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<th>PA OVR Web API Partner</th>
<th>Document ID: PAOVRSpec</th>
<th>Version: 1.5</th>
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<tr>
<td>PA OVR Web API Specification Document</td>
<td></td>
<td>Version Date: 3/5/2020</td>
</tr>
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PA OVR Web API Specification
PA Online Voter Registration (PAOVR)

Version 1.5
3.5.2020

Produced for:
PA OVR Web API Posting Entities

Produced by:
Pennsylvania Department of State
Harrisburg, PA
# REVISION HISTORY

<table>
<thead>
<tr>
<th>Date</th>
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<th>Description</th>
<th>Author</th>
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<tr>
<td>7/26/2016</td>
<td>0.0</td>
<td>Initial Publication</td>
<td>Moser</td>
</tr>
<tr>
<td>04/16/2017</td>
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<td>Ready for Review</td>
<td>TenHuisen</td>
</tr>
<tr>
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<td>0.2</td>
<td>Feedback Incorporated, Added Release Notes and Project Timeline</td>
<td>TenHuisen</td>
</tr>
<tr>
<td>05/03/2017</td>
<td>0.3</td>
<td>Added batch vs interactive differentiation, field processing order, expected response codes, clarifications to technical description</td>
<td>TenHuisen</td>
</tr>
<tr>
<td>05/23/2017</td>
<td>1.0</td>
<td>Clarification in multi-language support, interactive mode, and batch mode with continueAppSubmit=1 and miscellaneous formatting and clarity issues.</td>
<td>TenHuisen</td>
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| 06/22/2017   | 1.1     | • Added responses for ID verification on successful and error submissions. Updated Release Notes.  
|              |         | • Field Description spreadsheet updated with new parties (Green and Libertarian) and GetApplicationSetup | TenHuisen  |
| 10/02/2017   | 1.2     | • Appendix added for full GetApplicationSetup output  
|              |         | • Format Changes                                                             | TenHuisen  |
| 11/16/2017   | 1.3     | • Corrected eSignature size and defined contrast thresholds  
|              |         | • Removed duplicate Trailer UNITTYPE in GETAPPLICATIONSETUP example          | TenHuisen  |
| 06/01/2018   | 1.4     | • Added error response messaging for eSignatures not meeting the 96 dpi threshold.  
|              |         | • Clarification on processing in Batch with ID scenarios  
|              |         | • Update GETAPPLICATIONSETUP to update Political Party, Race and UNITTYPE  
|              |         | • Updated Field Spec reference  
|              |         | • Updated Release Notes                                                      | TenHuisen  |
| 02/20/2020   | 1.5     | • Added ACT 77 Mail-In Ballot information, details, links to updated documents and changes to GET calls | TenHuisen  |
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INTRODUCTION

PA ONLINE VOTER REGISTRATION (PAOVR) PROCESS DESCRIPTION

Upon launching its Online Voter Registration service in August of 2015, Pennsylvania’s current Governor Tom Wolf said, “Online Voter Registration is about making the voting experience more convenient and more accessible ... It is about giving citizens an easier way to exercise their right to vote and establishing a clearer connection between the political system and the citizens. Online voter registration is secure; it improves accuracy and will reduce costs for counties by cutting down on time-consuming data entry.”

Since then, Pennsylvania has seen over 1,6 million citizens registered to vote through this type of online service. The process to register is quite simple and relies on certifying individuals through either their Pennsylvania Driver’s License or their signature. The process is outlined below:
PRODUCT OBJECTIVE

Historically, voter registration drives have been common across the nation. These drives use various methods to make voter registration “easier” and/or more “accessible” for eligible, but unregistered voters within each state, like Pennsylvania. Third-party registration organizations are moving towards the use of mobile devices to register voters but usually only if they can capture the voter data electronically for their own purposes.

The challenge then, is how can an approved Posting Entity and its associated Partner Organization(s) (aka those organizations managing voter registration drives) easily and efficiently transfer the application information into a Statewide Uniform Registry of Electors (SURE), such as in Pennsylvania? And in doing this, increase reliability, efficiency and quality of the information captured, while presenting “real-time” acknowledgement of the voter registration application to the applicant?

These and other metrics measuring the success rate and cost reductions have prompted the Department of State to develop an easy way to do business with the Commonwealth for voter registration drives by approved Posting Entities and their associated Partner Organization(s). In addition to registering new voters, the Department’s strategy further supports the capabilities of the drives to “maintain” already registered voters. Supported voter maintenance functions currently support the following changes:

- name
- address
- party affiliation
- requiring assistance to vote
- Federal of State Employee Registering in County of Last Residence

The goal of the Department’s strategy for electronic voter registration will not only significantly reduce the overhead in voter registration and record maintenance versus paper methods, but also increase voter registrations and the quality of the voter record data.

Following the models of industry giants, such as PayPal and Amazon, the Department of State developed a secure internet facing service to which approved Posting Entities can consume this web-based service from their custom voter registration applications (custom VRApp). Thus, this service is named the Pennsylvania Online Voter Registration Web Application Interface or PA OVR Web API.

