eCVI Version 2 How To

and FAQ

# What is the eCVI XML Standard Version 2.2?

The standard itself is the XML Schema document. It can be found at https://github.com/AAVLD-USAHA-ITStandards/eCVI/blob/master/ecvi2.xsd. The schema spells out in computer readable form the order, repeatability, and optionality of each element of structured data expected to be shared between eCVI applications and other systems that need to receive these data. In many cases the content of elements has been defined by either a pattern (regular expression) or as a list of values. Other fields that should be restricted still allow free text. This is because the committee could not find a definitive standard for this list and was not able to create one due to variations found among state requirements, etc.

# What does the eCVI XML Standard do?

The standard schema is used to test the validity of any given eCVI XML data file. It does not test the application on either the sending or receiving end. An approved eCVI implementation must generate XML data files that are valid based on the standard schema.[[1]](#footnote-1) For an eCVI implementation to be approved by the National Assembly of Animal Health Officials it must be able to render each of its CVIs' data in valid XML. It must also comply with the evaluation standards developed by a subcommittee of the NASAHO for evaluation of eCVIs. Many of these standards cannot be encoded in schema language so the committee manually evaluated sample data files as part of the approval process.

# Who owns the Standard?

The standard was jointly developed by a subcommittee of the AAVLD/USAHA Committee on Animal Health Surveillance and Information Systems. It is copyrighted by AAVLD/USAHA.

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# eCVI Document Element

The eCVI xml document contains an extract of data from an interstate certificate of veterinary inspection (normally electronic) used to communicate the information to another computer system. It does not constitute the legal document; that remains the job of the originating application. This schema tries to capture those data elements and the level of detail needed for regulatory decision support, disease traceability, and business interoperability. A large majority of use-cases can be met using the fully-structured (close standard) data. Inevitably, edge cases--even very important ones--have had to be left to open standard features such as "other" choices and free-text entry elements.

## Namespace

The XML namespace for the eCVI element and all its children must be defined as  
<eCVI xmlns="http://www.usaha.org/xmlns/ecvi2"

### Contents of eCVI

The standard XML uses both attributes and child elements to structure the data. In general attributes are used for individual facts that contain more than one part. A good example is the GeoPoint element that contains attributes for Latitude and Longitude. More complex compound data are expressed as nested child elements. Whenever possible those are defined as reusable elements and included by reference. A good XML editor with outline feature makes it much easier to jump to the definitions of these reference elements. For example, the first child element of eCVI is the Veterinarian:

<xs:element ref="Veterinarian" minOccurs="1" maxOccurs="1"/>

The Veterinarian element structure is defined a few lines after the end of the definition of the eCVI element itself.

<xs:element name="Veterinarian">

<xs:annotation>

<xs:documentation> Veterinarian is a required element for iCVIs. When available deterministic identifier such as license number and state

or national accreditation number should be provided. </xs:documentation>

</xs:annotation>

<xs:complexType>

<xs:sequence>

<xs:element ref="Person" minOccurs="1" maxOccurs="1"/>

<xs:element ref="Address" minOccurs="0" maxOccurs="1"/>

</xs:sequence>

<xs:attribute name="LicenseState" type="xs:string" use="optional"/>

<xs:attribute name="LicenseNumber" type="xs:string" use="optional"/>

<xs:attribute name="NationalAccreditationNumber" type="xs:string" use="optional"/>

</xs:complexType>

</xs:element>

Note the "documentation" element here. It documents a strong preference where the standard developers did not believe the standard could require something for all eCVIs (License and/or Accreditation number\_.

## Attributes in eCVI element

* **CviNumber**: Required
* **CviNumberIssuedBy**: Optional
* **IssueDate**: Required
* **ExpirationDate**: Required
* **ShipmentDate**: Optional
* **EntryPermitNumber**: Optional

## Child Elements in eCVI element

* **Veterinarian**: Required
* **MovementPurposes**: Required
* **Origin**: Required
* **Destination**: Required
* **Consignor**: Optional
* **Consignee**: Optional
* **Carrier**: Optional
* **TransportMode**: Optional
* **Accessions**: Optional
* **Animal**: Optional, may repeat
* **GroupLot**: Optional, may repeat
* **Statements**: Optional
* **Attachment**: Optional, may repeat
* **MiscAttribute**: Optional, may repeat
* **Binary**: Optional, may repeat

### Veterinarian

Veterinarian is a required element for iCVIs. When available deterministic identifier such as license number and state or national accreditation number should be provided.

#### Attributes

* **LicenseState**: Optional
* **LicenseNumber**: Optional
* **NationalAccreditationNumber**: Optional

#### Child Elements

* **Person**: Required
* **Address**: Optional

### Person

Person is a child element found in many parts of the schema. Its structure is defined here because Veterinarian is the first element to reference it.

