Cyber-Data:** application hosting & SI of Portal and Analytics

SBE: Virginia State Board of Elections  
EASE (Electronic Absentee Systems for Elections)  
UOCAVA ((Uniformed and Overseas Citizens Absentee Voting Act)  
FVAP (Federal Voting Assistance Program)  
MOVE (Military and Overseas Voter Empowerment ) Act

# VA SBE EASE Project Team

**SBE IT:** System integration of legacy systems with new systems

**OSDVF:** provide open-source software for project:

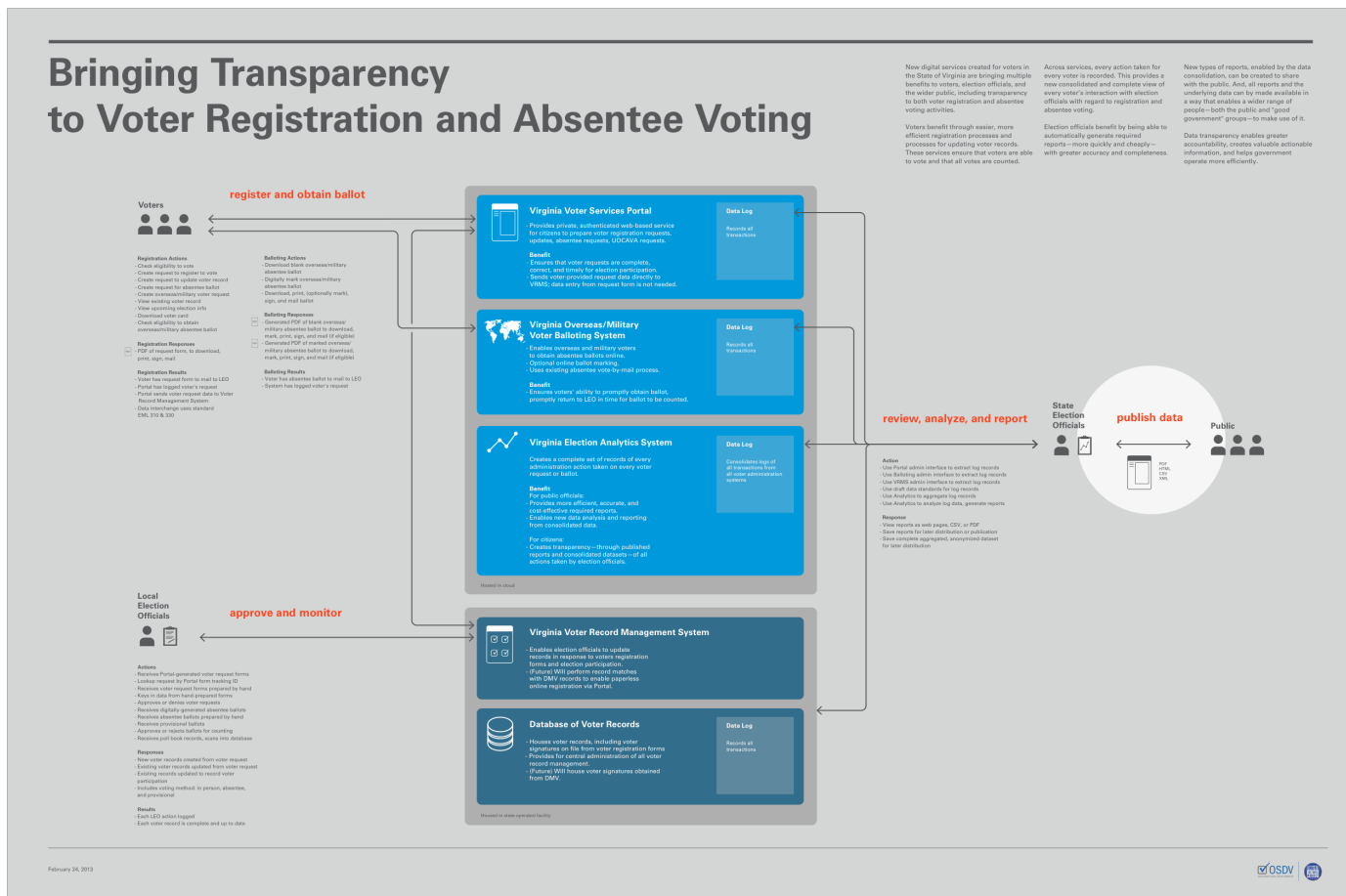
- Adapt online VR tool to become “Voter Services Portal”
- Integrate Portal with legacy voter record system
- Integrate Portal with Democracy Live product deployed by MS
- Develop Analytics tool
- Support Cyber-data deployment of OSS from public repo

**Democracy Live:** Data integration with legacy voter record system, web services integration with Portal, data integration with Analytics, support Microsoft deployment of DL product

**MS and CyberData:** deploy application software in the hosting environment, provide ongoing system and application support

# Project Outcome

## The Big Picture: The VA Voter World – After the Project





# Project Outcome

## **The Big Picture:** After the Project

### **Voters:** workflows for online (Portal or DL) and offline:

voter registration request, voter record update request,  
absentee ballot request, FPCA request, absentee ballot or FWAB

**Online:** print, sign, mail

**Offline:** scrawl, sign, mail

### **LEOs:** process request forms and ballots, on- or off-line generated:

receive forms	in mail	approve or deny	log decision
receive absentee ballots	in mail	count or deny	log decision
receive provisional ballots	from polls	count or deny	log decision
receive poll books	from polls	update voter records	log updates

