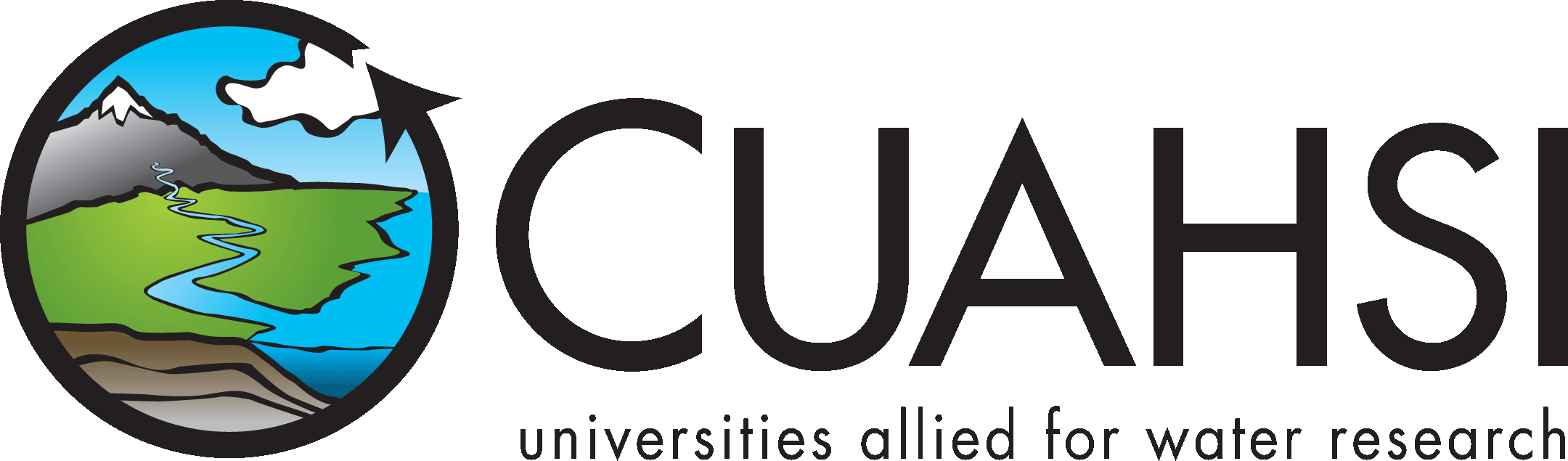
****

CUAHSI WaterML 1.0

Specification

**WaterML 1.0 Schema Description**

by:

David Valentine

Ilya Zaslavsky

San Diego Supercomputer Center

University of California at San Diego

San Diego, California, USA

Distribution

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Funding and acknowledgements

Funding for this document was provided by the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI) under NSF Grant No. EAR-0413265. In addition, much input and feedback has been received from the CUAHSI Hydrologic Information System development team. Their contribution is acknowledged here.

We would also like to thank partner agency personnel from USGS (Water Resource Division), EPA (the STORET team), and NCDC, as well as data managers and personnel of hydrologic observatory testbeds for cooperation, discussions and insightful feedback. We are especially grateful to the USGS and NCDC teams, and other partners who implemented WaterML-compliant web services over their repositories.

Scope

Water Markup Language (WaterML) specification defines an information exchange schema, which has been used in water data services within the Hydrologic Information System (HIS) project supported by the U.S. National Science Foundation, and has been adopted by several federal agencies as a format for serving hydrologic data. The goal of the first version of WaterML was to encode the semantics of hydrologic observation discovery and retrieval and implement water data services in a way that is both generic and unambiguous across different data providers, thus creating the least barriers for adoption by the hydrologic research community. Now in version 1.1, WaterML is evolving to reflect the deployment experience at hydrologic observatory testbeds around the U.S., and U.S. federal and state agency practices of serving observational data on the web. Data sources that can be queried via WaterML-compliant water data services include many national and international repositories of water data, and a growing number of academic observation networks registered by researchers associated with the hydrologic observatories.

WaterML 1.0 specification was published as an OGC discussion paper in 2007, and is available at the OGC web site. This document is a detailed technical description of WaterML 1.0 schema.

Support and questions

Contact Dr. David Valentine, SDSC, valentin@sdsc.edu

# Introduction

This schema documentation is exported from the published WaterML 1.0 schema using a DocFlex/XML XSDDoc. An online HTML version of the WaterML 1.0 documentation is found at: <http://water.sdsc.edu/doc/waterMldoc/v10/default.html>.

The starting point for using the WaterML schema is to examine the three response elements, and their complexType definitions:

|  |  |  |
| --- | --- | --- |
|  | Element | ComplexType |
| Site | siteResponse | SiteResponseType |
| Variable | variablesResponse | VariablesResponseType |
| Time Series | timeSeriesResponse | TimeSeriesResponseType |

XML Schema Documentation

Jun 11, 2009 1:27:52 PM

Namespace Summary

|  |  |
| --- | --- |
| [**http://www.cuahsi.org/waterML/1.0/**](#r6) | **Page** |
| Targeting Schemas (1):  [cuahsiTimeSeries\_v1\_0.xsd](#r7)  Targeting Components:  17 [global elements](#r2), 119 [local elements](#r2), 31 [complexTypes](#r3), 11 [simpleTypes](#r4), 7 [attribute groups](#r5) | 6 |

|  |  |  |
| --- | --- | --- |
| **Schema Summary** | | **Page** |
| [**cuahsiTimeSeries\_v1\_0.xsd**](#r7) | Changes: 2006-07-10 valentine removed choice.  Target Namespace:  [http://www.cuahsi.org/waterML/1.0/](#r6)  Version:  [1.01](E:/Program%20Files/docflex-xml-re-1.7.2/docflex-xml-re-1.7.2)  Defined Components:  17 global elements, 102 local elements, 31 complexTypes, 11 simpleTypes, 7 attribute groups  Default Namespace-Qualified Form:  Local Elements: qualified; Local Attributes: unqualified  Schema Location:  [https://svn.sdsc.edu/repo/WATER/CUAHSI/WebServices/BaseWofServic e/WofSchemas/cuahsiTimeSeries\_v1\_0.xsd](https://svn.sdsc.edu/repo/WATER/CUAHSI/WebServices/BaseWofService/WofSchemas/cuahsiTimeSeries_v1_0.xsd) | 23 |

Namespace *"http://www.cuahsi.org/waterML/1.0/"*

Targeting Schemas (1):

[cuahsiTimeSeries\_v1\_0.xsd](#r7)

Targeting Components:

17 [global elements](#r2), 119 [local elements](#r2), 31 [complexTypes](#r3), 11 [simpleTypes](#r4), 7 [attribute groups](#r5)