Person is defined as a Name string and an optional Phone Number (see Phone) and Email. Because of a lack of industry consensus on handling names, Name can be provided as either a single string (Name) or individual name components (NameParts).

#### Child Elements

* Either:
  + **NameParts**: Required
  + **Name**: Required
* **Phone**: Optional, may repeat
* **Email**: Optional, may repeat

### NameParts

NameParts defines a structured name for a business or person. BusinessName, FirstName, Middle Name, LastName, OtherName are all optional for applications to use one or more (NameParts with on individual components would validate, the schema language to force "one or more of one or more of these parts" would be more complex than necessary.)

#### Child Elements

* **BusinessName**: Optional
* **FirstName**: Optional
* **MiddleName**: Optional
* **LastName**: Optional
* **OtherName**: Optional

### Phone

The Phone Number specifies type (list enumeration values?) and a ten-digit number, and can include a comment.

Note that the definition of Phone is the first place we encounter a Pattern based on a regular expression. While developing an eCVI application a regular expression evaluation tool is invaluable. Because of small variations in the regular expression language it is important to use one that is consistent with XPath.[[2]](#footnote-2) The regular expression here is very simple, it simply requires exactly 10 digits. (This could be better.)

#### Attributes

* **Number**: Required  
  Pattern(s):
  + \d{10}
* **Comment**: Optional
* **Type**: Required  
  Values:
  + Unknown (Probably the most common.)
  + Landline (If known to be fixed location.)
  + Cellphone (If known to be a mobile phone.)
  + Fax (Fax line.)

### Email

#### Attributes

* **Address**: Required  
  *EmailType*

Optional email address following simplified standard email address pattern.

Pattern(s):

* + [a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,24}

Note that this regular expression is much more complex than the one for Phone.

### Address

Origin and destination require a structured address. Because of variation in policy between jurisdictions this schema leaves each element optional. However for elements that represent distinct locations this element must contain enough information for authorities to uniquely identify the location. Those addresses must be a physical (911) addresses. For elements such as here in Veterinarian that designate contact information, PO boxes, rural routes, etc. are allowed.

#### Child Elements

* **Line1**: Optional
* **Line2**: Optional
* **Town**: Optional
* **County**: Optional
* **State**: Required  
  *StateCodeType*

State Code includes territories, APO addresses, etc. Does NOT include Canadian provinces or Mexican states. This includes the list of post office abbreviations for states.

* **ZIP**: Optional  
  Pattern(s):
  + \d{5}
  + \d{5}-\d{4}

Either five or nine digit zip codes are allowed.

* **Country**: Optional  
  Values:
  + USA ()

This is included for forward compatibility purposes in case this standard is ever extended to be international.

* **GeoPoint**: Optional   
  Attributes: Latitude decimal number -90 to 90, Longitude decimal number -180 to 180

### MovementPurposes

Movement Purposes is required, however, it may be an empty list. This is a challenging element to populate because there are so many factors that become important in regulatory decision making. This list encompasses many different aspects of the animal's use, reason for movement, etc. As with many elements, the goal has been to enumerate those most often used in regulatory and other decision making but leave "Other" available. If "Other" is selected a reason should be supplied as text in the "OtherReason" element.

#### Child Elements

* **MovementPurpose**: Optional, may repeat  
  Values:
  + Racing ()
  + Sale ()
  + Grazing ()
  + Training ()
  + Slaughter ()
  + Medical Treatment ()
  + Exhibition/Show/Rodeo ()
  + Breeding ()
  + Competition ()
  + Feeding to condition ()
  + Feeding to slaughter ()
  + Laying Hens ()
  + Hunting for harvest ()
  + Companion Animal ()
  + Personal Travel/Transit ()
  + Owner relocating ()
  + Evacuation from Natural Disaster ()
  + Other ()
* **OtherReason**: Optional

### Origin

The physical location of the animal(s) prior to movement is required. Must be a physical (911) address.

### PremType

PremType is used for origin and destination, and must be actual physical (animal?) locations. PremId (see PremIdType) is optional only if unavailable. PremName is an optional string. Address is required (see AddressType). ProgramStatus (see ProgramStatusType) is optional, but there is no limit on additional ProgramStatuses. Person (see PersonType) is required (why?), and there is no limit on additional Persons.

#### Child Elements

* **PremId**: Optional  
  *PremIdType*

PremIdType does minimal validation of true premises identifiers including both PINs (7 characters and LIDs (6 or 8 characters). Only nationally registered LIDs are appropriate. Implementing applications are highly encouraged to validate against the appropriate checksum logic.

Pattern(s):

* + [A-Z0-9]{6,8}
* **PremName**: Optional
* **Address**: Required
* **StateZoneOrAreaStatus**: Optional, may repeat

There are specific, enumerated values for Brucellosis and TB statuses. OtherStateOrZoneStatus takes strings for disease and status.

* **HerdOrFlockStatus**: Optional, may repeat

This takes three string values: Disease, herd or flock number, and status.

* **Person**: Optional, may repeat

### Destination

The intended physical location of the animal(s) after movement is required. Must be a physical (911) address.

* See: *PremType*

### Consignor

The contact information for the person or business responsible for the animal(s) prior to movement. Only required if different from Origin.

### ContactType

ContactType is used for consignor and consignee that may be actual physical locations or other postal addresses. The Address should be the best contact address.

#### Child Elements

* **Address**: Optional
* **Person**: Required, may repeat

### Consignee

The contact information for the person or business responsible for the animal(s) after to movement. Only required if different from Destination.

* See: *ContactType*

### Carrier

The contact information for the person or business responsible for moving the animals from origin to destination.

* See: *ContactType*

### TransportMode

If important for certification of ability to travel the mode, air, car, rail, truck or boat (ship).

Values:

* air
* boat
* car
* rail
* truck
* land
* other

### Accessions

Because many herd movements have testing performed in one accession, the accession(s) is(are) listed here and referenced by each test rather than duplicating all the accession information for each test on each animal.

This is one of two most difficult elements to execute. Every test result in an Animal or GroupLot element must reference an Accession. This may be a conventional Laboratory accession or a Field testing accession. Most laboratory accessions can have samples from many different individual animals. An example is most Brucellosis tests run today. The key elements there are laboratory name and accession number. A field test has neither a lab or accession number. Both have date tested. The Accession element itself has a redundant attribute "InfieldTest". If a lab test this would always be negative. For field test it would be positive. In equine Coggins tests, each specimen gets its own accession number. In this case the logic of splitting accession-level variables from those of the individual tests. But for bulk accessions such as Brucella herd tests with RAP or other lab test, or for field testing, one Accession element can be shared by all tests that were part of that accession.

#### Child Elements

* **Accession**: Optional, may repeat

### Accession

Accessions are listed for the CVI as a whole and referenced by each test. An accession is defined as the encounter in which testing was performed. This may be either laboratory testing or in field testing. A single Laboratory or Field element must be specified, indicating where tests for this accession were performed. InfieldTest is an optional boolean (true/false value) indicating if a test was performed in the field. This redundancy is retained from version 1 that did not have a distinct Field test element. ID is required, and is the reference number that associates an animal’s individual tests performed as part of this accession. ID is not the lab accession number but rather a distinct identifier used for linking within the XML document.

#### Attributes

* **InfieldTest**: Optional
* **id**: Required

#### Child Elements

* Either:
  + **Laboratory**: Required
  + **Field**: Required

### Laboratory

For testing done in or by a named laboratory, the Laboratory element contains the relevant information. LabName is a required string. PremId (see PremIdType) is optional only if unavailable. Address is optional only if unavailable and should contain the lab physical address. AccessionDate is a required date. AccessionNumber is a required string. Accession number is a distinct identifier assigned by the Laboratory.

#### Attributes

* **AccessionDate**: Required
* **AccessionNumber**: Required

#### Child Elements

* **LabName**: Required
* **PremId**: Optional  
  *PremIdType*

PremIdType does minimal validation of true premises identifiers including both PINs (7 characters and LIDs (6 or 8 characters). Only nationally registered LIDs are appropriate. Implementing applications are highly encouraged to validate against the appropriate checksum logic.

Pattern(s):

* + [A-Z0-9]{6,8}
* **Address**: Optional

### Field

For testing performed outside of a laboratory, the Field element contains the relevant information. PremId (see PremIdType) is optional only if unavailable. Address (see AddressType) is optional only if unavailable and should contain the physical address of the test location. AccessionDate is a required date.

#### Attributes

* **AccessionDate**: Required

#### Child Elements

* **PremId**: Optional  
  *PremIdType*

PremIdType does minimal validation of true premises identifiers including both PINs (7 characters and LIDs (6 or 8 characters). Only nationally registered LIDs are appropriate. Implementing applications are highly encouraged to validate against the appropriate checksum logic.