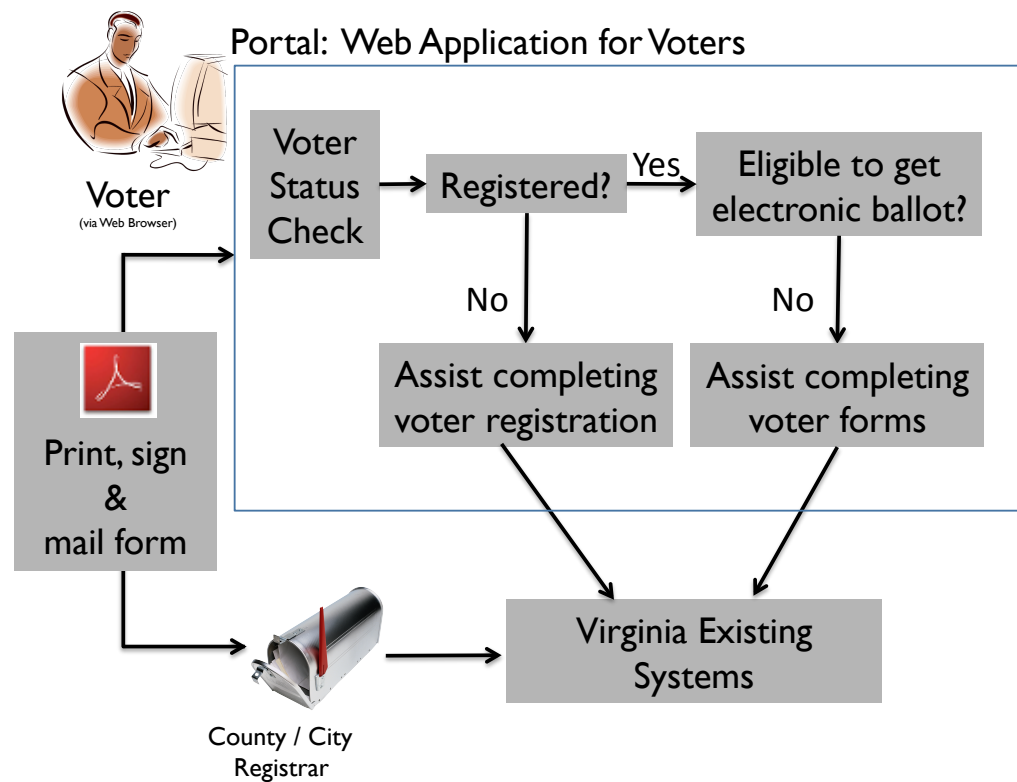
### **SBE:** pull log data from other 3 systems push into Analytics generate reports pull reports and aggregated data

# Project Details

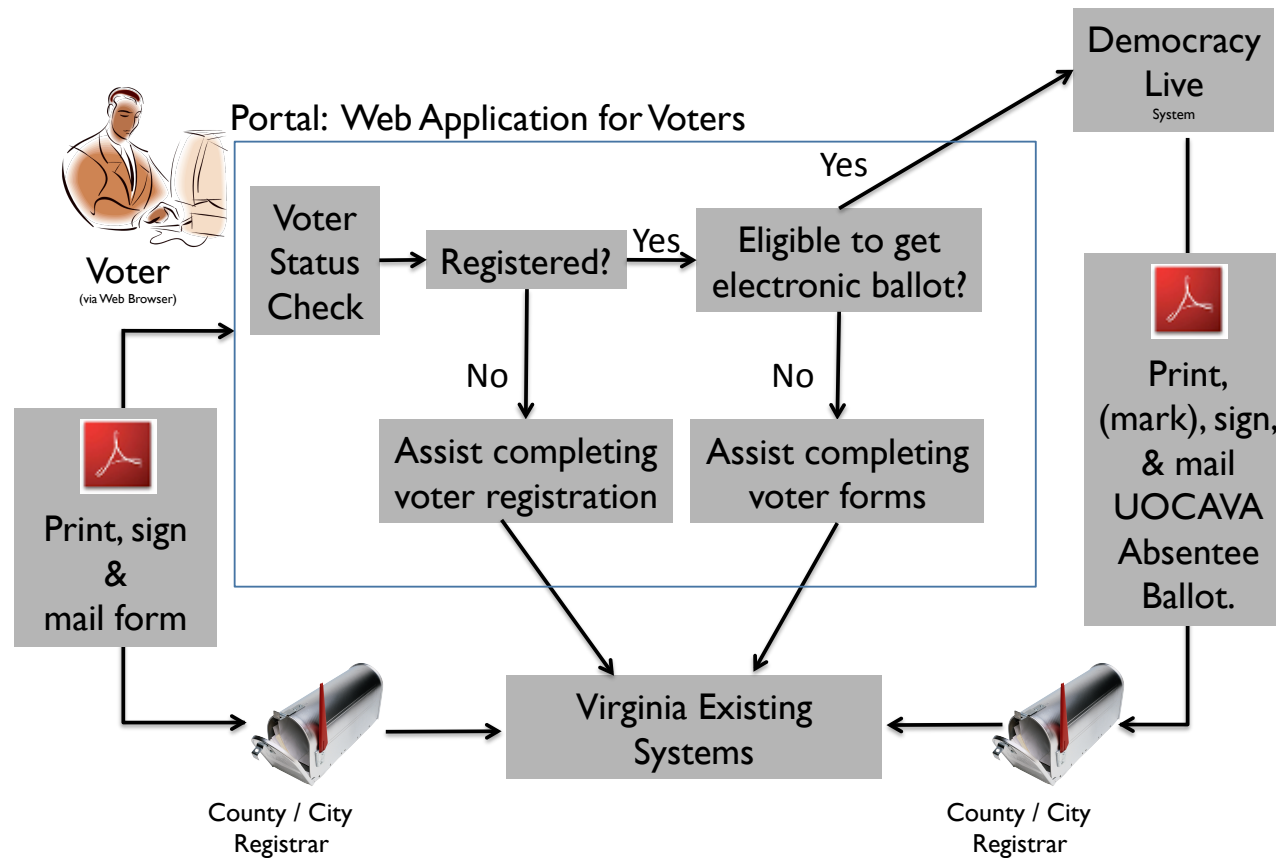
**Now that you know how it ended...**  
*how did we get there?*

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# Voter Services Portal Workflow



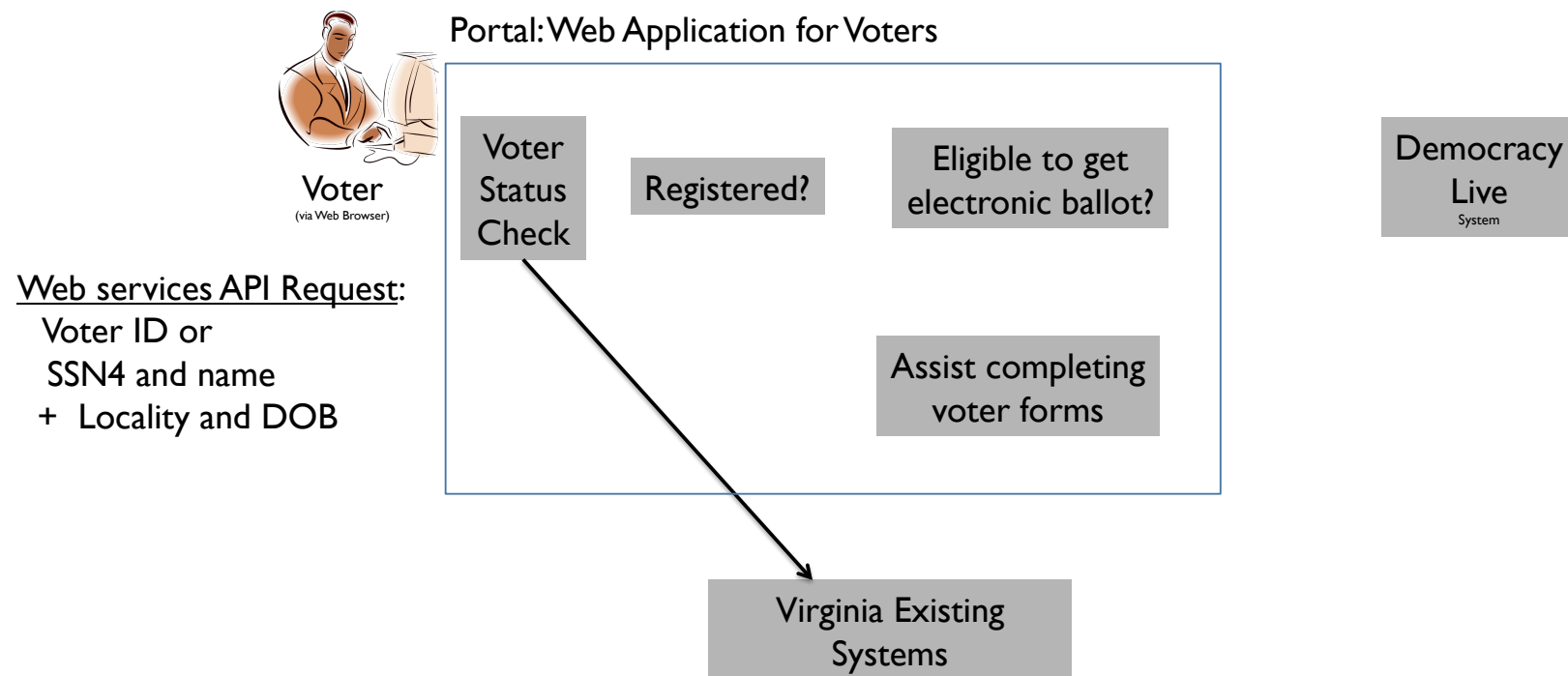
# Voter Services Portal Workflow



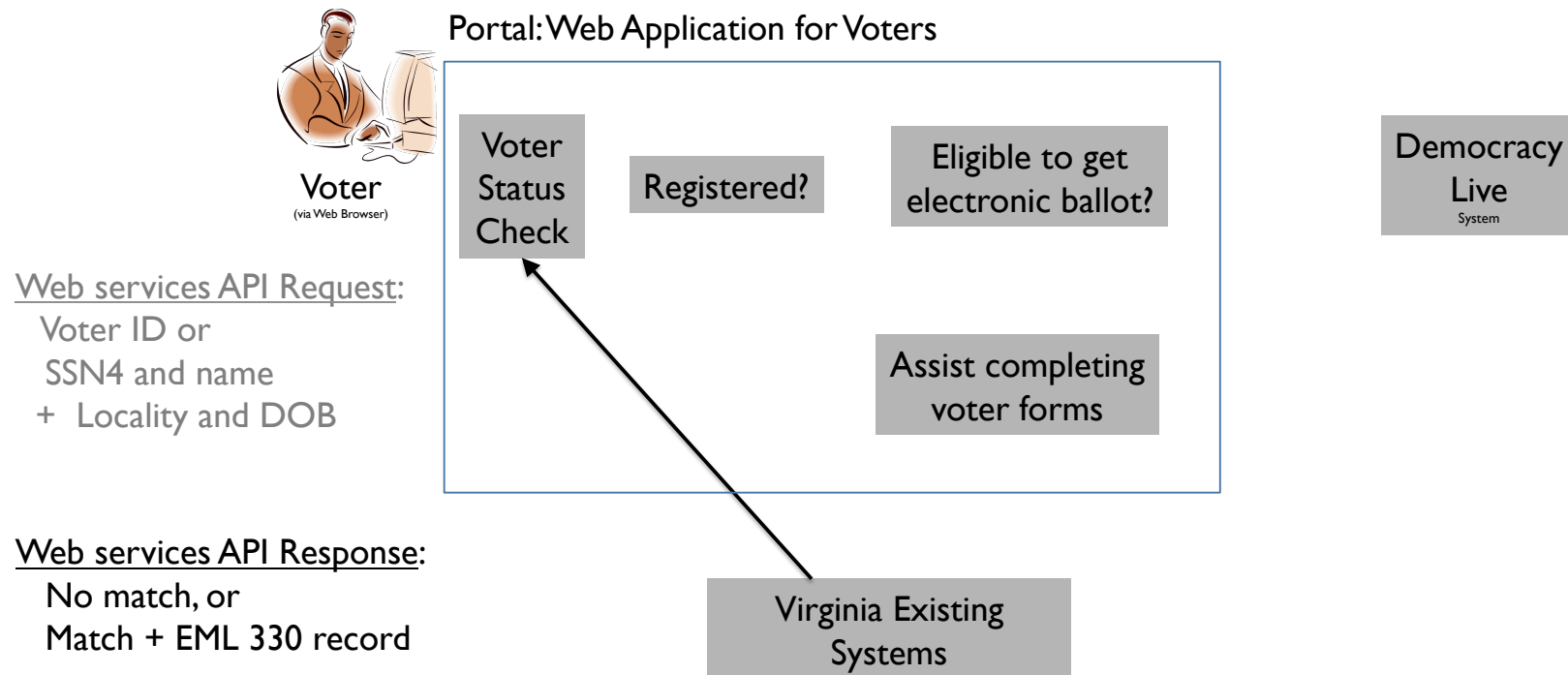
# Portal and Analytics Software Objectives

- Open Source:** Software freely available to any other election officials to adopt, adapt, and deploy — *via royalty free license*
- Max Flexibility:** SBE is unconstrained going forward in how to enhance, expand, modify, scale, etc.
- Open Data:** Data interchange and output uses public common data formats, and open standards (where available)
- Cloud Hosting:** Public facing software uses out-sourced hosting; cost-effective scalability, appropriate security measures with State Hosting, and professional SLA
- State Hosting:** Voter records and data repository hosted and managed directly by SBE; web services interface to new software; appropriate data integrity and security measures with Cloud Hosting