|  |  |  |
| --- | --- | --- |
| **All Element Summary** | | **Page** |
| [**Abstract**](#r9) (in [Metadata](#r108)) | Abstract of data from a specific data source.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r422) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r8) [24] | | 23 |
| [**Address**](#r11) (in [ContactInformation](#r20)) | Any address element structure that can be used to communicate contact information.   |  |  | | --- | --- | | Type: | xsi:anyType | | Content: | any | | Defined: | [locally](#r369) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r10) [24] | | 24 |
| [**altname**](#r13) (in [siteInfo](#r250)) | Alternate name   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r498) within complexType [SiteInfoType](#r508) [122] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r12) [25] | | 24 |
| [**beginDateTime**](#r15) (in [timeParam](#r273)) | The string submited as startDate to the GetValues method   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r270) within element [timeParam](#r273) [80] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r14) [25] | | 25 |
| [**beginDateTime**](#r18) (type xsi:dateTime) | |  |  | | --- | --- | | Type: | xsi:dateTime | | Content: | simple | | Defined: | locally at 3 [locations](#r16) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 25 |
| [**ContactInformation**](#r20) (type [ContactInformationType](#r375)) | Contact information about source.   |  |  | | --- | --- | | Type: | [ContactInformationType](#r375) [99] | | Content: | complex, 5 elements | | Defined: | [locally](#r516) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r19) [27] | | 26 |
| [**ContactName**](#r22) (in [ContactInformation](#r20)) | name of contact, or title of organization   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r370) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r21) [27] | | 27 |
| [**creationTime**](#r24) (in [queryInfo](#r195)) | When was this response originally created.   |  |  | | --- | --- | | Type: | xsi:dateTime | | Content: | simple | | Defined: | [locally](#r464) within complexType [QueryInfoType](#r471) [116] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r23) [27] | | 27 |
| [**criteria**](#r30) (in [queryInfo](#r195)) | The criteria are the actual parameters that are passed into the method.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 3 [elements](#r29) | | Defined: | [locally](#r465) within complexType [QueryInfoType](#r471) [116] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r25) [28] | | Includes: | definitions of 3 [elements](#r29) | | 28 |
| [**dataSetDescription**](#r32) (in [datasetInfo](#r36)) | Text description describing the data source.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r378) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r31) [29] | | 29 |
| [**dataSetIdentifier**](#r34) (in [datasetInfo](#r36)) | The indentifier which the original source uses to identify this dataset.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r379) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r33) [29] | | 29 |
| [**datasetInfo**](#r36) | dataSetInfo element describes time series derived from a dataset, such as a netCDF file, or a gridded model.   |  |  | | --- | --- | | Type: | [DataSetInfoType](#r385) [100] | | Content: | complex, 6 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r35) [30] | | Used: | never | | 29 |
| [**dataSetLocation**](#r38) (in [datasetInfo](#r36)) | geolocation describing the spatial coverage of a gridded dataset.   |  |  | | --- | --- | | Type: | [GeogLocationType](#r394) [102] | | Content: | empty, 1 attribute | | Defined: | [locally](#r380) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r37) [30] | | 30 |
| [**dataType**](#r42) (type [dataTypeEnum](#r614)) | |  |  | | --- | --- | | Type: | [dataTypeEnum](#r614) [142] | | Content: | simple | | Defined: | locally at 2 [locations](#r40) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 30 |
| [**daylightSavingsTimeZone**](#r44) (in [timeZoneInfo](#r295)) | The daylight savings time zone for a site, specified in hours and minutes: "hh:mm"   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | empty, 2 attributes | | Defined: | [locally](#r292) within element [timeZoneInfo](#r295) [84] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r43) [32] | | 31 |
| [**defaultTimeZone**](#r46) (in [timeZoneInfo](#r295)) | The default time zone for a site, specified in hours and minutes: "hh:mm"   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | empty, 2 attributes | | Defined: | [locally](#r293) within element [timeZoneInfo](#r295) [84] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r45) [32] | | 32 |
| [**east**](#r48) (in [latLonBox](#r91)) | East longitude.   |  |  | | --- | --- | | Type: | [Longitude](#r626) [145] | | Content: | simple | | Defined: | [locally](#r408) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r47) [33] | | 32 |
| [**elevation\_m**](#r50) (in [siteInfo](#r250)) | Elevation in meters.   |  |  | | --- | --- | | Type: | xsi:double | | Content: | simple | | Defined: | [locally](#r499) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r49) [33] | | 33 |
| [**Email**](#r52) (in [ContactInformation](#r20)) | email address   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r371) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r51) [34] | | 33 |
| [**endDateTime**](#r54) (in [timeParam](#r273)) | The string submited a startDate to the GetValues method   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r271) within element [timeParam](#r273) [80] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r53) [34] | | 34 |
| [**endDateTime**](#r57) (type xsi:dateTime) | |  |  | | --- | --- | | Type: | xsi:dateTime | | Content: | simple | | Defined: | locally at 3 [locations](#r55) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 34 |
| [**extension**](#r62) | In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace.   |  |  | | --- | --- | | Type: | xsi:anyType | | Content: | any | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r61) [36] | | Used: | at 7 [locations](#r60) | | 35 |
| [**generalCategory**](#r66) (type [generalCategoryEnum](#r620)) | |  |  | | --- | --- | | Type: | [generalCategoryEnum](#r620) [144] | | Content: | simple | | Defined: | locally at 2 [locations](#r64) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 36 |
| [**geogLocation**](#r68) (in [geoLocation](#r73)) | Geographic location: A geographic location is required as part of the site information (siteInfoType or siteInfo element) At present this can be elements of GeogLocationType: LatLonPointType and LatLonBoxType. an xml schema type attribute can be used to determine which type is contained in this element (xsi:type="LatLonPointType" or xsi:type="LatLonBoxType")   |  |  | | --- | --- | | Type: | [GeogLocationType](#r394) [102] | | Content: | empty, 1 attribute | | Defined: | [locally](#r70) within element [geoLocation](#r73) [38] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r67) [37] | | 36 |
| [**geoLocation**](#r73) (in [siteInfo](#r250)) | The geoLocation speficies the details of the geographic location.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 2 [elements](#r72) | | Defined: | [locally](#r501) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r69) [37] | | Includes: | definitions of 2 [elements](#r72) | | 37 |
| [**LabMethod**](#r75) (type [LabMethodType](#r405)) | LabMethod is a LabMethodType containing infomration about lab methods   |  |  | | --- | --- | | Type: | [LabMethodType](#r405) [103] | | Content: | complex, 1 attribute, 5 elements | | Defined: | [locally](#r475) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r74) [39] | | 38 |
| [**labMethodDescription**](#r77) (in [LabMethod](#r75)) | Description of the method and protocols used for sample analysis.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r399) within complexType [LabMethodType](#r405) [104] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r76) [39] | | 39 |
| [**labMethodLink**](#r79) (in [LabMethod](#r75)) | Link to additional reference material on the analysis method.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r400) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r78) [39] | | 39 |
| [**LabMethodName**](#r81) (in [LabMethod](#r75)) | Name of the method and protocols used for sample analysis.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r401) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r80) [40] | | 40 |
| [**labName**](#r83) (in [LabMethod](#r75)) | Name of the laboratory responsible for processing the sample.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r402) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r82) [40] | | 40 |
| [**labOrganization**](#r85) (in [LabMethod](#r75)) | Organization responsible for sample analysis.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r403) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r84) [41] | | 40 |
| [**labSampleCode**](#r87) (type xsi:string) | Code or label used to identify and track lab sample or sample container (e.g. bottle) during lab analysis.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r476) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r86) [41] | | 41 |
| [**latitude**](#r89) (in [latLonPoint](#r93)) | The latitude of the site in a decimal degrees as calculated in terms of the given datum.   |  |  | | --- | --- | | Type: | [Latitude](#r623) [145] | | Content: | simple | | Defined: | [locally](#r416) within complexType [LatLonPointType](#r419) [108] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r88) [42] | | 41 |
| [**latLonBox**](#r91) | Box type describing a geographic location.   |  |  | | --- | --- | | Type: | [LatLonBoxType](#r413) [105] | | Content: | complex, 1 attribute, 4 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r90) [42] | | Used: | never | | 42 |
| [**latLonPoint**](#r93) | Point type for describing a geographic location   |  |  | | --- | --- | | Type: | [LatLonPointType](#r419) [107] | | Content: | complex, 1 attribute, 2 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r92) [43] | | Used: | never | | 42 |
| [**localSiteXY**](#r102) (in [geoLocation](#r73)) | Site information can contain one or more other locations using the localSiteXY element.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [attribute](#r96), 4 [elements](#r101) | | Defined: | [locally](#r71) within element [geoLocation](#r73) [38] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r94) [43] | | Includes: | definitions of 1 [attribute](#r96) and 4 [elements](#r101) | | 43 |
| [**locationParam**](#r104) (in [criteria](#r30)) | the location or site parameter passed into the site   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r26) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r103) [45] | | 44 |
| [**longitude**](#r106) (in [latLonPoint](#r93)) | The longitude of the site in a decimal degrees as calculated in terms of the given datum.   |  |  | | --- | --- | | Type: | [Longitude](#r626) [145] | | Content: | simple | | Defined: | [locally](#r417) within complexType [LatLonPointType](#r419) [108] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r105) [45] | | 45 |
| [**Metadata**](#r108) (type [MetaDataType](#r428)) | MetadataType contains the information from the ODM table IsoMetadata.   |  |  | | --- | --- | | Type: | [MetaDataType](#r428) [108] | | Content: | complex, 5 elements | | Defined: | [locally](#r517) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r107) [46] | | 45 |
| [**MetadataLink**](#r110) (in [Metadata](#r108)) | Link to additional metadata reference material.   |  |  | | --- | --- | | Type: | xsi:anyURI | | Content: | simple | | Defined: | [locally](#r423) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r109) [46] | | 46 |
| [**Method**](#r114) (in [series](#r229)) | Method description.   |  |  | | --- | --- | | Type: | [MethodType](#r436) [109] | | Content: | complex, 1 attribute, 2 elements | | Defined: | [locally](#r220) within element [series](#r229) [70] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r113) [47] | | 47 |
| [**method**](#r112) (in [values](#r325)) | Multiple &amp;amp;lt;method&amp;amp;gt;s lists the methods used to collect the data and any additional information about the method.   |  |  | | --- | --- | | Type: | [MethodType](#r436) [109] | | Content: | complex, 1 attribute, 2 elements | | Defined: | [locally](#r564) within complexType [TsValuesSingleVariableType](#r571) [133] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r111) [47] | | 46 |
| [**MethodDescription**](#r116) (type xsi:string) | Text description of each method.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r433) within complexType [MethodType](#r436) [110] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r115) [48] | | 47 |
| [**MethodLink**](#r118) (type xsi:string) | Link to additional reference material on the method.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r434) within complexType [MethodType](#r436) [110] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r117) [48] | | 48 |
| [**NoDataValue**](#r120) (in [variable](#r333)) | Numeric value used to encode no data values for this variable.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r590) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r119) [49] | | 48 |
| [**north**](#r122) (in [latLonBox](#r91)) | North Latitude   |  |  | | --- | --- | | Type: | [Latitude](#r623) [145] | | Content: | simple | | Defined: | [locally](#r409) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r121) [49] | | 49 |
| [**note**](#r126) (type [NoteType](#r441)) | |  |  | | --- | --- | | Type: | [NoteType](#r441) [111] | | Content: | simple, 4 attributes | | Defined: | locally at 6 [locations](#r124) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 49 |
| [**offset**](#r128) (in [values](#r325)) | <offset> is of type OffsetType. offset lists full descriptive information for each of the measurement offsets.   |  |  | | --- | --- | | Type: | [OffsetType](#r452) [112] | | Content: | complex, 1 attribute, 5 elements | | Defined: | [locally](#r565) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r127) [51] | | 51 |
| [**offsetDescription**](#r130) (in [offset](#r128)) | Full text description of the offset type.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r446) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r129) [52] | | 51 |
| [**offsetHorizDirectionDegrees**](#r132) (in [offset](#r128)) | if offsetIsVertical=false, then this is the direction of the offset   |  |  | | --- | --- | | Type: | xsi:int | | Content: | simple | | Defined: | [locally](#r447) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r131) [52] | | 52 |
| [**offsetIsVertical**](#r134) (in [offset](#r128)) | By default, the offset is vertical.   |  |  | | --- | --- | | Type: | xsi:boolean | | Content: | simple | | Defined: | [locally](#r448) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r133) [53] | | 52 |
| [**offsetValue**](#r136) (in [offset](#r128)) | offsetValue element is value of offset.   |  |  | | --- | --- | | Type: | xsi:float | | Content: | simple | | Defined: | [locally](#r449) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r135) [53] | | 53 |
| [**option**](#r145) | Option elements are key-value pair elements that control how a variable maght be utilized in a service.   |  |  | | --- | --- | | Type: | [anonymous](#r139) (extension of xsi:string) | | Content: | simple, 3 [attributes](#r144) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r140) [54] | | Includes: | definitions of 3 [attributes](#r144) | | Used: | at 2 [locations](#r138) | | 53 |
| [**optionGroup**](#r149) | |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [element](#r148) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r146) [55] | | Includes: | definition of 1 [element](#r148) | | Used: | never | | 54 |
| [**options**](#r155) | A list of options.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [element](#r154) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r152) [56] | | Includes: | definition of 1 [element](#r154) | | Used: | at 1 [location](#r151) | | 55 |
| [**Organization**](#r157) (type xsi:string) | Name of the organization that collected the data.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r518) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r156) [57] | | 56 |
| [**parentID**](#r160) (in [related](#r206)) | variableCode for the parent   |  |  | | --- | --- | | Type: | [anonymous](#r158) (extension of xsi:string) | | Content: | simple, 3 attributes | | Defined: | [locally](#r203) within element [related](#r206) [66] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r159) [57] | | 57 |
| [**Phone**](#r162) (in [ContactInformation](#r20)) | phone   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r372) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r161) [58] | | 57 |
| [**ProfileVersion**](#r164) (in [Metadata](#r108)) | Name of metadata profile used by the data source   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r424) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r163) [58] | | 58 |
| [**qualifier**](#r172) | qualifying comments that accompany the data   |  |  | | --- | --- | | Type: | [anonymous](#r167) (extension of xsi:string) | | Content: | simple, 7 [attributes](#r171) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r168) [59] | | Includes: | definitions of 2 [attributes](#r171) | | Used: | at 1 [location](#r166) | | 58 |
| [**qualifier**](#r178) (type anonymous) | qualifying comments that accompany the data. value/@qaulifier is a space delimted list of qualifiers for a data value.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 4 [attributes](#r175), 1 [element](#r177) | | Defined: | [locally](#r454) within complexType [QualifiersType](#r456) [114] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r173) [60] | | Includes: | definitions of 1 [attribute](#r175) and 1 [element](#r177) | | 60 |
| [**qualifierCode**](#r180) (in [qualifier](#r178) : anonymous) | Text code used by organization that collects the data. value/@qaulifier is a space delimted list of qualifiers for a data value.   |  |  | | --- | --- | | Type: | xsi:token | | Content: | simple | | Defined: | [locally](#r176) within element [qualifier](#r178) [60] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r179) [61] | | 61 |
| [**qualityControlLevel**](#r188) | quality control levels that are used for versioning data within the database.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 6 [attributes](#r185), 1 [element](#r187) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r183) [62] | | Includes: | definitions of 1 [attribute](#r185) and 1 [element](#r187) | | Used: | at 1 [location](#r182) | | 61 |
| [**QualityControlLevel**](#r190) (in [series](#r229)) | Code used to identify the level of quality control to which data values have been subjected.   |  |  | | --- | --- | | Type: | [QualityControlLevelType](#r461) [114] | | Content: | simple, 1 attribute | | Defined: | [locally](#r221) within element [series](#r229) [70] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r189) [63] | | 62 |
| [**qualityControlLevelID**](#r192) (in [qualityControlLevel](#r188)) | Unique integer identifying the quality control level.   |  |  | | --- | --- | | Type: | xsi:normalizedString | | Content: | simple | | Defined: | [locally](#r186) within element [qualityControlLevel](#r188) [62] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r191) [63] | | 63 |
| [**queryInfo**](#r195) (type [QueryInfoType](#r471)) | |  |  | | --- | --- | | Type: | [QueryInfoType](#r471) [115] | | Content: | complex, 6 elements | | Defined: | locally at 3 [locations](#r193) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 63 |
| [**querySQL**](#r197) (in [queryInfo](#r195)) | For debugging, the SQL used to generate this request may be placed in this element.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r468) within complexType [QueryInfoType](#r471) [117] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r196) [64] | | 64 |
| [**queryURL**](#r199) (in [queryInfo](#r195)) | The URL of the web page that was used as the original source for the response.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r469) within complexType [QueryInfoType](#r471) [117] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r198) [65] | | 64 |
| [**realTimeDataPeriod**](#r201) (type xsi:duration) | Duration Data Type The duration data type is used to specify a time interval.   |  |  | | --- | --- | | Type: | xsi:duration | | Content: | simple | | Defined: | [locally](#r531) within complexType [TimePeriodRealTimeType](#r533) [128] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r200) [65] | | 65 |
| [**related**](#r206) (in [variable](#r333)) | This can be used to build up relationships between variables.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 2 [elements](#r205) | | Defined: | [locally](#r593) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r202) [66] | | Includes: | definitions of 2 [elements](#r205) | | 65 |
| [**relatedID**](#r209) (in [related](#r206)) | Child or other relationships can be encoded using the related element.   |  |  | | --- | --- | | Type: | [anonymous](#r207) (extension of xsi:string) | | Content: | simple, 3 attributes | | Defined: | [locally](#r204) within element [related](#r206) [67] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r208) [67] | | 67 |
| [**sampleMedium**](#r213) (type [SampleMediumEnum](#r632)) | |  |  | | --- | --- | | Type: | [SampleMediumEnum](#r632) [147] | | Content: | simple | | Defined: | locally at 2 [locations](#r211) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 67 |
| [**SampleType**](#r215) (type [sampleTypeEnum](#r635)) | Controlled vocabulary specifying the sample type from the SampleTypeEnum.   |  |  | | --- | --- | | Type: | [sampleTypeEnum](#r635) [148] | | Content: | simple | | Defined: | [locally](#r477) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r214) [69] | | 68 |
| [**series**](#r229) (in [seriesCatalog](#r231)) | Separate data series are for the purposes of identifying or displaying what data are available at each site.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 11 [elements](#r228) | | Defined: | [locally](#r487) within complexType [seriesCatalogType](#r489) [120] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r216) [69] | | Includes: | definitions of 11 [elements](#r228) | | 69 |
| [**seriesCatalog**](#r231) (in [site](#r239)) | |  |  | | --- | --- | | Type: | [seriesCatalogType](#r489) [118] | | Content: | complex, 2 attributes, 3 elements | | Defined: | [locally](#r236) within element [site](#r239) [73] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r230) [72] | | 71 |
| [**site**](#r239) | A site element can have two parts: siteInfo, and one or more seriesCatalogs.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 3 [elements](#r238) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r234) [73] | | Includes: | definitions of 3 [elements](#r238) | | Used: | at 1 [location](#r233) | | 72 |
| [**siteCode**](#r248) (in [siteInfo](#r250)) | A &lt;siteCode&gt; is an identifier that this site is referred to as.   |  |  | | --- | --- | | Type: | [anonymous](#r240) (extension of xsi:string) | | Content: | simple, 5 [attributes](#r247) | | Defined: | [locally](#r503) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r241) [74] | | Includes: | definitions of 5 [attributes](#r247) | | 73 |
| [**siteInfo**](#r250) (in [site](#r239)) | siteInfo element contains a list of information about a site.   |  |  | | --- | --- | | Type: | [SiteInfoType](#r508) [121] | | Content: | complex, 2 attributes, 9 elements | | Defined: | [locally](#r237) within element [site](#r239) [73] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r249) [75] | | 75 |
| [**siteName**](#r252) (in [siteInfo](#r250)) | Full name of the sampling site. eg “LOGAN RIVER ABOVE STATE DAM, NEAR LOGAN,UT”   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r504) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r251) [76] | | 75 |
| [**sitesResponse**](#r254) | |  |  | | --- | --- | | Type: | [SiteInfoResponseType](#r495) [120] | | Content: | complex, 2 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r253) [76] | | Used: | never | | 76 |
| [**Source**](#r258) (in [series](#r229)) | Source of the data values and reference information to recover/discover the data from the source.   |  |  | | --- | --- | | Type: | [SourceType](#r522) [124] | | Content: | complex, 1 attribute, 5 elements | | Defined: | [locally](#r223) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r257) [77] | | 77 |
| [**source**](#r256) (in [values](#r325)) | The Sources the original sources of the data, providing information sufficient to retrieve the data value.   |  |  | | --- | --- | | Type: | [SourceType](#r522) [124] | | Content: | complex, 1 attribute, 5 elements | | Defined: | [locally](#r568) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r255) [77] | | 76 |
| [**SourceDescription**](#r260) (type xsi:string) | Full text description of the source of the data.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r519) within complexType [SourceType](#r522) [126] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r259) [78] | | 77 |
| [**sourceInfo**](#r262) (in [timeSeries](#r275)) | |  |  | | --- | --- | | Type: | [SourceInfoType](#r511) [124] | | Content: | empty | | Defined: | [locally](#r547) within complexType [TimeSeriesType](#r551) [131] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r261) [78] | | 78 |
| [**SourceLink**](#r264) (type xsi:anyURI) | Link that can be pointed at the original data file and/or associated metadata stored in the digital library or URL of data source.   |  |  | | --- | --- | | Type: | xsi:anyURI | | Content: | simple | | Defined: | [locally](#r520) within complexType [SourceType](#r522) [126] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r263) [78] | | 78 |
| [**south**](#r266) (in [latLonBox](#r91)) | South Latitude   |  |  | | --- | --- | | Type: | [Latitude](#r623) [145] | | Content: | simple | | Defined: | [locally](#r410) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r265) [79] | | 79 |
| [**timeInterval**](#r268) (in [timeSupport](#r286)) | |  |  | | --- | --- | | Type: | xsi:int | | Content: | simple | | Defined: | [locally](#r283) within element [timeSupport](#r286) [83] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r267) [79] | | 79 |
| [**timeParam**](#r273) (in [criteria](#r30)) | the begin and end time of the GetValues request used to generate a timeSeriesResponse.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 2 [elements](#r272) | | Defined: | [locally](#r27) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r269) [80] | | Includes: | definitions of 2 [elements](#r272) | | 79 |
| [**timeSeries**](#r275) (in [timeSeriesResponse](#r277)) | Contains the source of the time series, the variable, and values element which is an array of value elements and thier associated metadata (qualifiers, methods, sources, quality control level, samples)   |  |  | | --- | --- | | Type: | [TimeSeriesType](#r551) [130] | | Content: | complex, 1 attribute, 3 elements | | Defined: | [locally](#r540) within complexType [TimeSeriesResponseType](#r542) [129] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r274) [81] | | 80 |
| [**timeSeriesResponse**](#r277) | |  |  | | --- | --- | | Type: | [TimeSeriesResponseType](#r542) [129] | | Content: | complex, 2 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r276) [81] | | Used: | never | | 81 |
| [**timeSingle**](#r279) (type xsi:dateTime) | |  |  | | --- | --- | | Type: | xsi:dateTime | | Content: | simple | | Defined: | [locally](#r555) within complexType [TimeSingleType](#r557) [132] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r278) [82] | | 81 |
| [**timeSupport**](#r286) (in [variable](#r333)) | Element containing the time support (or temporal footprint) of the data values.   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [attribute](#r282), 2 [elements](#r285) | | Nillable: | (can be declared as nil using xsi:nil attribute in instance XML documents) | | Defined: | [locally](#r595) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r280) [82] | | Includes: | definitions of 1 [attribute](#r282) and 2 [elements](#r285) | | 82 |
| [**timeZoneInfo**](#r295) | The default time zone for this site (+00:00) and if this site shifts to daylight savings time (attribute: usesDaylightSavingsTime)   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [attribute](#r291), 2 [elements](#r294) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r289) [83] | | Includes: | definitions of 1 [attribute](#r291) and 2 [elements](#r294) | | Used: | at 2 [locations](#r288) | | 83 |
| [**Title**](#r297) (in [Metadata](#r108)) | Title of data from a specific data source.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r425) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r296) [84] | | 84 |
| [**TopicCategory**](#r299) (in [Metadata](#r108)) | Topic category keyword that gives the broad ISO19115 metadata topic category for data from this source.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r426) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r298) [85] | | 84 |
| [**TypeOfContact**](#r301) (in [ContactInformation](#r20)) | Type of contact, in open terms: Project Contact Data source contact HIS Admin Data Source Admin Data Base Admin   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r373) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r300) [85] | | 85 |
| [**unit**](#r303) (in [timeSupport](#r286)) | |  |  | | --- | --- | | Type: | [UnitsType](#r581) [134] | | Content: | complex, 1 attribute, 4 elements | | Defined: | [locally](#r284) within element [timeSupport](#r286) [83] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r302) [86] | | 85 |
| [**UnitAbbreviation**](#r305) (in [unit](#r303)) | |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r576) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r304) [86] | | 86 |
| [**UnitDescription**](#r307) (in [unit](#r303)) | |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r577) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r306) [87] | | 86 |
| [**UnitName**](#r309) (in [unit](#r303)) | |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r578) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r308) [87] | | 87 |
| [**units**](#r314) | |  |  | | --- | --- | | Type: | [anonymous](#r312) (extension of xsi:string) | | Content: | simple, 3 attributes | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r313) [88] | | Used: | at 2 [locations](#r311) | | 87 |
| [**UnitType**](#r316) (in [unit](#r303)) | |  |  | | --- | --- | | Type: | [UnitsTypeEnum](#r638) [149] | | Content: | simple | | Defined: | [locally](#r579) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r315) [88] | | 88 |
| [**value**](#r318) (in [values](#r325)) | Multiple <value>s represent the data series.   |  |  | | --- | --- | | Type: | [ValueSingleVariable](#r584) [135] | | Content: | simple, 17 attributes | | Defined: | [locally](#r569) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r317) [89] | | 88 |
| [**valueCount**](#r323) (in [series](#r229)) | |  |  | | --- | --- | | Type: | [anonymous](#r319) (extension of xsi:int) | | Content: | simple, 1 [attribute](#r322) | | Defined: | [locally](#r224) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r320) [90] | | Includes: | definition of 1 [attribute](#r322) | | 89 |
| [**values**](#r325) (in [timeSeries](#r275)) | A list of values and associated metadata.   |  |  | | --- | --- | | Type: | [TsValuesSingleVariableType](#r571) [132] | | Content: | complex, 6 attributes, 6 elements | | Defined: | [locally](#r548) within complexType [TimeSeriesType](#r551) [131] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r324) [91] | | 90 |
| [**valueType**](#r329) (type [valueTypeEnum](#r641)) | |  |  | | --- | --- | | Type: | [valueTypeEnum](#r641) [150] | | Content: | simple | | Defined: | locally at 2 [locations](#r327) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 91 |
| [**variable**](#r333) (type [VariableInfoType](#r602)) | |  |  | | --- | --- | | Type: | [VariableInfoType](#r602) [137] | | Content: | complex, 2 attributes, 14 elements | | Defined: | locally at 3 [locations](#r331) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) | | 92 |
| [**variableCode**](#r340) | Text code used by the organization that collects the data to identify the variable.   |  |  | | --- | --- | | Type: | [anonymous](#r336) (extension of xsi:token) | | Content: | simple, 4 [attributes](#r339) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r337) [93] | | Includes: | definition of 1 [attribute](#r339) | | Used: | at 1 [location](#r335) | | 93 |
| [**variableDescription**](#r342) (in [variable](#r333)) | A detailed description of the variable.   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r599) within complexType [VariableInfoType](#r602) [140] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r341) [94] | | 94 |
| [**variableName**](#r344) (in [variable](#r333)) | A brief name of the variable that could be shown in a menu   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r600) within complexType [VariableInfoType](#r602) [140] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r343) [94] | | 94 |
| [**variableParam**](#r346) (in [criteria](#r30)) | the variable paramter passed into the service   |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r28) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r345) [95] | | 95 |
| [**variables**](#r352) | variables is a list of variable elements (VariableInfoType).   |  |  | | --- | --- | | Type: | anonymous complexType | | Content: | complex, 1 [element](#r351) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r349) [96] | | Includes: | definition of 1 [element](#r351) | | Used: | at 1 [location](#r348) | | 95 |
| [**variablesResponse**](#r354) | |  |  | | --- | --- | | Type: | [VariablesResponseType](#r608) [140] | | Content: | complex, 2 elements | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r353) [96] | | Used: | never | | 96 |
| [**variableTimeInterval**](#r356) (in [series](#r229)) | this describes the time period that ana variable or observed parameter are available for.   |  |  | | --- | --- | | Type: | [TimePeriodType](#r536) [128] | | Content: | empty | | Defined: | [locally](#r227) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r355) [97] | | 96 |
| [**verticalDatum**](#r358) (in [siteInfo](#r250)) | |  |  | | --- | --- | | Type: | xsi:string | | Content: | simple | | Defined: | [locally](#r506) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r357) [97] | | 97 |
| [**west**](#r360) (in [latLonBox](#r91)) | West Longitude   |  |  | | --- | --- | | Type: | [Longitude](#r626) [145] | | Content: | simple | | Defined: | [locally](#r411) within complexType [LatLonBoxType](#r413) [107] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r359) [98] | | 97 |
| [**X**](#r362) (in [localSiteXY](#r102)) | |  |  | | --- | --- | | Type: | xsi:double | | Content: | simple | | Defined: | [locally](#r98) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r361) [98] | | 98 |
| [**Y**](#r364) (in [localSiteXY](#r102)) | |  |  | | --- | --- | | Type: | xsi:double | | Content: | simple | | Defined: | [locally](#r99) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r363) [98] | | 98 |
| [**Z**](#r366) (in [localSiteXY](#r102)) | |  |  | | --- | --- | | Type: | xsi:double | | Content: | simple | | Defined: | [locally](#r100) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r365) [99] | | 98 |