Pattern(s):

* + [A-Z0-9]{6,8}
* **Address**: Optional

### Animal

The Animal element is used for all individually identifiable animals in a shipment even when those may have been entered in an electronic source document using shorthand tools such as identifier ranges. Animal species may be designated by code (see SpeciesCode) or other (see SpeciesOther). At least one animal tag (see AnimalTags) is required. Test (see TestType) is optional, and there is no limit on additional Tests. Age is optional (although often required by regulatory policy) and may be specified as either: a number of days, weeks, months or years plus the standard code for units (d|wk|mo|a) (example: 3wk), age definitions adhere to UCUM - http://unitsofmeasure.org/ucum.html), or as a specific date of birth as a four-digit year, two-digit month, and two-digit date, separated by dashes (example: 2001-05-31). Breed is optional and specified by a two or three uppercase letter code or by a string description such as "black". The code list is not specified in the standard but most are available at: https://www.naab-css.org/uniform-breed-codes, and https://www.aphis.usda.gov/animal\_health/vs\_ocio/downloads/date\_standards/icvi\_data\_concepts.pdf. Sex (see SexType) reflects the most common variations needed for regulatory. If other configurations are needed they are provided as a string in SexDetail. "Mixed" is not an allowable value for a single Animal (provided for use with Group). InspectionDate is a required date, and is the date the animals were inspected by the vet. If the inspection took place over multiple days, use the first date.

#### Attributes

* **Age**: Optional  
  *AgeType*

Age can be expressed as days , weeks, months, years, or as date of birth.

Pattern(s):

* + (<|>)? ?\d{1,3} ?(d|wk|mo|a)
  + (19|20)\d\d-(0[1-9]|1[012])-(0[1-9]|[12]\d|3[01])
* **Breed**: Optional
* **Sex**: Optional  
  *SexType*

Sex type only becomes complicated for groups and minor species.

Values:

* + Female ()
  + Male ()
  + Spayed Female ()
  + Neutered Male ()
  + True Hermaphrodite ()
  + Mixed Group (Only applicable to Group.)
  + Gender Unknown (Only applies to minor species in unusual cases such as non sexually dimorphic birds.)
  + Other (Only applies to minor species in unusual cases. Supply explanation in SexDetail)
* **SexDetail**: Optional

For weird sexes the specific value should be spelled out in SexDetail. (Assuming anyone implements them.)

* **InspectionDate**: Required

#### Child Elements

* Either:
  + **SpeciesCode**: Required
  + **SpeciesOther**: Required
* **AnimalTags**: Required
* **Test**: Optional, may repeat
* **Vaccination**: Optional, may repeat

### SpeciesCode

For animals with official species codes, the code is required with optional text to add detail if necessary.

Species is a complicated variable. It is more correctly called "taxonomy" because not every value is what a taxonomist would call "species." The codes used track more closely to USDA regulatory categories than they do true biological species. This field can be populated with either a standard enumerated code in element SpeciesCode or any other code or no code at all in SpeciesOther. Spelled out name of the species is optional in SpeciesCode but required in SpeciesOther.

#### Attributes

* **Code**: Required  
  *SpeciesCodes*

A subset of USDA species codes to support the most common eCVI usages. All other species can be sent as SpeciesOther which is not enumerated.

Values:

* + AQU ( Aquaculture)
  + BEF ( Beef)
  + BIS ( Bison)
  + BOV ( Bovine (Bison and Cattle) DEPRECATED)
  + CAM ( Camelid (Alpacas, Llamas, etc.))
  + CAN ( Canine)
  + CAP ( Caprine (Goats))
  + CER ( Cervids)
  + CHI ( Chickens)
  + DAI ( Dairy)
  + EQU ( Equine (Horses, Mules, Donkeys, Burros))
  + FEL ( Feline)
  + OVI ( Ovine (Sheep))
  + POR ( Porcine (Swine))
  + TUR ( Turkeys)
* **Text**: Optional

### SpeciesOther

The species coded in the standard include only those commonly needed for regulatory action related to the movement. Many other official species codes can be found at http://???? Because not all systems may understand these other codes, human readable Text is required in addition to the code. For animals without an official species code, the code may be omitted the default value is OTH and text used to define the actual taxonomy is required.

#### Attributes

* **Code**: Optional
* **Text**: Required

### AnimalTags

Animal identification is the most difficult aspect of the standard because there are so many competing forms of official identification "numbers", even within species. One of the most desired features in review of the initial draft standard was more control of "animal tags." The current implementation is a balance between enforcing structure of known types while still allowing other weird types that are still considered official as well as any barn names, management tags, etc.

An absolute requirement is that IDs be listed individually. Receiving applications cannot parse lists. If lists are entered by users, the sending application has the best chance of parsing them out. Some applications may ask the user to specify ID type. Others may attempt to match the regular expressions defining each type and send in that type. Most types are defined by a regular expression (or regular expressions). Others such as brand images and equine names, descriptions and photos have specific internal structure.

This is a jumble of type of ID with the type of device holding the ID. "Tags" is a misnomer. An ID may be either one of the most common known formats (840, 900 series manufacturer tags, NUES9 or NUES8) matching one of the list of regular expressions for common official animal IDs, or some other official type, either or a non-official management tag. This field also supports brand descriptions, brand images, and equine description or photographs. These can appear in any order up to six IDs per animal

#### Child Elements

* Either:
  + **AIN**: Required
  + **MfrRFID**: Required
  + **NUES9**: Required
  + **NUES8**: Required
  + **OtherOfficialID**: Required
  + **ManagementID**: Required
  + **BrandImage**: Required
  + **EquineDescription**: Required
  + **EquinePhotographs**: Required

### AIN

840 (usually RFIF) tags or chips.