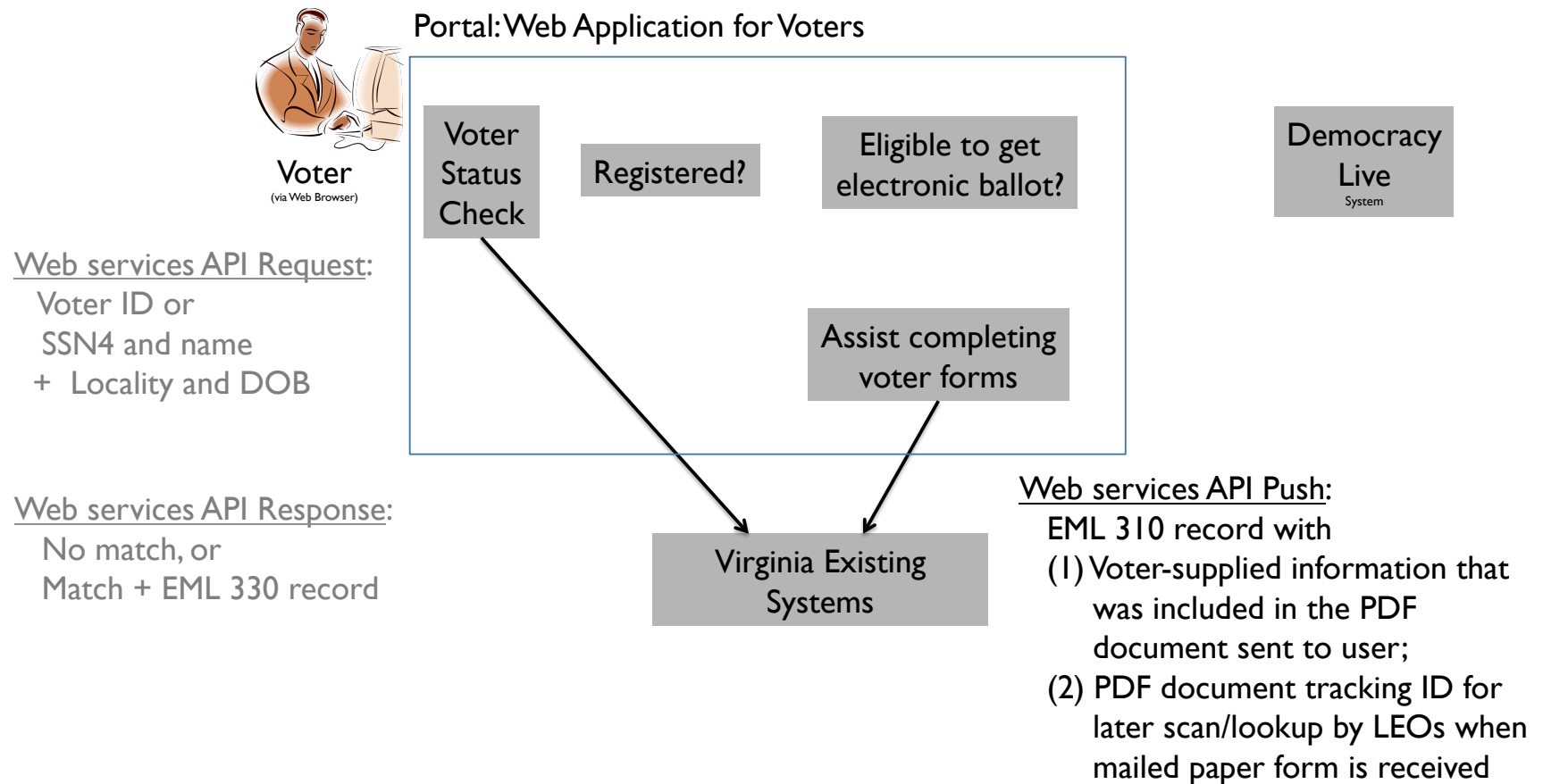
# EML Usage and APIs for Data Interchange



# EML Usage and APIs for Data Interchange

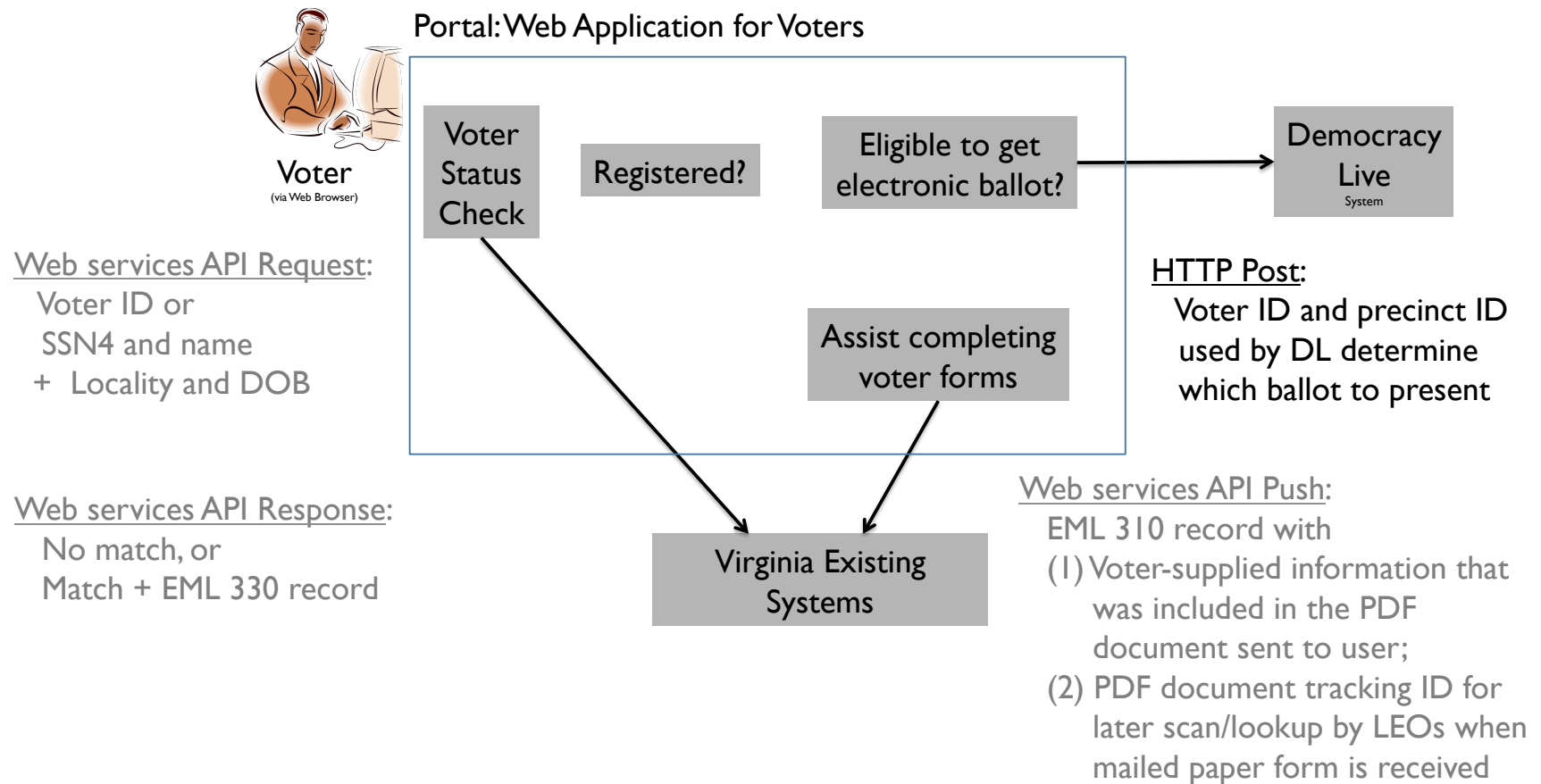


# EML Usage and APIs for Data Interchange





# EML Usage and APIs for Data Interchange



# EML 310 Usage

**What Worked:** excellent starting point for representing all the contents of a Virginia VR form for:

domestic voter registration, UOCAVA registration (VA FPCA), UOCAVA update, domestic voter record update, domestic absentee ballot request

## **Extensions Required:**

- Several voter check boxes – military, overseas, volunteer, ...
- FPCA voter type – support for 4 types
- FPCA military info – branch, rank, ID number
- VA FPCA extensions – VA residence available/unavailable
- VA eligibility – felony or incapacity history, restoration dates
- **Address confidentiality !** Including VA-specific related info

**What Didn't Work:** Schema validation problems; requires more examples for clarity and to explain to non-technical stakeholders

# Example: Check Boxes

<!-- END OF CHECKBOXES -->

```
<CheckBox Type="Eighteenplus">yes</CheckBox>
<CheckBox Type="Citizen">yes</CheckBox>
<CheckBox Type="ElectionOfficialInterest">no</CheckBox>
<CheckBox Type="RegistrationStatement">yes</CheckBox>
<CheckBox Type="PrivacyNotice">yes</CheckBox>
```

<!-- please note the addition of more checkboxes -->

```
<CheckBox Type="NewRegistrationRequest">no</CheckBox>
<CheckBox Type="UpdateRegistrationRequest">yes</CheckBox> <!-- one of New or Update is always yes -->
<CheckBox Type="AbsenteeRequest">yes</CheckBox> <!-- can be yes with either New or Update and with Overseas or Military or neither -->
<CheckBox Type="Overseas">yes</CheckBox>
<CheckBox Type="Military">no</CheckBox>
<CheckBox Type="ResidenceStillAvailable">no</CheckBox>
<CheckBox Type="AddressConfidentialityRequest">yes</CheckBox>
<CheckBox Type="Volunteer">no</CheckBox>
<CheckBox Type="VotingRightsRevoked">yes</CheckBox> <!-- if yes, then one of Felony or Incapacitated below will be present -->
```

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# Example: Extensions for VA Specific Registration or Absentee Form Info

```
<FurtherInformation>
  <Message DisplayOrder="0001" Type="Felony" Seqn="1">
    <Felony xsi:schemaLocation="http://sbe.virginia.gov EmlExtension.xsd" RightsRestored="yes" ConvictionState="Virginia" RestoredDate="2001-08-05"
      xmlns="">yes</Felony> </Message>
    <Message DisplayOrder="0002" Type="Incapacitated" Seqn="2">
      <Incapacitated xsi:schemaLocation="http://sbe.virginia.gov EmlExtension.xsd" RightsRestored="yes" RestoredDate="2001-08-05"
        xmlns="">yes</Incapacitated></Message>
    <Message DisplayOrder="0003" Type="Confidential" Seqn="3"> <!-- Required if AddressConfidentialityRequest is true; if false, required to be absent-->
      <Confidentiality xsi:schemaLocation="http://sbe.virginia.gov EmlExtension.xsd" type="LEO" xmlns="">yes</Confidentiality>
      <!-- one of LEO, CPD, TSC, ACP-->
      <SubstituteAddress status="previous"> <!-- always postal address for PO box-->
        <PostalAddress xmlns="urn:oasis:names:tc:ciq:xal:4">
          <Thoroughfare type="PObox" number="1313">P.O. Box 1313</Thoroughfare>
          <Locality type="Town">Richmond</Locality>
          <AdministrativeArea type="StateCode">VA</AdministrativeArea>
          <PostCode type="ZipCode">02315</PostCode>
          <Country code="USA">United States of America</Country>
        </PostalAddress>
      </SubstituteAddress>
    </Message>
    <Message DisplayOrder="0004" Type="Status" Seqn="4"> <!-- will not be used-->
      <ChangeAction xsi:schemaLocation="http://sbe.virginia.gov EmlExtension.xsd" xmlns="">Add</ChangeAction>
    </Message>
    <Message DisplayOrder="0005" Type="AbsenteeRequest" Seqn="5"> <!-- required if AbsenteeRequest checkbox is true; if false, required to be absent-->
      <AbsenteeType xsi:schemaLocation="http://sbe.virginia.gov EmlExtension.xsd" xmlns="">ActiveDutyMerchantMarineOrArmedForces</AbsenteeType>
      <!-- one of: Student, SpouseOfStudent, Business, Vacation, Commuting, FirstResponder, DisabilityOrIllness, CaringForDisabledorIllFamilyMember,
      Pregnancy, ConfinedAwaitingTrial, ConfinedMisdemeanorConviction, ElectoralService, ReligiousObligation, ActiveDutyMerchantMarineOrArmedForces,
      SpouseOrDependentActiveDutyMerchantMarineOrArmedForces, TemporaryResideOutside, TemporaryResideOutsideBusiness, TemporaryResideOutsideSpouse,
      PartyRepresentative, RequestPVPonly-->
    </AbsenteeType>
    <AbsenteeInfo>Army A04-5244-SS Staff Sergeant</AbsenteeInfo> <!-- for now, just a string until detailed XSD-->
  </Message>
  <Message DisplayOrder="000n" Type="DateofLastResidence" Seqn="n"> <!-- required if ResidenceStillAvailable is yes--> 2011-12-24
  </Message>
</FurtherInformation>
</VoterInformation>
</Voter>
<DateTimeSubmitted>2012-05-07T11:29:48.7888-04:00</DateTimeSubmitted>
</VoterRegistration>
</EML>
```

# Status

## (Proposed by David Webber)

Add a Status element and “@status” attribute

Add status to Voter after the **DateTimeSubmitted** element at the bottom

Add @status to **VoterInformation** element and to **VoterIdentification** element

Define status values: New, Updated, Removed, Pending, Expired, Deceased

Define @status values: New, Updated, Removed, Pending, Expired

All **VToken** elements must be a repeatable

Currently they are simply optional; need ability to track multiple events and information exchanges in the extended use cases

What is the difference between **VTokenQualified** and **VToken**?