|  |  |  |
| --- | --- | --- |
| **Complex Type Summary** | | **Page** |
| [**ContactInformationType**](#r375) | Contains information about a contact.   |  |  | | --- | --- | | Content: | complex, 5 [elements](#r374) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r368) [99] | | Includes: | definitions of 5 [elements](#r374) | | Used: | at 1 [location](#r367) | | 99 |
| [**DataSetInfoType**](#r385) | DataSetInfoType describes time series derived from a dataset, such as a netCDF file, or a gridded model.   |  |  | | --- | --- | | Content: | complex, 6 [elements](#r384) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r377) [101] | | Includes: | definitions of 6 [elements](#r384) | | Used: | at 1 [location](#r376) | | 100 |
| [**DocumentationType**](#r389) | |  |  | | --- | --- | | Content: | mixed, 4 [attributes](#r388) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r386) [102] | | Includes: | definition of 1 [attribute](#r388) | | Used: | never | | 102 |
| [**GeogLocationType**](#r394) | GeogLocationType is the base class for the two geometry types: LatLonPointType, and LatLonBoxType.   |  |  | | --- | --- | | Content: | empty, 1 [attribute](#r393) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r391) [103] | | Includes: | definition of 1 [attribute](#r393) | | Used: | at 4 [locations](#r390) | | 102 |
| [**LabMethodType**](#r405) | contains descriptions of the laboratory methods used to analyze physical samples for specific constituents.   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r398), 5 [elements](#r404) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r396) [104] | | Includes: | definitions of 1 [attribute](#r398) and 5 [elements](#r404) | | Used: | at 1 [location](#r395) | | 103 |
| [**LatLonBoxType**](#r413) | |  |  | | --- | --- | | Content: | complex, 1 attribute, 4 [elements](#r412) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r407) [106] | | Includes: | definitions of 4 [elements](#r412) | | Used: | at 1 [location](#r406) | | 105 |
| [**LatLonPointType**](#r419) | |  |  | | --- | --- | | Content: | complex, 1 attribute, 2 [elements](#r418) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r415) [107] | | Includes: | definitions of 2 [elements](#r418) | | Used: | at 1 [location](#r414) | | 107 |
| [**MetaDataType**](#r428) | MetadataType contains the information from the ODM table IsoMetadata.   |  |  | | --- | --- | | Content: | complex, 5 [elements](#r427) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r421) [109] | | Includes: | definitions of 5 [elements](#r427) | | Used: | at 1 [location](#r420) | | 108 |
| [**MethodType**](#r436) | Method used to collect the data and any additional information about the method.   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r432), 2 [elements](#r435) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r430) [110] | | Includes: | definitions of 1 [attribute](#r432) and 2 [elements](#r435) | | Used: | at 2 [locations](#r429) | | 109 |
| [**NoteType**](#r441) | NoteType defines the note element available in many defined types. the value should the description of the note.   |  |  | | --- | --- | | Content: | simple, 4 [attributes](#r440) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r438) [111] | | Includes: | definition of 1 [attribute](#r440) | | Used: | at 1 [location](#r437) | | 111 |
| [**OffsetType**](#r452) | OffsetType contains full descriptive information for each of the measurement offsets.   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r445), 5 [elements](#r451) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r443) [112] | | Includes: | definitions of 1 [attribute](#r445) and 5 [elements](#r451) | | Used: | at 1 [location](#r442) | | 112 |
| [**QualifiersType**](#r456) | qualifying comments that accompany the data   |  |  | | --- | --- | | Content: | complex, 1 [element](#r455) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r453) [114] | | Includes: | definition of 1 [element](#r455) | | Used: | never | | 113 |
| [**QualityControlLevelType**](#r461) | Value is the text Code used to identify the level of quality control to which data values have been subjected.   |  |  | | --- | --- | | Content: | simple, 1 [attribute](#r460) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r458) [115] | | Includes: | definition of 1 [attribute](#r460) | | Used: | at 1 [location](#r457) | | 114 |
| [**QueryInfoType**](#r471) | This contains information about the request, and is used to enable the XML responses (timeSeriesResponse, variablesResponse,siteResponse) to be stored on disk.   |  |  | | --- | --- | | Content: | complex, 6 [elements](#r470) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r463) [116] | | Includes: | definitions of 6 [elements](#r470) | | Used: | at 1 [location](#r462) | | 115 |
| [**SampleType**](#r479) | information about physical samples analyzed in a laboratory.   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r474), 3 [elements](#r478) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r472) [117] | | Includes: | definitions of 1 [attribute](#r474) and 3 [elements](#r478) | | Used: | never | | 117 |
| [**seriesCatalogType**](#r489) | Series catalog represents a list of series, where each separate data series are for the purposes of identifying or displaying what data are available at each site.   |  |  | | --- | --- | | Content: | complex, 2 [attributes](#r484), 3 [elements](#r488) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r481) [119] | | Includes: | definitions of 2 [attributes](#r484) and 3 [elements](#r488) | | Used: | at 1 [location](#r480) | | 118 |
| [**SiteInfoResponseType**](#r495) | A sitesResponse contains a list of zero or more site elements.   |  |  | | --- | --- | | Content: | complex, 2 [elements](#r494) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r491) [120] | | Includes: | definitions of 2 [elements](#r494) | | Used: | at 1 [location](#r490) | | 120 |
| [**SiteInfoType**](#r508) | A sampling station is any place where data are collected.   |  |  | | --- | --- | | Content: | complex, 2 attributes, 9 [elements](#r507) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r497) [122] | | Includes: | definitions of 9 [elements](#r507) | | Used: | at 1 [location](#r496) | | 121 |
| [**SourceInfoType**](#r511) | SourceInfoType is used to describe the data source in the timeSeriesResponse.   |  |  | | --- | --- | | Content: | empty | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r510) [124] | | Used: | at 3 [locations](#r509) | | 124 |
| [**SourceType**](#r522) | original sources of the data, providing information sufficient to retrieve and reconstruct the data value from the original data files if necessary   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r515), 5 [elements](#r521) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r513) [125] | | Includes: | definitions of 1 [attribute](#r515) and 5 [elements](#r521) | | Used: | at 2 [locations](#r512) | | 124 |
| [**TimeIntervalType**](#r527) | For where a series has multiple observations, and a define beingDateTime as dateTime of the first data value in the series, and endDateTime dateTime of the last data value in the series.   |  |  | | --- | --- | | Content: | complex, 2 [elements](#r526) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r523) [126] | | Includes: | definitions of 2 [elements](#r526) | | Used: | never | | 126 |
| [**TimePeriodRealTimeType**](#r533) | Use where a site has an evolving period where data is available.   |  |  | | --- | --- | | Content: | complex, 3 [elements](#r532) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r528) [127] | | Includes: | definitions of 3 [elements](#r532) | | Used: | never | | 127 |
| [**TimePeriodType**](#r536) | time series (site-variable-observation) can have three types of time periods: 1) definite start and end time, or TimeIntervalType, 2) single observation, or TimeSingleType 3) Real Time station with moving window of data available, or TimeRealTimeType In order to simplify client development, all types now include beginDateTime, and endDateTime.   |  |  | | --- | --- | | Content: | empty | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r535) [129] | | Used: | at 4 [locations](#r534) | | 128 |
| [**TimeSeriesResponseType**](#r542) | |  |  | | --- | --- | | Content: | complex, 2 [elements](#r541) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r538) [129] | | Includes: | definitions of 2 [elements](#r541) | | Used: | at 1 [location](#r537) | | 129 |
| [**TimeSeriesType**](#r551) | Contains the source of the time series, the variable, and values element which is an array of value elements and thier associated metadata (qualifiers, methods, sources, quality control level, samples)   |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r546), 3 [elements](#r550) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r544) [130] | | Includes: | definitions of 1 [attribute](#r546) and 3 [elements](#r550) | | Used: | at 1 [location](#r543) | | 130 |
| [**TimeSingleType**](#r557) | For where a series is a single observation. timeSingle, beginDateTime, and endDateTime will have the same value.   |  |  | | --- | --- | | Content: | complex, 3 [elements](#r556) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r552) [131] | | Includes: | definitions of 3 [elements](#r556) | | Used: | never | | 131 |
| [**TsValuesSingleVariableType**](#r571) | TsValuesSingleVariableTypea aggregates the list of values and associated metadata.   |  |  | | --- | --- | | Content: | complex, 6 [attributes](#r563), 6 [elements](#r570) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r559) [133] | | Includes: | definitions of 3 [attributes](#r563) and 6 [elements](#r570) | | Used: | at 1 [location](#r558) | | 132 |
| [**UnitsType**](#r581) | |  |  | | --- | --- | | Content: | complex, 1 [attribute](#r575), 4 [elements](#r580) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r573) [135] | | Includes: | definitions of 1 [attribute](#r575) and 4 [elements](#r580) | | Used: | at 1 [location](#r572) | | 134 |
| [**ValueSingleVariable**](#r584) | |  |  | | --- | --- | | Content: | simple, 17 attributes | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r583) [136] | | Used: | at 1 [location](#r582) | | 135 |
| [**VariableInfoType**](#r602) | VariableInfoType is a complex type containting full descriptive information about a variable, as described by the ODM.   |  |  | | --- | --- | | Content: | complex, 2 attributes, 14 [elements](#r601) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r586) [137] | | Includes: | definitions of 14 [elements](#r601) | | Used: | at 1 [location](#r585) | | 137 |
| [**VariablesResponseType**](#r608) | VariablesResponseType is object type returned by the method GetVariableInfo.   |  |  | | --- | --- | | Content: | complex, 2 [elements](#r607) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r604) [141] | | Includes: | definitions of 2 [elements](#r607) | | Used: | at 1 [location](#r603) | | 140 |

|  |  |  |
| --- | --- | --- |
| **Simple Type Summary** | | **Page** |
| [**CensorCodeEnum**](#r611) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r610) [142] | | Used: | at 1 [location](#r609) | | 141 |
| [**dataTypeEnum**](#r614) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r613) [143] | | Used: | at 1 [location](#r612) | | 142 |
| [**DocumentationEnumTypes**](#r617) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r616) [143] | | Used: | at 1 [location](#r615) | | 143 |
| [**generalCategoryEnum**](#r620) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r619) [144] | | Used: | at 1 [location](#r618) | | 144 |
| [**Latitude**](#r623) | The latitude of the site in a decimal degrees as calculated in terms of the given datum.   |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r622) [145] | | Used: | at 3 [locations](#r621) | | 145 |
| [**Longitude**](#r626) | The longitude of the site in a decimal degrees as calculated in terms of the given datum.   |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r625) [146] | | Used: | at 3 [locations](#r624) | | 145 |
| [**QualityControlLevelEnum**](#r629) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r628) [147] | | Used: | at 1 [location](#r627) | | 146 |
| [**SampleMediumEnum**](#r632) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r631) [148] | | Used: | at 1 [location](#r630) | | 147 |
| [**sampleTypeEnum**](#r635) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r634) [149] | | Used: | at 1 [location](#r633) | | 148 |
| [**UnitsTypeEnum**](#r638) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r637) [150] | | Used: | at 2 [locations](#r636) | | 149 |
| [**valueTypeEnum**](#r641) | |  |  | | --- | --- | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r640) [151] | | Used: | at 1 [location](#r639) | | 150 |

|  |  |  |
| --- | --- | --- |
| **Attribute Group Summary** | | **Page** |
| [**DbIdentifiers**](#r649) | thei attribute group provides provenance information for when an object is retrieved from a database.   |  |  | | --- | --- | | Content: | 2 [attributes](#r648) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r645) [152] | | Includes: | definitions of 2 [attributes](#r648) | | Used: | at 5 [locations](#r644) | | 151 |
| [**offsetAttr**](#r659) | |  |  | | --- | --- | | Content: | 5 [attributes](#r658) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r652) [152] | | Includes: | definitions of 5 [attributes](#r658) | | Used: | at 1 [location](#r651) | | 152 |
| [**timeZoneAttr**](#r666) | |  |  | | --- | --- | | Content: | 2 [attributes](#r665) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r662) [153] | | Includes: | definitions of 2 [attributes](#r665) | | Used: | at 2 [locations](#r661) | | 153 |
| [**unitsAttr**](#r675) | |  |  | | --- | --- | | Content: | 3 [attributes](#r674) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r670) [154] | | Includes: | definitions of 3 [attributes](#r674) | | Used: | at 2 [locations](#r669) | | 154 |
| [**ValueAttr**](#r690) | valueAttr contains the possible attributes that can be associated with a data value element.   |  |  | | --- | --- | | Content: | 10 [attributes](#r689) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r678) [155] | | Includes: | definitions of 10 [attributes](#r689) | | Used: | at 1 [location](#r677) | | 155 |
| [**VocabularyAttributes**](#r698) | Tthe attribute group vocabularyAttributes contains common attributes used to differentiate data source codes.   |  |  | | --- | --- | | Content: | 3 [attributes](#r697) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r693) [157] | | Includes: | definitions of 3 [attributes](#r697) | | Used: | at 6 [locations](#r692) | | 157 |
| [**XLinkAttr**](#r706) | |  |  | | --- | --- | | Content: | 3 [attributes](#r705) | | Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r701) [158] | | Includes: | definitions of 3 [attributes](#r705) | | Used: | at 2 [locations](#r700) | | 158 |

XML Schema *"cuahsiTimeSeries\_v1\_0.xsd"*

Target Namespace:

[http://www.cuahsi.org/waterML/1.0/](#r6)

Version:

[1.01](E:/Program%20Files/docflex-xml-re-1.7.2/docflex-xml-re-1.7.2)

Defined Components:

17 global elements, 102 local elements, 31 complexTypes, 11 simpleTypes, 7 attribute groups

Default Namespace-Qualified Form:

Local Elements: qualified; Local Attributes: unqualified

Schema Location:

<https://svn.sdsc.edu/repo/WATER/CUAHSI/WebServices/BaseWofService/WofSchemas/cuahsiTimeSeries_v1_0.xsd>

Annotation

Changes: 2006-07-10 valentine removed choice. Replaced with Types defined TimePeriodType TimeIntervalType TimeSingleType added GeogLocationType to hold the geometry redefined LatLongPoint as a type defined LatLongBox to hold defined simpleTypes Latitude and Longitude added DataSetLocation Element (type GeogLocationType) to dataset info removed xlink namespace. Just used the xlink concept (problems getting it to compile with xlink schema) 2006-08-30 valentine MANY CHANGES to: sync with the Observations Database terminolog simplify. Removed many unneeded types. (initial version was Type happy) types mostly used only when needed (Geometry, SourceInfo, TimeSeries, Notes, Enumerations). \*\*\* Element Case Standardize \*\*\*\* All types are PascalCase All CUAHSI elements and attributes are camelCase \* All root response elements are now elements, and not types \*\* SitesResponse \*\* TimeSeriesResponse (not timeSeriesType) \*\* VariablesResponse \* extension elements added. \*\* These are extension points for groups like the USGS that wish to include more information than the normal community uses. \* enumerations added \* unitType \* censorCode (characters used because symbols make for unmaintainable source code) \* lt - less than \* gt - greater than \* nc - no code \* variable types consolidated \* units element added \* consistent siteID/variableID pattern (both include a XXXCode) \* Remove many types \*\* too many to list. \* values == TsValuesType renamed from TsValuesSingleVariableType \*\* split values element out to type ValueSingleVar (c# change tsValuesTypeValueType to ValueSingleVar). \*\* qualifier elements can be added after the final value element in the Values element. \*\*\* we don't know the full list of included qualifiers until we get done with the values. \*\*\* at present, qualifiers attribute in the value element is an aggregated field. element block looks like: = values == value qualifers=&quot;A&quot; == value qualifers=&quot;Ae&quot; == qualifier qualifierCode=&quot;A&quot; &quot;Approved&quot; == qualifier qualifierCode=&quot;e&quot; &quot;Estimated. This value has been estimated.&quot; 2006-09-08 variableID renamed variableCode siteID renamed siteCode siteID and variableID attributes added, xxCode removed siteCode name moved into siteInfo 2006-09-15 variable/name to variable/variableName variablePeriod to variablePeriodOfObservation 2006-09-17 added QualityControlLevelEnum added attribute qualityControlLevel to valueAttribute group. (affects ValueSingleVariable) added qualityControlLevel element, and element to the TSValuesSingleVariableType namespace changed to http://www.cuahsi.org/waterML/1.0/ return to types for top level elements, without this they get named getValuesResponse added note to siteInfoElement. We need to put the URL or Retireved from DB not in this block. added TimePeriodRealTime. Need to represent real time data. 2006-0920 variablePeriodofRecorr to seriesCatalog variablePeriodOfObservation to series variableObservationCount to valueCount (to match the OD) added enumerations from the OD valueTypeEnum generalCategoryEnum sampleMediumEnum dataTypeEnum 2006-09-24 queryInfo/criteria/timeParam is now a sequence, since a start or end time can be null The community wants it to be easy, and VB and other .net have problems with some values: converted xsd:decimal to xsd:double. decimal is not well handled by VB converted tsValuesSingleVaribaleType/count from xsd:nonNegativeInteger to xsd:int. 2006-09-28 API signature has been changed to strings. queryInfo/timeInterval/... changed to strings 2007-07-09 ODM seriesCatalog table added columns. Columns now added DataValue element was missing: DataType(eg statistic), Method, Source, and QualityControlLevel. 2007-08-28 added to values method[](methodType), source[](SourceType) added &quot;Unknown&quot; to many enumerations. contactInformation in sourceType changed to unbounded 2007-08-29 DT/DM believes that including an offsetDescription on every element is verbose offsetTypeID attribute added to offsetAttr offsetType Type added, Designed to be a bit more extensible, and handle 2007-08-30 restored attributes that had the offset information on the values offsetAttr restored attr offsetUnitsAbbreviation offsetUnitsCode offsetDescription 2007-11-14 Many services use agency (aka EPA, and USGS) added attributes agencyCode and AgencyName to siteCode. 2007-11-29 SiteInfo/TimezoneInfo min occurs 0 max 1 Series/QualityControlLevel min occurs 0 max 1

element <Abstract>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r422) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r8) [24] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Abstract | | |
|  | *Content:* | { xsi:string } |
| </Abstract> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

Abstract of data from a specific data source. Abstract field should be populated with a more complete text description of the data that the metadata record references. This field can be populated with “Unknown” if there is no abstract for the data.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Abstract**](#r422)" type="xsi:string"/> |

element <Address>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:anyType |
| Content: | any |
| Defined: | [locally](#r369) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r10) [24] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Address | | |
|  | *Content:* | { xsi:anyType } |
| </Address> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

Any address element structure that can be used to communicate contact information.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**Address**](#r369)" type="xsi:anyType"/> |

element <altname>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r498) within complexType [SiteInfoType](#r508) [122] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r12) [25] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <altname | | |
|  | *Content:* | { xsi:string } |
| </altname> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

Alternate name

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**altname**](#r498)" type="xsi:string"/> |

element <beginDateTime>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r270) within element [timeParam](#r273) [80] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r14) [25] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <beginDateTime | | |
|  | *Content:* | { xsi:string } |
| </beginDateTime> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeParam](#r273) (in [criteria](#r30)) [79] |  |

Annotation

The string submited as startDate to the GetValues method

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**beginDateTime**](#r270)" type="xsi:string"/> |

element <beginDateTime>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:dateTime |
| Content: | simple |
| Defined: | locally at 3 [locations](#r16) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <beginDateTime | | |
|  | *Content:* | { xsi:dateTime } |
| </beginDateTime> | | |

Definition Locations

* Within global complexTypes (3):

[TimeIntervalType](#r527) [126], [TimePeriodRealTimeType](#r533) [128], [TimeSingleType](#r557) [132]

Annotations (2) (by all definition locations)

**Location:**

within complexType [TimePeriodRealTimeType](#r533) [128]

**Annotation:**

dateTime of the first data value in the series. This should be be calculated based on the duration stored in realTimeDataPeriod The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

**Locations:**

within complexType [TimeIntervalType](#r527) [126], within complexType [TimeSingleType](#r557) [132]

**Annotation:**

dateTime of the first data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

element <ContactInformation>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [ContactInformationType](#r375) [99] |
| Content: | complex, 5 elements |
| Defined: | [locally](#r516) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r19) [27] |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <ContactInformation> | |
|  | |  |  | | --- | --- | | *Content:* | [ContactName](#r370), [TypeOfContact](#r373)?, [Phone](#r372)?, [Email](#r371)?, [Address](#r369)? | |
| </ContactInformation> | |

Content model elements (5):

|  |  |
| --- | --- |
| [Address](#r11) (in [ContactInformation](#r20)) [24],  [ContactName](#r22) (in [ContactInformation](#r20)) [27],  [Email](#r52) (in [ContactInformation](#r20)) [33], | [Phone](#r162) (in [ContactInformation](#r20)) [57],  [TypeOfContact](#r301) (in [ContactInformation](#r20)) [85] |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

Contact information about source.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**ContactInformation**](#r516)" type="[**ContactInformationType**](#r375)"/> |

element <ContactName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r370) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r21) [27] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <ContactName | | |
|  | *Content:* | { xsi:string } |
| </ContactName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

name of contact, or title of organization

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="1" name="[**ContactName**](#r370)" type="xsi:string"/> |

element <creationTime>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:dateTime |
| Content: | simple |
| Defined: | [locally](#r464) within complexType [QueryInfoType](#r471) [116] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r23) [27] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <creationTime | | |
|  | *Content:* | { xsi:dateTime } |
| </creationTime> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Annotation

When was this response originally created.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**creationTime**](#r464)" type="xsi:dateTime"/> |

element <criteria>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 3 [elements](#r29) |
| Defined: | [locally](#r465) within complexType [QueryInfoType](#r471) [116] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r25) [28] |
| Includes: | definitions of 3 [elements](#r29) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <criteria> | |
|  | |  |  | | --- | --- | | *Content:* | ([locationParam](#r26)?, [variableParam](#r28)?, [timeParam](#r27)?)? | |
| </criteria> | |

Content model elements (3):

|  |  |
| --- | --- |
| [locationParam](#r104) (in [criteria](#r30)) [44],  [timeParam](#r273) (in [criteria](#r30)) [79], | [variableParam](#r346) (in [criteria](#r30)) [95] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Annotation

The criteria are the actual parameters that are passed into the method. If you are generate this without a XML helper class, be sure to properly encode these elements.

XML Source (w/o annotations (6))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**criteria**](#r465)">  <xsi:complexType>  <xsi:sequence minOccurs="0">  <xsi:element minOccurs="0" name="[**locationParam**](#r26)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**variableParam**](#r28)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**timeParam**](#r27)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**beginDateTime**](#r270)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**endDateTime**](#r271)" type="xsi:string"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r30) component only; 3/3)

[locationParam](#r104) [44]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

the location or site parameter passed into the site

[timeParam](#r273) [79]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

the begin and end time of the GetValues request used to generate a timeSeriesResponse.

[variableParam](#r346) [95]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

the variable paramter passed into the service

element <dataSetDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r378) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r31) [29] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <dataSetDescription | | |
|  | *Content:* | { xsi:string } |
| </dataSetDescription> | | |

Included in content model of elements (1):

[datasetInfo](#r36) [29]

Annotation

Text description describing the data source.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**dataSetDescription**](#r378)" type="xsi:string"/> |

element <dataSetIdentifier>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r379) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r33) [29] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <dataSetIdentifier | | |
|  | *Content:* | { xsi:string } |
| </dataSetIdentifier> | | |

Included in content model of elements (1):

[datasetInfo](#r36) [29]

Annotation

The indentifier which the original source uses to identify this dataset. This may be a unique indentifier, or a URL from which the data source was retireved

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**dataSetIdentifier**](#r379)" type="xsi:string"/> |

element <datasetInfo>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [DataSetInfoType](#r385) [100] |
| Content: | complex, 6 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r35) [30] |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <datasetInfo> | |
|  | |  |  | | --- | --- | | *Content:* | [dataSetIdentifier](#r379), [timeZoneInfo](#r383)?, [dataSetDescription](#r378)?, [note](#r382)\*, [dataSetLocation](#r380)?, [extension](#r381)? | |
| </datasetInfo> | |

Content model elements (6):

|  |  |
| --- | --- |
| [dataSetDescription](#r32) (in [datasetInfo](#r36)) [29],  [dataSetIdentifier](#r34) (in [datasetInfo](#r36)) [29],  [dataSetLocation](#r38) (in [datasetInfo](#r36)) [30], | [extension](#r62) [35],  [note](#r126) (type [NoteType](#r441)) [49],  [timeZoneInfo](#r295) [83] |

Annotation

dataSetInfo element describes time series derived from a dataset, such as a netCDF file, or a gridded model.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**datasetInfo**](#r36)" type="[**DataSetInfoType**](#r385)"/> |

element <dataSetLocation>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [GeogLocationType](#r394) [102] |
| Content: | empty, 1 attribute |
| Defined: | [locally](#r380) within complexType [DataSetInfoType](#r385) [101] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r37) [30] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <dataSetLocation | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
| /> | | | |

Included in content model of elements (1):

[datasetInfo](#r36) [29]

Annotation

geolocation describing the spatial coverage of a gridded dataset.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**dataSetLocation**](#r380)" type="[**GeogLocationType**](#r394)"/> |

element <dataType>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [dataTypeEnum](#r614) [142] |
| Content: | simple |
| Defined: | locally at 2 [locations](#r40) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <dataType | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </dataType> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "Continuous", "Instantaneous", "Cumulative", "Incremental", "Average", "Maximum", "Minimum", "Constant Over Interval", "Categorical", "Best Easy Systematic Estimator ", "Unknown", "Variance", "Median", "Mode", "Best Easy Systematic Estimator", "Standard Deviation", "Skewness", "Equivalent Mean", "Sporadic", "Unknown" |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Definition Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [138]

* Within anonymous complexTypes of elements (1):

[series](#r229) (in [seriesCatalog](#r231)) [70]

Annotations (2) (by all definition locations)

**Location:**

within complexType [VariableInfoType](#r602) [138]

**Annotation:**

Text value that identifies the data values as one of several types from the dataTypeEnum A default value of “Unknown” can be used where the data type is unknown.

**Location:**

within element [series](#r229) [70]

**Annotation:**

Text value that identifies the data as one of several types as found ing dataTypeEnum

element <daylightSavingsTimeZone>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | empty, 2 attributes |
| Defined: | [locally](#r292) within element [timeZoneInfo](#r295) [84] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r43) [32] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <daylightSavingsTimeZone | | | |
|  | [ZoneAbbreviation](#r663) | = | xsi:normalizedString |
|  | [ZoneOffset](#r664) | = | xsi:string |
| /> | | | |

Included in content model of elements (1):

[timeZoneInfo](#r295) [83]

Annotation

The daylight savings time zone for a site, specified in hours and minutes: "hh:mm"

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**daylightSavingsTimeZone**](#r292)">  <xsi:complexType>  <xsi:attributeGroup ref="[**timeZoneAttr**](#r666)"/>  </xsi:complexType>  </xsi:element> |

element <defaultTimeZone>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | empty, 2 attributes |
| Defined: | [locally](#r293) within element [timeZoneInfo](#r295) [84] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r45) [32] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <defaultTimeZone | | | |
|  | [ZoneAbbreviation](#r663) | = | xsi:normalizedString |
|  | [ZoneOffset](#r664) | = | xsi:string |
| /> | | | |

Included in content model of elements (1):

[timeZoneInfo](#r295) [83]

Annotation

The default time zone for a site, specified in hours and minutes: "hh:mm"

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**defaultTimeZone**](#r293)">  <xsi:complexType>  <xsi:attributeGroup ref="[**timeZoneAttr**](#r666)"/>  </xsi:complexType>  </xsi:element> |

element <east>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Longitude](#r626) [145] |
| Content: | simple |
| Defined: | [locally](#r408) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r47) [33] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <east | | |
|  | *Content:* | { xsi:double } |
| </east> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 180.00 |
| MinInclusive: | -180.00 |

Included in content model of elements (1):

[latLonBox](#r91) [42]

Annotation

East longitude.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**east**](#r408)" type="[**Longitude**](#r626)"/> |

element <elevation\_m>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:double |
| Content: | simple |
| Defined: | [locally](#r499) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r49) [33] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <elevation\_m | | |
|  | *Content:* | { xsi:double } |
| </elevation\_m> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

Elevation in meters. A vertical datum should also be provided.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**elevation\_m**](#r499)" type="xsi:double"/> |

element <Email>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r371) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r51) [34] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Email | | |
|  | *Content:* | { xsi:string } |
| </Email> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

email address

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**Email**](#r371)" type="xsi:string"/> |

element <endDateTime>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r271) within element [timeParam](#r273) [80] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r53) [34] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <endDateTime | | |
|  | *Content:* | { xsi:string } |
| </endDateTime> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeParam](#r273) (in [criteria](#r30)) [79] |  |

Annotation

The string submited a startDate to the GetValues method

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**endDateTime**](#r271)" type="xsi:string"/> |

element <endDateTime>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:dateTime |
| Content: | simple |
| Defined: | locally at 3 [locations](#r55) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <endDateTime | | |
|  | *Content:* | { xsi:dateTime } |
| </endDateTime> | | |

Definition Locations

* Within global complexTypes (3):

[TimeIntervalType](#r527) [127], [TimePeriodRealTimeType](#r533) [128], [TimeSingleType](#r557) [132]

Annotations (2) (by all definition locations)

**Locations:**

within complexType [TimeIntervalType](#r527) [127], within complexType [TimeSingleType](#r557) [132]

**Annotation:**

Date of the last data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

**Location:**

within complexType [TimePeriodRealTimeType](#r533) [128]

**Annotation:**

Date of the last data value in the series. This should be be calculated based on the duration stored in realTimeDataPeriod The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

element <extension>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:anyType |
| Content: | any |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r61) [36] |
| Used: | at 7 [locations](#r60) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <extension | | |
|  | *Content:* | { xsi:anyType } |
| </extension> | | |

Included in content model of elements (7):

|  |  |
| --- | --- |
| [datasetInfo](#r36) [29],  [queryInfo](#r195) (type [QueryInfoType](#r471)) [63],  [series](#r229) (in [seriesCatalog](#r231)) [69],  [seriesCatalog](#r231) (in [site](#r239)) [71], | [site](#r239) [72],  [siteInfo](#r250) (in [site](#r239)) [75],  [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Known Usage Locations

* Within global complexTypes (5):

[DataSetInfoType](#r385) [101], [QueryInfoType](#r471) [116], [SiteInfoType](#r508) [123], [VariableInfoType](#r602) [138], [seriesCatalogType](#r489) [119]

* Within anonymous complexTypes of elements (2):

[series](#r229) (in [seriesCatalog](#r231)) [70], [site](#r239) [73]

Annotation

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in &lt;extension?

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**extension**](#r62)" type="xsi:anyType"/> |

element <generalCategory>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [generalCategoryEnum](#r620) [144] |
| Content: | simple |
| Defined: | locally at 2 [locations](#r64) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <generalCategory | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </generalCategory> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "Water Quality", "Climate", "Hydrology", "Geology", "Biota", "Unknown", "Instrumentation" |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Definition Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [138]

* Within anonymous complexTypes of elements (1):

[series](#r229) (in [seriesCatalog](#r231)) [70]

Annotations (2) (by all definition locations)

**Location:**

within element [series](#r229) [70]

**Annotation:**

General category of the variable as listed in generalCategoryEnum

**Location:**

within complexType [VariableInfoType](#r602) [138]

**Annotation:**

General category of the data values from the generalCategoryEnum. A default value of “Unknown” can be used where the general category is unknown.

element <geogLocation>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [GeogLocationType](#r394) [102] |
| Content: | empty, 1 attribute |
| Defined: | [locally](#r70) within element [geoLocation](#r73) [38] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r67) [37] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <geogLocation | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
| /> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [geoLocation](#r73) (in [siteInfo](#r250)) [37] |  |

Annotation

Geographic location: A geographic location is required as part of the site information (siteInfoType or siteInfo element) At present this can be elements of GeogLocationType: LatLonPointType and LatLonBoxType. an xml schema type attribute can be used to determine which type is contained in this element (xsi:type="LatLonPointType" or xsi:type="LatLonBoxType")

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**geogLocation**](#r70)" type="[**GeogLocationType**](#r394)"/> |

element <geoLocation>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 2 [elements](#r72) |
| Defined: | [locally](#r501) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r69) [37] |
| Includes: | definitions of 2 [elements](#r72) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <geoLocation> | |
|  | |  |  | | --- | --- | | *Content:* | [geogLocation](#r70), [localSiteXY](#r71)\* | |
| </geoLocation> | |

Content model elements (2):

|  |  |
| --- | --- |
| [geogLocation](#r68) (in [geoLocation](#r73)) [36], | [localSiteXY](#r102) (in [geoLocation](#r73)) [43] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

The geoLocation speficies the details of the geographic location. It contains two portions, a geographic locaiton &amp;lt;geogLocation&amp;gt;, and a local location &amp;lt;localSiteXY&amp;gt;. In order to be discovered spatially, geogLocation is required. The geogLocation can be of GeogLocationType, which at present is either a latLonPoint or a latLongBox. There may be multiple localSiteXY, which might be used by data sources to provide other coordinated system information, like UTM and State Plane coordinates.

XML Source (w/o annotations (5))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**geoLocation**](#r501)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**geogLocation**](#r70)" type="[**GeogLocationType**](#r394)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**localSiteXY**](#r71)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**X**](#r98)" type="xsi:double"/>  <xsi:element name="[**Y**](#r99)" type="xsi:double"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Z**](#r100)" type="xsi:double"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r97)" type="[**NoteType**](#r441)"/>  </xsi:sequence>  <xsi:attribute name="[**projectionInformation**](#r95)" type="xsi:string"/>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r73) component only; 2/2)

[geogLocation](#r68) [36]



|  |  |
| --- | --- |
| Type: | [GeogLocationType](#r394) [102], empty content |

Geographic location: A geographic location is required as part of the site information (siteInfoType or siteInfo element) At present this can be elements of GeogLocationType: LatLonPointType and LatLonBoxType. an xml schema type attribute can be used to determine which type is contained in this element (xsi:type="LatLonPointType" or xsi:type="LatLonBoxType")

[localSiteXY](#r102) [43]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

Site information can contain one or more other locations using the localSiteXY element. The projection string should be stored in projectionInformation. Lat or Northing = Y Lon or Easting = X

element <LabMethod>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [LabMethodType](#r405) [103] |
| Content: | complex, 1 attribute, 5 elements |
| Defined: | [locally](#r475) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r74) [39] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <LabMethod | | | |
|  | [labMethodID](#r397) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [labName](#r402)?, [labOrganization](#r403)?, [LabMethodName](#r401)?, [labMethodDescription](#r399)?, [labMethodLink](#r400)? | | | |
| </LabMethod> | | | |

Content model elements (5):

|  |  |
| --- | --- |
| [labMethodDescription](#r77) (in [LabMethod](#r75)) [39],  [labMethodLink](#r79) (in [LabMethod](#r75)) [39],  [LabMethodName](#r81) (in [LabMethod](#r75)) [40], | [labName](#r83) (in [LabMethod](#r75)) [40],  [labOrganization](#r85) (in [LabMethod](#r75)) [40] |

Annotation

LabMethod is a LabMethodType containing infomration about lab methods

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**LabMethod**](#r475)" type="[**LabMethodType**](#r405)"/> |

element <labMethodDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r399) within complexType [LabMethodType](#r405) [104] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r76) [39] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <labMethodDescription | | |
|  | *Content:* | { xsi:string } |
| </labMethodDescription> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

Description of the method and protocols used for sample analysis.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**labMethodDescription**](#r399)" type="xsi:string"/> |

element <labMethodLink>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r400) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r78) [39] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <labMethodLink | | |
|  | *Content:* | { xsi:string } |
| </labMethodLink> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

Link to additional reference material on the analysis method.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**labMethodLink**](#r400)" type="xsi:string"/> |

element <LabMethodName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r401) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r80) [40] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <LabMethodName | | |
|  | *Content:* | { xsi:string } |
| </LabMethodName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

Name of the method and protocols used for sample analysis. Suggest using nemi names and codes http://www.nemi.gov/ “USEPA-365.1”

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**LabMethodName**](#r401)" type="xsi:string"/> |

element <labName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r402) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r82) [40] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <labName | | |
|  | *Content:* | { xsi:string } |
| </labName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

Name of the laboratory responsible for processing the sample.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**labName**](#r402)" type="xsi:string"/> |

element <labOrganization>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r403) within complexType [LabMethodType](#r405) [105] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r84) [41] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <labOrganization | | |
|  | *Content:* | { xsi:string } |
| </labOrganization> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

Organization responsible for sample analysis.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**labOrganization**](#r403)" type="xsi:string"/> |

element <labSampleCode>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r476) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r86) [41] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <labSampleCode | | |
|  | *Content:* | { xsi:string } |
| </labSampleCode> | | |

Annotation

Code or label used to identify and track lab sample or sample container (e.g. bottle) during lab analysis.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**labSampleCode**](#r476)" type="xsi:string"/> |

element <latitude>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Latitude](#r623) [145] |
| Content: | simple |
| Defined: | [locally](#r416) within complexType [LatLonPointType](#r419) [108] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r88) [42] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <latitude | | |
|  | *Content:* | { xsi:double } |
| </latitude> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 90.00 |
| MinInclusive: | -90.00 |

Included in content model of elements (1):

[latLonPoint](#r93) [42]

Annotation

The latitude of the site in a decimal degrees as calculated in terms of the given datum.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**latitude**](#r416)" type="[**Latitude**](#r623)"/> |

element <latLonBox>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [LatLonBoxType](#r413) [105] |
| Content: | complex, 1 attribute, 4 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r90) [42] |
| Used: | never |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <latLonBox | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [south](#r410), [west](#r411), [north](#r409), [east](#r408) | | | |
| </latLonBox> | | | |

Content model elements (4):

|  |  |
| --- | --- |
| [east](#r48) (in [latLonBox](#r91)) [32],  [north](#r122) (in [latLonBox](#r91)) [49], | [south](#r266) (in [latLonBox](#r91)) [79],  [west](#r360) (in [latLonBox](#r91)) [97] |

Annotation

Box type describing a geographic location.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**latLonBox**](#r91)" type="[**LatLonBoxType**](#r413)"/> |

element <latLonPoint>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [LatLonPointType](#r419) [107] |
| Content: | complex, 1 attribute, 2 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r92) [43] |
| Used: | never |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <latLonPoint | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [latitude](#r416), [longitude](#r417) | | | |
| </latLonPoint> | | | |

Content model elements (2):

|  |  |
| --- | --- |
| [latitude](#r89) (in [latLonPoint](#r93)) [41], | [longitude](#r106) (in [latLonPoint](#r93)) [45] |

Annotation

Point type for describing a geographic location

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**latLonPoint**](#r93)" type="[**LatLonPointType**](#r419)"/> |

element <localSiteXY>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [attribute](#r96), 4 [elements](#r101) |
| Defined: | [locally](#r71) within element [geoLocation](#r73) [38] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r94) [43] |
| Includes: | definitions of 1 [attribute](#r96) and 4 [elements](#r101) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <localSiteXY | | | |
|  | [projectionInformation](#r95) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [X](#r98), [Y](#r99), [Z](#r100)?, [note](#r97)\* | | | |
| </localSiteXY> | | | |

Content model elements (4):

|  |  |
| --- | --- |
| [note](#r126) (type [NoteType](#r441)) [49],  [X](#r362) (in [localSiteXY](#r102)) [98], | [Y](#r364) (in [localSiteXY](#r102)) [98],  [Z](#r366) (in [localSiteXY](#r102)) [98] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [geoLocation](#r73) (in [siteInfo](#r250)) [37] |  |

Annotation

Site information can contain one or more other locations using the localSiteXY element. The projection string should be stored in projectionInformation. Lat or Northing = Y Lon or Easting = X

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**localSiteXY**](#r71)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**X**](#r98)" type="xsi:double"/>  <xsi:element name="[**Y**](#r99)" type="xsi:double"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Z**](#r100)" type="xsi:double"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r97)" type="[**NoteType**](#r441)"/>  </xsi:sequence>  <xsi:attribute name="[**projectionInformation**](#r95)" type="xsi:string"/>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r102) component only; 1/1)

projectionInformation



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

Spatial Reference System of the local coordinates. This should use the PROJ4 projection string standard

Content Element Detail (defined in [this](#r102) component only; 4/4)

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information should be encoded in zero or more note elmements. The name of the property should be @title, and the value should be inside the note value. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[X](#r362) [98]



|  |  |
| --- | --- |
| Type: | xsi:double, predefined, simple content |

[Y](#r364) [98]



|  |  |
| --- | --- |
| Type: | xsi:double, predefined, simple content |

[Z](#r366) [98]



|  |  |
| --- | --- |
| Type: | xsi:double, predefined, simple content |

element <locationParam>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r26) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r103) [45] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <locationParam | | |
|  | *Content:* | { xsi:string } |
| </locationParam> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [criteria](#r30) (in [queryInfo](#r195)) [28] |  |

Annotation

the location or site parameter passed into the site

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**locationParam**](#r26)" type="xsi:string"/> |

element <longitude>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Longitude](#r626) [145] |
| Content: | simple |
| Defined: | [locally](#r417) within complexType [LatLonPointType](#r419) [108] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r105) [45] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <longitude | | |
|  | *Content:* | { xsi:double } |
| </longitude> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 180.00 |
| MinInclusive: | -180.00 |

Included in content model of elements (1):

[latLonPoint](#r93) [42]

Annotation

The longitude of the site in a decimal degrees as calculated in terms of the given datum.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**longitude**](#r417)" type="[**Longitude**](#r626)"/> |

element <Metadata>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [MetaDataType](#r428) [108] |
| Content: | complex, 5 elements |
| Defined: | [locally](#r517) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r107) [46] |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <Metadata> | |
|  | |  |  | | --- | --- | | *Content:* | [TopicCategory](#r426)?, [Title](#r425)?, [Abstract](#r422)?, [ProfileVersion](#r424)?, [MetadataLink](#r423)? | |
| </Metadata> | |

Content model elements (5):

|  |  |
| --- | --- |
| [Abstract](#r9) (in [Metadata](#r108)) [23],  [MetadataLink](#r110) (in [Metadata](#r108)) [46],  [ProfileVersion](#r164) (in [Metadata](#r108)) [58], | [Title](#r297) (in [Metadata](#r108)) [84],  [TopicCategory](#r299) (in [Metadata](#r108)) [84] |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

MetadataType contains the information from the ODM table IsoMetadata. It is anticpated that many data sources may not have this fully available.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**Metadata**](#r517)" type="[**MetaDataType**](#r428)"/> |

element <MetadataLink>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:anyURI |
| Content: | simple |
| Defined: | [locally](#r423) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r109) [46] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <MetadataLink | | |
|  | *Content:* | { xsi:anyURI } |
| </MetadataLink> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

Link to additional metadata reference material.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**MetadataLink**](#r423)" type="xsi:anyURI"/> |

element <method>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [MethodType](#r436) [109] |
| Content: | complex, 1 attribute, 2 elements |
| Defined: | [locally](#r564) within complexType [TsValuesSingleVariableType](#r571) [133] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r111) [47] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <method | | | |
|  | [methodID](#r431) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [MethodDescription](#r433), [MethodLink](#r434)? | | | |
| </method> | | | |

Content model elements (2):

|  |  |
| --- | --- |
| [MethodDescription](#r116) (type xsi:string) [47], | [MethodLink](#r118) (type xsi:string) [48] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Annotation

Multiple &amp;amp;lt;method&amp;amp;gt;s lists the methods used to collect the data and any additional information about the method. @methodID is the link between the values, and method. Different instruments should be represented as different methods, according to ODM best practices

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**method**](#r564)" type="[**MethodType**](#r436)"/> |

element <Method>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [MethodType](#r436) [109] |
| Content: | complex, 1 attribute, 2 elements |
| Defined: | [locally](#r220) within element [series](#r229) [70] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r113) [47] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <Method | | | |
|  | [methodID](#r431) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [MethodDescription](#r433), [MethodLink](#r434)? | | | |
| </Method> | | | |

Content model elements (2):

|  |  |
| --- | --- |
| [MethodDescription](#r116) (type xsi:string) [47], | [MethodLink](#r118) (type xsi:string) [48] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69] |  |

Annotation

Method description. Optional, since many sources do not have detailed methods. ODM datasources require methods.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Method**](#r220)" type="[**MethodType**](#r436)"/> |

element <MethodDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r433) within complexType [MethodType](#r436) [110] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r115) [48] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <MethodDescription | | |
|  | *Content:* | { xsi:string } |
| </MethodDescription> | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Method](#r114) (in [series](#r229)) [47], | [method](#r112) (in [values](#r325)) [46] |

Annotation

Text description of each method.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**MethodDescription**](#r433)" type="xsi:string"/> |

element <MethodLink>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r434) within complexType [MethodType](#r436) [110] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r117) [48] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <MethodLink | | |
|  | *Content:* | { xsi:string } |
| </MethodLink> | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Method](#r114) (in [series](#r229)) [47], | [method](#r112) (in [values](#r325)) [46] |

Annotation

Link to additional reference material on the method.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**MethodLink**](#r434)" type="xsi:string"/> |

element <NoDataValue>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r590) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r119) [49] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <NoDataValue | | |
|  | *Content:* | { xsi:string } |
| </NoDataValue> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

Numeric value used to encode no data values for this variable.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**NoDataValue**](#r590)" type="xsi:string"/> |

element <north>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Latitude](#r623) [145] |
| Content: | simple |
| Defined: | [locally](#r409) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r121) [49] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <north | | |
|  | *Content:* | { xsi:double } |
| </north> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 90.00 |
| MinInclusive: | -90.00 |

Included in content model of elements (1):

[latLonBox](#r91) [42]

Annotation

North Latitude

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**north**](#r409)" type="[**Latitude**](#r623)"/> |

element <note>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [NoteType](#r441) [111] |
| Content: | simple, 4 attributes |
| Defined: | locally at 6 [locations](#r124) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <note | | | |
|  | [href](#r702) | = | xsi:string |
|  | [show](#r703) | = | xsi:string |
|  | [title](#r704) | = | xsi:string |
|  | [type](#r439) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </note> | | | |

Included in content model of elements (6):

|  |  |
| --- | --- |
| [datasetInfo](#r36) [29],  [localSiteXY](#r102) (in [geoLocation](#r73)) [43],  [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [seriesCatalog](#r231) (in [site](#r239)) [71],  [siteInfo](#r250) (in [site](#r239)) [75],  [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Definition Locations

* Within global complexTypes (5):

[DataSetInfoType](#r385) [102], [QueryInfoType](#r471) [116], [SiteInfoType](#r508) [123], [VariableInfoType](#r602) [139], [seriesCatalogType](#r489) [120]

* Within anonymous complexTypes of elements (1):

[localSiteXY](#r102) (in [geoLocation](#r73)) [44]

Annotations (5) (by all definition locations)

**Location:**

within complexType [SiteInfoType](#r508) [123]

**Annotation:**

Additional information, like state, county, or other properties like HUC codes should be encoded in zero or more &lt;note&gt; elmements. The name of the property should be @title, and the value should be inside the <note>value</note>. Attribute @type is provided so that notes can be grouped.

**Location:**

within element [localSiteXY](#r102) [44]

**Annotation:**

Additional information should be encoded in zero or more note elmements. The name of the property should be @title, and the value should be inside the note value. Attribute @type is provided so that notes can be grouped.

**Location:**

within complexType [seriesCatalogType](#r489) [120]

**Annotation:**

Additional information, properties like should be encoded in zero or more In seriesCatalog note elements are placed at the top, to simplify human identification, since there can be tens, or hundred of series for a location. The name of the property should be @title, and the value should be inside the note element. Attribute @type is provided so that notes can be grouped.

**Locations:**

within complexType [VariableInfoType](#r602) [139], within complexType [QueryInfoType](#r471) [116]

**Annotation:**

Additional information, properties like should be encoded in zero or more &amp;lt;note&amp;gt; elmements. The name of the property should be @title, and the value should be inside the &lt;note&gt;value&lt;/note&gt;. Attribute @type is provided so that notes can be grouped.

**Location:**

within complexType [DataSetInfoType](#r385) [102]

**Annotation:**

Additional information, about a dataset, or other properties should be encoded in zero or more &amp;lt;note&amp;gt; elmements. The name of the property should be @title, and the value should be inside the &lt;note&gt;value&lt;/note&gt;. Attribute @type is provided so that notes can be grouped.

element <offset>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [OffsetType](#r452) [112] |
| Content: | complex, 1 attribute, 5 elements |
| Defined: | [locally](#r565) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r127) [51] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <offset | | | |
|  | [offsetTypeID](#r444) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [offsetValue](#r449), [offsetDescription](#r446), [units](#r450), [offsetIsVertical](#r448)?, [offsetHorizDirectionDegrees](#r447)? | | | |
| </offset> | | | |

Content model elements (5):

|  |  |
| --- | --- |
| [offsetDescription](#r130) (in [offset](#r128)) [51],  [offsetHorizDirectionDegrees](#r132) (in [offset](#r128)) [52],  [offsetIsVertical](#r134) (in [offset](#r128)) [52], | [offsetValue](#r136) (in [offset](#r128)) [53],  [units](#r314) [87] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Annotation

<offset> is of type OffsetType. offset lists full descriptive information for each of the measurement offsets. @offsetID is the link between offset, and values.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**offset**](#r565)" type="[**OffsetType**](#r452)"/> |

element <offsetDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r446) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r129) [52] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <offsetDescription | | |
|  | *Content:* | { xsi:string } |
| </offsetDescription> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Annotation

Full text description of the offset type. Field should be filled in with a complete text description of the offset that provides enough information to interpret the type of offset being used. For example, “Distance from stream bank” is ambiguous because it is not known which bank is being referred to.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="1" name="[**offsetDescription**](#r446)" type="xsi:string"/> |

element <offsetHorizDirectionDegrees>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:int |
| Content: | simple |
| Defined: | [locally](#r447) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r131) [52] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <offsetHorizDirectionDegrees | | |
|  | *Content:* | { xsi:int } |
| </offsetHorizDirectionDegrees> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Annotation

if offsetIsVertical=false, then this is the direction of the offset

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**offsetHorizDirectionDegrees**](#r447)" type="xsi:int"/> |

element <offsetIsVertical>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:boolean |
| Content: | simple |
| Defined: | [locally](#r448) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r133) [53] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <offsetIsVertical | | |
|  | *Content:* | { xsi:boolean } |
| </offsetIsVertical> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Default: | "true" |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Annotation

By default, the offset is vertical. If the offset is horizontal, then this becomes a direction, and distance from the observation point

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element default="true" maxOccurs="1" minOccurs="0" name="[**offsetIsVertical**](#r448)" type="xsi:boolean"/> |

element <offsetValue>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:float |
| Content: | simple |
| Defined: | [locally](#r449) within complexType [OffsetType](#r452) [113] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r135) [53] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <offsetValue | | |
|  | *Content:* | { xsi:float } |
| </offsetValue> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Annotation

offsetValue element is value of offset. If 0, then offset is not needed, and offsetTypeId should not be included on the dataValue

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="1" name="[**offsetValue**](#r449)" type="xsi:float"/> |

element <option>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r139) (extension of xsi:string) |
| Content: | simple, 3 [attributes](#r144) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r140) [54] |
| Includes: | definitions of 3 [attributes](#r144) |
| Used: | at 2 [locations](#r138) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <option | | | |
|  | [name](#r141) | = | xsi:normalizedString |
|  | [optionCode](#r142) | = | xsi:token |
|  | [optionID](#r143) | = | xsi:integer |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </option> | | | |

Included in content model of elements (2):

[optionGroup](#r149) [54], [options](#r155) [55]

Known Usage Locations

* Within anonymous complexTypes of elements (2):

[optionGroup](#r149) [55], [options](#r155) [56]

Annotation

Option elements are key-value pair elements that control how a variable maght be utilized in a service. Examples: MODIS web service. Information is aggreated over land or ocean or both. The plotarea option can include: plotarea=land, plotarea=land, plotarea=landocean USGS uses a statistic code, 0003, to repesent a value type of 'Average'. The USGS statistic codes also several options that do not fit the ODM data model.

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**option**](#r145)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**name**](#r141)" type="xsi:normalizedString"/>  <xsi:attribute name="[**optionID**](#r143)" type="xsi:integer"/>  <xsi:attribute name="[**optionCode**](#r142)" type="xsi:token"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r145) component only; 3/3)

name



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

optionCode



|  |  |
| --- | --- |
| Type: | xsi:token, predefined |
| Use: | optional |

optionID



|  |  |
| --- | --- |
| Type: | xsi:integer, predefined |
| Use: | optional |

element <optionGroup>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [element](#r148) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r146) [55] |
| Includes: | definition of 1 [element](#r148) |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <optionGroup> | |
|  | |  |  | | --- | --- | | *Content:* | [option](#r147)+ | |
| </optionGroup> | |

Content model elements (1):

[option](#r145) [53]

XML Source

|  |
| --- |
| <xsi:element name="[**optionGroup**](#r149)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="unbounded" ref="[**option**](#r145)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r149) component only; 1/1)

[option](#r145) [53]



|  |  |
| --- | --- |
| Type: | [anonymous](#r139) (extension of xsi:string), simple content |

Simple Content

|  |
| --- |
| xsi:string |

element <options>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [element](#r154) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r152) [56] |
| Includes: | definition of 1 [element](#r154) |
| Used: | at 1 [location](#r151) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <options> | |
|  | |  |  | | --- | --- | | *Content:* | [option](#r153)\* | |
| </options> | |

Content model elements (1):

[option](#r145) [53]

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Known Usage Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [139]

Annotation

A list of options. Option elements are key-value pair elements that control how a variable maght be utilized in a service. Examples: MODIS web service. Information is aggreated over land or ocean or both. The plotarea option can include: plotarea=land, plotarea=land, plotarea=landocean USGS uses a statistic code, 0003, to repesent a value type of 'Average'. The USGS statistic codes also several options that do not fit the ODM data model.

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:element name="[**options**](#r155)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="unbounded" minOccurs="0" ref="[**option**](#r145)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r155) component only; 1/1)

[option](#r145) [53]



|  |  |
| --- | --- |
| Type: | [anonymous](#r139) (extension of xsi:string), simple content |

Option elements are key-value pair elements that control how a variable maght be utilized in a service. Examples: MODIS web service. Information is aggreated over land or ocean or both. The plotarea option can include: plotarea=land, plotarea=land, plotarea=landocean USGS uses a statistic code, 0003, to repesent a value type of 'Average'. The USGS statistic codes also several options that do not fit the ODM data model.

Simple Content

|  |
| --- |
| xsi:string |

element <Organization>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r518) within complexType [SourceType](#r522) [125] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r156) [57] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Organization | | |
|  | *Content:* | { xsi:string } |
| </Organization> | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

Name of the organization that collected the data. This should be the agency or organization that collected the data, even if it came out of a database consolidated from many sources such as STORET. “Utah Division of Water Quality”

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Organization**](#r518)" type="xsi:string"/> |

element <parentID>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r158) (extension of xsi:string) |
| Content: | simple, 3 attributes |
| Defined: | [locally](#r203) within element [related](#r206) [66] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r159) [57] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <parentID | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [network](#r695) | = | xsi:string |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </parentID> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [related](#r206) (in [variable](#r333)) [65] |  |

Annotation

variableCode for the parent

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**parentID**](#r203)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

element <Phone>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r372) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r161) [58] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Phone | | |
|  | *Content:* | { xsi:string } |
| </Phone> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

phone

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**Phone**](#r372)" type="xsi:string"/> |

element <ProfileVersion>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r424) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r163) [58] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <ProfileVersion | | |
|  | *Content:* | { xsi:string } |
| </ProfileVersion> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

Name of metadata profile used by the data source

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**ProfileVersion**](#r424)" type="xsi:string"/> |

element <qualifier>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r167) (extension of xsi:string) |
| Content: | simple, 7 [attributes](#r171) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r168) [59] |
| Includes: | definitions of 2 [attributes](#r171) |
| Used: | at 1 [location](#r166) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <qualifier | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [network](#r695) | = | xsi:string |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | [qualifierCode](#r169) | = | xsi:token |
|  | [qualifierID](#r170) | = | xsi:integer |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </qualifier> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Known Usage Locations

* Within global complexTypes (1):

[TsValuesSingleVariableType](#r571) [134]

Annotation

qualifying comments that accompany the data

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**qualifier**](#r172)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**qualifierCode**](#r169)" type="xsi:token"/>  <xsi:attribute name="[**qualifierID**](#r170)" type="xsi:integer"/>  <xsi:attributeGroup ref="[**DbIdentifiers**](#r649)"/>  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r172) component only; 2/7)

qualifierCode



|  |  |
| --- | --- |
| Type: | xsi:token, predefined |
| Use: | optional |

qualifierID



|  |  |
| --- | --- |
| Type: | xsi:integer, predefined |
| Use: | optional |

element <qualifier>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 4 [attributes](#r175), 1 [element](#r177) |
| Defined: | [locally](#r454) within complexType [QualifiersType](#r456) [114] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r173) [60] |
| Includes: | definitions of 1 [attribute](#r175) and 1 [element](#r177) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <qualifier | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [network](#r695) | = | xsi:string |
|  | [qualifierID](#r174) | = | xsi:int |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [qualifierCode](#r176) | | | |
| </qualifier> | | | |

Content model elements (1):

|  |  |
| --- | --- |
| [qualifierCode](#r180) (in [qualifier](#r178) : anonymous) [61] |  |

Annotation

qualifying comments that accompany the data. value/@qaulifier is a space delimted list of qualifiers for a data value. @qualifierCode is the link to the value/@qualifier for a single value The value inside provides the textual description. @qualifierCode is the reference code. @qualifierCode=A qualifier value=Approved @vocabulary and @network are suggested. For example a value from the USGS may qualifiers from multiple vocabularies, and the network would be the data service.

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:element name="[**qualifier**](#r454)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**qualifierCode**](#r176)" type="xsi:token"/>  </xsi:sequence>  <xsi:attribute name="[**qualifierID**](#r174)" type="xsi:int"/>  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r178) component only; 1/4)

qualifierID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Content Element Detail (defined in [this](#r178) component only; 1/1)

[qualifierCode](#r180) [61]



|  |  |
| --- | --- |
| Type: | xsi:token, predefined, simple content |

Text code used by organization that collects the data. value/@qaulifier is a space delimted list of qualifiers for a data value. @qualifierCode is the link to the value/@qualifier for a single value

element <qualifierCode>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:token |
| Content: | simple |
| Defined: | [locally](#r176) within element [qualifier](#r178) [60] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r179) [61] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <qualifierCode | | |
|  | *Content:* | { xsi:token } |
| </qualifierCode> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [qualifier](#r178) (type anonymous) [60] |  |

Annotation

Text code used by organization that collects the data. value/@qaulifier is a space delimted list of qualifiers for a data value. @qualifierCode is the link to the value/@qualifier for a single value

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**qualifierCode**](#r176)" type="xsi:token"/> |

element <qualityControlLevel>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 6 [attributes](#r185), 1 [element](#r187) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r183) [62] |
| Includes: | definitions of 1 [attribute](#r185) and 1 [element](#r187) |
| Used: | at 1 [location](#r182) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <qualityControlLevel | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [network](#r695) | = | xsi:string |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | [qualityControlLevelCode](#r184) | = | xsi:string |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [qualityControlLevelID](#r186) | | | |
| </qualityControlLevel> | | | |

Content model elements (1):

|  |  |
| --- | --- |
| [qualityControlLevelID](#r192) (in [qualityControlLevel](#r188)) [63] |  |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Known Usage Locations

* Within global complexTypes (1):

[TsValuesSingleVariableType](#r571) [134]

Annotation

quality control levels that are used for versioning data within the database.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:element name="[**qualityControlLevel**](#r188)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**qualityControlLevelID**](#r186)" type="xsi:normalizedString"/>  </xsi:sequence>  <xsi:attribute name="[**qualityControlLevelCode**](#r184)" type="xsi:string"/>  <xsi:attributeGroup ref="[**DbIdentifiers**](#r649)"/>  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r188) component only; 1/6)

qualityControlLevelCode



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

Code used to identify the level of quality control to which data values have been subjected.

Content Element Detail (defined in [this](#r188) component only; 1/1)

[qualityControlLevelID](#r192) [63]



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined, simple content |

Unique integer identifying the quality control level.

element <QualityControlLevel>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [QualityControlLevelType](#r461) [114] |
| Content: | simple, 1 attribute |
| Defined: | [locally](#r221) within element [series](#r229) [70] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r189) [63] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <QualityControlLevel | | | |
|  | [qualityControlLevelID](#r459) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </QualityControlLevel> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69] |  |

Annotation

Code used to identify the level of quality control to which data values have been subjected.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**QualityControlLevel**](#r221)" type="[**QualityControlLevelType**](#r461)"/> |

element <qualityControlLevelID>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:normalizedString |
| Content: | simple |
| Defined: | [locally](#r186) within element [qualityControlLevel](#r188) [62] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r191) [63] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <qualityControlLevelID | | |
|  | *Content:* | { xsi:normalizedString } |
| </qualityControlLevelID> | | |

Included in content model of elements (1):

[qualityControlLevel](#r188) [61]

Annotation

Unique integer identifying the quality control level.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**qualityControlLevelID**](#r186)" type="xsi:normalizedString"/> |

element <queryInfo>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [QueryInfoType](#r471) [115] |
| Content: | complex, 6 elements |
| Defined: | locally at 3 [locations](#r193) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <queryInfo> | |
|  | |  |  | | --- | --- | | *Content:* | [creationTime](#r464)?, [queryURL](#r469)?, [querySQL](#r468)?, [criteria](#r465)?, [note](#r467)\*, [extension](#r466)? | |
| </queryInfo> | |

Content model elements (6):

|  |  |
| --- | --- |
| [creationTime](#r24) (in [queryInfo](#r195)) [27],  [criteria](#r30) (in [queryInfo](#r195)) [28],  [extension](#r62) [35], | [note](#r126) (type [NoteType](#r441)) [49],  [querySQL](#r197) (in [queryInfo](#r195)) [64],  [queryURL](#r199) (in [queryInfo](#r195)) [64] |

Included in content model of elements (3):

[sitesResponse](#r254) [76], [timeSeriesResponse](#r277) [81], [variablesResponse](#r354) [96]

Definition Locations

* Within global complexTypes (3):

[SiteInfoResponseType](#r495) [121], [TimeSeriesResponseType](#r542) [129], [VariablesResponseType](#r608) [141]

Annotations (3) (by all definition locations)

**Location:**

within complexType [SiteInfoResponseType](#r495) [121]

**Annotation:**

The parameter information passed to GetSiteInfo(site) or GetSites(site[]) should be placed in QueryInfoType/criteria/locationParam See QueryInfoType for more details.

**Location:**

within complexType [VariablesResponseType](#r608) [141]

**Annotation:**

the parameter information passed to GetVariableInfo(variable) should be placed in QueryInfoType/criteria/variableParam See QueryInfoType for more details.

**Location:**

within complexType [TimeSeriesResponseType](#r542) [129]

**Annotation:**

the parameter information passed to Getvalues(location,variable,beginDate,endDate) should be placed in QueryInfoType/criteria/ See QueryInfoType for more details.

element <querySQL>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r468) within complexType [QueryInfoType](#r471) [117] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r196) [64] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <querySQL | | |
|  | *Content:* | { xsi:string } |
| </querySQL> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Annotation

For debugging, the SQL used to generate this request may be placed in this element.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**querySQL**](#r468)" type="xsi:string"/> |

element <queryURL>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r469) within complexType [QueryInfoType](#r471) [117] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r198) [65] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <queryURL | | |
|  | *Content:* | { xsi:string } |
| </queryURL> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Annotation

The URL of the web page that was used as the original source for the response. Often requests scrap HTML pages. This should be the URL of that page. If the response is retreive from a rest URL. This is also a the location for the URL.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**queryURL**](#r469)" type="xsi:string"/> |

element <realTimeDataPeriod>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:duration |
| Content: | simple |
| Defined: | [locally](#r531) within complexType [TimePeriodRealTimeType](#r533) [128] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r200) [65] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <realTimeDataPeriod | | |
|  | *Content:* | { xsi:duration } |
| </realTimeDataPeriod> | | |

Annotation

Duration Data Type The duration data type is used to specify a time interval. The time interval is specified in the following form "PnYnMnDTnHnMnS" where: \* P indicates the period (required) \* nY indicates the number of years \* nM indicates the number of months \* nD indicates the number of days \* T indicates the start of a time section (required if you are going to specify hours, minutes, or seconds) \* nH indicates the number of hours \* nM indicates the number of minutes \* nS indicates the number of seconds

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**realTimeDataPeriod**](#r531)" type="xsi:duration"/> |

element <related>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 2 [elements](#r205) |
| Defined: | [locally](#r593) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r202) [66] |
| Includes: | definitions of 2 [elements](#r205) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <related> | |
|  | |  |  | | --- | --- | | *Content:* | ([parentID](#r203), [relatedID](#r204))+ | |
| </related> | |

Content model elements (2):

|  |  |
| --- | --- |
| [parentID](#r160) (in [related](#r206)) [57], | [relatedID](#r209) (in [related](#r206)) [67] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

This can be used to build up relationships between variables.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**related**](#r593)">  <xsi:complexType>  <xsi:sequence maxOccurs="unbounded">  <xsi:element name="[**parentID**](#r203)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  <xsi:element name="[**relatedID**](#r204)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r206) component only; 2/2)

[parentID](#r160) [57]



|  |  |
| --- | --- |
| Type: | [anonymous](#r158) (extension of xsi:string), simple content |

variableCode for the parent

Simple Content

|  |
| --- |
| xsi:string |

[relatedID](#r209) [67]



|  |  |
| --- | --- |
| Type: | [anonymous](#r207) (extension of xsi:string), simple content |

Child or other relationships can be encoded using the related element.

Simple Content

|  |
| --- |
| xsi:string |

element <relatedID>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r207) (extension of xsi:string) |
| Content: | simple, 3 attributes |
| Defined: | [locally](#r204) within element [related](#r206) [67] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r208) [67] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <relatedID | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [network](#r695) | = | xsi:string |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </relatedID> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [related](#r206) (in [variable](#r333)) [65] |  |

Annotation

Child or other relationships can be encoded using the related element.

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**relatedID**](#r204)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

element <sampleMedium>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SampleMediumEnum](#r632) [147] |
| Content: | simple |
| Defined: | locally at 2 [locations](#r211) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <sampleMedium | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </sampleMedium> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "Surface Water", "Ground Water", "Sediment", "Soil", "Air", "Tissue", "Precipitation", "Unknown", "Other", "Snow", "Not Relevant" |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Definition Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [139]

* Within anonymous complexTypes of elements (1):

[series](#r229) (in [seriesCatalog](#r231)) [71]

Annotations (2) (by all definition locations)

**Location:**

within element [series](#r229) [71]

**Annotation:**

The medium of the sample as listed in SampleTypeEnum

**Location:**

within complexType [VariableInfoType](#r602) [139]

**Annotation:**

Only terms from the SampleMediumEnume can be used to populate the sampleMedium element. A default value of “Unknown” is used where the sample medium is unknown.

element <SampleType>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [sampleTypeEnum](#r635) [148] |
| Content: | simple |
| Defined: | [locally](#r477) within complexType [SampleType](#r479) [118] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r214) [69] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <SampleType | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </SampleType> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "FD", "FF", "FL", "LF", "GW", "PB", "PD", "PE", "PI", "PW", "RE", "SE", "SR", "SS", "SW", "TE", "TI", "TW", "VE", "VI", "VW", "Grab", "Unknown", "No Sample" |

Annotation

Controlled vocabulary specifying the sample type from the SampleTypeEnum.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**SampleType**](#r477)" type="[**sampleTypeEnum**](#r635)"/> |

element <series>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 11 [elements](#r228) |
| Defined: | [locally](#r487) within complexType [seriesCatalogType](#r489) [120] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r216) [69] |
| Includes: | definitions of 11 [elements](#r228) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <series> | |
|  | |  |  | | --- | --- | | *Content:* | [dataType](#r217)?, [variable](#r226), [valueCount](#r224), [variableTimeInterval](#r227), [valueType](#r225)?, [generalCategory](#r219)?, [sampleMedium](#r222)?, [Method](#r220)?, [Source](#r223)?, [QualityControlLevel](#r221)?, [extension](#r218)? | |
| </series> | |

Content model elements (11):

|  |  |
| --- | --- |
| [dataType](#r42) (type [dataTypeEnum](#r614)) [30],  [extension](#r62) [35],  [generalCategory](#r66) (type [generalCategoryEnum](#r620)) [36],  [Method](#r114) (in [series](#r229)) [47],  [QualityControlLevel](#r190) (in [series](#r229)) [62],  [sampleMedium](#r213) (type [SampleMediumEnum](#r632)) [67], | [Source](#r258) (in [series](#r229)) [77],  [valueCount](#r323) (in [series](#r229)) [89],  [valueType](#r329) (type [valueTypeEnum](#r641)) [91],  [variable](#r333) (type [VariableInfoType](#r602)) [92],  [variableTimeInterval](#r356) (in [series](#r229)) [96] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [seriesCatalog](#r231) (in [site](#r239)) [71] |  |

Annotation

Separate data series are for the purposes of identifying or displaying what data are available at each site. Site information is a parent of the series so that it does not need to be repeated (difference from the ODM. ). A Site contains one or more seriesCatalogs which contain one or more series. Assotiated with site, a series is a unique combination of the textual repesentation of ODM series: Variable,Method,Source,QualityControlLevel. An ODM series is a unique site/variable combinations are defined by unique combinations of SiteID, VariableID, MethodID, SourceID, and QualityControlLevelID.

XML Source (w/o annotations (9))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**series**](#r487)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**dataType**](#r217)" type="[**dataTypeEnum**](#r614)"/>  <xsi:element name="[**variable**](#r226)" type="[**VariableInfoType**](#r602)"/>  <xsi:element name="[**valueCount**](#r224)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:int">  <xsi:attribute name="[**countIsEstimated**](#r321)" type="xsi:boolean"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  <xsi:element name="[**variableTimeInterval**](#r227)" type="[**TimePeriodType**](#r536)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**valueType**](#r225)" type="[**valueTypeEnum**](#r641)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**generalCategory**](#r219)" type="[**generalCategoryEnum**](#r620)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**sampleMedium**](#r222)" type="[**SampleMediumEnum**](#r632)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Method**](#r220)" type="[**MethodType**](#r436)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Source**](#r223)" type="[**SourceType**](#r522)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**QualityControlLevel**](#r221)" type="[**QualityControlLevelType**](#r461)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r229) component only; 11/11)

[dataType](#r42) [30]



|  |  |
| --- | --- |
| Type: | [dataTypeEnum](#r614) [142], simple content |

Text value that identifies the data as one of several types as found ing dataTypeEnum

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Continuous", "Instantaneous", "Cumulative", "Incremental", "Average", "Maximum", "Minimum", "Constant Over Interval", "Categorical", "Best Easy Systematic Estimator ", "Unknown", "Variance", "Median", "Mode", "Best Easy Systematic Estimator", "Standard Deviation", "Skewness", "Equivalent Mean", "Sporadic", "Unknown" |

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

[generalCategory](#r66) [36]



|  |  |
| --- | --- |
| Type: | [generalCategoryEnum](#r620) [144], simple content |

General category of the variable as listed in generalCategoryEnum

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Water Quality", "Climate", "Hydrology", "Geology", "Biota", "Unknown", "Instrumentation" |

[Method](#r114) [47]



|  |  |
| --- | --- |
| Type: | [MethodType](#r436) [109], complex content |

Method description. Optional, since many sources do not have detailed methods. ODM datasources require methods.

[QualityControlLevel](#r190) [62]



|  |  |
| --- | --- |
| Type: | [QualityControlLevelType](#r461) [114], simple content |

Code used to identify the level of quality control to which data values have been subjected.

Simple Content

|  |
| --- |
| xsi:string |

[sampleMedium](#r213) [67]



|  |  |
| --- | --- |
| Type: | [SampleMediumEnum](#r632) [147], simple content |

The medium of the sample as listed in SampleTypeEnum

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Surface Water", "Ground Water", "Sediment", "Soil", "Air", "Tissue", "Precipitation", "Unknown", "Other", "Snow", "Not Relevant" |

[Source](#r258) [77]



|  |  |
| --- | --- |
| Type: | [SourceType](#r522) [124], complex content |

Source of the data values and reference information to recover/discover the data from the source.

[valueCount](#r323) [89]



|  |  |
| --- | --- |
| Type: | [anonymous](#r319) (extension of xsi:int), simple content |

Simple Content

|  |
| --- |
| xsi:int |

[valueType](#r329) [91]



|  |  |
| --- | --- |
| Type: | [valueTypeEnum](#r641) [150], simple content |

Text value indicating what type of data value is being recorded as listed in valueTypeEnum

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Field Observation", "Sample", "Model Simulation Result", "Derived Value", "Unknown" |

[variable](#r333) [92]



|  |  |
| --- | --- |
| Type: | [VariableInfoType](#r602) [137], complex content |

[variableTimeInterval](#r356) [96]



|  |  |
| --- | --- |
| Type: | [TimePeriodType](#r536) [128], empty content |

this describes the time period that ana variable or observed parameter are available for. This is of TimePeriodType, which is presently: TimeIntervalType - definite begin and end TimeSingleType - single observation/datavalue TimePeriodRealTime - a floating time period for when data is available. This will have a xml schema type attribute: xsi:type="TimeIntervalType" xsi:type="TimeSingleType" xsi:type="TimePeriodRealTime"

element <seriesCatalog>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [seriesCatalogType](#r489) [118] |
| Content: | complex, 2 attributes, 3 elements |
| Defined: | [locally](#r236) within element [site](#r239) [73] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r230) [72] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <seriesCatalog | | | |
|  | [menuGroupName](#r482) | = | xsi:string |
|  | [serviceWsdl](#r483) | = | xsi:anyURI |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [note](#r486)\*, [series](#r487)\*, [extension](#r485)? | | | |
| </seriesCatalog> | | | |

Content model elements (3):

|  |  |
| --- | --- |
| [extension](#r62) [35],  [note](#r126) (type [NoteType](#r441)) [49], | [series](#r229) (in [seriesCatalog](#r231)) [69] |

Included in content model of elements (1):

[site](#r239) [72]

XML Source

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**seriesCatalog**](#r236)" type="[**seriesCatalogType**](#r489)"/> |

element <site>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 3 [elements](#r238) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r234) [73] |
| Includes: | definitions of 3 [elements](#r238) |
| Used: | at 1 [location](#r233) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <site> | |
|  | |  |  | | --- | --- | | *Content:* | [siteInfo](#r237), [seriesCatalog](#r236)\*, [extension](#r235)? | |
| </site> | |

Content model elements (3):

|  |  |
| --- | --- |
| [extension](#r62) [35],  [seriesCatalog](#r231) (in [site](#r239)) [71], | [siteInfo](#r250) (in [site](#r239)) [75] |

Included in content model of elements (1):

[sitesResponse](#r254) [76]

Known Usage Locations

* Within global complexTypes (1):

[SiteInfoResponseType](#r495) [121]

Annotation

A site element can have two parts: siteInfo, and one or more seriesCatalogs. The siteInfo element contains the basic site information, siteName, location, siteCodes, properties. The seriesCatalog contains the list of observation series conducted at a site. Rules: GetSites(site[]) or GetSites(null), return no seriesCatalogs elements GetSiteInfo(site) return all information about a site, including the seriesCatalog.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:element name="[**site**](#r239)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**siteInfo**](#r237)" type="[**SiteInfoType**](#r508)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**seriesCatalog**](#r236)" type="[**seriesCatalogType**](#r489)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r239) component only; 3/3)

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in extension element

[seriesCatalog](#r231) [71]



|  |  |
| --- | --- |
| Type: | [seriesCatalogType](#r489) [118], complex content |

[siteInfo](#r250) [75]



|  |  |
| --- | --- |
| Type: | [SiteInfoType](#r508) [121], complex content |

siteInfo element contains a list of information about a site. See SiteInfoType

element <siteCode>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r240) (extension of xsi:string) |
| Content: | simple, 5 [attributes](#r247) |
| Defined: | [locally](#r503) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r241) [74] |
| Includes: | definitions of 5 [attributes](#r247) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <siteCode | | | |
|  | [agencyCode](#r242) | = | xsi:normalizedString |
|  | [agencyName](#r243) | = | xsi:normalizedString |
|  | [defaultId](#r244) | = | xsi:boolean |
|  | [network](#r245) | = | xsi:normalizedString |
|  | [siteID](#r246) | = | xsi:normalizedString |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </siteCode> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

A &lt;siteCode&gt; is an identifier that this site is referred to as. This Code used by organization that collects the data to identify the site. A siteCode has a reference to it's source or network as the @network. For waterWebServices, a site/location is the network plus the value of the sitecode, eg '@network:siteCode' siteCode identifiers often change, so multiple siteCode elements are allowed There may be multiple siteCode elements. Only one should be labeled as the default using @defaultID (set attribute defaultID=true) Multiple siteCode elements can utilize different observation networks may refer to the same site with different identifiers.

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (6))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" name="[**siteCode**](#r503)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**defaultId**](#r244)" type="xsi:boolean"/>  <xsi:attribute name="[**network**](#r245)" type="xsi:normalizedString" use="required"/>  <xsi:attribute name="[**siteID**](#r246)" type="xsi:normalizedString"/>  <xsi:attribute name="[**agencyCode**](#r242)" type="xsi:normalizedString"/>  <xsi:attribute name="[**agencyName**](#r243)" type="xsi:normalizedString"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r248) component only; 5/5)

agencyCode



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

Code used to differentiate sites in a datasource. Agency codes are specific to a data source, and are not required nor do they need to be understood by a web service client.

agencyName



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

optional name to provide more detail about an agency code

defaultId



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

True if this is the main identifier that this service uses to access this site. default value is false.

network



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | required |

The abbreviation for the datasource or observation network that this site code is associated with. A siteCode has a reference to it's source or network as the @network. For waterWebServices, a site/location is the network plus the value of the sitecode, eg '@network:siteCode'

siteID



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

An internal numeric identifier of the site.

element <siteInfo>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SiteInfoType](#r508) [121] |
| Content: | complex, 2 attributes, 9 elements |
| Defined: | [locally](#r237) within element [site](#r239) [73] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r249) [75] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <siteInfo | | | |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [siteName](#r504), [siteCode](#r503)+, [timeZoneInfo](#r505)?, [geoLocation](#r501)?, [elevation\_m](#r499)?, [verticalDatum](#r506)?, [note](#r502)\*, [extension](#r500)?, [altname](#r498)\* | | | |
| </siteInfo> | | | |

Content model elements (9):

|  |  |
| --- | --- |
| [altname](#r13) (in [siteInfo](#r250)) [24],  [elevation\_m](#r50) (in [siteInfo](#r250)) [33],  [extension](#r62) [35],  [geoLocation](#r73) (in [siteInfo](#r250)) [37],  [note](#r126) (type [NoteType](#r441)) [49], | [siteCode](#r248) (in [siteInfo](#r250)) [73],  [siteName](#r252) (in [siteInfo](#r250)) [75],  [timeZoneInfo](#r295) [83],  [verticalDatum](#r358) (in [siteInfo](#r250)) [97] |

Included in content model of elements (1):

[site](#r239) [72]

Annotation

siteInfo element contains a list of information about a site. See SiteInfoType

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**siteInfo**](#r237)" type="[**SiteInfoType**](#r508)"/> |

element <siteName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r504) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r251) [76] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <siteName | | |
|  | *Content:* | { xsi:string } |
| </siteName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

Full name of the sampling site. eg “LOGAN RIVER ABOVE STATE DAM, NEAR LOGAN,UT”

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**siteName**](#r504)" type="xsi:string"/> |

element <sitesResponse>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SiteInfoResponseType](#r495) [120] |
| Content: | complex, 2 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r253) [76] |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <sitesResponse> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r492)?, [site](#r493)\* | |
| </sitesResponse> | |

Content model elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [site](#r239) [72] |

XML Source

|  |
| --- |
| <xsi:element name="[**sitesResponse**](#r254)" type="[**SiteInfoResponseType**](#r495)"/> |

element <source>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SourceType](#r522) [124] |
| Content: | complex, 1 attribute, 5 elements |
| Defined: | [locally](#r568) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r255) [77] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <source | | | |
|  | [sourceID](#r514) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [Organization](#r518)?, [SourceDescription](#r519)?, [Metadata](#r517)?, [ContactInformation](#r516)?, [SourceLink](#r520)? | | | |
| </source> | | | |

Content model elements (5):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26],  [Metadata](#r108) (type [MetaDataType](#r428)) [45],  [Organization](#r157) (type xsi:string) [56], | [SourceDescription](#r260) (type xsi:string) [77],  [SourceLink](#r264) (type xsi:anyURI) [78] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Annotation

The Sources the original sources of the data, providing information sufficient to retrieve the data value. @sourceID is the link bewteen source the values.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**source**](#r568)" type="[**SourceType**](#r522)"/> |

element <Source>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SourceType](#r522) [124] |
| Content: | complex, 1 attribute, 5 elements |
| Defined: | [locally](#r223) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r257) [77] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <Source | | | |
|  | [sourceID](#r514) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [Organization](#r518)?, [SourceDescription](#r519)?, [Metadata](#r517)?, [ContactInformation](#r516)?, [SourceLink](#r520)? | | | |
| </Source> | | | |

Content model elements (5):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26],  [Metadata](#r108) (type [MetaDataType](#r428)) [45],  [Organization](#r157) (type xsi:string) [56], | [SourceDescription](#r260) (type xsi:string) [77],  [SourceLink](#r264) (type xsi:anyURI) [78] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69] |  |

Annotation

Source of the data values and reference information to recover/discover the data from the source.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Source**](#r223)" type="[**SourceType**](#r522)"/> |

element <SourceDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r519) within complexType [SourceType](#r522) [126] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r259) [78] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <SourceDescription | | |
|  | *Content:* | { xsi:string } |
| </SourceDescription> | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

Full text description of the source of the data. “Text file retrieved from the EPA STORET system indicating data originally from Utah Division of Water Quality”

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**SourceDescription**](#r519)" type="xsi:string"/> |

element <sourceInfo>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [SourceInfoType](#r511) [124] |
| Content: | empty |
| Defined: | [locally](#r547) within complexType [TimeSeriesType](#r551) [131] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r261) [78] |

|  |
| --- |
| XML Representation Summary |
| <sourceInfo/> |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |  |

XML Source

|  |
| --- |
| <xsi:element name="[**sourceInfo**](#r547)" type="[**SourceInfoType**](#r511)"/> |

element <SourceLink>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:anyURI |
| Content: | simple |
| Defined: | [locally](#r520) within complexType [SourceType](#r522) [126] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r263) [78] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <SourceLink | | |
|  | *Content:* | { xsi:anyURI } |
| </SourceLink> | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

Link that can be pointed at the original data file and/or associated metadata stored in the digital library or URL of data source.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**SourceLink**](#r520)" type="xsi:anyURI"/> |

element <south>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Latitude](#r623) [145] |
| Content: | simple |
| Defined: | [locally](#r410) within complexType [LatLonBoxType](#r413) [106] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r265) [79] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <south | | |
|  | *Content:* | { xsi:double } |
| </south> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 90.00 |
| MinInclusive: | -90.00 |

Included in content model of elements (1):

[latLonBox](#r91) [42]

Annotation

South Latitude

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**south**](#r410)" type="[**Latitude**](#r623)"/> |

element <timeInterval>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:int |
| Content: | simple |
| Defined: | [locally](#r283) within element [timeSupport](#r286) [83] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r267) [79] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <timeInterval | | |
|  | *Content:* | { xsi:int } |
| </timeInterval> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeSupport](#r286) (in [variable](#r333)) [82] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**timeInterval**](#r283)" type="xsi:int"/> |

element <timeParam>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 2 [elements](#r272) |
| Defined: | [locally](#r27) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r269) [80] |
| Includes: | definitions of 2 [elements](#r272) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <timeParam> | |
|  | |  |  | | --- | --- | | *Content:* | [beginDateTime](#r270)?, [endDateTime](#r271)? | |
| </timeParam> | |

Content model elements (2):

|  |  |
| --- | --- |
| [beginDateTime](#r15) (in [timeParam](#r273)) [25], | [endDateTime](#r54) (in [timeParam](#r273)) [34] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [criteria](#r30) (in [queryInfo](#r195)) [28] |  |

Annotation

the begin and end time of the GetValues request used to generate a timeSeriesResponse.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**timeParam**](#r27)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**beginDateTime**](#r270)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**endDateTime**](#r271)" type="xsi:string"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r273) component only; 2/2)

[beginDateTime](#r15) [25]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

The string submited as startDate to the GetValues method

[endDateTime](#r54) [34]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

The string submited a startDate to the GetValues method

element <timeSeries>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [TimeSeriesType](#r551) [130] |
| Content: | complex, 1 attribute, 3 elements |
| Defined: | [locally](#r540) within complexType [TimeSeriesResponseType](#r542) [129] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r274) [81] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <timeSeries | | | |
|  | [name](#r545) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [sourceInfo](#r547), [variable](#r549), [values](#r548) | | | |
| </timeSeries> | | | |

Content model elements (3):

|  |  |
| --- | --- |
| [sourceInfo](#r262) (in [timeSeries](#r275)) [78],  [values](#r325) (in [timeSeries](#r275)) [90], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Included in content model of elements (1):

[timeSeriesResponse](#r277) [81]

Annotation

Contains the source of the time series, the variable, and values element which is an array of value elements and thier associated metadata (qualifiers, methods, sources, quality control level, samples)

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**timeSeries**](#r540)" type="[**TimeSeriesType**](#r551)"/> |

element <timeSeriesResponse>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [TimeSeriesResponseType](#r542) [129] |
| Content: | complex, 2 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r276) [81] |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <timeSeriesResponse> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r539)?, [timeSeries](#r540) | |
| </timeSeriesResponse> | |

Content model elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |

XML Source

|  |
| --- |
| <xsi:element name="[**timeSeriesResponse**](#r277)" type="[**TimeSeriesResponseType**](#r542)"/> |

element <timeSingle>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:dateTime |
| Content: | simple |
| Defined: | [locally](#r555) within complexType [TimeSingleType](#r557) [132] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r278) [82] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <timeSingle | | |
|  | *Content:* | { xsi:dateTime } |
| </timeSingle> | | |

XML Source

|  |
| --- |
| <xsi:element name="[**timeSingle**](#r555)" type="xsi:dateTime"/> |

element <timeSupport>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [attribute](#r282), 2 [elements](#r285) |
| Nillable: | (can be declared as nil using xsi:nil attribute in instance XML documents) |
| Defined: | [locally](#r595) within complexType [VariableInfoType](#r602) [139] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r280) [82] |
| Includes: | definitions of 1 [attribute](#r282) and 2 [elements](#r285) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <timeSupport | | | |
|  | [isRegular](#r281) | = | xsi:boolean |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [unit](#r284)?, [timeInterval](#r283)? | | | |
| </timeSupport> | | | |

Content model elements (2):

|  |  |
| --- | --- |
| [timeInterval](#r268) (in [timeSupport](#r286)) [79], | [unit](#r303) (in [timeSupport](#r286)) [85] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

Element containing the time support (or temporal footprint) of the data values. @isRegular indicates if the spacing is regular. In waterML 1.0, there is a divergence of mean between ODM, and WaterML. WaterML only communcates the regularity, and the spacing of the observations (timeInterval). Whereas timesupport in the ODM is associated with the dataType, and time support. This will be addressed in 1.1

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**timeSupport**](#r595)" nillable="true">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**unit**](#r284)" type="[**UnitsType**](#r581)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**timeInterval**](#r283)" type="xsi:int"/>  </xsi:sequence>  <xsi:attribute name="[**isRegular**](#r281)" type="xsi:boolean"/>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r286) component only; 1/1)

isRegular



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

Content Element Detail (defined in [this](#r286) component only; 2/2)

[timeInterval](#r268) [79]



|  |  |
| --- | --- |
| Type: | xsi:int, predefined, simple content |

[unit](#r303) [85]



|  |  |
| --- | --- |
| Type: | [UnitsType](#r581) [134], complex content |

element <timeZoneInfo>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [attribute](#r291), 2 [elements](#r294) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r289) [83] |
| Includes: | definitions of 1 [attribute](#r291) and 2 [elements](#r294) |
| Used: | at 2 [locations](#r288) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <timeZoneInfo | | | |
|  | [siteUsesDaylightSavingsTime](#r290) | = | xsi:boolean : "false" |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [defaultTimeZone](#r293)?, [daylightSavingsTimeZone](#r292)? | | | |
| </timeZoneInfo> | | | |

Content model elements (2):

|  |  |
| --- | --- |
| [daylightSavingsTimeZone](#r44) (in [timeZoneInfo](#r295)) [31], | [defaultTimeZone](#r46) (in [timeZoneInfo](#r295)) [32] |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [datasetInfo](#r36) [29], | [siteInfo](#r250) (in [site](#r239)) [75] |

Known Usage Locations

* Within global complexTypes (2):

[DataSetInfoType](#r385) [102], [SiteInfoType](#r508) [123]

Annotation

The default time zone for this site (+00:00) and if this site shifts to daylight savings time (attribute: usesDaylightSavingsTime)

XML Source (w/o annotations (4))

|  |
| --- |
| <xsi:element name="[**timeZoneInfo**](#r295)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**defaultTimeZone**](#r293)">  <xsi:complexType>  <xsi:attributeGroup ref="[**timeZoneAttr**](#r666)"/>  </xsi:complexType>  </xsi:element>  <xsi:element maxOccurs="1" minOccurs="0" name="[**daylightSavingsTimeZone**](#r292)">  <xsi:complexType>  <xsi:attributeGroup ref="[**timeZoneAttr**](#r666)"/>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  <xsi:attribute default="false" name="[**siteUsesDaylightSavingsTime**](#r290)" type="xsi:boolean" use="optional"/>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r295) component only; 1/1)

siteUsesDaylightSavingsTime



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

If the location shifts it's data sources to Daylight Savings Time, this flag should be true.

Attribute Value

|  |  |
| --- | --- |
| Default: | "false" |

Content Element Detail (defined in [this](#r295) component only; 2/2)

[daylightSavingsTimeZone](#r44) [31]



|  |  |
| --- | --- |
| Type: | anonymous, empty content |

The daylight savings time zone for a site, specified in hours and minutes: "hh:mm"

[defaultTimeZone](#r46) [32]



|  |  |
| --- | --- |
| Type: | anonymous, empty content |

The default time zone for a site, specified in hours and minutes: "hh:mm"

element <Title>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r425) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r296) [84] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Title | | |
|  | *Content:* | { xsi:string } |
| </Title> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

Title of data from a specific data source. Title field should be populated with a brief text description of what the referenced data represent. This field can be populated with “Unknown” if there is no title for the data.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Title**](#r425)" type="xsi:string"/> |

element <TopicCategory>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r426) within complexType [MetaDataType](#r428) [109] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r298) [85] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <TopicCategory | | |
|  | *Content:* | { xsi:string } |
| </TopicCategory> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

Topic category keyword that gives the broad ISO19115 metadata topic category for data from this source. The controlled vocabulary of topic category keywords is given in the TopicCategoryCV table.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**TopicCategory**](#r426)" type="xsi:string"/> |

element <TypeOfContact>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r373) within complexType [ContactInformationType](#r375) [100] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r300) [85] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <TypeOfContact | | |
|  | *Content:* | { xsi:string } |
| </TypeOfContact> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

Type of contact, in open terms: Project Contact Data source contact HIS Admin Data Source Admin Data Base Admin

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**TypeOfContact**](#r373)" type="xsi:string"/> |

element <unit>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [UnitsType](#r581) [134] |
| Content: | complex, 1 attribute, 4 elements |
| Defined: | [locally](#r284) within element [timeSupport](#r286) [83] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r302) [86] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <unit | | | |
|  | [UnitID](#r574) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [UnitName](#r578)?, [UnitDescription](#r577)?, [UnitType](#r579)?, [UnitAbbreviation](#r576)? | | | |
| </unit> | | | |

Content model elements (4):

|  |  |
| --- | --- |
| [UnitAbbreviation](#r305) (in [unit](#r303)) [86],  [UnitDescription](#r307) (in [unit](#r303)) [86], | [UnitName](#r309) (in [unit](#r303)) [87],  [UnitType](#r316) (in [unit](#r303)) [88] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeSupport](#r286) (in [variable](#r333)) [82] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**unit**](#r284)" type="[**UnitsType**](#r581)"/> |

element <UnitAbbreviation>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r576) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r304) [86] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <UnitAbbreviation | | |
|  | *Content:* | { xsi:string } |
| </UnitAbbreviation> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitAbbreviation**](#r576)" type="xsi:string"/> |

element <UnitDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r577) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r306) [87] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <UnitDescription | | |
|  | *Content:* | { xsi:string } |
| </UnitDescription> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitDescription**](#r577)" type="xsi:string"/> |

element <UnitName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r578) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r308) [87] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <UnitName | | |
|  | *Content:* | { xsi:string } |
| </UnitName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitName**](#r578)" type="xsi:string"/> |

element <units>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r312) (extension of xsi:string) |
| Content: | simple, 3 attributes |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r313) [88] |
| Used: | at 2 [locations](#r311) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <units | | | |
|  | [unitsAbbreviation](#r671) | = | xsi:normalizedString |
|  | [unitsCode](#r672) | = | xsi:token |
|  | [unitsType](#r673) | = | ("Angle" | "Area" | "Dimensionless" | "Energy" | "Energy Flux" | "Flow" | "Force" | "Frequency" | "Length" | "Light" | "Mass" | "Permeability" | "Power" | "Pressure/Stress" | "Resolution" | "Scale" | "Temperature" | "Time" | "Velocity" | "Volume") |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </units> | | | |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Known Usage Locations

* Within global complexTypes (2):

[OffsetType](#r452) [113], [VariableInfoType](#r602) [139]

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source

|  |
| --- |
| <xsi:element name="[**units**](#r314)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**unitsAttr**](#r675)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

element <UnitType>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [UnitsTypeEnum](#r638) [149] |
| Content: | simple |
| Defined: | [locally](#r579) within complexType [UnitsType](#r581) [135] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r315) [88] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <UnitType | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </UnitType> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "Angle", "Area", "Dimensionless", "Energy", "Energy Flux", "Flow", "Force", "Frequency", "Length", "Light", "Mass", "Permeability", "Power", "Pressure/Stress", "Resolution", "Scale", "Temperature", "Time", "Velocity", "Volume" |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitType**](#r579)" type="[**UnitsTypeEnum**](#r638)"/> |

element <value>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [ValueSingleVariable](#r584) [135] |
| Content: | simple, 17 attributes |
| Defined: | [locally](#r569) within complexType [TsValuesSingleVariableType](#r571) [134] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r317) [89] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <value | | | |
|  | [accuracyStdDev](#r679) | = | xsi:double |
|  | [censorCode](#r680) | = | ("lt" | "gt" | "nc" | "nd" | "pnq") |
|  | [codedVocabulary](#r681) | = | xsi:boolean |
|  | [codedVocabularyTerm](#r682) | = | xsi:string |
|  | [dateTime](#r683) | = | xsi:dateTime |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [methodID](#r684) | = | xsi:int |
|  | [offsetDescription](#r653) | = | xsi:string |
|  | [offsetTypeID](#r654) | = | xsi:int |
|  | [offsetUnitsAbbreviation](#r655) | = | xsi:string |
|  | [offsetUnitsCode](#r656) | = | xsi:string |
|  | [offsetValue](#r657) | = | xsi:double |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | [qualifiers](#r685) | = | xsi:string |
|  | [qualityControlLevel](#r686) | = | ("Raw data" | "Quality controlled data" | "Derived products" | "Interpreted products" | "Knowledge products" | "Unknown") |
|  | [sampleID](#r687) | = | xsi:int |
|  | [sourceID](#r688) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:decimal } | | | |
| </value> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Annotation

Multiple <value>s represent the data series.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element maxOccurs="unbounded" minOccurs="1" name="[**value**](#r569)" type="[**ValueSingleVariable**](#r584)"/> |

element <valueCount>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r319) (extension of xsi:int) |
| Content: | simple, 1 [attribute](#r322) |
| Defined: | [locally](#r224) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r320) [90] |
| Includes: | definition of 1 [attribute](#r322) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <valueCount | | | |
|  | [countIsEstimated](#r321) | = | xsi:boolean |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:int } | | | |
| </valueCount> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69] |  |

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:int  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:int |

XML Source

|  |
| --- |
| <xsi:element name="[**valueCount**](#r224)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:int">  <xsi:attribute name="[**countIsEstimated**](#r321)" type="xsi:boolean"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r323) component only; 1/1)

countIsEstimated



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

element <values>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [TsValuesSingleVariableType](#r571) [132] |
| Content: | complex, 6 attributes, 6 elements |
| Defined: | [locally](#r548) within complexType [TimeSeriesType](#r551) [131] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r324) [91] |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <values | | | |
|  | [count](#r560) | = | xsi:nonNegativeInteger |
|  | [timeZoneShiftApplied](#r561) | = | xsi:boolean |
|  | [unitsAbbreviation](#r671) | = | xsi:normalizedString |
|  | [unitsAreConverted](#r562) | = | xsi:boolean : "false" |
|  | [unitsCode](#r672) | = | xsi:token |
|  | [unitsType](#r673) | = | ("Angle" | "Area" | "Dimensionless" | "Energy" | "Energy Flux" | "Flow" | "Force" | "Frequency" | "Length" | "Light" | "Mass" | "Permeability" | "Power" | "Pressure/Stress" | "Resolution" | "Scale" | "Temperature" | "Time" | "Velocity" | "Volume") |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [value](#r569)+, [qualifier](#r566)\*, [qualityControlLevel](#r567)\*, [method](#r564)\*, [source](#r568)\*, [offset](#r565)\* | | | |
| </values> | | | |

Content model elements (6):

|  |  |
| --- | --- |
| [method](#r112) (in [values](#r325)) [46],  [offset](#r128) (in [values](#r325)) [51],  [qualifier](#r172) [58], | [qualityControlLevel](#r188) [61],  [source](#r256) (in [values](#r325)) [76],  [value](#r318) (in [values](#r325)) [88] |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |  |

Annotation

A list of values and associated metadata. It is the values element in the timeSerissResponse

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**values**](#r548)" type="[**TsValuesSingleVariableType**](#r571)"/> |

element <valueType>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [valueTypeEnum](#r641) [150] |
| Content: | simple |
| Defined: | locally at 2 [locations](#r327) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <valueType | | |
|  | *Content:* | { *enumeration of* xsi:string } |
| </valueType> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| Enumeration: | "Field Observation", "Sample", "Model Simulation Result", "Derived Value", "Unknown" |

Included in content model of elements (2):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

Definition Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [140]

* Within anonymous complexTypes of elements (1):

[series](#r229) (in [seriesCatalog](#r231)) [71]

Annotations (2) (by all definition locations)

**Location:**

within complexType [VariableInfoType](#r602) [140]

**Annotation:**

Text value indicating what type of data value is being recorded. For 1.0 this must be from the valueTypeEnum type. A default value of “Unknown” can be used where the value type is unknown.

**Location:**

within element [series](#r229) [71]

**Annotation:**

Text value indicating what type of data value is being recorded as listed in valueTypeEnum

element <variable>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [VariableInfoType](#r602) [137] |
| Content: | complex, 2 attributes, 14 elements |
| Defined: | locally at 3 [locations](#r331) in [cuahsiTimeSeries\_v1\_0.xsd](#r7) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <variable | | | |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [variableCode](#r598)+, [variableName](#r600)?, [variableDescription](#r599)?, [valueType](#r597)?, [dataType](#r587)?, [generalCategory](#r589)?, [sampleMedium](#r594)?, [units](#r596)?, [options](#r592)?, [note](#r591)\*, [related](#r593)?, [extension](#r588)?, [NoDataValue](#r590)?, [timeSupport](#r595)? | | | |
| </variable> | | | |

Content model elements (14):

|  |  |
| --- | --- |
| [dataType](#r42) (type [dataTypeEnum](#r614)) [30],  [extension](#r62) [35],  [generalCategory](#r66) (type [generalCategoryEnum](#r620)) [36],  [NoDataValue](#r120) (in [variable](#r333)) [48],  [note](#r126) (type [NoteType](#r441)) [49],  [options](#r155) [55],  [related](#r206) (in [variable](#r333)) [65], | [sampleMedium](#r213) (type [SampleMediumEnum](#r632)) [67],  [timeSupport](#r286) (in [variable](#r333)) [82],  [units](#r314) [87],  [valueType](#r329) (type [valueTypeEnum](#r641)) [91],  [variableCode](#r340) [93],  [variableDescription](#r342) (in [variable](#r333)) [94],  [variableName](#r344) (in [variable](#r333)) [94] |

Included in content model of elements (3):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69],  [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80], | [variables](#r352) [95] |

Definition Locations

* Within global complexTypes (1):

[TimeSeriesType](#r551) [131]

* Within anonymous complexTypes of elements (2):

[series](#r229) (in [seriesCatalog](#r231)) [71], [variables](#r352) [96]

Annotations (2) (by all definition locations)

**Location:**

within element [variables](#r352) [96]

**Annotation:**

zero or more variable elements are contained in a variables element. See VariableInfoType for more details on the information in the variable element

**Location:**

within complexType [TimeSeriesType](#r551) [131]

**Annotation:**

Contains full descriptive information about a variable, as described by the ODM. This includes one or more variable codes, the short variable name, a detailed variable description, and suggest. See VariableInforType for full details.

element <variableCode>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [anonymous](#r336) (extension of xsi:token) |
| Content: | simple, 4 [attributes](#r339) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r337) [93] |
| Includes: | definition of 1 [attribute](#r339) |
| Used: | at 1 [location](#r335) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <variableCode | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [network](#r695) | = | xsi:string |
|  | [variableID](#r338) | = | xsi:integer |
|  | [vocabulary](#r696) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:token } | | | |
| </variableCode> | | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Known Usage Locations

* Within global complexTypes (1):

[VariableInfoType](#r602) [140]

Annotation

Text code used by the organization that collects the data to identify the variable. The attribute @vocabulary must be set to the data source name, so the clients can subbumit variable requests to a web service (net USGS discharge variableCode @vocabularyk=NWISDV @default=true “00060”

Anonymous Type Detail

|  |
| --- |
| Type Derivation Tree  xsi:token  **complexType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:token |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**variableCode**](#r340)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:token">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  <xsi:attribute name="[**variableID**](#r338)" type="xsi:integer"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element> |

Attribute Detail (defined in [this](#r340) component only; 1/4)

variableID



|  |  |
| --- | --- |
| Type: | xsi:integer, predefined |
| Use: | optional |

element <variableDescription>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r599) within complexType [VariableInfoType](#r602) [140] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r341) [94] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <variableDescription | | |
|  | *Content:* | { xsi:string } |
| </variableDescription> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

A detailed description of the variable. May include processing information and other details.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**variableDescription**](#r599)" type="xsi:string"/> |

element <variableName>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r600) within complexType [VariableInfoType](#r602) [140] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r343) [94] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <variableName | | |
|  | *Content:* | { xsi:string } |
| </variableName> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

A brief name of the variable that could be shown in a menu

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**variableName**](#r600)" type="xsi:string"/> |

element <variableParam>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r28) within element [criteria](#r30) [28] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r345) [95] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <variableParam | | |
|  | *Content:* | { xsi:string } |
| </variableParam> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [criteria](#r30) (in [queryInfo](#r195)) [28] |  |

Annotation

the variable paramter passed into the service

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element minOccurs="0" name="[**variableParam**](#r28)" type="xsi:string"/> |

element <variables>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | anonymous complexType |
| Content: | complex, 1 [element](#r351) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r349) [96] |
| Includes: | definition of 1 [element](#r351) |
| Used: | at 1 [location](#r348) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <variables> | |
|  | |  |  | | --- | --- | | *Content:* | [variable](#r350)\* | |
| </variables> | |

Content model elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Included in content model of elements (1):

[variablesResponse](#r354) [96]

Known Usage Locations

* Within global complexTypes (1):

[VariablesResponseType](#r608) [141]

Annotation

variables is a list of variable elements (VariableInfoType).

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:element name="[**variables**](#r352)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**variable**](#r350)" type="[**VariableInfoType**](#r602)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element> |

Content Element Detail (defined in [this](#r352) component only; 1/1)

[variable](#r333) [92]



|  |  |
| --- | --- |
| