Voter Records Interchange (VRI)

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Project website: https://github.com/pstenbjorn/VRIUsecases

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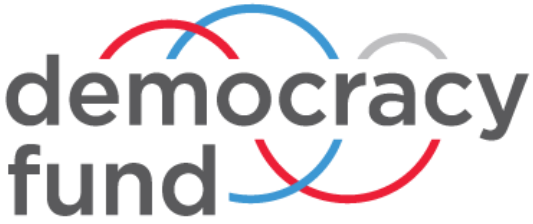

Overview:

The National Institute of Standards and Technology (NIST), in collaboration with election officials and technologists, has created the Voter Records Interchange common data format (VRICDF) for data exchanges of voter records. State adoption of the VRICDF will allow for simplified automated processes in online voter record management and better voter list maintenance and accuracy. The ultimate goal of this engagement is to enhance the utility, timeliness, and sustainability of the VRICDF.

The core of this engagement is the articulation of a series of use cases that are critical to the further adoption of the CDF. These use cases are described in narrative form, in use case models, and reference code implementations below.

The use cases are intended to augment existing models created by NIST and its partner entities for the receipt and validation of voter records.[1]

Glossary of terms:

NVRA:

The National Voter Registration Act of 1993 (52 U.S.C. § 20501 - 52 U.S.C. § 20511) which, in part, stipulates the provisions by which other governmental entities must provide prospective voters the opportunity to register to vote while conducting certain other transactions. This component of NVRA is often colloquially referred to as the Motor Voter Act since it allows applicants for driver's licenses and applicants for renewal of licenses to register to vote.

VR Authority:

The voter registration authority, as described herein, refers to the governmental entity that is responsible for maintaining the official list of voters for a jurisdiction. With the passage of the Help America Vote Act of 2002 (52 U.S.C. § 20101 - 52 U.S.C. § 21145) states were required to maintain a "uniform, official, centralized, interactive computerized statewide voter registration list defined, maintained, and administered at the State level". In most cases this led to state electoral authorities to maintain a single state-wide database of registered voters, however, this is not uniformly implemented by all states.

Registration Authority:

In most states local election officials (chief election officers of municipal jurisdictions) are ultimately responsible for the determination of voter registration eligibility. The registration authority is defined as the governmental entity that ultimately determines the validity of an application to register to voter.

API:

An Application Programming Interface is broadly defined as software that is deployed in a manner so that other software may be written to interact with it and receive and send data in a structured format with pre-defined security and data transfer protocols.

Third-Party Registrant:

[1] Wack, John, et al., NIST Special Publication 1500-102, http://dx.doi.org/10.6028/NIST.SP.1500-102

Any non-governmental entity that is entitled to collect information from citizens for voter registration purposes and transmit this information to the VR Authority or Registration Authority of a respective voting district.

NVRA Agency:

Any governmental entity identified under the NVRA as governmental entities with which citizens regularly interact that is required to provide the population it serves with access to voter registration forms to register to vote, renew voter registrations, or update information on existing voter registration records.

OVR:

Online voter registration is a service provided by the VR Authority that allows for the electronic transmission of voter registration applications which may be used as original voter registration requests or to modify existing voter records. OVR is determined on a state-to-state basis and is governed by applicable state statute.

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Use case narratives

Use Case 1: Third Party Online Voter Registration Authentication

Several states have developed application programming interfaces (APIs) that allow external parties to programmatically interact with public sector based online voter registration (OVR) systems.[2] These APIs are generally state specific and require third parties to create state specific implementation of any online system that transmits data for voter registration purposes. The use of a common data format that could be accepted by any state would broaden the potential implementation of the use of APIs by third party registrants.

In order for voter transactions to be accepted electronically, state specific guidelines for voter authentication and identification must be met. This use case details the specific data sets that will need be transmitted by the third party registrar and the response objects to be proved by the API provider in order to electronically authenticate a registrant's request.

In general, states require the transmission of some personally identifiable information in order to authorize a registrant. Therefore, the data should be transmitted using appropriate information security techniques.

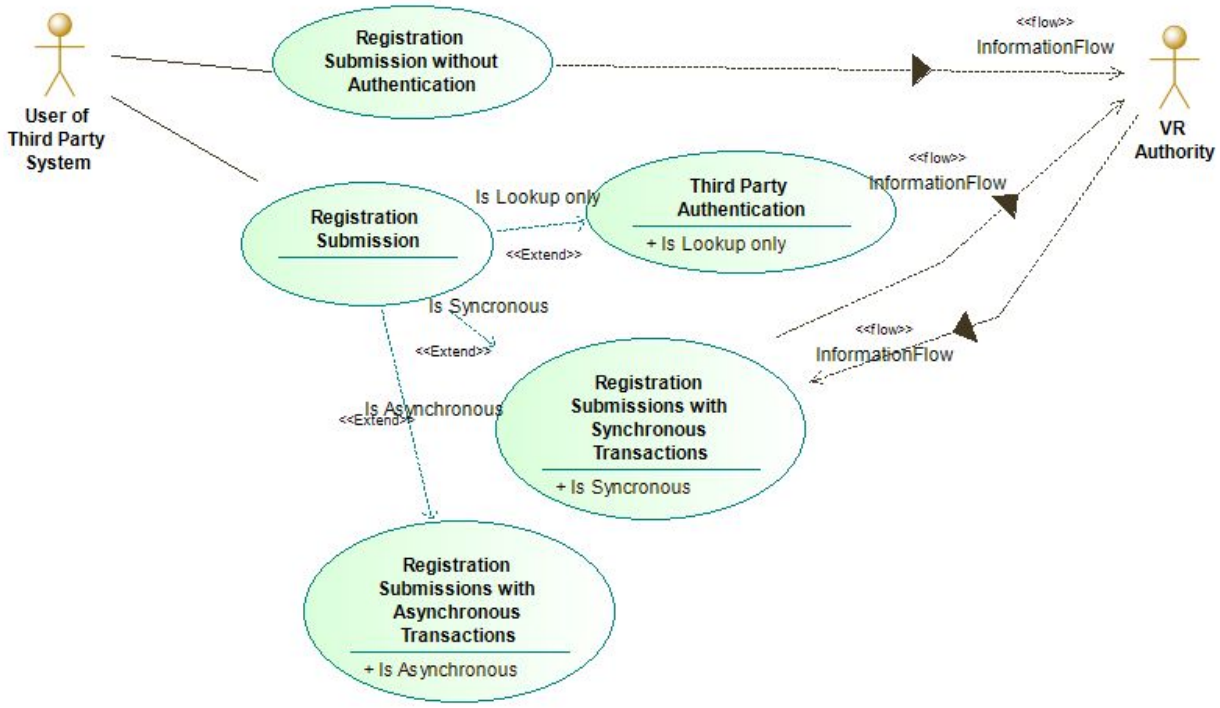
For broadest applicability, the use case demonstrates the most expansive set of data elements required for voter authorization. This includes state motor vehicle identification number and date of issuance, full social security number, date of birth, full name, and locality of residence.

As currently implemented, some third party registrants submit voter registration records to the state registration authority and asynchronously monitor the resolution of the transaction. The use case below describes both a synchronous voter authentication model and the asynchronous monitory of voter record status.

A representative example of third party registrants is Rock the Vote. In its online toolset, Rock the Vote collects generalized voter data that can assist the registrant with registration and submit the completed information to voter registration authorities.

[2] Online Voter Registration systems are the broad category of mostly state-based technical systems that allow for fully electronic voter record transactions. While the term "registration system" is used generally, these voter record systems may allow for the execution of other voter transactions (e.g. vote by mail ballot requests).

Workflow of Use Case 1



VRI CDF Use Cases

Use Case 1	Third-Party Registrant Online Voter Registration Authentication
Actor	Third-party registrants submitting voter registration records
Use Case Overview	Several states have developed application programing interfaces (APIs) that allow external parties to programmatically interact with VR Authority's online voter registration (OVR) systems. Third-party registrants collect information from website users that is transmitted to these the VR Authority to facilitate the users' voter registration transactions. These transactions can include initial voter registration, updating of existing voter registration data, and other voter record transactions permitted by the governmental entity. The VRI provides a framework for a consistent modeling of voter information for transmission. It also may provide the opportunity for VR Authorities to synchronously or asynchronously provide dispositional information to the submitting organization.
Subject Area	Transmission of voter record transactions and receipts
Actor(s)	Third-party registrants, users of third-party registration systems and VR Authorities
Trigger	The submission of a voter registration request from Third-party registrant's online application.
Precondition 1	A trust agreement between the actors or an open authentication API model provided by the governmental voter registration entity. A protocol for posting information to the API is established.

Precondition 2	An enumerated set of minimum requirements for the submission of a valid voter registration record.

1.0 Basic Flow: Registration Submission

Description	This scenario allows for the voter registration entity to submit a completed voter registration application in the common data format to the VR Authority.
1	A user of a Third-party registrant's website navigates to an online application that permits the submission of voter registration applications.
2	The user completes online forms that identify the meta data required for the state of residence to be compiled in the voter registration record.
3	The user completes the online forms with sufficient information to constitute a valid voter registration request.
4	The Third-party registrant's online software evaluates the completeness of information provided and performs a validation of information.
5	As necessary, the user completes missing or invalid information.
6	The software compiles a valid VoterRecordsRequest object in either XML or Json format.
7	The VoterRecordsRequest is posted to the VR Authority's registration API endpoint with additional data to authenticate or identify the information of the entity providing the request.

8	The VR Authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).
9	If the API server receives the VoterRecordsRequest it responds with a VoterRecordResponse record with details correspondent to the implementation of the standard by the VR Authority (see sub-use cases below). Most commonly, the response will either contain a Voter record, in the case of a voter lookup request or a RequestAcknowledgement for asynchronous processing of requests.
Termination outcome	The Third-party registrant's software receives the VoterRecordResponse object from the API.

Alternative Flow 1.1: Registrant Authentication

Description	The usefulness of third party APIs is increased if the VR Authority's API provides a service that identifies the voter status of an applicant prior to the submission of a voter registration application. This scenario describes the submission of a subset of voter authentication data to determine if the voter registration status of the applicant so that the third-party registration software may facilitate the application process. See: Use Case 2: NVRA authentication of description of currently deployed authentication models.
1.1.1	A user of a Third-party registrant website navigates to an online application that permits the submission of voter registration applications.
1.1.2	The user completes online forms that identify the meta data required for the state of residence to be compiled in the voter registration record.
1.1.3	The user completes the online forms with sufficient information to authenticate the voter record with the VR Authority. This may include: full or partial name, data or year of birth, full or partial social security number, driver's license number and issuance date, and city or county of registration.
1.1.4	The software compiles a valid VoterRecordsRequest object in either XML or Json format.
1.1.5	The VoterRecordsRequest is posted to the VR Authority's API endpoint with additional data to authenticate or identify the information of the entity providing the request.

1.1.6	The VR Authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).
1.1.7	The API responds with a VoterRecordsResponse record of a type that indicates the current voter registration status of the applicant and a record identifier that will allow the Third-party registrant to submit a completed application with sufficient information to complete a transaction and more simply allow voter registration entities to identify if a record is a new registration or an update to an existing record.
Termination outcome	The Third-party registrant's software receives a VoterRecordsResponse record and a current registration status of the applicant.

Alternative flow 1.2: Registration Submission without Authentication.

Description	The scenario of the basic flow of this use case assumes that the VR Authority hosting the API will provide interactivity and valid API and XML/Json responses. However, there are instances where a governmental service provider will allow for the submission of well formatted records without providing the submitting entity with response records. In this scenario, the Third-party registrant will still compile required information and submit a VoterRecordsRequest as detailed in the basic flow of this use case as above.
1.2.1	This scenario extends the preconditions to include the Third-party registrant's compiling of information required to provide an applicant after the submission of a voter registration application. This information will include the name and contact information of the entity or individual responsible for the disposition of the registration record. Additionally, if this Third-party registrant offers independent online tracking of voter registration information, a link to the software that provides this information.
1.2.2	After submission of the VoterRecordsRequest and the receipt of a success or failure message from the API, the end user is redirected to the information regarding the actors, process and timeframe of the disposition of the voter registration application.
Termination outcome	The record is transmitted to the VR Authority and the end user receives an acknowledgement with supplemental information.

Alternative flow 1.3 Registration Submissions with Synchronous Transactions.

Description	The basic flow above terminates at the point where the VR Authority API provider acknowledges receipt with a valid VoterRecordsResponse record. This alternative flow describes the additional process of extending the VoterRecordsResponse record with a valid RegistrationRejection or RegistrationSuccess record.
1.3.1	The VoterRecordsResponse received by the Third-party registrant is extended to contain dispositional information about the registration record. This can include the complete RegistrationRejection or RegistrationSuccessRecord. In the event of a successful registration, the record may contain information sufficient to guide a registrant to a polling location, local election officials and provide ballot detail information for the registrant.
1.3.2	Synchronous transactions submitted by Third-party registrants may, and almost certainly will, require lag time for the ultimate registration authority to review and approve the voter registration application.
Termination outcome	The applicant receives information related to the disposition of the voter registration application and other information related to her current voter registration record.