The definition text is obtuse – this requires clearer explanation in text:

1. **VTokenQualified**: A **VToken** that is permitted to be used for the purpose and context of a particular process and event.

2. **VToken**: A unique identifier for a device or entity involved in the voting process.

# EML 330 Usage

**What Worked:** Excellent starting point for representing all the contents of a Virginia voter record required to:

- (1) Determine eligibility to use the DL ballot system
- (2) Enable voter record updates

## **Extensions Needed:**

- Several voter attributes
- Election list
- Past election list elements for voting history
- Future election list elements for absentee status or lack thereof
- UOCAVA specific information, e.g. absentee status expiration

## **What Didn't Work:**

Slightly poor fit with VA voter data model generally

Very poor fit with VA model of absentee voting data, specifically

# Example: Election List

<Event>

```
<EventIdentifier type="current ballot"> <!-- Upcoming Elections voter is eligible to vote in -->
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY" Permitted="yes" Voted="no"
    seqn="0001">2012 May City General</ElectionName>
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY" Permitted="no" Voted="no"
    seqn="0002">2012 June Democratic Primary</ElectionName>
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY" Permitted="no" Voted="no"
    seqn="0003">2012 June Republican Primary</ElectionName>
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY" Permitted="no" Voted="no"
    seqn="0004">2012 November General Election</ElectionName>
```

</EventIdentifier>

```
<EventIdentifier type="voter history"> <!-- Elections voter has participated in. Type is optional -->
  <ElectionName Locality="BRISTOL CITY"
    seqn="0001">11/2/2004 - NOVEMBER 2, 2004 GENERAL ELECTION</ElectionName>
  <ElectionName Locality="BRISTOL CITY"
    seqn="0002">11/8/2005 - NOVEMBER 8, 2005 GENERAL ELECTION</ElectionName>
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY"
    seqn="0003">11/7/2006 - NOVEMBER 7, 2006 GENERAL ELECTION</ElectionName>
  <ElectionName Type="Full Ballot" Locality="BRISTOL CITY"
    seqn="0004">2008 November General</ElectionName>
```

</EventIdentifier>

</Event>

# Example: UOCAVA Voter

```
<Election>
  <ElectionIdentifier IdNumber="07261afc-9ed3-410f-b07d-84d014ab2c6b" DisplayOrder="0006">
    <ElectionName>2008 November General</ElectionName>
  </ElectionIdentifier>
  <PollingDistrict>
    <Name divisionType="locality"/>
  </PollingDistrict>
  <CheckBox Type="Voted">no</CheckBox>
  <CheckBox Type="Permitted">yes</CheckBox>
  <CheckBox Type="FutureElection">no</CheckBox>
  <Absentee xmlns="https://wscp.virginia.gov/voter">
    <AbsenteeApplicationType>Federal Post Cards Application – FPCA</AbsenteeApplicationType>
    <ApplicationReceived>2008-08-23</ApplicationReceived>
    <EffectiveDate>2008-08-23</EffectiveDate>
    <ExpirationDate>2009-12-31</ExpirationDate>
    <IsOngoing>true</IsOngoing>
    <EmailAddress>cepedara2000@hotmail.com</EmailAddress>
    <BallotIssued>2010-09-14</BallotIssued>
    <AbsenteeBallotStatusCode>Issued</AbsenteeBallotStatusCode>
    <AbsenteeBallotStatus>Issued</AbsenteeBallotStatus>
  </Absentee>
</Election>
```



# Pause, Recap, Q&A

## **Q&A On:**

Who We Are; What We Do  
VA EASE Project Background  
The Big Picture  
Portal Concept  
Details of CDF Usage in Portal

## **Next Up:**

More on Analytics, data format walkthrough  
Good news? New use case possible for standards process?  
Next steps on Portal and Analytics  
Related work in TrustTheVote Project

# TrustTheVote Project

## Analytics Goals

**Similar to Portal:** open-source, open data, extensible, cloud hosted, rely on existing state-operated systems of record

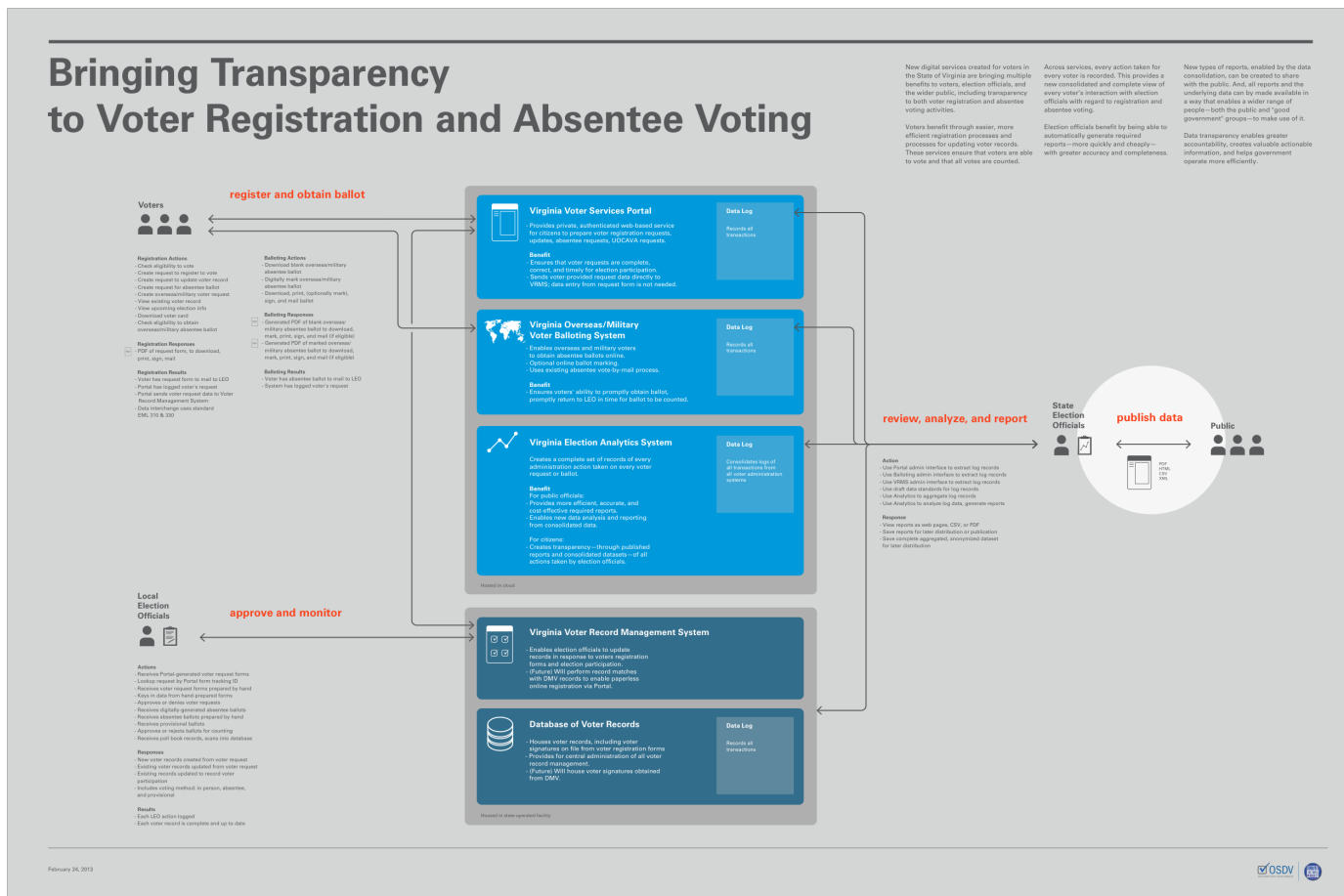
**CDFs:** no directly applicable standards for the plethora of both common and VA-specific transaction types of log records, or for the various outcomes required in FPCA reporting