SPECIFICATION OBJECTIVES

The goal of the PA OVR Web API specification is to provide an adequate document for interested entities to develop, test, and use the PA OVR Web API service for secure voter registration applications and voter record maintenance into the SURE system within Pennsylvania.
INTENDED AUDIENCES

The PA OVR Web API specification document is intended for the following Posting Entity’s technical audiences:

- Architecture Team
- Development Team
- Test Team

REFERENCES

This document references and/or relies on the following documents:

- Field Definition Dictionary:
  - PA OVR Web API Field Dictionary
  - XML Guidelines
    - Must be registered on PA OVR Web API website
    - Under Web API Info menu
- Application (Custom VRApp) Approval Guidelines:
  - Registration Website
  - PA OVR Web API Terms of Use
- Test Plan:
  - Acceptance Test Plan (In development) **
- Project Documents:
  - Sample PA OVR Web API Project Timeline
  - Sample PA OVR Web API Project Plan

SPECIFICATION OVERVIEW

The PA OVR Web API Specification Document is a reference document that outlines information and approval processes and the corresponding interface formats for the development, approval and utilization of this online service specifically associated with Voter Registration tasks within Pennsylvania.
The PA OVR Web API uses HTTP methods. Requests to PA OVR Web API should be formatted as a JSON message passing XML within the body of the message and the API’s responses are returned, likewise, in JSON-formatted responses with XML body tags.

**IMPORTANT: YOU CANNOT RUN THE SAMPLE REQUESTS IN THIS SPECIFICATION AS-IS. REPLACE CALL-SPECIFIC PARAMETERS, SUCH AS TOKENS AND IDS, WITH YOUR OWN VALUES.**

**LANGUAGE**

Currently PA OVR Web API supports both English and Spanish submissions and responses, using US-ASCii (English) characters only. If a Posting Entity would desire to support additional languages, they would have to address this with the Department of State. Architecturally, the custom VRApp would be responsible to “translate” the posting of data and responses not currently supported under the current model, if approved by the Department.

**SECURITY**

Current security measures employ both the environment authorization key (per Posting Entity and Partner Organization) and calls using HTTPS and SSL protocols.
CUSTOM VRAPP PROGRAMMER INTERFACES

REQUIRED FIELDS

Please refer to the PA OVR Web API Field Dictionary in the REFERENCES section of this document for a list of the required fields and values.

PRECEDENCE

In the design of any application that interfaces with a web service, it is important to know how the interface will expect and process the information. For this reason, we have included the order in which the PA OVR Web API will expect and process interactions with the Posting Entity’s custom VRApp.

FIELD PROCESSING ORDER AND RESPONSES

PA OVR Web API has both a well-defined field processing order and a defined set of required and optional fields, denoted in the PA OVR Web API Field Dictionary. It distinguishes each submission into several groups, processing each group by the following priorities:

1. Missing Fields – checking for existence of the main access fields to setup the authorized XML transfer
2. Invalid Fields – validating the values of these fields
3. Mode – existence and validation of the forthcoming XML submission mode
4. Application Data Phase
   a. Primary Block – verifies existence and validation of primary fields (both required and optional) for most all submissions
   b. Options Block – verifies existence and validation of options fields (both required and optional) that are used based on the prior field values

MISSING FIELDS

1. <MissingAccessKey>VR_WAPI_MissingAccessKey</MissingAccessKey>
2. <MissingAPIaction>VR_WAPI_MissingAPIaction</MissingAPIaction>
3. <MissingLanguage>VR_WAPI_MissingLanguage</MissingLanguage>

INVALID FIELDS

4. <InvalidAccessKey>VR_WAPI_InvalidAccessKey</InvalidAccessKey>
5. <InvalidAction>VR_WAPI_InvalidAction</InvalidAction>

MODE
6. `<batch>VR_WAPI_InvalidAPIdBatch</batch>`

### APPLICATION DATA (PRIMARY BLOCK)

7. `<FirstName>VR_WAPI_MissingOVRfirstname</FirstName>`
8. `<LastName>VR_WAPI_MissingOVRlastname</LastName>`
9. `<DateOfBirth>VR_WAPI_InvalidOVRDOB</DateOfBirth>`
10. `<Phone>VR_WAPI_InvalidOVRphone</Phone>`
11. `<Email>VR_WAPI_InvalidOVRemail</Email>`
12. `<zipcode>VR_WAPI_InvalidOVRzipcode</zipcode>`
13. `<county>VR_WAPI_MissingOVRcounty</county>`
14. `<mailingzipcode>VR_WAPI_InvalidOVRmailingzipcode</mailingzipcode>`
15. `<drivers-license>VR_WAPI_InValidOVRDLformat</drivers-license>`
16. `<ssn4>VR_WAPI_InvalidOVRSSNformat</ssn4>`
17. `<invalidsignaturestring>VR_WAPI_Invalidsignaturestring</invalidsignaturestring>`
18. `<invalidsignaturetype>VR_WAPI_InValidsignaturetype</invalidsignaturetype>`
19. `<invalidsignaturesize>VR_WAPI_InValidsignaturesize</invalidsignaturesize>`
20. `<invalidsignaturedimension>VR_WAPI_InValidsignaturedimension</invalidsignaturedimension>`
21. `<invalidsignaturecontrast>VR_WAPI_InValidsignaturecontrast</invalidsignaturecontrast>`
22. `<politicalparty>VR_WAPI_MissingOVRParty</politicalparty>`
23. `<needhelptovote></needhelptovote>`
24. `<typeofassistance></typeofassistance>`
25. `<preferredlanguage></preferredlanguage>`
26. `<voterregnumber></voterregnumber>`
27. `<previousregzip>VR_WAPI_InvalidOVRPreviouszipcode</previousregzip>`
28. `<previousregyear>VR_WAPI_invalidpreviousregyear</previousregyear>`
29. `<declaration1>VR_WAPI_MissingOVRdeclaration1</declaration1>`
30. `<assistedpersonname></assistedpersonname>`
31. `<assistedpersonAddress></assistedpersonAddress>`
32. `<assistedpersonphone>VR_WAPI_InvalidOVRAssistedpersonphone</assistedpersonphone>`
33. `<assisteddeclaration2></assisteddeclaration2>`
34. `<ispollworker></ispollworker>`
35. `<bilingualinterpreter></bilingualinterpreter>`
36. `<pollworkerspeaklang>VR_WAPI_MissingOVRInterpreterlang</pollworkerspeaklang>`
37. `<secondEmail>VR_WAPI_InvalidOVRsecondEmail</secondEmail>`
38. `<mailinballotaddr>VR_WAPI_MissingOVRmailinballotaddr</mailinballotaddr>`
39. `<mailincity>VR_WAPI_MissingOVRmailincity</mailincity>`
40. `<mailinstate>VR_WAPI_MissingOVRmailinstate</mailinstate>`
41. `<mailin zipcode>VR_WAPI_InValidOVRmailin zipcode</mailin zipcode>
42. <mailinlivedsince>VR_WAPI_MissingOVRmailinlivedsince</mailinlivedsince>
43. <mailindeclaration>VR_WAPI_MissingOVRmailindeclaration</mailindeclaration>