Alternative flow 1.4 Registration Submissions with Asynchronous Transactions.

Description	The alternative flow described in 1.3 above would be exceptional for a Third-party registrant's scenario. In most instances, Third-party registration applications will be submitted to a VR Authority and then routed to the Registration Authority that ultimately determines the eligibility of the registrant and makes final disposition of the voter registration record. The Third-party registrant, however, can submit these records and the API provider can deploy a service that allows for the asynchronous monitoring of voter registration applications via a secondary service call.
1.4.1	Upon the receipt of the RegistrationAcknowledgement and VoterRecordsResponse, the Third-party registrant will receive and store a TransactionId that will be used to request VoterRecordsResponse records at a later time.
1.4.2	The VR Authority will establish an end point that will receive simplified VoterRecordsRequest objects containing the TransactionId
1.4.3	The API will return VoterRecordsResponse records that provide interim and ultimate dispensation of the voter registration application.
Termination outcome	The Third-party registrant receives interim and ultimate determinations of voter records requests by transaction id from the VR Authority's API.

Post conditions: End user is provided with a means of determining the disposition of the voter registration application. This may be in the form of an online toolset to determine dispositional status or by providing contact information for the Registration Authority for disposing of the registration application.

Business Rules:

- The NVRA form provides the definition of minimal meta data required for all voter registration requests.
- States can, and do, require additional information to be provided in order to consider a voter registration request valid.

Use Case 2: NVRA[3] Agency Automation

Some state NVRA agencies have implemented fully electronic voter registration processes. In these transactions, customers of state motor vehicle agencies (and other NVRA agencies) may complete voter registration transactions while completing other transactions with the NVRA agency. In some states, electronic NVRA transactions completed online or in person may lead to the option of completing an electronic voter registration transaction.

Similarly to third party registrants, in order to implement these electronic voter registration transactions, the NVRA agency must establish an electronic method of authorizing voter information. The NVRA agency should collect, or has in its records, sufficient information to transmit to the VR Authority so that the individual can be identified as a currently registered voter. This information will include some personally identifiable information provided by the NVRA customer. The VR Authority will then need to return information acknowledging the record request and provide a response object that provides sufficient information to the NVRA agency to process and classify the electronic registration request.

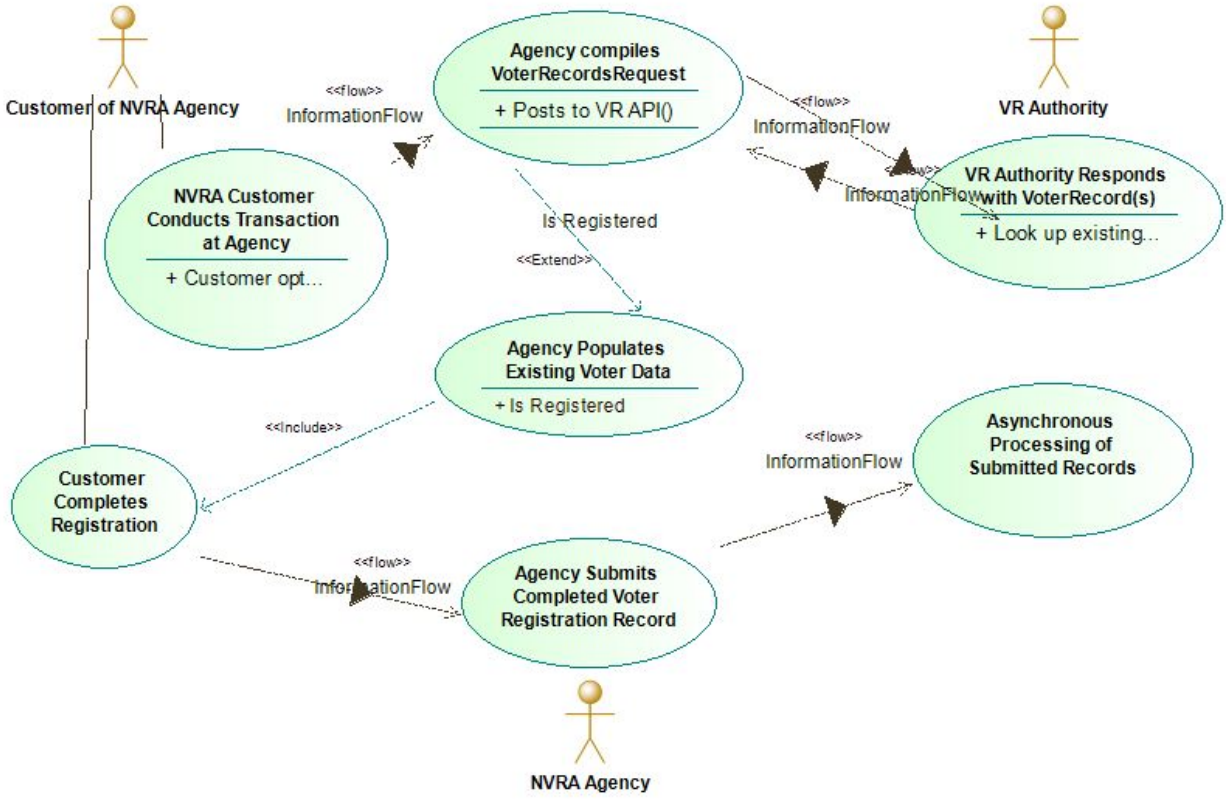
Once the acknowledgement is received, the NVRA agency will then populate a complete voter registration request and transmit this to the VR Authority. There are novel elements of the NVRA transaction process and the use case will refer to the Commonwealth of Virginia's specific electronic NVRA implementation. This implementation allows customers of the state's DMV to conduct electronic voter registration transactions in-person and online. In-person transactions utilize the credit card terminal to collect voter registration information that supplemented DMV record information to complete the transaction.

The VR Authority also must regularly use requests and responses from NVRA agencies to perform authorization of voter information to satisfy digital signature requirements. The process by which VR Authorities can standardize these requests and responses using the VRICDF will include the use of the VoterIdType, VoterRegistration, and VoterRegistration/Name date elements for authentication purposes.

The state VR Authority, in most cases, is not the entity that will ultimately have the authority to approve or reject the application for voter registration. The state VR Authority acts as a clearinghouse for voter registration applications and provides these applications to municipal clerks who have dispositive authority.

[3] Then National Voter Registration Act (commonly referred to as the "Motor Voter Act") requires, among other provisions, that state motor vehicle licensing bureaus offer the opportunity for customers to register when conducting voter licensing transactions.

Workflow for Use Case 2



VRI CDF Use Cases

Use Case 2	NVRA Agency Automation
Actor	Governmental entities as defined in the National Voter Registration Act as being required to provide voter registration services.
Use Case Overview	Some state NVRA agencies have implemented fully electronic voter registration processes. In these transactions, customers of state motor vehicle agencies (and other NVRA agencies) may complete voter registration transactions while completing other transactions with the NVRA agency. In some states, electronic NVRA transactions completed online or in person may lead to the option of completing an electronic voter registration transaction. Similarly to third party registrants, in order to implement these electronic voter registration transactions, the NVRA agency must establish an electronic method of authorizing voter information. The NVRA agency should collect, or has in its records, sufficient information to transmit to the VR Authority so that the individual can be identified as a currently registered voter. This information will include some personally identifiable information provided by the NVRA customer. The VR Authority will then need to return information acknowledging the record request and provide a response object that provides sufficient information to the NVRA agency to process and classify the electronic registration request.
Subject Area	Transmission of voter record transactions and receipts
Actor(s)	Governmental NVRA agencies, customers of NVRA agencies and governmental VR Authorities.
Trigger	A customer of a NVRA agency's completion of a transaction that can collect information used for voter registration purposes.

Precondition 1	The customer's acceptance of the use of the information provided for voter registration purposes.
Precondition 2	A trust relationship established between the systems of the respective governmental entities.
Precondition 3	The VR authority has a mechanism to collect and NVRA identifiers and associate these identifiers with existing voter records.

2.0 Basic Flow: Registration Application Submission

Description	This scenario allows for the NVRA entity to submit a completed voter registration application in the common data format to the voter registration entity.
2.1	A customer of the NVRA agency conducts a transaction at the office of the agency or on the agency's website that has been identified as transaction that allows the customer to complete voter registration information.
2.2	The customer is prompted to allow the information collected to be used for voter registration purposes or to opt-out of sending registration information in automatic registration states.
2.3	Upon affirmation by the customer, the NVRA agency collects sufficient information to submit a VoterRecordsRequest to the VR authority to determine the registrant's current voter registration status. This may include full or partial name, data of birth, full or partial social security number, driver's license number and issuance date, and city or county of residence.

2.4	The VoterRecordsRequest is posted to the VR Authority's API endpoint with additional data to authenticate or identify the information of the agency providing the request. See example of VoterRecordsRequest
2.5	The VR authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).
2.6	The VR authority's API 200 series response includes a VoterRecordsResponse record that identifies if this applicant has a current voter registration record and can provide additional VoterRegistration detail information to facilitate the updates to existing records. See sample voter record response
2.7	The NVRA agency's system routes the customer to the correct workflow branch for a new or existing registration record. (see alternative flows below.
Termination outcome	The NVRA agency's customer is directed to a workflow to complete a new voter registration application or to submit an application to update an existing voter record.

Alternative Flow 2.1: Online Motor Vehicle License Transactions Authentication

Description	The initial step of the basic flow described above is the authentication of NVRA customer information. The online process described in this scenario is for transactions taking place on the NVRA agency's website.
2.1.1	A customer visits the NVRA agency's website, begins a transaction that allows for the concurrent submission of a voter registration record, and agrees to use information provided for voter registration purposes.
2.1.2	Ordinarily the customer has previously authenticated with the software on the NVRA agency's site and sufficient information is available to submit a complete authentication query in a VoterRecordsRequest (as detailed above), however, if any information is absent, the NVRA agency's website will prompt the customer to provide the additional information prior to compiling a VoterRecordsRequest.
2.1.3	The response from the VR authority will determine the user experience of the end user on the NVRA website and the customer will be directed to the appropriate path. The NVRA authority may also provide visual cues to the end user that identify the nature of the transaction.
Termination outcome	The end user of the NVRA website is directed to a new registration application or an appropriate update of registration information.

Alternative flow 2.2 In-person Motor Vehicle License Transaction Authentication.

Description	This scenario describes the process of a customer at an office of the NVRA agency conducting a transaction via electronic means that entitles the customer to concurrently submit a voter registration transaction.
2.2.1	A customer initiates a transaction in the office of an NVRA agency that allows for the submission of a voter registration application and agrees to use information provided for voter registration purposes. Electronic transactions of this form are normally conducted on a kiosk (which would use technology similarly to the online application above) or through integrated screen prompts on, smaller, point of sale terminals. This scenario specifically describes the transactions that utilize the point of sale terminals.
2.2.2	The customer service representative conducts the components of the transaction on NVRA systems that prompts the customer to complete her components of the transaction electronically on the point of sale unit.
2.2.3	The NVRA system prompts the customer to accept the use of information for voter registration purposes and if any additional information is required (and not previously provided be the customer) for voter registration purposes, prompts the customer for that additional information. The NVRA system then transmits to the VR authority a VoterRecordsRequest.
2.2.4	The VoterRecordsResponse provided by the VR authority will be used by the NVRA point of sale system to determine the work flow that will be followed by the customer. See alternative flows below.
Termination outcome	The NVRA customer is directed to a new registration application or an appropriate update of registration information.

Alternative flow 2.3 NVRA Change of Address/Name Change Transactions.

Description	This scenario describes the transaction that will ensue if the NVRA transaction described above determines that an applicant is currently registered. This scenario does not describe the process by which a VR authority will determine if the information submitted by the NVRA customer is duplicative with an existing voter record. However, the use a well formatted VoterRegistration record returned from the VR authority to the NVRA agency could be used to compare information provided by the customer and the information currently on file with the VR authority. Historically, many NVRA transactions, on paper and electronically, have been duplicative.
2.3.1	The NVRA agency has authenticated customer information through the VR authority and has received a VoterRecordsResponse that indicates that the voter is currently registered.
2.3.2	The NVRA agency has likely collected information at this juncture that is sufficient to transmit the voter application with the exception of any additional criteria established for voter registration purposes (E.g. affirmation of citizenship, attestation of acceptance of oath or affirmation). The NVRA agency system prompt the customer for any additional information not provided in the course of the NVRA transaction.
2.3.3	If the information provided by the customer differs from the original record, the NVRA agency will compile a valid VoterRecordsRequest containing information from the customer and from the NVRA transaction and transmit it to the API of the VR authority. If the record is duplicative, it should still be communicated to the VR authority for records maintenance purposes.
2.3.4	The VR authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).

2.3.5	If there is a successful transmission, the API server responds with a RegistrationAcknowledgement record with a record identifier that can be retained by the NVRA agency. The ultimate disposition of the record will ordinarily be delayed so, as mentioned elsewhere, messaging to the customer about the next steps in the voter registration process should be provided.
Termination outcome	The NVRA customer is notified that her application has been submitted to the appropriate voter registration authority and been provided with information related to the ultimate disposition of voter registration requests.