**New Use Case:** election administration record logging worked example, requirements and schema doc, XSD, running code

**Actors, Roles, Workflow, Dataflow:** see the big picture

# Project Outcome

## The Big Picture: The VA Voter World – After the Project



# TrustTheVote Project

## Analytics System for EASE

**Basic Purpose:** Fulfill EASE grant requirements for tracking UOCAVA voter experiences and reporting to FVAP

**Basic Scope:** Both usage of services, and outcomes of requests

Usage of paper forms, online forms, online balloting

Outcome of voter registration requests; absentee requests; FPCA

Outcome of absentee ballot and FWAB:

*(not returned, returned late, on-time counted, on-time rejected)*

Comparison of usage and outcome of UOCAVA vs. other voters

**Extended Scope:** OPEN SOURCE DIGITAL VOTING FOUNDATION

Similar tracking for all voters and all ballot outcomes:

*absentee, provisional, in-person, none, rejected, ...*

Comparison based on arbitrary demographic attributes:

*voter type or status, year of birth, ZIP, ...*

# TrustTheVote Project

## Analytics System for VA

**Basic Requirement:** Automatically generate FVAP-mandated report in FVAP spreadsheet format

**Extensibility:** Extend to generate HTML/PDF/CSV reports for ...

Other government requirements, e.g. EAC, legislature requests  
Reports of interest to general public

**Integration:** Data integration with existing SBE systems and data

Voter records, voter history, voter demographics

**Logging and Accountability:** Consolidate and analyze log data

from existing VA systems; from DL; and from Portal ...  
... with every online or offline voter request or ballot outcome;  
... and every administrative decision of LEOs

# TrustTheVote Project Analytics Usage Model

**Web based tool for election officials:** aggregate data, make reports

Each election org hosts their own private instance of Analytics

**Independent based on CDFs:** no system integration

Data integration only, with users pushing data in CDFs, obtained from other systems: voter registration system, online voter services, ballot distribution, etc.

**Simple User Model:** admin user creates accounts for others in workgroup, all share ability to push data and generate reports

**Simple Process:** create, push, analyze, pull

1. Define a new election name, dates, etc.
2. Extract log data for that specific election, from other systems
3. Upload these log files into Analytics
4. Upload demographic data file into Analytics
5. Create and view each report needed, download reports & raw data files

# TrustTheVote Project Analytics Data Model

**XSD walkthrough:** only highlights here

**Common header** for log record dataset and demographic dataset

Origin data, generation time, etc.

Identifier hash algorithm applied to voter unique ID numbers for anonymity

**Demographic data:** list of records each with

hashed voterID as unique key

attribute values like ZIP, year of birth, etc.

**Log data:** list of records with same unique key for the voter whose request or outcome is represented in the log record

Voter action: submit a request form (registration, update, absentee, ...)

Voter action: submit a ballot (absentee, provisional, pollbook checkin)

LEO action: receive, approve, deny request

LEO action: receive, reject, or count ballot (absentee, provisional)

Forms (requests, ballots, poll books, ...)

Form attributes (online, FPCA, FWAB, ...)

Notes on the recorded transaction (reason for rejection)

# TrustTheVote Project Analytics Data Model

**XSD walkthrough:** only highlights here

**Common header** for log record dataset and demographic dataset

```
<xs:element name="header">
  <xs:complexType>
    <xs:all>
      <xs:element name="origin" type="xs:string" />
      <xs:element name="originUniq" type="xs:string" minOccurs="0" />
      <xs:element name="hashAlg" type="hashAlgType" />
      <xs:element name="createDate" type="xs:dateTime" />
      <xs:element name="election" type="xs:string" />
    </xs:all>
  </xs:complexType>
</xs:element>
```



# TrustTheVote Project Analytics Data Model

**XSD walkthrough:** only highlights here

**Common header** for log record dataset and demographic dataset

Origin data, generation time, etc.

Identifier hash algorithm applied to voter unique ID numbers for anonymity

**Demographic data:** list of records each with

```
<xs:element name="voterid" type="xs:string" />
<xs:element name="regDate" type="xs:dateTime" />
<xs:element name="regStatus" type="regStatusType" /> <!-- v2 -->
<xs:element name="gender" type="genderType" />
<xs:element name="agegroup" type="ageGroupType" />
<xs:element name="zip" type="xs:string" />
<xs:element name="overseas" type="xs:boolean" />
<xs:element name="military" type="xs:boolean" />
<xs:element name="absenteeInThisElection" type="xs:boolean" />
<xs:element name="politicalPartyName" type="xs:string" minOccurs="0" /> <!-- not used in VA -->
<xs:element name="precinctSplitID" type="xs:string" /> <!-- v2 -->
<xs:element name="jurisdiction" type="xs:string" /> <!-- v2 -->
<xs:element name="locality" type="xs:string" /> <!-- v2 -->
<xs:element name="congressionalDistrict" type="xs:string" /> <!-- v2 -->
```

# TrustTheVote Project Analytics Data Model

**XSD walkthrough:** only highlights here

**Common header** for log record dataset and demographic dataset

Origin data, generation time, etc.

Identifier hash algorithm applied to voter unique ID numbers for anonymity

**Demographic data:** list of records each with

hashed voterID as unique key

attribute values like ZIP, year of birth, etc.

**Log data:** list of records with same unique key for the voter whose request or outcome is represented in the log record

```
<xs:element name="voterid" type="xs:string" />
<xs:element name="date" type="xs:dateTime" />
<xs:element name="action" type="actionType" />
<xs:element name="form" type="formType" />
<xs:element name="formNote" type="formNoteType" minOccurs="0" />
<xs:element name="jurisdiction" type="xs:string" />
<xs:element name="leo" type="xs:string" minOccurs="0" />
<xs:element name="notes" type="noteType" minOccurs="0" />
<xs:element name="comment" type="xs:string" minOccurs="0" />
```

# TrustTheVote Project Analytics Data Model

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="voterTransactionLog">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="header">
          <xs:complexType>
            <xs:all>
              <xs:element name="origin" type="xs:string" />
              <xs:element name="originUniq" type="xs:string" minOccurs="0" />
              <xs:element name="hashAlg" type="hashAlgType" />
              <xs:element name="createDate" type="xs:dateTime" />
              <xs:element name="election" type="xs:string" />
            </xs:all>
          </xs:complexType>
        </xs:element>
        <xs:element name="voterTransactionRecord" minOccurs="0"
          maxOccurs="unbounded">
          <xs:complexType>
            <xs:all>
              <xs:element name="voterid" type="xs:string" />
              <xs:element name="date" type="xs:dateTime" />
              <xs:element name="action" type="actionType" />
              <xs:element name="form" type="formType" />
              <xs:element name="formNote" type="formNoteType" minOccurs="0" />
              <xs:element name="jurisdiction" type="xs:string" />
              <xs:element name="leo" type="xs:string" minOccurs="0" />
              <xs:element name="notes" type="noteType" minOccurs="0" />
              <xs:element name="comment" type="xs:string" minOccurs="0" />
            </xs:all>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:simpleType name="hashAlgType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="SHA1" />
      <xs:enumeration value="none" />
    </xs:restriction>
  </xs:simpleType>
```

```
<xs:simpleType name="actionType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="identify" />
    <xs:enumeration value="start" />
    <xs:enumeration value="discard" />
    <xs:enumeration value="complete" />
    <xs:enumeration value="submit" />
    <xs:enumeration value="receive" />
    <xs:enumeration value="approve" />
    <xs:enumeration value="reject" />
    <xs:enumeration value="sentToVoter" />
    <xs:enumeration value="returnedUndelivered" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="formType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="VoterRegistration" />
    <xs:enumeration value="VoterRegistrationAbsenteeRequest" />
    <xs:enumeration value="VoterRecordUpdate" />
    <xs:enumeration value="VoterRecordUpdateAbsenteeRequest" />
    <xs:enumeration value="AbsenteeRequest" />
    <xs:enumeration value="AbsenteeBallot" />
    <xs:enumeration value="ProvisionalBallot" />
    <xs:enumeration value="PollBookEntry" />
    <xs:enumeration value="VoterCard" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="formNoteType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="handMarked" />
    <xs:enumeration value="onlineGenerated" />
    <xs:enumeration value="FPCA" />
    <xs:enumeration value="FWAB" />
    <xs:enumeration value="trackingCodeNone" />
    <xs:enumeration value="trackingCodeMatch" />
    <xs:enumeration value="trackingCodeNoMatch" />
  </xs:restriction>
</xs:simpleType>
```

```
<xs:simpleType name="noteType">
  <xs:restriction base="xs:string">

    <!-- Trackable sub cases for accepting a VR or AB requests -->
    <xs:enumeration value="acceptReactivate" />
    <xs:enumeration value="acceptDuplicate" />
    <xs:enumeration value="acceptTransferIn" />

    <!-- Reasons for rejecting a VR or AB requests, and absentee or provisional
    ballots -->
    <xs:enumeration value="rejectLate" />
    <xs:enumeration value="rejectUnsigned" />
    <xs:enumeration value="rejectIncomplete" />
    <xs:enumeration value="rejectFelonyConviction" />

    <!-- Reasons for rejecting Absentee or provisional ballots -->
    <xs:enumeration value="rejectPreviousVoteAbsentee" />
    <xs:enumeration value="rejectPreviousVote" />

    <!-- Notes for how a form or ballot was received -->
    <xs:enumeration value="postalReceived" />
    <xs:enumeration value="personalReceived" />
    <xs:enumeration value="faxReceived" />

    <!-- Notes for how a blank ballot was sent to voter -->
    <xs:enumeration value="postalSent" />
    <xs:enumeration value="emailSent" />
    <xs:enumeration value="faxSent" />

    <!-- Notes for types of non-documents (online systems, not forms) that a voter
    can identify to -->
    <xs:enumeration value="onlineVoterReg" />
    <xs:enumeration value="onlineBalloting" />
  </xs:restriction>
</xs:simpleType>
</xs:schema>
```

# Next Steps: Portal 2013

## **Portal 2012 Deployed:**

Voter record access

Eligibility check for online balloting

Forms generation delayed by regulatory approval

**Portal Q2 2013:** Forms generation enabled after approval

**Portal Q3:** Voter access to online sample ballot “What’s on My Ballot?”

**Portal Q?:** Online paperless completion of voter registration requests

- For users with valid VA state ID, and DMV provides digital image of signature
- Depends on real-time integration of DMV systems with SBE VR back-end
- Very recent development, many details unknown, likely not to include record updates, absentee requests, UOCAVA status change, in or out of state transfers

# Next Steps: Analytics 2013

**Analytics 2012 Deployed:** Only FVAP report, only one election's data, very limited use of Portal and DL

**Analytics Q1/Q2 2013:** Full data run-through for Q1 election(s)

**Analytics Q2:** More reports generated – currently TBD

**Analytics Q3:** More reports, more formats

**Analytics Q?:** Enhanced user model and admin features public demo system sponsored by OSDV Foundation, hosted by OSL

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**Analytics 201?:** Support for IEEE/NIST standard CDF Hint ;-)

# TrustTheVote Project 2013 Agenda

## Related Projects and CDFs

### **Portal 2013:** Use of EML 410 for ballot style definition

Also to employ any IEEE standards updates in use of EML 310 or 330

### **Ballot Marking Device:**

Build on UI usability study of ITIF/EAC funded project of U. Baltimore

May use EML 410 for ballot style definition

*Tablet based demo:* right here! and at poster session

### **Election Night Reporting System:**

Consumes EMS tally data, presents public with Web presentation

May use EML for precinct-level election result data

*Web UI demo:* <http://enrs.trustthevote.org>

### **Digital Poll Book:** Candidate for EML 310 for poll book records

### **Ballot Design Studio:** Candidate for EML 410 for ballot style definitions

# Contacts for More Information

**OSDV Foundation:** <http://osdv.org>

**TrustTheVote Project:** <http://trustthevote.org>

**TrustTheVote Project Blog:** <http://blog.trustthevote.org>

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Co-Executive Director, OSDV Foundation