**APPLICATION DATA (OPTIONS BLOCK)**

After this, the PA OVR Web API checks for the following fields:

1. <isnewregistration/></isnewregistration>
2. <name-update></name-update>
3. <address-update></address-update>
4. <ispartychange></ispartychange>
5. <isfederalvoter></isfederalvoter>
6. <united-states-citizen>VR_WAPI_MissingOVRisuscitizen</united-states-citizen>
7. <eighteen-on-election-day>VR_WAPI_MissingOVRisageover18</eighteen-on-election-day>
8. <otherpoliticalparty></otherpoliticalparty>
9. <donthavePermitOrResAddress></donthavePermitOrResAddress>
10. <streetaddress></streetaddress>
11. <streetaddress2></streetaddress2>
12. <unittype></unittype>
13. <unitnumber></unitnumber>
14. <city></city>
15. <previousreglastname></previousreglastname>
16. <previousregfirstname></previousregfirstname>
17. <previousregaddress></previousregaddress>
18. <previousregcity></previousregcity>
19. <previousregstate></previousregstate>
20. <previousregcounty></previousregcounty>
21. <politicalparty></politicalparty>
22. <assistedpersonname />
23. <assistedpersonAddress />
24. <assistedpersonphone />
25. <assistancedeclaration2 />
26. <donthavebothDLandSSN />
27. <drivers-license></drivers-license>
28. <signatureimage></signatureimage> (This depends on all the scenarios)

   a. Same with DL too.

To help in the construct of the custom VRApp by a Posting Entity, a diagram is being presented to facilitate various technical teams in the development, testing and planning of an application focused on voter registration initiatives and integrating with the Department of State’s Registry. The following UML sequence diagram shows how
processes operate with one another and in what order within the context of the PA OVR Web API. It is a construct of the PA OVR Web API Message Sequence Chart that shows object interactions arranged in time sequence.

![Figure 1: UML Sequence Diagram for PA OVR Web API - Interactive Mode](image-url)
Figure 2: UML Sequence Diagram for PA OVR Web API - Batch Mode

MAIL-IN BALLOT REQUEST OPTION (ACT 77 OF 2019)

As a part of Act 77 of 2019, a new ballot option was introduced for Pennsylvania voters, the mail-in ballot option. This is another option for voters to receive a ballot in the mail and it does not require an excuse to vote. Additionally, a voter who is requesting a mail-in ballot may also request to be added to a permanent mail-in voter list, which is otherwise known as an annual mail-in ballot request. If they opt for the permanent option, they will then receive ballots automatically for the remainder of the calendar year for eligible elections. Then, they will be asked to renew this request each year from the county election office to continue to receive ballots for eligible election.

The process begins with the voter electing to submit a mail-in ballot application. Once their application is completed, processed and approved by the county, the voter will be begin to receive their ballots via the address...
that they provided. Per Act 77, if the voter is approved for mail-in ballots, they cannot vote as a regular voter in their polling place on election day. The voter must deliver the mail-in ballot by mail or in person to their county election office by 8PM on election day, or they may only vote by provisional ballot at their polling place.

The OVR WebAPI has been expanded to incorporate the initial request to be placed on the mail-in ballot list. The foundation of voter registration information must be present for mail-in ballot application information to be submitted. Because mail-in ballot processing is a different application type to the county, a separate response will be presented to the VRApp submission that pertains specifically to the mail-in ballot submission.

To account for different VRApp timeframes to include the mail-in ballot option, we have designed the processing of application submissions by the OVR WebAPI to not require the fundamental field of <ismailin> field. This will accommodate VRApps as they are able to include this functionality.

Mail-in Ballot application submissions can be allowed or disallowed depending on the election cycle or deadlines. This is controlled by a backend system processing parameter that is not visible to the VRApp at this point. As a result, we have provided an appropriate response for those mail-in ballot requests during those timeframes when mail-in ballot requests are not accepted. In the future, we may look at providing dates via GETAPPLICATIONSETUP call (like voter registration deadline) that will help the VRApp manage the mail-in ballot request more efficiently.