#### Attributes

* **Number**: Required  
  *AINType*

840 AIN (usually RFID) tag.

Pattern(s):

* + (840)\d{12} (840 RFID: 840 followed by 12 digits)

### MfrRFID

900 series but not "900" RFID tags or chips.

#### Attributes

* **Number**: Required  
  *MfrRFIDType*

900 Series manufacturer tags (always RFID?).

Pattern(s):

* + ((9[0-8]\d)|(9\d[0-8])|(124)|(484))\d{12} ( Non 840 RFID: Company prefix (not 999) followed by 12 digits )

### NUES9

NUES9 tags most commonly on metal "brite" tags.

#### Attributes

* **Number**: Required  
  *NUES9Type*

9 Character NUES (brite) tags.

Pattern(s):

* + (\d{2}|MD|MN|NM|NY|US|WY)[A-Z]{3}\d{4} ( NUES 9 Character: Two digits + three letters + four digits or some state's alpha codes followed by three more letters and four digits )

### NUES8

NUES8 tags most commonly on the smaller sized metal "brite" tags. Because the pattern of characters matches backtags, it is important that these rarely used tags be recorded by type when they do appear on CVIs.

#### Attributes

* **Number**: Required  
  *NUES8Type*

8 Character NUES (brite) tags.

Pattern(s):

* + \d{2}[A-Z]{2}\d{4} ( NUES 8 Character: Two digits + two letters + four digits (Note: matches cattle backtag pattern.) )

### OtherOfficialID

Other Formats: No restrictions

#### Attributes

* **Type**: Optional  
  *TagType*

This lists the known tag types that are supported.

Values:

* + AMID (American ID)
  + BT (Backtag)
  + IMP ()
  + NAME (Name?)
  + SGFLID (Scrapie group flock ID)
  + NPIN (Swine PIN Tag)
  + PINPLUS (Swine PIN plus Management Tag)
  + TAT (Tattoo)
  + OTHER (We would like to always know the type but can't have captured them all.)
* **Number**: Required

### ManagementID

Other Formats: No restrictions

#### Attributes

* **Number**: Required

### BrandImage

This should be PNG/JPEG/GIF/PDF format. The format is specified in the Binary mime type.

#### Attributes

* **BrandImageRef**: Required
* **Description**: Optional

### EquineDescription

Equine registered name is only legal identification with description

#### Attributes

* **Name**: Optional
* **Description**: Required

### EquinePhotographs

Photos are also official.

#### Child Elements

* **Photograph**: Required, may repeat

### Test

Individual test results are included with each animal and reference via ID/IDREF an accession. For herd testing this allows one accession with many tests. For tests such as Equine Coggins tests that are one per accession it results in slight extra overhead.

For now, the TestCode is a simple string. Sending applications should try to be consistent to allow future searching. In the future an enumerated list of LOINC or other test codes *may* replace this simple string.

#### Attributes

* **AccessionRef**: Required
* **TestCode**: Required

#### Child Elements

* **Result**: Required, may repeat

### Vaccination

Vaccination information for animal or group. For now the type of vaccine is left as a simple string. Ideally will become a coded value from a standard set. The date is optional but highly suggested.

#### Attributes

* **Type**: Required
* **Date**: Optional

### GroupLot

GroupLot is used for any grouping of similar animals that do not require individual identification. Rules for what constitute legal groups are defined in the federal ADT rule and various other legal sources. In general groups contain only animals of the same species and general age. All attributes apply to all members of the group. If significant variation exists, multiple GroupLot elements may be needed. Description is the phrase recorded on the iCVI that defines the group and justifies the absence of individual animal IDs. Because this phrase is not easily computer interpretable, various structured elements are included that may overlap the contents of the description. Species may be designated by code (see SpeciesCodeType) or other (see SpeciesOtherType). A single GroupLotID is allowed as a single string, not further defined in order to be species neutral. Quantity is a optional number. Unit by default is "Number", as in a count. A different unit can be specified as an optional string (guidelines on standardized units?). Edge cases might require number to be a total weight of things like fish or shellfish. In those cases "number" may be a decimal. Age is optional and may be specified as either: a number of days, weeks, months or years plus the standard code for units (d|wk|mo|a) (example: 3wk), age definitions adhere to UCUM - http://unitsofmeasure.org/ucum.html), or as a specific date of birth as a four-digit year, two-digit month, and two-digit date, separated by dashes (example: 2001-05-31). It is understood that groups consist of individuals varying in age so that the Age element here represents a rough mid-point. In practice, Age is often omitted and included in the Description such as "Feeder steers under 18 months." Breed is optional and specified by two or three uppercase letters. The list is not specified in the standard but most are available at: https://www.naab-css.org/uniform-breed-codes, and https://www.aphis.usda.gov/animal\_health/vs\_ocio/downloads/date\_standards/icvi\_data\_concepts.pdf. Sex (see SexType) is optional. SexDetail is an optional string. .