Alternative flow 2.4 NVRA New Registration.

Description	This scenario describes the process flow that the NVRA agency's systems will follow when the VoterRecordsResponse provided by the VR authority during authentication indicates that the customer is not a currently registered voter.
2.4.1	The NVRA agency has authenticated customer information through the VR authority and has received a VoterRecordsResponse that indicates that the voter is not currently registered.
2.4.2	The NVRA agency's system prompts the customer for the series of questions that are required for submission for newly registered voters. This may include: an affirmation of citizenship, an affirmation of majority age, affirmation of residency, an affirmation of eligibility based on other factors (felony conviction, adjudication of mental competence), previous registration geography, acknowledgments of consent to additional statutory requirements.
2.4.3	The NVRA agency will compile a valid VoterRecordsRequest containing information from the customer and from the NVRA transaction and transmit it to the API of the VR authority.
2.4.4	The VR authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).
2.4.5	If there is a successful transmission, the API server responds with a RegistrationAcknowledgement record with a record identifier that can be retained by the NVRA agency. The ultimate disposition of the record will ordinarily be delayed so, as mentioned elsewhere, messaging to the customer about the next steps in the voter registration process should be provided.

Termination outcome	The NVRA customer is notified that her application has been submitted to the appropriate voter registration authority and been provided with information related to the ultimate disposition of voter registration requests.

Alternative flow 2.5 VR Authority to DL Agency Record Authorization.

Description	In this scenario the VoterRecordsRequest is generated by the VR authority and is transmitted to the NVRA agency (in this case, solely the agency that issues motor vehicle driver's licenses) for the purpose of establishing authentication. In some states, the OVR statutes detail that an electronic signature may be used for the purpose of online voter registration transactions if the user possesses a valid driver's license and this information can be established in the course of the online transaction. The driver's license authority responds to transactions with an acknowledgement and other data that may be used as an electronic signature to complete the OVR transaction.
2.5.1	The OVR application collects a VoterRecordsRequest that may contain the applicants name or part of name, the data of birth or part of date of birth, gender, address or city or county of residence, social security number or part of social security number, and a driver's license number or customer identification number with the driver's license authority.
2.5.2	The VR authority transmits the request to the NVRA agency's API end point that will respond with a success (200 series code) or a transmission error (400 series code) and a VoterRecordsResponse.
2.5.3	In the event that the record is successfully located by the NVRA agency's API, this scenario presents a different use of the VoterRegistration object. As the NVRA agency will often return a signature with an image of the signature (which in the VRI requires a VoterRegistration object to be returned), the VoterRecordsResponse will be accompanied by a VoterRecordsRequest with a valid signature.

2.5.4	The VR authority receives the VoterRecordsResponse with a transactionid that, if the record is found, will allow for an association to a VoterRecordsRequest with additional identification details from the underlying NVRA record. Or the VR authority will receive a VoterRecordsResponse record that indicates that the driver's license record was not found.
Termination outcome	The VR authority's OVR application will use the disposition of the VoterRecordsRequest to determine the eligibility of the end user to complete the electronic OVR transaction.

Post conditions: NVRA customer is provided with a means of determining the disposition of the voter registration application. This may be in the form of an online toolset to determine dispositional status or by providing contact information for the ultimate governmental authority for disposing of the registration application.

Business Rules:

- NVRA itself prohibits NVRA agencies from requesting duplicative information in the preparation of voter registration requests (with certain exclusions).
- The ultimate disposition of the voter registration application will, in most instances, not be available to provide to the NVRA agency's customer at the time of completing the NVRA transaction. The NVRA agency and VR authority should provide meaningful messaging to the end users to redirect them to systems that can provide final disposition of all registration transactions.
- NVRA agencies and VR authorities often treat addresses differently. Often NVRA agencies place priority on mailing addresses and have few restrictions as to what address can be used for NVRA purposes (E.g. the use of post office boxes). VR authorities define voter residence requirements more stringently. A voter's registration address will commonly be used a geolocation point to establish the voter's district representation and places where the voter may cast a ballot. Therefore, a common definition of residence and mailing address needs to be established between the entities.

Use Case 3: Electronic Pollbook Data Exchange

Electronic pollbooks are software and hardware systems that are deployed to polling locations at early voting sites and polling locations. Electronic pollbooks are used by local election officials to verify voter eligibility and to track voter participation on an election by election basis. These systems contain lists of voter information provided by state or local voter registration agencies. Data are loaded on these systems that identify voters who may be eligible to cast ballots in a specific election.

The data elements required for the use of these systems may include a voter's name, registration address, year or date of birth, prior voting status, identification requirements, party affiliation, voting precinct, driver's license number, and ballot style.[4]

Local election officials prepare electronic pollbook data prior to its deployment at a voting site often through the use of middleware that accepts data in a structured format from a voter registration management system. This data translation process entails the downloading of data from a voter registration and transforming the data into the destination schema of the electronic pollbook system. For election day voting, the data are often further subdivided into precinct specific voter list.

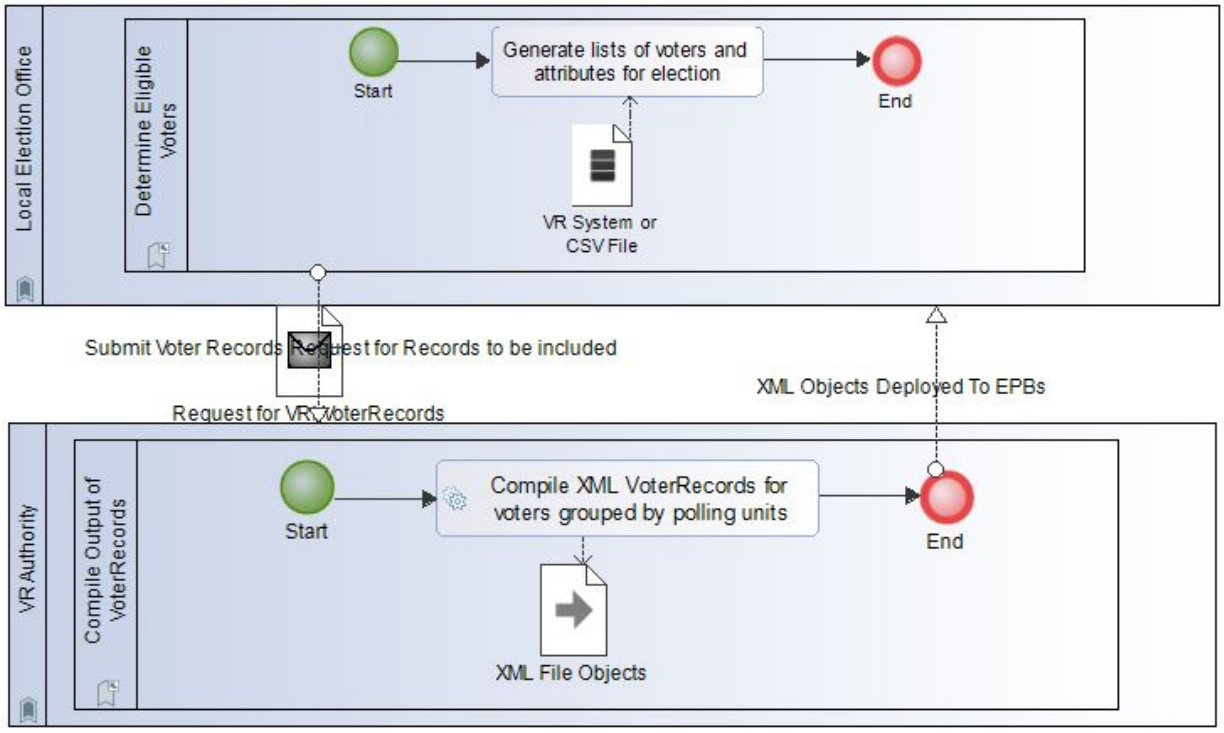
The VRICDF describes most data elements that are required for the operation of electronic pollbooks. This use case will detail the specific data elements and work flow at each interval in the extraction process. The technical implementation samples will demonstrate the generation of datasets for distribution to electronic pollbook systems.

At voting locations, pollworkers search for voters in the electronic pollbook system, use the information provided by the system to determine ballot eligibility, mark the voter as having voted, and may use the system to record voter anomalies (e.g. provisional ballot issuance). The electronic pollbook stores a record of the voter's participation in its system. Electronic pollbooks are commonly deployed on local networks where data are synchronized across a series of systems deployed at a common location. In early voting sites, data are commonly synchronized across a locality. Data transfer protocols within a pollbook and among pollbooks may also utilize parts of the VRICDF. However, the fully articulated use case for recording the casting of a ballot on a ballot style for an election event would require the extension of the use case into other data sets.

After the election, data are returned from electronic pollbook systems to update voter records. Commonly, this information records the participation of a voter and the location of the cast ballot. In some applications, information regarding the disposition status of provisional ballots is included in the information returned from electronic pollbooks to voter registration management systems. The use case for updating voter participation information will detail the areas where the VRICDF may be used to generate data sets and where additional data standards may be required to complete the data transaction. The technical examples will demonstrate a comprehensive dataset that would be usable for the accounting for voter participation information.

[4] A ballot style is the specific list of candidates available for voting based on the registration geography of the voter. In most states the voter's address used to assign the voter to certain districts. For each election, a ballot style is the list of offices contested in those districts.

Workflow for Use Case 3



VRI CDF Use Cases

Use Case 3	Electronic Pollbook Data Exchange
Actor	Local and state governmental entities that provide voter registration list information used to verify voter eligibility at polling locations.
Use Case Overview	Electronic pollbooks are software and hardware systems that are deployed to polling locations at early voting sites and polling locations. Electronic pollbooks are used by local election officials to verify voter eligibility on an election by election basis. These systems contain lists of voter information provided by state or local voter registration agencies. Data are loaded on these systems that identify voters who may be eligible to cast ballots in a specific election. The data elements required for the use of these systems may include a voter's name, registration address, year or date of birth, prior voting status, identification requirements, party affiliation, voting precinct, driver's license number, and ballot style. Local election officials prepare electronic pollbook data prior to its deployment at a voting site often through the use of middleware that accepts data in a structured format from a voter registration management system. This data translation process entails the downloading of data from a voter registration and transforming the data into the destination schema of the electronic pollbook system. For election day voting, the data are often further subdivided into precinct specific voter list. This use case describes the use of distributed hardware that is not dependent on synchronous data availability during the voting period from centralized voter registration databases with the exception of the scenario below that describes election day registration. As will be evident in some of the details below, the VRI CDF, as it currently is structured, does not ideally meet this use case. In order for it to be more compliant, it would need to be augmented with attributes that describe a voter's relationship to specific election events and have a

	transaction object related to a voter for a specific election. However, for the delivery of data to distributed systems, the VRI describes voters in sufficient detail to be used as source information within systems that add the transaction specific details.
Subject Area	Determination of voter eligibility at polling locations and administering to voting history in governmental voter registration databases.
Actor(s)	State and local voter registration and election administration governmental entities.
Trigger	An election is forthcoming and local election administration officials need to compile electronic lists of voters eligible to participate in the election.
Precondition 1	The determination of geographic boundaries to be included in the upcoming election and the respective ballot styles associated with the geographic boundaries.
Precondition 2	The association of voter records to geographic boundaries.
Precondition 3	The creation of a system that will compile a collection of voter registration records based upon district selections and other criteria (E.g. party affiliation)
Precondition 4	The adoption of an election metadata definition that can be used by the electronic pollbooks that external to the VRI definition.

Basic Flow: Compiling Voter Records for Distribution to Electronic Pollbooks

Description	This scenario allows for a local election administration official to acquire a series of voter registration records from a central voter registration

	database and distribute these data to various devices that will be deployed to polling locations for the period of time that voters may cast ballots in advance of an election.
3.1	The election administrator compiling pollbook information initiates a process that identifies the election for which the pollbooks will be used. The definition of the election should contain the districts that will have contents competed in the election. The system used to generate pollbook files will then associate then associate the districts in an election with the precincts and parts of precincts in an election.
3.2	Using the compiled list of precincts in an election the system will then perform a VoterRecordsRequest that will generate a collection VoterRecords. (In the code sample associated with this project, it is assumed that a denormalized flat file [csv] can be generated for these respective voter lists).
3.3	The VoterRecord will be identified using the ReportingUnitType enumerations (i.e. precinct, polling-place, county, city, town ward, etc.).
3.4	For closed primary elections the preselection of eligible political parties may be used to limit the VoterRecord generated by the political party affiliation of the voters.
3.5	Once the collection of VoterRecord is compiled it may be subsetted by polling place so that individual pollbook units are only loaded with voters eligible to cast a ballot in that polling location.
3.6	Pollbook units should be configured with attributes that allow the pollbook unit itself to define the subsets of voters eligible to cast ballots in that polling place. In election day voting, this is customarily voters assigned to the specific polling place.

3.7	The pollbook units should also be configured with a list of ballot styles and the association of those ballot styles to a specific set of election districts or a precinct or part of a precinct. VoterRecords will be associated through the collection of ReportingUnitType with precincts, split-precincts, and districts.
3.8	Some attributes about the election are not contained in the VRI specification as it currently exists, however, metadata about the election can be compiled and included on the pollbook units in the NIST Election Results Reporting common data format using the ElectionReport and Election objects.
3.9	The VoterRecords collections are deployed to the individual units to be used the election and software is enabled to import or interpret the data in the XML or Json format of the VRI. See an example of XML for Voter Records
Termination outcome	Voter registration records for voters eligible to cast a ballot in a given election are loaded on the deployed technology for use in polling locations on election days.

Alternative Flow 3.1 Voter Check-in Transactions

Description	The VRI CDF is a transaction schema that is based on the transaction being of a voter registration record transmission. The transactions conducted by electronic pollbooks are similar in some requests and electronic pollbook systems may be configured to use the VoterRecordsRequest and response objects internally. A voter presents herself to a worker in a polling location and provides her name and other information required. The polling location worker then transmits a query to the underlying data to locate the voter record and determine the voter's eligibility to cast a ballot at that polling location for the specific election and then determines the ballot style that should be provided to the voter.
3.1.1	The voter provides information to the poll worker that is entered into a search query of the records stored on the electronic pollbook.
3.1.2	The electronic pollbook software creates a VoterRecordsRequest from the information provided and submits this request to the underlying software. The VoterRecords returned may or may not be associated with the current election and a ballot style. This would indicate a voter's previous participation in the election. At this juncture the storage of the time and date of in-person voting, or provisional ballot disposition information is not possible.
3.1.3	The software returns a VoterRecordResponse with a respective record identifier that can be tracked by the software.
3.1.4	The underlying VoterRecord is used to associate the voter with the respective ballot styles available in this election.
Termination outcome	The voter is provided a ballot style or determined to be ineligible for a traditional ballot style in this polling location.

Alternative flow 3.2 Voter History Maintenance.

Description	A significant feature of the use of distributed electronic pollbook technology is the simplification of the application of voter participation history to voter databases. Customarily, after an election, records are exported from electronic pollbook systems and then imported in the centralized voter databases where an individual voter's participation in an election is tracked and stored. The compiling of a list of VoterRecords associated with an election and ballot stye can be used for this maintenance task in some instances. NOTE: some states require more information than the VRI currently provides to maintain comprehensive voter history.
3.2.1	Pollbook data are returned to the VR authority maintaining voter records.
3.2.2	Meta data have been applied to identify the election and the source polling location for the files with which the voter information stored in the data are related.
3.2.3	A routine is executed in software with access to the voter registration database that submits a VoterRegistrationRequest request with the associated collection of VoterRecords of voters and the participation status of the voters in the election. This information is augmented by the metadata compile to insert voter history records in the voter registration database.
Termination outcome	The voter records for voters participating in the given election are updated.

Alternative flow 3.3 Election (Same) Day Registration.

Description	Where the primary use cases for the VRI CDF perfectly intersect common use of electronic pollbooks is in jurisdictions that allow voters to register at the polling place (on election day or during an early voting period). In this scenario, the pollbook system would be able to transmit VoterRecordsRequests to a centralized VR authority's system and be able to append voter registration records to the system synchronously. This scenario adds the precondition that the VR authority has an established API for the acceptance of voter registration records and appropriate security constraints are in place to confirm voter identity.
3.3.1	A voter whose name does not appear on the pollbook appears to vote at a polling location for a given election.
3.3.2	The poll worker compiles information, either in written form or electronically, from the prospective voter and enters this information into the electronic pollbook.
3.3.3	The pollbook structures the data as a VoterRecordsRequest and sends this request to the VR authority's API.
3.3.4	The VR authority's API server acknowledges receipt of the record (200 series response code) or response with an error (400 series response code).
3.3.5	If the receipt of the VoterRecordsResponse record was successful, the electronic pollbook system adds the Voter record to its collection of voter records and the voter check in process may continue.
Termination outcome	A voter may be checked in to the electronic pollbook after the successful completion of the election day registration transaction.

Post conditions: Electronic pollbook systems should retain a transaction log of voter transactions performed. Transaction logs should be aggregated with other transaction data from each electronic pollbook device.

Business Rules:

- Electronic pollbook data is usually not narrowly tailored for a single polling place since the addition of voters who are not eligible to vote in a specific polling location allows for poll workers to redirect a voter to a different polling location or see other eligibility issues with a voter.
- In many jurisdictions, electronic pollbooks are used to track the issuance of provisional ballots to voters who have seemingly not met eligibility requirements.

Use Cases - XML Objects and Mapping

VoterRecordsRequest

Object Definition:

Form - Type of RequestForm - If a registration request, the numeration for type of registration form.

OtherForm - Text string to identify form if RequestForm type is other.

GeneratedDate - Date of the request

Issuer - A text string value naming the requesting entity

RequestMethod - Type of RequestMethod that enumerates the valid methods of transmission, e.g. voter-via-internet

OtherRequestMethod - Text string if the RequestMethod is other

RequestProxy- Type of proxy and information regarding the proxy.

RetistrationProxy definitions

Address - A valid address object for the proxy entity

Name - A name of the proxy making the request

OriginTransactionId - A source identification value from the entity

TimeStamp - Date/time of proxy request

Type - An enumeration of RequestProxyType, e.g. motor-vehicle-office

SelectedLanguage - Voter selected languages (as a valid xsd:language type, i.e. en, es, fr)

Subject - A instance of a **Voter** type (see below for a more complete Voter type description)

TransactionId - An identifier of the transaction

Type - An enumeration of the VoterRequestType (e.g. lookup)

OtherType - A text string to identify the type if the VoterRequestType is other.

VendorApplicationId - A text string identifying the implementing vendor id (or other value).

VoterRecordsResponse
Object Definition:

TransactionId - An identifier of the transaction

Note: The VoterRecordsResponse is extended by several object types and can represent any one of these types.

Example: <VoterRecordsResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xsi:type="VoterRecords" xmlns="NIST_V0_voter_records_interchange.xsd">

Objects that extend VoterRecordsResponse

RequestAcknowledgement - A class that adds no elements to the VoterRecordsResponse, but can act as a record receipt acknowledgement

RequestRejection

Object Definition:

AdditionalDetails - A text string that provides more information about a rejection

Error - An enumeration of the RequestError type (e.g. "incomplete.")

OtherError - A text string if Error is other

RequestSuccess

Object Definition:

Action - An enumeration of the SuccessAction type (e.g. registration-updated)

District - A type of ReportingUnit that describes one or more districts associated with the record.

EffectiveDate - Effective date of the action

ElectionAdministration - An instance of the ElectionAdministration type that describes the local election official associated with the registrant.

Locality - A type of ReportingUnit that describes the county, city and precinct information associated with the registrant.

PollingPlace - A type of ReportingUnit that describes the polling location(s) associated with the registrant.

VoterRecords

Object Definition: The VoterRecords type describes a collection of one or more VoterRecord objects.

VoterRecord

Object Definition:

District - A type of ReportingUnit that describes one or more districts associated with the record.

ElectionAdministration - An instance of the ElectionAdministration type that describes the local election official associated with the registrant.

Locality - A type of ReportingUnit that describes the county, city and precinct information associated with the registrant.

PollingPlace - A type of ReportingUnit that describes the polling location(s) associated with the registrant.

VoterParticipation - An instance of VoterParticipation type(s) that describes a voting history record by relating Election and BallotStyle types to the voter record.

Note: This object extends the Voter object.

Voter

Object Definition:

ContactMethod - An enumeration of the ContactMethodType (e.g. phone)

DateOfBirth - A date of birth in YYYY-MM-DD format

Ethnicity - A text string describing the voter's ethnicity

Gender - A text string describing the voter's gender

MailingAddress - An Address group for mailing address

Name - An instance of the Name type related to the voter

Party - An instance of the Party type related to the voter

PreviousName - An instance of the Name type describing a prior name (for name changes)

PreviousResidenceAddress - An Address group for a prior address

PreviousSignature - An instance of the Signature type related to a prior signature (this may include an image of a digitized signature)

ResidenceAddress - An Address group for residence address

ResidenceAddressIsMailingAddress - A true or false value describing if a mailing address is needed

Signature - An instance of the Signature type related to a signature (this may include an image of a digitized signature)

VoterClassification - An instance VoterClassification type(s) that references an enumeration of VoterClassificationType (e.g. protected-voter)

VoterId - An instance of VoterId type(s) that may contain a text value or an a file and referes to a VoterIdType

Addendum

Use Case 1 - Sample XML -Voter Lookup Example

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsRequest xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <GeneratedDate>2018-09-03</GeneratedDate>
  <Issuer>Third-Party Issuer</Issuer>
  <RequestMethod>other</RequestMethod>
  <Subject>
    <DateOfBirth>1999-01-01</DateOfBirth>
    <Name>
      <FirstName>John</FirstName>
      <FullName>John S. Smith</FullName>
      <LastName>Smith</LastName>
      <MiddleName>S</MiddleName>
    </Name>
    <VoterId>
      <DateOfIssuance>2015-01-01</DateOfIssuance>
      <StringValue>Z666776677</StringValue>
      <Type>drivers-license</Type>
    </VoterId>
    <VoterId>
      <StringValue>1234</StringValue>
      <Type>ssn4</Type>
    </VoterId>
  </Subject>
  <Type>lookup</Type>
</VoterRecordsRequest>
```

Use Case 1 - Sample XML – VoterRecordsResponse

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xsi:type="VoterRecords"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <TransactionId>vri-resp93201822022</TransactionId>
  <VoterRecord>
    <DateOfBirth>1999-01-01</DateOfBirth>
    <MailingAddress>
      <USPSPostalDeliveryBox_type>
        <USPSBox>PO Box 12345</USPSBox>
        <CompleteSubaddress>Richmond, VA 23219</CompleteSubaddress>
      </USPSPostalDeliveryBox_type>
    </MailingAddress>
    <Name>
      <FirstName>John</FirstName>
      <FullName>John S. Smith</FullName>
      <LastName>Smith</LastName>
    </Name>
    <Party>
      <Name>Not-specified</Name>
    </Party>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>1324</CompleteAddressNumber>
        <CompleteStreetName>E Main Street</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterId>
      <StringValue>99998888991</StringValue>
      <Type>state-voter-registration-id</Type>
    </VoterId>
    <District>
      <Name>7</Name>
      <Type>congressional</Type>
    </District>
    <Locality>
      <Name>Richmond City</Name>
      <Type>county</Type>
```

```
    </Locality>
    <Locality>
      <Name>111 - One Hundred Eleven</Name>
      <Type>precinct</Type>
    </Locality>
  </VoterRecord>
</VoterRecordsResponse>
```

Use Case 1.2 Example

Simple acknowledgement VoterRecordsResponse

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xsi:type="RequestAcknowledgement"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <TransactionId>vri-validation93201822030</TransactionId>
</VoterRecordsResponse>
```

Use Case 2 – Sample XML – NVRA Voter Lookup Example

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsRequest xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <GeneratedDate>2018-09-03</GeneratedDate>
  <Issuer>NVRA Agency</Issuer>
  <RequestMethod>motor-vehicle-office</RequestMethod>
  <Subject>
    <DateOfBirth>1999-01-01</DateOfBirth>
    <Name>
      <FirstName>John</FirstName>
      <FullName>John S. Smith</FullName>
      <LastName>Smith</LastName>
      <MiddleName>S</MiddleName>
    </Name>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>1324</CompleteAddressNumber>
        <CompleteStreetName>E Main Street</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterId>
      <DateOfIssuance>2015-01-01</DateOfIssuance>
      <StringValue>Z88837777</StringValue>
      <Type>drivers-license</Type>
    </VoterId>
    <VoterId>
      <StringValue>1234</StringValue>
      <Type>ssn4</Type>
    </VoterId>
  </Subject>
  <TransactionId>vri-request93201822012</TransactionId>
  <Type>lookup</Type>
</VoterRecordsRequest>
```

Use Case 2 – Sample XML – Voter Record Response from VR Authority

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xsi:type="VoterRecords"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <TransactionId>vri-resp93201822022</TransactionId>
  <VoterRecord>
    <DateOfBirth>1999-01-01</DateOfBirth>
    <MailingAddress>
      <USPSPostalDeliveryBox_type>
        <USPSBox>PO Box 12345</USPSBox>
        <CompleteSubaddress>Richmond, VA 23219</CompleteSubaddress>
      </USPSPostalDeliveryBox_type>
    </MailingAddress>
    <Name>
      <FirstName>John</FirstName>
      <FullName>John S. Smith</FullName>
      <LastName>Smith</LastName>
    </Name>
    <Party>
      <Name>Not-specified</Name>
    </Party>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>1324</CompleteAddressNumber>
        <CompleteStreetName>E Main Street</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterId>
      <StringValue>99998888991</StringValue>
      <Type>state-voter-registration-id</Type>
    </VoterId>
    <District>
      <Name>7</Name>
      <Type>congressional</Type>
    </District>
    <Locality>
      <Name>Richmond City</Name>
      <Type>county</Type>
    </Locality>
```

```
    <Locality>
      <Name>111 - One Hundred Eleven</Name>
      <Type>precinct</Type>
    </Locality>
  </VoterRecord>
</VoterRecordsResponse>
```

Use Case 3 – Sample XML - Electronic Pollbook Voter Records

Generated from sample CSV File

```
<?xml version="1.0" encoding="utf-8"?>
<VoterRecordsResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xsi:type="VoterRecords"
xmlns="NIST_V0_voter_records_interchange.xsd">
  <TransactionId>epb-vri-example</TransactionId>
  <VoterRecord>
    <DateOfBirth>1999-01-01</DateOfBirth>
    <Gender>M</Gender>
    <Name>
      <FirstName>John</FirstName>
      <FullName>John S Smith</FullName>
      <LastName>Smith</LastName>
      <MiddleName>S</MiddleName>
    </Name>
    <Party>
      <Name>Not-specified</Name>
    </Party>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>1234</CompleteAddressNumber>
        <CompleteStreetName>E Main St</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222 US</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>not protected</OtherType>
      <Type>other</Type>
    </VoterClassification>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>not uocava</OtherType>
      <Type>other</Type>
    </VoterClassification>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>no absentee ballot sent</OtherType>
      <Type>other</Type>
```

```
</VoterClassification>
<VoterClassification>
  <Assertion>no</Assertion>
  <OtherType>Active</OtherType>
  <Type>other</Type>
</VoterClassification>
<VoterClassification>
  <Assertion>no</Assertion>
  <OtherType>No confirmation</OtherType>
  <Type>other</Type>
</VoterClassification>
<VoterId>
  <StringValue>9999909</StringValue>
  <Type>state-voter-registration-id</Type>
</VoterId>
<VoterId>
  <StringValue>V9990999</StringValue>
  <Type>drivers-license</Type>
</VoterId>
<District>
  <Name>7</Name>
  <Type>congressional</Type>
</District>
<District>
  <Name>11</Name>
  <Type>state-senate</Type>
</District>
<District>
  <Name>71</Name>
  <Type>state-house</Type>
</District>
<Locality>
  <Name>RICHMOND CITY</Name>
  <Type>county</Type>
</Locality>
<Locality>
  <Name>111</Name>
  <Type>precinct</Type>
</Locality>
<Locality>
  <Type>split-precinct</Type>
</Locality>
```

```
    <VoterParticipation>
      <BallotStyle>
        <ExternalIdentifier>
          <Type>local-level</Type>
          <Value />
        </ExternalIdentifier>
      </BallotStyle>
      <Election>
        <Name>2018 General Election</Name>
        <StartDate>2018-11-07</StartDate>
      </Election>
    </VoterParticipation>
  </VoterRecord>
  <VoterRecord>
    <DateOfBirth>1955-01-01</DateOfBirth>
    <Gender>F</Gender>
    <Name>
      <FirstName>Mary</FirstName>
      <FullName>Mary Alice Allison</FullName>
      <LastName>Allison</LastName>
      <MiddleName>Alice</MiddleName>
    </Name>
    <Party>
      <Name>Not-specified</Name>
    </Party>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>2121</CompleteAddressNumber>
        <CompleteStreetName>N 17th St</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222 US</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>not protected</OtherType>
      <Type>other</Type>
    </VoterClassification>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>not uocava</OtherType>
      <Type>other</Type>
    </VoterClassification>
```

```
<VoterClassification>
  <Assertion>no</Assertion>
  <OtherType>no absentee ballot sent</OtherType>
  <Type>other</Type>
</VoterClassification>
<VoterClassification>
  <Assertion>no</Assertion>
  <OtherType>Active</OtherType>
  <Type>other</Type>
</VoterClassification>
<VoterClassification>
  <Assertion>no</Assertion>
  <OtherType>No confirmation</OtherType>
  <Type>other</Type>
</VoterClassification>
<VoterId>
  <StringValue>8888825</StringValue>
  <Type>state-voter-registration-id</Type>
</VoterId>
<VoterId>
  <StringValue>V1111225</StringValue>
  <Type>drivers-license</Type>
</VoterId>
<District>
  <Name>7</Name>
  <Type>congressional</Type>
</District>
<District>
  <Name>11</Name>
  <Type>state-senate</Type>
</District>
<District>
  <Name>71</Name>
  <Type>state-house</Type>
</District>
<Locality>
  <Name>RICHMOND CITY</Name>
  <Type>county</Type>
</Locality>
<Locality>
  <Name>111</Name>
  <Type>precinct</Type>
```

```
    </Locality>
    <Locality>
      <Type>split-precinct</Type>
    </Locality>
    <VoterParticipation>
      <BallotStyle>
        <ExternalIdentifier>
          <Type>local-level</Type>
          <Value />
        </ExternalIdentifier>
      </BallotStyle>
      <Election>
        <Name>2018 General Election</Name>
        <StartDate>2018-11-07</StartDate>
      </Election>
    </VoterParticipation>
  </VoterRecord>
  <VoterRecord>
    <DateOfBirth>1975-01-01</DateOfBirth>
    <Gender>M</Gender>
    <Name>
      <FirstName>Juan</FirstName>
      <FullName>Juan Montez Juares</FullName>
      <LastName>Juares</LastName>
      <MiddleName>Montez</MiddleName>
    </Name>
    <Party>
      <Name>Not-specified</Name>
    </Party>
    <ResidenceAddress>
      <NumberedThoroughfareAddress_type>
        <CompleteAddressNumber>5200</CompleteAddressNumber>
        <CompleteStreetName>E Cary St</CompleteStreetName>
        <CompleteSubaddress>Richmond, VA 23222 US</CompleteSubaddress>
      </NumberedThoroughfareAddress_type>
    </ResidenceAddress>
    <VoterClassification>
      <Assertion>no</Assertion>
      <OtherType>not protected</OtherType>
      <Type>other</Type>
    </VoterClassification>
    <VoterClassification>
```

```
    <Assertion>no</Assertion>
    <OtherType>not uocava</OtherType>
    <Type>other</Type>
  </VoterClassification>
  <VoterClassification>
    <Assertion>no</Assertion>
    <OtherType>no absentee ballot sent</OtherType>
    <Type>other</Type>
  </VoterClassification>
  <VoterClassification>
    <Assertion>no</Assertion>
    <OtherType>Active</OtherType>
    <Type>other</Type>
  </VoterClassification>
  <VoterClassification>
    <Assertion>no</Assertion>
    <OtherType>No confirmation</OtherType>
    <Type>other</Type>
  </VoterClassification>
  <VoterId>
    <StringValue>1155454</StringValue>
    <Type>state-voter-registration-id</Type>
  </VoterId>
  <VoterId>
    <StringValue>V4554545</StringValue>
    <Type>drivers-license</Type>
  </VoterId>
  <District>
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  <District>
    <Name>11</Name>
    <Type>state-senate</Type>
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    <Name>71</Name>
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      <LastName>Reilly</LastName>
      <MiddleName>Andrew</MiddleName>
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        <StartDate>2018-11-07</StartDate>
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  <VoterRecord>
    <DateOfBirth>1984-01-01</DateOfBirth>
    <Gender>F</Gender>
    <Name>
      <FirstName>Susan</FirstName>
      <FullName>Susan McAndrew</FullName>
      <LastName>McAndrew</LastName>
      <MiddleName />
    </Name>
    <Party>
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    <Gender>F</Gender>
    <Name>
      <FirstName>Jesse</FirstName>
      <FullName>Jesse Wilson Ferguson</FullName>
      <LastName>Ferguson</LastName>
      <MiddleName>Wilson</MiddleName>
    </Name>
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  <VoterRecord>
    <DateOfBirth>1945-01-01</DateOfBirth>
    <Gender>F</Gender>
    <Name>
      <FirstName>Yun</FirstName>
```

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    <FullName>Yun Lin</FullName>
    <LastName>Lin</LastName>
    <MiddleName />
  </Name>
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      <Type>precinct</Type>
    </Locality>
    <Locality>
      <Type>split-precinct</Type>
    </Locality>
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          <Value />
        </ExternalIdentifier>
      </BallotStyle>
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        <StartDate>2018-11-07</StartDate>
      </Election>
    </VoterParticipation>
  </VoterRecord>
</VoterRecordsResponse>
```

Complete Schema Definition

For easy to navigate version see: https://rawgit.com/pstenbjorn/VRIUsecases/master/vri.xsd.html

XML Schema Documentation

Printer-friendly Version

XML Instance Representation:

[Expand All | Collapse All]

Schema Component Representation:

[Expand All | Collapse All]

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Schema Document Properties

Target Namespace	NIST_Vo_voter_records_interchange.xsd
Version	0.0

Element and Attribute Namespaces	• Global element and attribute declarations belong to this schema's target namespace. • By default, local element declarations belong to this schema's target namespace. • By default, local attribute declarations have no namespace.

Schema Composition	• This schema imports schema(s) from the following namespace(s):
	  ○ *http://www.fgdc.gov/schemas/address/addr* (at https://www.fgdc.gov/schemas/address/addr.xsd)
	  ○ *http://www.w3.org/2000/09/xmldsig#* (at http://www.w3.org/2000/09/xmldsig#)

Declared Namespaces

Prefix	Namespace
Default namespace	NIST_V0_voter_records_interchange.xsd
xml	http://www.w3.org/XML/1998/namespace
addr	http://www.fgdc.gov/schemas/address/addr
ds	http://www.w3.org/2000/09/xmldsig#
xsd	http://www.w3.org/2001/XMLSchema

Schema Component Representation

top

Global Declarations

Element: VoterRecordsRequest

Name	VoterRecordsRequest
Type	VoterRecordsRequest
Nillable	no

Abstract no

XML Instance Representation

<VoterRecordsRequest>

<AdditionalInfo> AdditionalInfo </AdditionalInfo> [0..*] ?

<BallotRequest> BallotRequest </BallotRequest> [0..1] ?

<Form> RequestForm </Form> [0..1] ?

<GeneratedDate> xsd:date </GeneratedDate> [1] ?

<Issuer> xsd:string </Issuer> [0..1] ?

<OtherForm> xsd:string </OtherForm> [0..1] ?

<OtherRequestMethod> xsd:string </OtherRequestMethod> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<RequestHelper> RequestHelper </RequestHelper> [0..*] ?

<RequestMethod> RequestMethod </RequestMethod> [1] ?

<RequestProxy> RequestProxy </RequestProxy> [0..1] ?

<SelectedLanguage> xsd:language </SelectedLanguage> [0..1] ?

<Subject> Voter </Subject> [1] ?

<TransactionId> xsd:string </TransactionId> [0..1] ?

<Type> VoterRequestType </Type> [1..*] ?

<VendorApplicationId> xsd:string </VendorApplicationId> [0..1] ?

</VoterRecordsRequest>

Schema Component Representation

top

Element: VoterRecordsResponse

Name VoterRecordsResponse

Type VoterRecordsResponse

Nillable	no
Abstract	no

XML Instance Representation

<VoterRecordsResponse>

<TransactionId> xsd:string </TransactionId> [0..1] ?

</VoterRecordsResponse>

Schema Component Representation

top

Global Definitions

Complex Type: AdditionalInfo

Super-types: None

Sub-types: None

Name	AdditionalInfo
Abstract	no
Documentation	Class for specifying information not addressed in this model by other elements and attributes, e.g. state-specific information that does not “fit” in any other element. The information will thus be highly specific to the generating application, and consuming applications must “know” the meaning of the information to make use of it. For this reason, use of this class is discouraged as much as is possible. The StringValue and FileValue attributes are both optional, however exactly one of them must be included.

XML Instance Representation

<...>

<FileValue> File </FileValue> [0..1] ?

<Name> xsd:string </Name> [1] ?

<StringValue> xsd:string </StringValue> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: BallotRequest

Super-types: None

Sub-types:
- ElectionBasedBallotRequest (by extension)
- PermanentBallotRequest (by extension)
- TemporalBallotRequest (by extension)

Name	BallotRequest
Abstract	no
Documentation	An abstract class representing a request for a ballot. Classes for specific types of BallotRequest inherit the attributes and define their own.

XML Instance Representation

<...>

<BallotReceiptPreference> BallotReceiptMethod </BallotReceiptPreference> [0..*] ?

<MailForwardingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type
</GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type
</IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type
</NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type
</TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type
</USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type
</USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type
</USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type>
addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailForwardingAddress>

</...>

Schema Component Representation

top

Complex Type: BallotStyle

Super-types: None

Sub-types: None

Name BallotStyle

Abstract	no
Documentation	For defining a ballot style composed of ordered content (i.e. Headers or Contests) and their ballot selections, and associating the ballot style with a political party, a reference to an image of the ballot, and a reference to the a precinct or other geopolitical unit that the ballot is unique to. Election includes BallotStyle. BallotStyle references OrderedContent to include content that appears on that ballot style. To preserve any rotation associated with the ballot, it is expected that the generating application will list the occurrences of OrderedContest in the order as on the ballot for the associated geopolitical unit. BallotStyle references one or more GpUnit instances defined for the associated precincts or split precincts. If the ballot style is associated with multiple precincts (or other geographies), multiple references to the precinct GpUnit instances can be included. When including ExternalIdentifier, if the type is not listed in enumeration IdentifierType, use other and include the type (that is not listed in the enumeration) in OtherType.