AUTHENTICATION

To begin the process, organizations must first register on the PA OVR Web API Registration website. Once the registration is reviewed, an email correspondence will be sent from the Department informing the organization of its status and credential access. approved organizations will receive an authentication access key from the Department in the PA OVR Web API STAGING environment with PRE-APPROVED status. Initial access to the STAGING environment is intended to aid in the development of the custom VRApp in the building of dropdowns with prepopulated information from the SURE system. Upon successful design and retrieval of the information, the STAGING access key will be updated by request to the Department of State to APPROVED status to allow read/write access. This is intended for further development and initial testing by the Posting Entity. Upon completion of this phase, the Department will provide data for end to end testing and will be coordinated between the Department and the Posting Entity. All tests outlined in the test matrix (Test Plan referred in the REFERENCES section of this document) must be successful with documentation and with Department validation before an approved access key will be granted into the production environment (aka PROD) with a PRE-CERTIFIED status. This status is for a limited scope of final testing within the PROD environment and will be carefully coordinated by the Department. A PROD access key of CERTIFIED status will be provided once the organization’s custom VRApp has satisfied all testing requirements and the PA OVR Web API Terms of Use has been agreed to and completely executed via authorized signatures. The access key will be used to authenticate each Posting Entity/Partner Organization for security and reporting purposes. The Department reserves the right to re-issue new PROD or STAGING access keys with advanced notice. Re-issuance of access keys may be required due to security concerns.
An organization wishing to use PA OVR Web API must register with the Department of State’s Bureau of Commissions, Elections and Legislation at https://PAOVRWebAPI.votespa.com/SUREWebAPIAdmin/

**MODES OF OPERATION**

To accommodate various development techniques and support associated custom VRApp s, PA OVR Web API was developed to support two modes of operation, interactive (verbose) and batch (non-verbose). Despite the terminology, the key differentiator between interactive and batch is the utilization of the POST calls and their corresponding responses. The table below outlines the key mode differentiators:

<table>
<thead>
<tr>
<th>Mode</th>
<th>POST Call(s)</th>
<th>Expected Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch</td>
<td>Submit all fields for an application within a single POST call (XML)</td>
<td>All responses to each field will be received in the order submitted/processed, but all at once.</td>
</tr>
<tr>
<td>Interactive</td>
<td>Submit all fields for an application within a single POST call (XML)</td>
<td>Single error or success response received per POST call/XML submission. First error or final successful submission.</td>
</tr>
</tbody>
</table>

Table 1: Modes of Operation

This design then will allow custom VRApp developers to architect their interactive application using either interactive or batch modes within the PA OVR Web API, while providing a mechanism to submit multiple applications using batch mode.

**NOTE: IT SHOULD BE NOTED THAT APPLICATIONS CAN BE SUBMITTED INTERACTIVELY USING EITHER THE INTERACTIVE OR BATCH MODE WITHIN THE PA OVR WEB API.**

**SUBMITTING REGISTRATIONS INTERACTIVELY ONLINE**

Because both the PA OVR web application (https://www.pavoterservices.pa.gov/Pages/VoterRegistrationApplication.aspx) and PA OVR Web API services originated from the same design lineage, there are many similarities in their features and functions in capturing and processing voter registration applications. Although both focus on new voter registration applications and certain voter records maintenance functions, the main distinction between these services is subtle, yet very important. First while both integrate tightly with the Department’s backend systems and includes the validation logic for PennDOT Driver’s licenses, the PA OVR web application currently incorporates retry thresholds, such as one retry for PennDOT DL information correction and three signature upload attempts. Conversely, the PA OVR Web API allows for retry thresholds as designed by the custom VRApp. Secondly, the design of the PA OVR Web API allows for submission flexibility, yet processing information similarly to the logic built into the PA OVR web application. So much that, the logic, efficiency and flow of a registration application should follow the precedent...
guidelines (see section Precedence) within the Posting Entity’s custom VRApp. Likewise, there is currently no inherent mechanism to identify or correct the applicant’s information upon a failure, unless the Posting Entity’s custom VRApp is written to support this functionality.

Applications that are submitted interactively with a valid PennDOT ID number or PA Driver’s License number are to rely on the PA OVR Web API and other services to attach a digitized copy of the applicant’s PennDOT signature to the voter registration application. This will be accomplished by the PA OVR Web API parsing the pertinent information (from the Posting Entity custom VRApp) and passing it to a PennDOT/HAVA Interface for validation of the PennDOT ID. Once a response is received by PennDOT (either an error or signature), the subsequent posting of application data will be committed to the SURE Portal database and an appropriate response is generated to the Posting Entity’s VRApp via the PA OVR Web API per POST call.

If the applicant does not have a PennDOT Driver’s License or cannot validate his/her PennDOT ID, the applicant should be presented the opportunity to submit the last four digits of their SSN and/or upload a digital image file of his/her signature. This functionality should be incorporated into the Posting Entity’s custom VRApp logic. The submission of the voter registration application will follow the above description but instead of passing validation data to PennDOT, the uploaded signature will be processed by an imaging service within the SURE architecture. If the signature image file does not meet the PA OVR Web API standards or fails to properly process, the applicant may, at the discretion of the Posting Entity, have the option to print the registration form, sign it, and mail to their county voter registration office or to request a signature card be sent to their address for use in supplying a signature for their registration. This option can be built into the Posting Entity custom VRApp or relied on the SURE system to generate and mail Missing Signature Correspondence notifications (14-day rule).

Once an application is successfully submitted, the PA OVR Web API will provide a message back to the applicant that includes the application’s Application ID number. If the application is successfully posted with a valid email address provided, the SURE system will notify the applicant of his/her registration via email with his/her Application ID. All further application and registration correspondence will be managed by the SURE system and its current workflow.

The following table outlines the PA OVR Web API supported flows in interactive mode:

<table>
<thead>
<tr>
<th>Validation Parameter</th>
<th>Retries Supported? (PA OVR Web API)</th>
<th>Retries Supported? (PA OVR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PennDOT DL</td>
<td>No limit</td>
<td>3</td>
</tr>
<tr>
<td>Signature Upload</td>
<td>No limit</td>
<td>3</td>
</tr>
</tbody>
</table>

POSTING ENTITY’S CUSTOM VRAPP MUST ALSO SUPPORT RETRIES SUPPORTED BY PA OVR WEB API.

SUBMITTING REGISTRATIONS IN BATCH

While the goal of the Department is to certify applicants through their PennDOT ID, we do allow for applications with the last four digits of their SSN and/or digital signatures. Due to the nature of submitting multiple applications
via batch, the PA OVR Web API requires multiple applications submission within a batch environment to utilize the PA OVR Web API batch mode. In batch mode, all pertinent application data is submitted within one POST call. Applications that are submitted in a batch process should allow the applicant to submit both a PennDOT ID/Driver’s License number and a signature image file. Based on the precedent processing of the PA OVR Web API, it will first attempt to use the submitted PennDOT ID to retrieve a signature. If the PennDOT ID is validated, the PA OVR Web API will link the PennDOT signature to the application (and discard the submitted signature file). If the PennDOT ID cannot be validated, the system will then attempt to process the uploaded signature image file (if available) to determine if it meets signature quality standards. If neither process can capture the applicant’s signature, the application will still be submitted into the SURE system, but be placed into a 14-day “hold” status, pending signature receipt. If a signature is not received after 14 days, the application will be placed into a “pending” state and the applicant will either receive a signature capture card from their county voter registration office or missing signature correspondence via the SURE system. Ultimately the applicant must supply a signature to their county voter registration office to successfully complete his or her registration.

Once an application is successfully submitted, the PA OVR Web API will provide a message back to the Posting Entity’s custom VRApp that includes an Application ID number. If a valid email address is provided, the applicant will receive an email with his/her Application ID number.

If the application is successfully posted with a valid email address provided, the SURE system will notify the applicant of his/her registration via email with his/her Application ID. All further application and registration correspondence will be managed by the SURE system and its current workflow.

NOTE: WHEN USING EITHER INTERACTIVE OR BATCH MODE WITH THE <continueAppSubmit>=1 FIELD, ALONG WITH PENNDOT DL AND/OR SIGNATURE UPLOAD, PA OVR WEB API WILL NOT RESPOND WITH A STATUS OF THE PENNDOT DL VERIFICATION SUCCESS NOR THE SIGNATURE UPLOAD STATUS.

NOTE: IN BATCH MODE WITH <continueAppSubmit>=0:

- IF THERE’S AN INVALID DL & UPLOADED SIGNATURE, THE SYSTEM WILL USE THE UPLOADED SIGNATURE
- IF THE <donthavethedlandssn> FLAG IS SET TO 1 AND THERE’S AN UPLOADED SIGNATURE, THE SYSTEM WILL USE THE UPLOADED SIGNATURE
- IF THERE IS NO DL, THE <donthavethedlandssn> ISN’T SET, BUT THERE’S STILL AN UPLOADED SIGNATURE, THE SYSTEM WILL PROMPT THAT THERE’S A MISSING DL#

REPORTING

Posting Entity organizations can generate an on-demand report (including Affiliate associated submissions) by clicking a link in the options drop-down, while logged into their PA OVR Web API account. This report will provide registration name as well as the status of all successfully submitted applications by transaction number within the selected timeframe. The report may also be exported in a variety of file formats (XML, CSV, PDF, MHTML, Excel, TIFF and Word). Below is an example of such a report:
ADMINISTRATIVE INTERFACE

Administrative account or profile functions can be performed by accessing the PA OVR Web API Admin site, located at https://PAOVRWebAPI.votespa.com/SUREWebAPIAdmin

HOSTING A PREVIOUSLY APPROVED CUSTOM VRAPP

Posting Entity organizations that host an approved custom VRApp from another source that has been tested previously will still need to pass all test criteria above to ensure the custom VRApp meets the Department of State’s standards. This will apply to any hosting environment changes made by either the Posting Entity or its associated Partner Organization.

FUNCTIONS

Please note in each of the following calls, the AuthKey must be updated to your organization’s authorization key.

The general syntax for all PAOVR Web API functions will follow:

where:

<XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX> is the organization authentication key granted to the Posting Entity by the Department of State, specifically to the STAGING or PROD environment.

<FUNCTION> is one of the functional GETCALLS or POST CALL listed below

sysparm-Language=<#> is only included if listed as a functional parameter as outlined below

<#> is the functional parameter value as outlined below

## GETCALLS

### GETAPPLICATIONSETUP

Used to pull the drop-down values from DOS.

<table>
<thead>
<tr>
<th>Parameter</th>
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<tr>
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## SYNTAX

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<thead>
<tr>
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<th>Syntax</th>
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<tr>
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<td><a href="https://PAOVRWebAPI.beta.votespa.com/ovr/jsonv2&amp;sysparm_Action=GETAPPLICATIONSETUP&amp;sysparm_Language=0">https://PAOVRWebAPI.beta.votespa.com/ovr/jsonv2&amp;sysparm_Action=GETAPPLICATIONSETUP&amp;sysparm_Language=0</a></td>
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<td><a href="https://PAOVRWebAPI.beta.votespa.com/ovr/jsonv2&amp;sysparm_Action=GETAPPLICATIONSETUP&amp;sysparm_Language=1">https://PAOVRWebAPI.beta.votespa.com/ovr/jsonv2&amp;sysparm_Action=GETAPPLICATIONSETUP&amp;sysparm_Language=1</a></td>
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GETLANGUAGE

Used to determine the language to be displayed.