#### Attributes

* **Quantity**: Optional
* **Unit**: Optional
* **Age**: Optional  
  *AgeType*

Age can be expressed as days , weeks, months, years, or as date of birth. NOTE: the code for year is "a" for annum, NOT "y".

Pattern(s):

* + (<|>)? ?\d{1,3} ?(d|wk|mo|a)
  + (19|20)\d\d-(0[1-9]|1[012])-(0[1-9]|[12]\d|3[01])
* **Breed**: Optional
* **Sex**: Optional  
  *SexType*

Sex type only becomes complicated for groups and minor species.

Values:

* + Female ()
  + Male ()
  + Spayed Female ()
  + Neutered Male ()
  + True Hermaphrodite ()
  + Mixed Group (Only applicable to Group.)
  + Gender Unknown (Only applies to minor species in unusual cases such as non sexually dimorphic birds.)
  + Other (Only applies to minor species in unusual cases. Supply explanation in SexDetail)
* **SexDetail**: Optional
* **Description**: Required

#### Child Elements

* Either:
  + **SpeciesCode**: Required
  + **SpeciesOther**: Required
* **GroupLotID**: Optional, may repeat
* **Test**: Optional, may repeat
* **Vaccination**: Optional, may repeat

### Statements

Additional statements that may be required by various jurisdictions may be included here. These statements must not take the place of or modify the structured content found elsewhere in the standard.

### Attachment

Attachments can be used for text or binary additional information not specifically carried in one of the other Binary elements. Assumed to be from a file so Filename is required along with a reference to the Binary content. Be aware that receiving applications may ignore unknown or unexpected attachments. The actual binary content of the attachment is carried in the Binary element as are any other Binary fields. DocType is a required string. (put enumeration values in table somehow? Is this list adequate?). Filename is a required string. (Why require a file name? many may never have actually resided in a named file.) Comment is an optional string. (For what purpose?)

#### Attributes

* **AttachmentRef**: Required
* **DocType**: Required  
  Values:
  + Scanned Paper CVI (For sending an image of original paper CVI along with the extracted data. These may be image PDF or other image format. )
  + Scanned Test Chart (For sending scanned test charts along with electronic CVI or extracted data. These may be image PDF or other image format. )
  + PDF CVI (For sending data form PDF CVI along with extracted data. These would be Adobe PDF forms, or XFA forms. )
  + PDF Test Chart (For sending data form PDF Test Chart along with electronic CVI or extracted data. These would be Adobe PDF forms, or XFA forms. )
  + Other (All other uses.)
* **Filename**: Required
* **Comment**: Optional

### MiscAttribute

Any additional information needed by specific implementations can be provided as name/value pairs represented as strings. These data must not be essential to proper understanding of the structured content of the standard data but only extend it.

#### Attributes

* **Name**: Required
* **Value**: Required

### Binary

All binary content is included as Binary and referenced in specific elements by ID/IDREF.

#### Attributes

* **ID**: Required
* **MimeType**: Optional  
  *MimeType*

For complete information see: https://www.iana.org/assignments/media-types/media-types.xhtml. For common examples see: https://en.wikipedia.org/wiki/Media\_type

Pattern(s):

* + .{1,127}/.{1,127}

#### Child Elements

* **Payload**: Required

## Defined Types:

### PremType

PremType is used for origin and destination, and must be actual physical (animal?) locations. PremId (see PremIdType) is optional only if unavailable. PremName is an optional string. Address is required (see AddressType). ProgramStatus (see ProgramStatusType) is optional, but there is no limit on additional ProgramStatuses. Person (see PersonType) is required (why?), and there is no limit on additional Persons.

#### Child Elements

* **PremId**: Optional  
  *PremIdType*

PremIdType does minimal validation of true premises identifiers including both PINs (7 characters and LIDs (6 or 8 characters). Only nationally registered LIDs are appropriate. Implementing applications are highly encouraged to validate against the appropriate checksum logic.

Pattern(s):

* + [A-Z0-9]{6,8}
* **PremName**: Optional
* **Address**: Required
* **StateZoneOrAreaStatus**: Optional, may repeat
* **HerdOrFlockStatus**: Optional, may repeat
* **Person**: Optional, may repeat

### Address

Origin and destination require a structured address. Because of variation in policy between jurisdictions this schema leaves each element optional. However for a CVI to be valid in any jurisdiction, this element must contain enough information for authorities to uniquely identify the location.