XML Instance Representation

<...>

<ExternalIdentifier> ExternalIdentifier </ExternalIdentifier> [0..*] ?

<ImageUri> xsd:anyURI </ImageUri> [0..*] ?

<Party> Party </Party> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: ContactMethod

Super-types: None

Sub-types:
- PhoneContactMethod (by extension)

Name	ContactMethod
Abstract	no
Documentation	Used in request and response messages. ElectionAdministration optionally includes this class to specify how to contact the election administration. VoterRegistration optionally includes this class to specify the method for contacting a voter regarding the voter’s registration request. If the voter can be contacted in multiple ways, the application creating the data should order the occurrences of ContactMethod by priority. The PhoneContactMethod class uses ContactMethod as a base class, and should be used with when the contact method is for a telephone and it is necessary to describe the capabilities of the telephone. The Capability attribute is provided by the PhoneContactMethod class.

XML Instance Representation

<...>

<OtherType> xsd:string </OtherType> [0..1] ?

<Type> ContactMethodType </Type> [1] ?

<Value> xsd:string </Value> [1] ?

</...>

Schema Component Representation

top

Complex Type: Election

Super-types: None

Sub-types: None

Name	Election
Abstract	no
Documentation	Describes an election event. Only the date of the election is required. Other attributes may be used to describe the election for which a ballot is requested.

XML Instance Representation

<...>

<EndDate> xsd:date </EndDate> [0..1] ?

<ExternalIdentifier> ExternalIdentifier </ExternalIdentifier> [0..*] ?

<Name> xsd:string </Name> [0..1] ?

<StartDate> xsd:date </StartDate> [1] ?

</...>

Schema Component Representation

top

Complex Type: ElectionAdministration

Super-types: None

Sub-types: None

Name	ElectionAdministration

Abstract	no
Documentation	Used in response messages. ElectionAdministration optionally includes ContactMethod to specify contact information for the election authority.

XML Instance Representation

<...>

<ContactMethod> ContactMethod </ContactMethod> [0..*] ?

<Location> Location </Location> [0..1] ?

<Name> xsd:string </Name> [0..1] ?

<Uri> xsd:anyURI </Uri> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: ElectionBasedBallotRequest

Super-types: BallotRequest < **ElectionBasedBallotRequest** (by extension)

Sub-types: None

Name	ElectionBasedBallotRequest
Abstract	no
Documentation	A kind of ballot request in which a ballot for a single election event is requested.

XML Instance Representation

<...>

<BallotReceiptPreference> BallotReceiptMethod </BallotReceiptPreference> [0..*] ?

<MailForwardingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

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addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailForwardingAddress>

<Election> Election </Election> [1] ?

</...>

Schema Component Representation

top

Complex Type: ExternalIdentifier

Super-types: None

Sub-types: None

Name	ExternalIdentifier
Abstract	no
Documentation	Used in request and response messages. Election, Party and ReportingUnit > optionally include this class for associating a jurisdiction’s codes, i.e., identifiers, with political parties or geopolitical units such as counties, towns, precincts, etc. Multiple occurrences of ExternalIdentifier can be used to associate multiple codes, e.g., if there is a desire to associate multiple codes with an object such as state-specific codes as well as OCD-IDs (Open Civic Data Identifiers).

XML Instance Representation

<...>

<OtherType> xsd:string </OtherType> [0..1] ?

<Type> IdentifierType </Type> [1] ?

<Value> xsd:string </Value> [1] ?

</...>

Schema Component Representation

top

Complex Type: File

Super-types: xsd:base64Binary < **File** (by extension)

Sub-types:
- Image (by extension)

Name	File
Abstract	no
Documentation	Used in request messages. VoterId optionally uses this class for FileValue to specify a filename for voter identification purposes such as for a utility bill. AdditionalInfo also optionally includes FileValue. File extends the xsd:base64Binary type to add the attributes for filename and (Multi-Purpose Internet Mail Extensions) MIME type, e.g., application/pdf for a file of type PDF. The Image element uses this element as an supertype, thus Image can be used when the type of file is for an image, e.g., image/png.

XML Instance Representation

<...

fileName="xsd:string [0..1] ?"

mimeType="xsd:string [0..1] ?">

xsd:base64Binary

</...>

Schema Component Representation

top

Complex Type: Image

Super-types: xsd:base64Binary < File (by extension) < **Image** (by extension)

Sub-types: None

Name Image

Abstract no

Documentation Used in request messages.   Signature optionally includes this class to indicate that a file contains an image of a voter’s signature. Image uses File as supertype, thus attributes of File can be included in Image.

XML Instance Representation

<...

fileName="xsd:string [0..1] ?"

mimeType="xsd:string [0..1] ?">

xsd:base64Binary

</...>

Schema Component Representation

top

Complex Type: LatLng

Super-types: None

Sub-types: None

Name LatLng

Abstract no

Documentation	Used in response messages. Location optionally includes this element to specify the latitude and longitude of a voter’s voting location.

XML Instance Representation

<...>

<Latitude> xsd:float </Latitude> [1] ?

<Longitude> xsd:float </Longitude> [1] ?

<Source> xsd:string </Source> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: Location

Super-types:	None
Sub-types:	None

Name	Location
Abstract	no
Documentation	Used in response messages. ReportingUnit and ElectionAdministration optionally include this element to specify the address and directions to a voter’s voting location. The LatLng element can be included to specify the latitude and longitude of the voting location.

XML Instance Representation

<...>

<Address> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type
</CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type
</FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type
</GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type
</IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type
</NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type
</TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type
</USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type
</USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type
</USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type>
addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</Address>

<Directions> xsd:string </Directions> [0..1] ?

<LatLng> LatLng </LatLng> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: Name

Super-types: None

Sub-types: None

Name	Name
Abstract	no
Documentation	Used in request messages. Voter includes this class for specifying the name of a voter and, optionally, for specifying a previous name of the voter, using PreviousName instead of Name. ReguestHelper also includes this class for specifying the name of a registration helper. Multiple occurrences of the MiddleName attribute can be used as needed, e.g., for names with additional middle names or nicknames such as “John Andrew Winston (Jack) Smith”. All elements are optional, however at least FullName must be included if the other attributes are not.

XML Instance Representation

<...>

<FirstName> xsd:string </FirstName> [0..1] ?

<FullName> xsd:string </FullName> [0..1] ?

<LastName> xsd:string </LastName> [0..1] ?

<MiddleName> xsd:string </MiddleName> [0..*] ?

<Prefix> xsd:string </Prefix> [0..1] ?

<Suffix> xsd:string </Suffix> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: Party

Super-types: None

Sub-types: None

Name Party

Abstract no

Documentation Used in request messages.   Voter includes this element to specify a voter’s political party.

XML Instance Representation

<...>

<Abbreviation> xsd:string </Abbreviation> [0..1] ?

<ExternalIdentifier> ExternalIdentifier </ExternalIdentifier> [0..*] ?

<Name> xsd:string </Name> [1] ?

</...>

Schema Component Representation

top

Complex Type: PermanentBallotRequest

Super-types: BallotRequest < **PermanentBallotRequest** (by extension)

Sub-types: None

Name PermanentBallotRequest

Abstract no

Documentation A kind of ballot request which serves to request ballots for election events that the voter is qualified on a long term basis. Although "permanent", the request may be subject to renewal or cancellation procedures.

XML Instance Representation

<...>

<BallotReceiptPreference> BallotReceiptMethod </BallotReceiptPreference> [0..*] ?

<MailForwardingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type>
addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailForwardingAddress>

</...>

Schema Component Representation

top

Complex Type: PhoneContactMethod

Super-types: ContactMethod < **PhoneContactMethod** (by extension)

Sub-types: None

Name	PhoneContactMethod
Abstract	no
Documentation	Used in request and response messages. RequestHelper, and RequestProxy use this class to specify a telephone number as well as the capabilities of the telephone, e.g., sms, fax, etc. PhoneContactMethod is subtype ContactMethod. Thus, the elements that include ContactMethod could use PhoneContactMethod as applicable.

XML Instance Representation

<...>

<OtherType> xsd:string </OtherType> [0..1] ?

<Type> ContactMethodType </Type> [1] ?

<Value> xsd:string </Value> [1] ?

<Capability> PhoneCapability </Capability> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: ReportingUnit

Super-types: None

Sub-types: None

Name	ReportingUnit
Abstract	no
Documentation	Used in response messages. VoterRecordsResponse includes this class when a registration request is successful so as to provide a list of geopolitical geography associated with the voter’s registration, e.g., the voter’s precinct, polling place, districts, etc. The Type attribute uses the ReportingUnitType enumeration to specify the type of geopolitical geography being defined. If the reporting unit type is not listed in enumeration ReportingUnitType, use other and include the reporting unit type (that is not listed in the enumeration) in OtherType. The IsDistricted boolean is not strictly necessary, as it is possible to identify districts by their Type attribute. However, if the type of district is not listed in the ReportingUnitType enumeration and therefore OtherType is used, then IsDistricted is necessary. The IsDistricted boolean can also be used to signify that a ReportingUnit defined as a jurisdiction, e.g., a county, is also used as a district for, e.g., county-wide contests.

XML Instance Representation

<...>

<ExternalIdentifier> ExternalIdentifier </ExternalIdentifier> [0..*] ?

<IsDistricted> xsd:boolean </IsDistricted> [0..1] ?

<Location> Location </Location> [0..1] ?

<Name> xsd:string </Name> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<Type> ReportingUnitType </Type> [1] ?

</...>

Schema Component Representation

top

Complex Type: RequestAcknowledgement

Super-types: VoterRecordsResponse < **RequestAcknowledgement** (by extension)

Sub-types: None

Name	RequestAcknowledgement
Abstract	no
Documentation	Voter optionally includes this element to specify information about a request helper, i.e., a request assistant or witness involved in a voter’s request. RequestAssistant includes the Name element to specify the registration helper’s name and optionally includes the Signature element if a registration helper’s signature is required.

XML Instance Representation

<...>

<TransactionId> xsd:string </TransactionId> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: RequestHelper

Super-types: None

Sub-types: None

Name	RequestHelper
Abstract	no
Documentation	VoterRecordsRequest optionally includes this element to specify information about a request helper, i.e., a request assistant or witness involved in a voter’s request. RequestAssistant includes the Name element to specify the registration helper’s name and optionally includes the Signature element if a registration helper’s signature is required.

XML Instance Representation

<...>

<Address> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type
</GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type
</IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type
</NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type
</TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type
</USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type
</USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type
</USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type>
addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</Address>

<Name> Name </Name> [0..1] ?

<Phone> PhoneContactMethod </Phone> [0..1] ?

<Signature> Signature </Signature> [0..1] ?

<Type> VoterHelperType </Type> [1] ?

</...>

Schema Component Representation

top

Complex Type: RequestProxy

Super-types: None

Sub-types: None

Name RequestProxy

Abstract no

Documentation Used in request messages.   VoterRecordsRequest optionally includes this class to specify information about a request proxy involved in a voter records request.   OriginTransactionId can be used to include an optional identifier of the originating external transaction from the proxy, e.g., used for the transaction ID generated by a DMV application enacting a voter registration request to a registration portal application (on behalf of a citizen obtaining a driver’s license). This sub-element is not to be confused with TransactionId in VoterRecordsRequest, which is used to include a transaction ID of the voter records request, e.g., the transaction ID of the registration portal’s voter records request.

XML Instance Representation

<...>

<Address> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</Address>

<Name> xsd:string </Name> [0..1] ?

<OriginTransactionId> xsd:string </OriginTransactionId> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<Phone> PhoneContactMethod </Phone> [0..1] ?

<TimeStamp> xsd:date </TimeStamp> [0..1] ?

<Type> RequestProxyType </Type> [1] ?

</...>

Schema Component Representation

top

Complex Type: RequestRejection

Super-types: VoterRecordsResponse < **RequestRejection** (by extension)

Sub-types: None

Name RequestRejection

Abstract no

Documentation Used in responses. For indicating that the request failed. The Error attribute is used to indicate the type of error that occurred. The AdditionalDetails attribute can be used to provide more information as to the rejection.

XML Instance Representation

<...>

<TransactionId> xsd:string </TransactionId> [0..1] ?

<AdditionalDetails> xsd:string </AdditionalDetails> [0..*] ?

<Error> RequestError </Error> [0..*] ?

<OtherError> xsd:string </OtherError> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: RequestSuccess

Super-types: VoterRecordsResponse < **RequestSuccess** (by extension)

Sub-types: None

Name RequestSuccess

Abstract no

Documentation Used in responses. For indicating a successful response to a request. The Action attribute is used to indicate the action that occurred, which may differ from what was requested. For example, a request for a new voter registration may succeed, but if the voter was already registered, the response may indicate a registration update as opposed to a registration create. The response also includes, optionally, other information useful to the voter, including a description of the voter's polling place, districts (i.e., contests) associated with the polling place, or other geopolitical geographies such as the voter's precinct.