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SYNTAX

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GETXMLTEMPLATE

Used to identify the required XML tags.

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SYNTAX

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GETERRORVALUES
Used to retrieve the error code and error message pair in a JSON string.

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<tr>
<td></td>
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</tbody>
</table>

GETMUNICIPALITIES
Used to return the municipalities in a given county. County names and corresponding Municipality Responses will be returned in English only.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AuthKey</td>
<td></td>
<td>Your organization’s auth. key</td>
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<tr>
<td>County</td>
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<td>ADAMS through YORK</td>
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*NOTE: THE COUNTY NAME WILL NEED TO BE UPDATED ACCORDINGLY*

**SYNTAX**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Language</th>
<th>Syntax</th>
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<tbody>
<tr>
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<tr>
<td>PROD</td>
<td>English</td>
<td><a href="https://PAOVRWebAPI.votespa.com/SureOVRWebAPI/api/ovr?JSONv2&amp;sysparm_AuthKey=503296D9-C780-4A15-8803-1C829544258C&amp;sysparm_action=GETMUNICIPALITIES&amp;sysparm_County=ADAMS&amp;sysparm_Language=0">https://PAOVRWebAPI.votespa.com/SureOVRWebAPI/api/ovr?JSONv2&amp;sysparm_AuthKey=503296D9-C780-4A15-8803-1C829544258C&amp;sysparm_action=GETMUNICIPALITIES&amp;sysparm_County=ADAMS&amp;sysparm_Language=0</a></td>
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<td>Spanish</td>
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</tr>
</tbody>
</table>

**POST CALL**

**SETAPPLICATION**

Used to pass the label and value pairs in a JSON string for a registration application.
RESPONSES

Based on initial testing, response times of 30 – 45 seconds are typical for non-signature upload applications, including PennDOT DL and signature retrieval applications. For applications including signature uploads, response times have been observed to be upwards of 1 minute.

We are working on improving these response times in the next version.

The default timeout currently set at the PA OVR Web API is 20 minutes.

All PA OVR Web API responses should be formatted in XML.

SUCCESSFUL

Successfully submitted applications transmitted to the Department of State have an associated application ID (system generated). Responses for successful applications will contain the following application parameters in the PA OVR Web API response. The response has been updated to include two parts, a voter registration response (required) and a MailIn Ballot response (optional, depending if the applicant selects the Mail-In Ballot field):

- Application ID
- Application date
- Application Identity Method Successfully Submitted
- Errors in submission

Here are some sample XML responses for a successful voter registration submission, having the Mail-In Ballot Field as “0”:

- Example for the applications that are submitted **Without Signature**:
  - "<RESPONSE><APPLICATIONID>31863</APPLICATIONID><APPLICATIONDATE>Jun 5 2017 1:51PM</APPLICATIONDATE><SIGNATURE>Submitted Without Signature</SIGNATURE><ERROR></ERROR></RESPONSE>"

- Example for the applications that are submitted with **PennDOT Signature**:  
  - "<RESPONSE><APPLICATIONID>31863</APPLICATIONID><APPLICATIONDATE>Jun 5 2017 1:51PM</APPLICATIONDATE><SIGNATURE>Submitted With PennDOT Signature</SIGNATURE><ERROR></ERROR></RESPONSE>"

- Example for the applications that are submitted with **Uploaded Signature**:  
  - "<RESPONSE><APPLICATIONID>31863</APPLICATIONID><APPLICATIONDATE>Jun 5 2017 1:51PM</APPLICATIONDATE><SIGNATURE>Submitted With Uploaded Signature</SIGNATURE><ERROR></ERROR></RESPONSE>"
Here are some sample XML responses for a successful submission, having the Mail-In Ballot Field as “1”:

- Example for the applications that are submitted with **PennDOT Signature** and successful Mail-In Ballot submission:
  o  "<RESPONSE><APPLICATIONID>1414045</APPLICATIONID><APPLICATIONDATE>Feb 24 2020 2:29PM</APPLICATIONDATE><SIGNATURE>Submitted With PennDOT Signature</SIGNATURE><ERROR></ERROR><MAILINAPPLICATIONID>3270</MAILINAPPLICATIONID><MAILINAPPLICATIONDATE>Feb 24 2020 2:29PM</MAILINAPPLICATIONDATE></RESPONSE>"

- Example for the voter registration applications that are submitted **Without Signature**, yet the Mail-In Ballot was unsuccessful (generic error):
  o  "<RESPONSE><APPLICATIONID>1414046</APPLICATIONID><APPLICATIONDATE>Feb 24 2020 2:37PM</APPLICATIONDATE><SIGNATURE>Submitted Without Signature</SIGNATURE><ERROR>VR_WAPI_MailinNotEligible</ERROR></RESPONSE>"

**ERROR**

For attempted voter registration submissions that result in some type of error, you’ll also receive an XML response with some information pertaining to the error. They’ll contain an error code, which you will also receive a translation key for what each error code means. Here are some sample responses resulting from errors:

<RESPONSE><APPLICATIONID></APPLICATIONID><APPLICATIONDATE></APPLICATIONDATE><SIGNATURE><ERROR>VR_WAPI_MissingOVRfirstname</ERROR></RESPONSE>

<RESPONSE><APPLICATIONID></APPLICATIONID><APPLICATIONDATE></APPLICATIONDATE><SIGNATURE><ERROR>VR_WAPI_InvalidOVRDOB</ERROR></RESPONSE>

<RESPONSE><APPLICATIONID></APPLICATIONID><APPLICATIONDATE></APPLICATIONDATE><SIGNATURE><ERROR>VR_WAPI_Invalidsignatureresolution</ERROR></RESPONSE>
The text highlighted in red is the error code. A translation key for the error messages that is received back from the PA OVR Web API will enable your custom VRApp logic to determine appropriate responses to the applicant. Similar responses will be added pertaining to the Mail-In Ballot portion of the submission.
RELEASE NOTES

❖ Build 18.7 - June 20, 2016
  ➢ Online Processing
  ➢ Dropdown values from OVR
  ➢ Coding and Tags to NIST Standards
  ➢ Reporting metrics added

❖ Build 18.8 - August 20, 2016
  ➢ Add Forgot Username/Pwd Link to Admin website
  ➢ System generated temporary passwords with email notification
  ➢ Application sources added to SURE VR from Web API
    ▪ RD
    ▪ SE
    ▪ SF
    ▪ SG
    ▪ SH
    ▪ SI
    ▪ SJ
    ▪ SK
    ▪ SL
    ▪ SM
    ▪ SN
    ▪ SO
  ➢ Email notification to applicant upon registration
  ➢ Email notification to applicant upon approval
  ➢ Password reset link
  ➢ Edit Web API vendor information in SURE Portal
  ➢ On-demand reporting by county user
  ➢ Web API admin pages
  ➢ Batch Processing/Submission
  ➢ Web API applications into separate batches in SURE VR (County)
  ➢ Status of Web API application on SURE Portal

❖ Build 18.10 - September 20, 2016
  ➢ SURE Portal update status logic

❖ Build 18.11 - December 8, 2016
  ➢ Add instructions and requirements to Application Screen
  ➢ Add digital signature to agreement when requesting access

❖ Build 19.2 - March 9, 2017
  ➢ Web API application stats (daily) in SURE VR

❖ Build 19.3 - April 12, 2017
➢ Build upgraded with jQuery version 1.12.0

❖ Build 19.6 - July 13, 2017
➢ Provide Posting Entity with Responses on Submission of Application
➢ Web API Application - Update Party Field Selections

❖ Build 19.9 - October 5, 2017
➢ Get call value added for next election date (NextElection)
➢ Get call value added for close of registration date (NextVRDeadline)
➢ Validation message added to <pollworkerspeaklang> field
➢ Significant changes made to the WebAPI admin site
  ▪ Functionality added to add and manage affiliates
  ▪ Reporting page added – available through options drop-down (removed reporting link from default home page)
    • Selectable date ranges added
    • Organization & Affiliates included on report
    • Report exportable in a variety of formats
  ▪ Page options consolidated into dropdown
  ▪ Both staging and production key viewable from admin home page (if applicable to status)

❖ Build 19.10 – December 14, 2017
➢ Added Reset Password Function on WebAPIAdmin site

❖ Build 20.2 - March 15, 2018
➢ Esignature Resolution threshold check of >= 96 dpi+

❖ Build 22.2 – March 6, 2020
➢ Mail-In Ballot Fields, Definitions, Responses for ACT 77
SANDBOX

All organizations will need to submit their custom VRApp to the Department of State for testing to ensure their online user interface and underlying custom VRApp collects all necessary data elements as outlined in the attached PA OVR Web API Field Definitions document below. The PA OVR Web API will be available to users in either interactive or batch mode. custom VRApp s must be tested and approved in either or both, interactive and batch, modes.

All testing will occur against the Department of State’s staging environment. We require all custom VRApp s and organizations to successfully submit testing criteria before the Department begins the testing process in our production environment.

The Department of State’s PA OVR Web API currently resides in two environments, STAGING and PROD. The STAGING environment is used for a variety of purposes, including:

- User Review of new features and ongoing bug fixes
- User Acceptance Testing of new features and ongoing bug fixes
- Deployment testing
- Demos
- Posting Entity testing and approval

Meanwhile, the PROD or production environment is for operational functions of LIVE data involving Voter Information and its associated systems.
APPENDICES

ELECTRONIC SIGNATURE SPECIFICATIONS

The following specifications should be considered when capturing and submitting signatures as images. These specifications are meant to increase the performance of the PA OVR Web API and acceptance of digital signatures into the SURE system by enhancing their quality and other parameters:

- Signature capture and manipulation are the responsibility of the Posting Entity’s custom VRApp.
- Signatures should be formatted as TIF, TIFF, JPG, BMP or PNG
- Signatures can only be 60 high and 180 width (pixels)
- Signatures should be at least 96 dpi
- Signatures should not be rotated
- Signatures should be captured in black and white only (no grey tones or color), but be within the following thresholds
  - < 98% white pixels
  - < 90% black pixels
- Datatype transmitted should be Base64

GET CALL RESULTS

GETAPPLICATIONSETUP (XML)

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<Text_OVRApplnAssistanceDeclaration>
    &lt;p&gt;If you helped a voter complete this voter registration application, you must also sign the application.&lt;/p&gt;&lt;p&gt;By checking the box, you are signing the application electronically. In doing so:&lt;/p&gt;&lt;ul&gt;&lt;li&gt;You understand that your electronic signature on this application will constitute the legal equivalent of your signature.&lt;/li&gt;&lt;li&gt;You agree to sign this application by electronic means and that all laws of the Commonwealth of Pennsylvania will apply.&lt;/li&gt;&lt;/ul&gt;&lt;/Text_OVRApplnAssistanceDeclaration&gt;
I declare that I am eligible to vote by mail-in ballot at the forthcoming primary or election; that I am requesting the ballot of the party with which I am enrolled according to my voter registration record and that all of the information which I have listed on this mail-in ballot application is true and correct. WARNING: If your mail-in ballot is received by the deadline, you will not be allowed to vote at your polling place. By checking the box below, you are signing the application electronically. In doing so: You agree you have read and accept the terms of the declaration above. You understand that your electronic signature on this application will constitute a legal signature. You agree to submit this mail-in ballot application electronically and that all laws of the Commonwealth of Pennsylvania will apply to this transaction. By providing your PA Driver's License or PennDOT ID number, you understand that the signature from that PennDOT record will count as your signature on your mail-in ballot application.
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</MessageText>
<MessageText>
<ErrorCode>VR_WAPI_MissingOVRfirstname</ErrorCode>
>ErrorText>Your first name is required.</ErrorText>
</MessageText>
<MessageText>
<ErrorCode>VR_WAPI_MissingOVRinterpreterlang</ErrorCode>
>ErrorText>Required if interpreter is checked</ErrorText>
</MessageText>
<MessageText>
<ErrorCode>VR_WAPI_MissingOVRisageover18</ErrorCode>
>ErrorText>Will you be 18 years or older on or before election day? You must provide a response before continuing.</ErrorText>
</MessageText>
<MessageText>
<ErrorCode>VR_WAPI_MissingOVROtherParty</ErrorCode>
>ErrorText>Warning - Party is not selected. If Other is selected, the Other party text box should be completed.</ErrorText>
</MessageText>
<MessageText>
<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPoliticalParty</ErrorCode>
  <ErrorText>Warning - Party is not selected. If Other is selected, the Other party text box should be completed.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPreviousAddress</ErrorCode>
  <ErrorText>Address of Previous Registration is required for an Address Change application</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPreviousCity</ErrorCode>
  <ErrorText>City of Previous Registration is required for an Address Change application</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPreviousFirstName</ErrorCode>
  <ErrorText>Previous First Name is required for a Name Change application</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPreviousLastName</ErrorCode>
  <ErrorText>Previous Last Name is required for a Name Change application</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRPreviousZipCode</ErrorCode>
  <ErrorText>Zip of Previous Registration is required for an Address Change application</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRSSNDL</ErrorCode>
  <ErrorText>Please supply either a PA driver's license or PennDOT ID card number, the last four digits of your SSN, or click the check box.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRstreetaddress</ErrorCode>
  <ErrorText>Your street address is required</ErrorText>
</MessageText>
<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRtypeofassistance</ErrorCode>
  <ErrorText>Please select the type of assistance required.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRzipcode</ErrorCode>
  <ErrorText>Your zip code is required</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingReason</ErrorCode>
  <ErrorText>Please check at least one box.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_PennDOTServiceDown</ErrorCode>
  <ErrorText>PennDOT server is down.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_RequestError</ErrorCode>
  <ErrorText>WebAPI request is Invalid</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_ServiceError</ErrorCode>
  <ErrorText>Signature service is down.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_SystemError</ErrorCode>
  <ErrorText>We're sorry, but the system cannot verify your information and complete your application right now. Try again.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_InvalidOVRAssistedpersonphone</ErrorCode>
  <ErrorText>The phone number provided is not valid. Please enter a valid phone number.</ErrorText>
</MessageText>
<MessageText>
  <ErrorCode>VR_WAPI_InvalidOVRsecondemail</ErrorCode>
  <ErrorText>The format of the email address is incorrect. Please correct and try again.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_Invalidsignaturestring</ErrorCode>
  <ErrorText>Your upload was not successful. Please try again.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_Invalidsignaturetype</ErrorCode>
  <ErrorText>Please choose one of the following file types: .TIFF, .JPG, .BMP and .PNG.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_Invalidsignaturesize</ErrorCode>
  <ErrorText>Please upload an image file size less than 5MB.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_Invalidsignaturedimension</ErrorCode>
  <ErrorText>The image size should be equal to 180 x 60 pixels.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_Invalidsignaturecontrast</ErrorCode>
  <ErrorText>Your upload was not successful. Please try again.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRParty</ErrorCode>
  <ErrorText>Please select a political party.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_InvalidOVRPoliticalParty</ErrorCode>
  <ErrorText>Please select a political party.</ErrorText>
</MessageText>
<MessageText>
  <ErrorCode>VR_WAPI_InvalidSignatureResolution</ErrorCode>
  <ErrorText>Your uploaded signature does not meet the 96.00 dpi requirements. Please upload an image file meeting or exceeding this requirement.</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRMailInBallotAddr</ErrorCode>
  <ErrorText>Missing MailIn Ballot Address</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRMailInCity</ErrorCode>
  <ErrorText>Missing MailIn City</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRMailInState</ErrorCode>
  <ErrorText>Missing MailIn State</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_InvalidOVRMailInZipCode</ErrorCode>
  <ErrorText>Missing MailIn Zipcode</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRMailInLivedSince</ErrorCode>
  <ErrorText>Missing MailIn lived since</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MissingOVRMailInDeclaration</ErrorCode>
  <ErrorText>Missing MailIn Declaration</ErrorText>
</MessageText>

<MessageText>
  <ErrorCode>VR_WAPI_MailInNotEligible</ErrorCode>
</MessageText>
<ErrorText>MailIn Not Eligible</ErrorText>
</MessageText>
</OVRLookupData>"</OVRLookupData>"