#### Child Elements

* **Line1**: Optional
* **Line2**: Optional
* **Town**: Optional
* **County**: Optional
* **State**: Required  
  *StateCodeType*

State Code includes territories, APO addresses, etc. Does NOT include Canadian provinces or Mexican states.

Values:

* + AA (Military postal system in the Americas)
  + AE (Military postal system in Europe Africa and Canada)
  + AK (Alaska)
  + AL (Alabama)
  + AP (Military postal system in the Pacific)
  + AR (Arkansas)
  + AS (American Samoa)
  + AZ (Arizona)
  + CA (California)
  + CO (Colorado)
  + CT (Connecticut)
  + DC (Washington District of Columbia)
  + DE (Delaware)
  + FL (Florida)
  + FM (Federated States of Micronesia)
  + GA (Georgia)
  + GU (Guam)
  + HI (Hawaii)
  + IA (Iowa)
  + ID (Idaho)
  + IL (Illinois)
  + IN (Indiana)
  + KS (Kansas)
  + KY (Kentucky)
  + LA (Louisiana)
  + MA (Massachusetts)
  + MD (Maryland)
  + ME (Maine)
  + MH (Marshall Islands)
  + MI (Michigan)
  + MN (Minnesota)
  + MO (Missouri)
  + MP (Northern Mariana Islands)
  + MS (Mississippi)
  + MT (Montana)
  + NC (North Carolina)
  + ND (North Dakota)
  + NE (Nebraska)
  + NH (New Hampshire)
  + NJ (New Jersey)
  + NM (New Mexico)
  + NV (Nevada)
  + NY (New York)
  + OH (Ohio)
  + OK (Oklahoma)
  + OR (Oregon)
  + PA (Pennsylvania)
  + PR (Puerto Rico)
  + PW (Palau)
  + RI (Rhode Island)
  + SC (South Carolina)
  + SD (South Dakota)
  + TN (Tennessee)
  + TX (Texas)
  + UT (Utah)
  + VA (Virginia)
  + VI (U.S. Virgin Islands)
  + VT (Vermont)
  + WA (Washington)
  + WI (Wisconsin)
  + WV (West Virginia)
  + WY (Wyoming)
* **ZIP**: Optional  
  Pattern(s):
  + \d{5}
  + \d{5}-\d{4}
* **Country**: Optional  
  Values:
  + USA ()
* **GeoPoint**: Optional

### StateZoneOrAreaStatus

Statuses are explicitly enumerated for bovine Brucellosis and TB, and left as simple name/value for others.

#### Child Elements

* Either:
  + **BrucellosisStateOrAreaStatus**: Required
  + **TuberculosisStateOrZoneStatus**: Required
  + **OtherStateOrZoneStatus**: Required

### BrucellosisStateOrAreaStatus

Bovine Brucellosis status.

#### Attributes

* **Status**: Optional  
  Values:
  + Free ()
  + Class A ()
  + Class B ()
  + Class C ()
  + GYA, DSA (Class A) ()

### TuberculosisStateOrZoneStatus

Bovine TB status.

#### Attributes

* **Status**: Optional  
  Values:
  + Free ()
  + Modified Accredited Advanced State or Zone (MAA) ()
  + Modified Accredited State or Zone (MA) ()
  + Non Accredited State or Zone (NA) ()

### OtherStateOrZoneStatus

Bovine TB status.

#### Attributes

* **Disease**: Required
* **Status**: Required

### HerdOrFlockStatus

Herd or flock status vary enough that enumerating all the variations was impractical. These statuses are represented as a name, value pair with an optional herd or flock ID

#### Attributes

* **Disease**: Required
* **HerdOrFlockID**: Optional
* **Status**: Optional

### Person

Person is defined as a Name string and an optional Phone Number (see Phone). Because of a lack of industry consensus on hanling names, Name can be provided as either a single string (Name) or individual name components (NameParts).

#### Child Elements

* Either:
  + **NameParts**: Required
  + **Name**: Required
* **Phone**: Optional, may repeat
* **Email**: Optional, may repeat

### NameParts

NameParts defines a structured name for a business or person. BusinessName, FirstName, Middle Name, LastName, OtherName are all optional for applications to use one or more (NameParts with on individual components would validate, the schema language to force "one or more of one or more of these parts" would be more complex than necessary.)

#### Child Elements

* **BusinessName**: Optional
* **FirstName**: Optional
* **MiddleName**: Optional
* **LastName**: Optional
* **OtherName**: Optional

### Phone

The Phone Number specifies type (list enumeration values?) and a ten-digit number, and can include a comment.