XML Instance Representation

<...>

<TransactionId> xsd:string </TransactionId> [0..1] ?

<Action> SuccessAction </Action> [0..*] ?

<District> ReportingUnit </District> [0..*] ?

<EffectiveDate> xsd:date </EffectiveDate> [0..1] ?

<ElectionAdministration> ElectionAdministration </ElectionAdministration> [0..1] ?

<Locality> ReportingUnit </Locality> [0..*] ?

<PollingPlace> ReportingUnit </PollingPlace> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: Signature

Super-types: None

Sub-types: None

Name	Signature
Abstract	no
Documentation	Used in request messages. Voter includes this class for specifying information about a voter’s signature on a registration request. If there is a need to include previous signature that uses a different name, e.g., a maiden name, Voter uses PreviousSignature instead of Signature. Source is used to specify the source of the voter’s signature, for example, on file at a department of motor vehicles. FileValue is used to include an image of the voter’s signature.

XML Instance Representation

<...>

<Date> xsd:date </Date> [0..1] ?

<FileValue> Image </FileValue> [0..1] ?

<OtherSource> xsd:string </OtherSource> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<Source> SignatureSource </Source> [0..1] ?

<Type> SignatureType </Type> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: TemporalBallotRequest

Super-types: BallotRequest < **TemporalBallotRequest** (by extension)

Sub-types: None

Name	TemporalBallotRequest
Abstract	no
Documentation	A kind of ballot request in which election opportunities that the voter is qualified during a given time frame will be requested.

XML Instance Representation

<...>

<BallotReceiptPreference> BallotReceiptMethod </BallotReceiptPreference> [0..*] ?

<MailForwardingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type
</CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type
</FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type
</GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type
</IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type
</NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type
</TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type
</USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type
</USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type
</USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type>
addr:UnnumberedThoroughfareAddress_type
</UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailForwardingAddress>

<EndDate> xsd:date </EndDate> [1] ?

<StartDate> xsd:date </StartDate> [1] ?

</...>

Schema Component Representation

top

Complex Type: Voter

Super-types: None

Sub-types:
- VoterRecord (by extension)

Name Voter

Abstract no

Documentation Voter contains attributes specific to identifying a voter.

XML Instance Representation

<...>

<ContactMethod> ContactMethod </ContactMethod> [0..*] ?

<DateOfBirth> xsd:date </DateOfBirth> [0..1] ?

<Ethnicity> xsd:string </Ethnicity> [0..1] ?

<Gender> xsd:string </Gender> [0..1] ?

<MailingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailingAddress>

<Name> Name </Name> [1] ?

<Party> Party </Party> [0..1] ?

<PreviousName> Name </PreviousName> [0..1] ?

<PreviousResidenceAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</PreviousResidenceAddress>

<PreviousSignature> Signature </PreviousSignature> [0..1] ?

<ResidenceAddress> [1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

</ResidenceAddress>

<ResidenceAddressIsMailingAddress> xsd:boolean </ResidenceAddressIsMailingAddress> [0..1] ?

<Signature> Signature </Signature> [0..1] ?

<VoterClassification> VoterClassification </VoterClassification> [0..*] ?

<VoterId> VoterId </VoterId> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: VoterClassification

Super-types: None

Sub-types: None

Name	VoterClassification
Abstract	no
Documentation	Voter includes this class to describe a voter’s classification per criteria on the voter’s request form, e.g., united-states-citizen or eighteen-on-election-day. VoterClassification includes assertions of the voter in response to the voter request form criteria. For example, an assertion of true may be used with a criterion of united-states-citizen. Assertions can be negative, such as providing an assertion of false for a criterion of felon, an assertion of unknown to indicate that the voter does not know whether they meet or do not meet the specific criteria on the form or an assertion of other, in which the assertion is specified by the value of OtherAssertion.

XML Instance Representation

<...>

<Assertion> AssertionValue </Assertion> [1] ?

<OtherAssertion> xsd:string </OtherAssertion> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<Type> VoterClassificationType </Type> [1] ?

</...>

Schema Component Representation

top

Complex Type: VoterId

Super-types: None

Sub-types: None

Name	VoterId
Abstract	no
Documentation	Used in request messages. Used to include information about a voter’s identification that may be required in a registration request. Voter includes VoterId. AttestNoSuchId is used to attest that the voter has no ID of a specified type, thus it must be included with a value of true if attesting that the voter has no ID for that specified type. It can be included with a value of false to attest that the voter does have an ID of the specified type, in which case either StringValue or FileValue must be included; however, it is assumed to be false if not included. The StringValue and FileValue sub-elements are both optional, however at least one of them must be included.

XML Instance Representation

<...>

<AttestNoSuchId> xsd:boolean </AttestNoSuchId> [0..1] ?

<DateOfIssuance> xsd:date </DateOfIssuance> [0..1] ?

<FileValue> File </FileValue> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<StringValue> xsd:string </StringValue> [0..1] ?

<Type> VoterIdType </Type> [1] ?

</...>

Schema Component Representation

top

Complex Type: VoterParticipation

Super-types: None

Sub-types: None

Name	VoterParticipation
Abstract	no
Documentation	For indicating an election that the voter participated in. Participation does not imply a counted ballot.

XML Instance Representation

<...>

<BallotStyle> BallotStyle </BallotStyle> [0..1]

<Election> Election </Election> [1]

</...>

Schema Component Representation

top

Complex Type: VoterRecord

Super-types: Voter < **VoterRecord** (by extension)

Sub-types: None

Name VoterRecord

Abstract no

Documentation A subtype of Voter representing a voter record stored in a Voter Registration Database (VRDB). VoterRecord optionally contains additional information useful to the voter, including a description of the voter's polling place, districts associated with the polling place, or other geopolitical geographies such as the voter's precinct.

XML Instance Representation

<...>

<ContactMethod> ContactMethod </ContactMethod> [0..*] ?

<DateOfBirth> xsd:date </DateOfBirth> [0..1] ?

<Ethnicity> xsd:string </Ethnicity> [0..1] ?

<Gender> xsd:string </Gender> [0..1] ?

<MailingAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</MailingAddress>

<Name> Name </Name> [1] ?

<Party> Party </Party> [0..1] ?

<PreviousName> Name </PreviousName> [0..1] ?

<PreviousResidenceAddress> [0..1]

Start Group: Address [0..1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

End Group: Address

</PreviousResidenceAddress>

<PreviousSignature> Signature </PreviousSignature> [0..1] ?

<ResidenceAddress> [1]

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

</ResidenceAddress>

<ResidenceAddressIsMailingAddress> xsd:boolean </ResidenceAddressIsMailingAddress> [0..1] ?

<Signature> Signature </Signature> [0..1] ?

<VoterClassification> VoterClassification </VoterClassification> [0..*] ?

<VoterId> VoterId </VoterId> [0..*] ?

<District> ReportingUnit </District> [0..*] ?

<ElectionAdministration> ElectionAdministration </ElectionAdministration> [0..1] ?

<Locality> ReportingUnit </Locality> [0..*] ?

<PollingLocation> ReportingUnit </PollingLocation> [0..1] ?

<VoterParticipation> VoterParticipation </VoterParticipation> [0..*]

</...>

Schema Component Representation

top

Complex Type: VoterRecords

Super-types: VoterRecordsResponse < **VoterRecords** (by extension)

Sub-types: None

Name	VoterRecords
Abstract	no

Documentation	Used in responses. For indicating a successful response to a lookup request. A lookup for a single voter may result in multiple VoterRecords being returned. This can occur if the voter has duplicate records in the VRDB, or if the criteria specified in the lookup request was broad.

XML Instance Representation

<...>

<TransactionId> xsd:string </TransactionId> [0..1] ?

<VoterRecord> VoterRecord </VoterRecord> [0..*] ?

</...>

Schema Component Representation

top

Complex Type: VoterRecordsRequest

Super-types:	None
Sub-types:	None

Name	VoterRecordsRequest
Abstract	no
Documentation	The root element for request messages. For defining items pertaining to the status and type of the voter records request and when it was generated. VoterRecordsRequest includes the VoterRegistration association to specify various information about the voter in question. It includes the AbsenteeBallotRequest association to handle a request for an absentee ballot; this request may be part of an FPCA form registration or may be submitted independently.

XML Instance Representation

<...>

<AdditionalInfo> AdditionalInfo </AdditionalInfo> [0..*] ?

<BallotRequest> BallotRequest </BallotRequest> [0..1] ?

<Form> RequestForm </Form> [0..1] ?

<GeneratedDate> xsd:date </GeneratedDate> [1] ?

<Issuer> xsd:string </Issuer> [0..1] ?

<OtherForm> xsd:string </OtherForm> [0..1] ?

<OtherRequestMethod> xsd:string </OtherRequestMethod> [0..1] ?

<OtherType> xsd:string </OtherType> [0..1] ?

<RequestHelper> RequestHelper </RequestHelper> [0..*] ?

<RequestMethod> RequestMethod </RequestMethod> [1] ?

<RequestProxy> RequestProxy </RequestProxy> [0..1] ?

<SelectedLanguage> xsd:language </SelectedLanguage> [0..1] ?

<Subject> Voter </Subject> [1] ?

<TransactionId> xsd:string </TransactionId> [0..1] ?

<Type> VoterRequestType </Type> [1..*] ?

<VendorApplicationId> xsd:string </VendorApplicationId> [0..1] ?

</...>

Schema Component Representation

top

Complex Type: VoterRecordsResponse

Super-types: None

Sub-types:
- RequestAcknowledgement (by extension)
- RequestRejection (by extension)
- RequestSuccess (by extension)
- VoterRecords (by extension)

Name VoterRecordsResponse

Abstract yes

Documentation The root element for response messages. For defining items pertaining to the status of a response to a voter records request. <VoterRecordsResponse> is an abstract element with three xsi:types that get used according to the type of response: • <VoterRecordsResponse xsi:type="RegistrationAcknowledgement">, used to indicate an acknowledgement only. • <VoterRecordsResponse xsi:type="RegistrationRejection">, used to indicate a failure and the type of failure. • <VoterRecordsResponse xsi:type="RegistrationSuccess">, used to indication that a successful registration action occurred and the type of registration action, which may differ from the type of registration action requested. <VoterRecordsResponse> optionally includes the <TransactionId> sub-element associated with the voter records request.

XML Instance Representation

<...>

<TransactionId> xsd:string </TransactionId> [0..1] ?

</...>

Schema Component Representation

top

Model Group: Address

Name Address

XML Instance Representation

Start Choice [1]

<CommunityAddress_type> addr:CommunityAddress_type </CommunityAddress_type> [1]

<FourNumberAddressRange_type> addr:FourNumberAddressRange_type </FourNumberAddressRange_type> [1]

<GeneralAddressClass_type> addr:GeneralAddressClass_type </GeneralAddressClass_type> [1]

<IntersectionAddress_type> addr:IntersectionAddress_type </IntersectionAddress_type> [1]

<LandmarkAddress_type> addr:LandmarkAddress_type </LandmarkAddress_type> [1]

<NumberedThoroughfareAddress_type> addr:NumberedThoroughfareAddress_type </NumberedThoroughfareAddress_type> [1]

<TwoNumberAddressRange_type> addr:TwoNumberAddressRange_type </TwoNumberAddressRange_type> [1]

<USPSGeneralDeliveryOffice_type> addr:USPSGeneralDeliveryOffice_type </USPSGeneralDeliveryOffice_type> [1]

<USPSPostalDeliveryBox_type> addr:USPSPostalDeliveryBox_type </USPSPostalDeliveryBox_type> [1]

<USPSPostalDeliveryRoute_type> addr:USPSPostalDeliveryRoute_type </USPSPostalDeliveryRoute_type> [1]

<UnnumberedThoroughfareAddress_type> addr:UnnumberedThoroughfareAddress_type </UnnumberedThoroughfareAddress_type> [1]

End Choice

Schema Component Representation

top

Simple Type: AssertionValue

Super-types: xsd:string < **AssertionValue** (by restriction)

Sub-types: None

Name	AssertionValue
Content	• Base XSD Type: string • *value* comes from list: {'no'|'yes'|'unknown'|'other'}
Documentation	Enumeration for assertions from a voter or a third party such as a department of motor vehicles (DMV) in response to questions on a registration form, used in the Assertion attribute of VoterClassification .

Schema Component Representation

top

Simple Type: BallotReceiptMethod

Super-types: xsd:string < **BallotReceiptMethod** (by restriction)

Sub-types: None

Name BallotReceiptMethod

Content
- Base XSD Type: string
- *value* comes from list: {'email'|'email-or-online'|'fax'|'mail'|'online'}

Documentation Enumeration for methods for delivering a ballot to the voter, used in the BallotReceiptPreference attribute of
oterRegistration. The sub-element may be repeated multiple times with different values as applicable, e.g., to specify both mail and online.

Schema Component Representation

top

Simple Type: ContactMethodType

Super-types: xsd:string < **ContactMethodType** (by restriction)

Sub-types: None

Name ContactMethodType

Content
- Base XSD Type: string
- *value* comes from list: {'email'|'phone'|'other'}

Documentation	Used in requests AND responses. Enumeration for methods for contacting a voter or an election administration office, used in the Type attribute of ContactMethod.

Schema Component Representation

top

Simple Type: IdentifierType

Super-types: xsd:string < **IdentifierType** (by restriction)

Sub-types: None

Name IdentifierType

Content

- Base XSD Type: string
- *value* comes from list: {'fips'|'local-level'|'national-level'|'ocd-id'|'state-level'|'other'}

Documentation	Used in request messages. Enumeration for election data-related codes in the ExternalIdentifiers class.

Schema Component Representation

top

Simple Type: PhoneCapability

Super-types: xsd:string < **PhoneCapability** (by restriction)

Sub-types: None

Name	PhoneCapability
Content	• Base XSD Type: string • *value* comes from list: {'fax'|'mms'|'sms'|'voice'}
Documentation	Used in request and response messages. Enumeration for telephone capabilities, used in the Capability attribute of PhoneContactMethod.

Schema Component Representation

top

Simple Type: ReportingUnitType

Super-types: xsd:string < **ReportingUnitType** (by restriction)

Sub-types: None

Name	ReportingUnitType
Content	• Base XSD Type: string • *value* comes from list: {'ballot-batch'|'ballot-style-area'|'borough'|'city'|'city-council'|'combined-precinct'|'congressional'|'county'|'county-council'|'drop-box'|'judicial'|'municipality'|'polling-place'|'precinct'|'school'|'special'|'split-precinct'|'state'|'state-house'|'state-senate'|'town'|'township'|'utility'|'village'|'vote-center'|'ward'|'water'|'other'}
Documentation	Used in request and response messages. Enumeration for the type of geopolitical unit, used in the Type sub-element in the ReportingUnit element.

Schema Component Representation

top

Simple Type: RequestError

Super-types: xsd:string < **RequestError** (by restriction)

Sub-types: None

Name RequestError

Content
- Base XSD Type: string
- *value* comes from list: {'identity-lookup-failed'|'incomplete'|'incomplete-address'|'incomplete-birth-date'|'incomplete-name'|'incomplete-signature'|'ineligible'|'invalid-form'|'other'}

Documentation Used in response messages.   Enumeration for registration-related errors, used in the Error attribute of RegistrationRejection.

Schema Component Representation

top

Simple Type: RequestForm

Super-types: xsd:string < **RequestForm** (by restriction)

Sub-types: None

Name RequestForm

Content
- Base XSD Type: string
- *value* comes from list: {'fpca'|'nvra'|'other'}

Documentation
 Used in request messages.   Enumeration for types of registration forms, used in the RegistrationForm attribute of VoterRecordsRequest.

Schema Component Representation

top

Simple Type: RequestMethod

Super-types: xsd:string < **RequestMethod** (by restriction)

Sub-types: None

Name RequestMethod

Content
- Base XSD Type: string
- *value* comes from list: {'armed-forces-recruitment-office'|'motor-vehicle-office'|'other-agency-designated-by-state'|'public-assistance-office'|'registration-drive-from-advocacy-group-or-political-party'|'state-funded-agency-serving-persons-with-disabilities'|'voter-via-election-registrars-office'|'voter-via-email'|'voter-via-fax'|'voter-via-internet'|'voter-via-mail'|'unknown'|'other'}

Schema Component Representation

top

Simple Type: RequestProxyType

Super-types: xsd:string < **RequestProxyType** (by restriction)

Sub-types: None

Name RequestProxyType

Content
- Base XSD Type: string
- *value* comes from list: {'armed-forces-recruitment-office'|'motor-vehicle-office'|'other-agency-designated-by-state'|'public-assistance-office'|'registration-drive-from-advocacy-group-or-political-party'|'state-funded-agency-serving-persons-with-disabilities'|'other'}

Documentation Used in request messages.   Enumeration for the registration proxy, e.g., the MVA/DMV , involved in the voter’s registration request, used in the
Type attribute of RegistrationProxy.

Schema Component Representation

top

Simple Type: SignatureSource

Super-types: xsd:string < **SignatureSource** (by restriction)

Sub-types: None

Name SignatureSource

Content
- Base XSD Type: string
- *value* comes from list: {'dmv'|'local'|'state'|'voter'|'other'}

Documentation	Used in request messages. Enumeration for source of the voter’s signature, used in the Source sub-element of Signature.

Schema Component Representation

top

Simple Type: SignatureType

Super-types: xsd:string < **SignatureType** (by restriction)

Sub-types: None

Name SignatureType

Content

- Base XSD Type: string
- *value* comes from list: {'dynamic'|'electronic'|'other'}

Documentation	Used in request messages. Enumeration for the type of voter signature, used in the Type sub-element of Signature.

Schema Component Representation

top

Simple Type: SuccessAction

Super-types: xsd:string < **SuccessAction** (by restriction)

Sub-types: None

Name	SuccessAction
Content	● Base XSD Type: string ● *value* comes from list: {'address-updated'|'name-updated'|'registration-cancelled'|'registration-created'|'registration-updated'|'status-updated'|'other'}
Documentation	Used in response messages. Enumeration for a response to a voter records request, indicating that the response to the request is successful and the action that occurred, used in the Action sub-element of RegistrationSuccess. The success action may not necessarily match the requested action.

Schema Component Representation

top

Simple Type: VoterClassificationType

Super-types:	xsd:string < **VoterClassificationType** (by restriction)
Sub-types:	None

Name	VoterClassificationType
Content	● Base XSD Type: string ● *value* comes from list: {'activated-national-guard'|'active-duty'|'active-duty-spouse-or-dependent'|'citizen-abroad-intent-to-return'|'citizen-abroad-return-uncertain'|'citizen-abroad-never-resided'|'deceased'|'declared-incompetent'|'eighteen-on-election-day'|'felon'|'permanently-denied'|'protected-voter'|'restored-felon'|'united-states-citizen'|'other'}

Documentation	Used in request messages. Enumeration for voter status classifications, used in the Type attribute of VoterClassification . Whether the voter status, e.g., eighteen-on-election-day, is true, false, or unknown depends on the value of the Assertion attribute.

Schema Component Representation

top

Simple Type: VoterHelperType

Super-types: xsd:string < **VoterHelperType** (by restriction)

Sub-types: None

Name VoterHelperType

Content

- Base XSD Type: string
- *value* comes from list: {'assistant'|'witness'}

Documentation	Used in request messages. Enumeration for types of registration helpers, used in the Type attribute of RegistrationHelper .

Schema Component Representation

top

Simple Type: VoterIdType

Super-types: xsd:string < **VoterIdType** (by restriction)

Sub-types: None

Name VoterIdType

Content
- Base XSD Type: string
- *value* comes from list: {'drivers-license'|'local-voter-registration-id'|'ssn'|'ssn4'|'state-id'|'state-voter-registration-id'|'unspecified-document'|'unspecified-document-with-name-and-address'|'unspecified-document-with-photo-identification'|'unknown'|'other'}

Documentation Used in request messages.   Enumeration for the type of voter ID, used in the Type attribute of VoterId.

Schema Component Representation

top

Simple Type: VoterRequestType

Super-types: xsd:string < **VoterRequestType** (by restriction)

Sub-types: None

Name VoterRequestType

Content
- Base XSD Type: string
- *value* comes from list: {'ballot-request'|'lookup'|'registration'|'other'}

Documentation	Used in request messages. Enumeration for the type of voter records request, used in the Type attribute of VoterRecordsRequest.

Schema Component Representation

top

Legend

Complex Type:
Schema Component Type

AusAddress
Schema Component Name

Super-types: Address < AusAddress (by extension)

Sub-types:
- QLDAddress (by restriction)

If this schema component is a type definition, its type hierarchy is shown in a gray-bordered box.

Name	AusAddress
Abstract	no

The table above displays the properties of this schema component.

XML Instance Representation

<... country="Australia" >

<unitNo> string </unitNo> [0..1]

<houseNo> string </houseNo> [1]

<street> string </street> [1]

Start Choice [1]

<city> string </city> [1]

<town> string </town> [1]

End Choice

<state> AusStates </state> [1]

<postcode> string <<*pattern* = [1-9][0-9]{3}>> </postcode> [1] ?

</...>

The XML Instance Representation table above shows the schema component's content as an XML instance.

- The minimum and maximum occurrence of elements and attributes are provided in square brackets, e.g. [0..1].
- Model group information are shown in gray, e.g. Start Choice ... End Choice.
- For type derivations, the elements and attributes that have been added to or changed from the base type's content are shown in **bold**.
- If an element/attribute has a fixed value, the fixed value is shown in green, e.g. country="Australia".
- Otherwise, the type of the element/attribute is displayed.
    - If the element/attribute's type is in the schema, a link is provided to it.
    - For local simple type definitions, the constraints are displayed in angle brackets, e.g. <<*pattern* = [1-9][0-9]{3}>>.
- If a local element/attribute has documentation, it will be displayed in a window that pops up when the question mark inside the attribute or next to the element is clicked, e.g. <postcode>.

Schema Component Representation

<complexType name="AusAddress">

<complexContent>

<extension base="Address">

<sequence>

<element name="state" type="AusStates"/>

<element name="postcode">

<simpleType>

<restriction base="string">

<pattern value="[1-9][0-9]{3}"/>

</restriction>

</simpleType>

</element>

</sequence>

<attribute name="country" type="string" fixed="Australia"/>

</extension>

</complexContent>

</complexType>

The Schema Component Representation table above displays the underlying XML representation of the schema component. (Annotations are not shown.)

top

Glossary

Abstract (Applies to complex type definitions and element declarations). An abstract element or complex type cannot used to validate an element instance. If there is a reference to an abstract element, only element declarations that can substitute the abstract element can be used to validate the instance. For references to abstract type definitions, only derived types can be used.

All Model Group Child elements can be provided *in any order* in instances. See: http://www.w3.org/TR/xmlschema-1/#element-all.

Choice Model Group *Only one* from the list of child elements and model groups can be provided in instances. See: http://www.w3.org/TR/xmlschema-1/#element-choice.

Collapse Whitespace Policy Replace tab, line feed, and carriage return characters with space character (Unicode character 32). Then, collapse contiguous sequences of space characters into single space character, and remove leading and trailing space characters.

Disallowed Substitutions (Applies to element declarations). If *substitution* is specified, then substitution group members cannot be used in place of the given element declaration to validate element instances. If *derivation methods*, e.g. extension, restriction, are specified, then the given element declaration will not validate element instances that have types derived from the element declaration's type using the specified derivation methods. Normally, element instances can override their declaration's type by specifying an xsi:type attribute.

Key Constraint Like Uniqueness Constraint, but additionally requires that the specified value(s) must be provided. See: http://www.w3.org/TR/xmlschema-1/#cIdentity-constraint_Definitions.

Key Reference Constraint Ensures that the specified value(s) must match value(s) from a Key Constraint or Uniqueness Constraint. See: http://www.w3.org/TR/xmlschema-1/#cIdentity-constraint_Definitions.

Model Group Groups together element content, specifying the order in which the element content can occur and the number of times the group of element content may be repeated. See: http://www.w3.org/TR/xmlschema-1/#Model_Groups.

Nillable (Applies to element declarations). If an element declaration is nillable, instances can use the xsi:nil attribute. The xsi:nil attribute is the boolean attribute, *nil*, from the *http://www.w3.org/2001/XMLSchema-instance* namespace. If an element instance has an xsi:nil attribute set to true, it can be left empty, even though its element declaration may have required content.

Notation A notation is used to identify the format of a piece of data. Values of elements and attributes that are of type, NOTATION, must come from the names of declared notations. See: http://www.w3.org/TR/xmlschema-1/#cNotation_Declarations.

Preserve Whitespace Policy Preserve whitespaces exactly as they appear in instances.

Prohibited Derivations (Applies to type definitions). Derivation methods that cannot be used to create sub-types from a given type definition.

Prohibited Substitutions (Applies to complex type definitions). Prevents sub-types that have been derived using the specified derivation methods from validating element instances in place of the given type definition.

Replace Whitespace Policy Replace tab, line feed, and carriage return characters with space character (Unicode character 32).

Sequence Model Group Child elements and model groups must be provided *in the specified order* in instances. See: http://www.w3.org/TR/xmlschema-1/#element-sequence.

Substitution Group Elements that are *members* of a substitution group can be used wherever the *head* element of the substitution group is referenced.

Substitution Group Exclusions (Applies to element declarations). Prohibits element declarations from nominating themselves as being able to substitute a given element declaration, if they have types that are derived from the original element's type using the specified derivation methods.

Target Namespace The target namespace identifies the namespace that components in this schema belongs to. If no target namespace is provided, then the schema components do not belong to any namespace.

Uniqueness Constraint Ensures uniqueness of an element/attribute value, or a combination of values, within a specified scope. See: http://www.w3.org/TR/xmlschema-1/#cIdentity-constraint_Definitions.

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