#### Attributes

* **Number**: Required  
  Pattern(s):
  + \d{10}
* **Comment**: Optional
* **Type**: Required  
  Values:
  + Unknown (Probably the most common.)
  + Landline (If known to be fixed location.)
  + Cellphone (If known to be a mobile phone.)
  + Fax (Fax line.)

### Email

#### Attributes

* **Address**: Required  
  *EmailType*

Optional email address following simplified standard email address pattern.

Pattern(s):

* + [a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,24}

### ContactType

ContactType is used for consignor and consignee that may be actual physical locations or other postal addresses. The Address should be the best contact address.

#### Child Elements

* **Address**: Optional
* **Person**: Required, may repeat

### Address

Origin and destination require a structured address. Because of variation in policy between jurisdictions this schema leaves each element optional. However for a CVI to be valid in any jurisdiction, this element must contain enough information for authorities to uniquely identify the location.

#### Child Elements

* **Line1**: Optional
* **Line2**: Optional
* **Town**: Optional
* **County**: Optional
* **State**: Required  
  *StateCodeType*

State Code includes territories, APO addresses, etc. Does NOT include Canadian provinces or Mexican states.

Values:

* + AA (Military postal system in the Americas)
  + AE (Military postal system in Europe Africa and Canada)
  + AK (Alaska)
  + AL (Alabama)
  + AP (Military postal system in the Pacific)
  + AR (Arkansas)
  + AS (American Samoa)
  + AZ (Arizona)
  + CA (California)
  + CO (Colorado)
  + CT (Connecticut)
  + DC (Washington District of Columbia)
  + DE (Delaware)
  + FL (Florida)
  + FM (Federated States of Micronesia)
  + GA (Georgia)
  + GU (Guam)
  + HI (Hawaii)
  + IA (Iowa)
  + ID (Idaho)
  + IL (Illinois)
  + IN (Indiana)
  + KS (Kansas)
  + KY (Kentucky)
  + LA (Louisiana)
  + MA (Massachusetts)
  + MD (Maryland)
  + ME (Maine)
  + MH (Marshall Islands)
  + MI (Michigan)
  + MN (Minnesota)
  + MO (Missouri)
  + MP (Northern Mariana Islands)
  + MS (Mississippi)
  + MT (Montana)
  + NC (North Carolina)
  + ND (North Dakota)
  + NE (Nebraska)
  + NH (New Hampshire)
  + NJ (New Jersey)
  + NM (New Mexico)
  + NV (Nevada)
  + NY (New York)
  + OH (Ohio)
  + OK (Oklahoma)
  + OR (Oregon)
  + PA (Pennsylvania)
  + PR (Puerto Rico)
  + PW (Palau)
  + RI (Rhode Island)
  + SC (South Carolina)
  + SD (South Dakota)
  + TN (Tennessee)
  + TX (Texas)
  + UT (Utah)
  + VA (Virginia)
  + VI (U.S. Virgin Islands)
  + VT (Vermont)
  + WA (Washington)
  + WI (Wisconsin)
  + WV (West Virginia)
  + WY (Wyoming)
* **ZIP**: Optional  
  Pattern(s):
  + \d{5}
  + \d{5}-\d{4}
* **Country**: Optional  
  Values:
  + USA ()
* **GeoPoint**: Optional

### Person

Person is defined as a Name string and an optional Phone Number (see Phone). Because of a lack of industry consensus on hanling names, Name can be provided as either a single string (Name) or individual name components (NameParts).

#### Child Elements

* Either:
  + **NameParts**: Required
  + **Name**: Required
* **Phone**: Optional, may repeat
* **Email**: Optional, may repeat

### NameParts

NameParts defines a structured name for a business or person. BusinessName, FirstName, Middle Name, LastName, OtherName are all optional for applications to use one or more (NameParts with on individual components would validate, the schema language to force "one or more of one or more of these parts" would be more complex than necessary.)

#### Child Elements

* **BusinessName**: Optional
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* **MiddleName**: Optional
* **LastName**: Optional
* **OtherName**: Optional

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* **Number**: Required  
  Pattern(s):
  + \d{10}
* **Comment**: Optional
* **Type**: Required  
  Values:
  + Unknown (Probably the most common.)
  + Landline (If known to be fixed location.)
  + Cellphone (If known to be a mobile phone.)
  + Fax (Fax line.)

### Email

#### Attributes

* **Address**: Required  
  *EmailType*

Optional email address following simplified standard email address pattern.

Pattern(s):

* + [a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,24}

1. "Valid" is a technical term in XML. It means that all the required structural elements are present, all the required content is present and matches data types, patterns, etc. A closed schema such the eCVI XML standard also checks that no extra elements are present. [↑](#footnote-ref-1)
2. XPath is a very useful XML tool that allows on to identify an element or attribute in an XML document by specifying the sequence of parent nodes. It ends up looking something like a file path in Unix, DOS, or Windows. [↑](#footnote-ref-2)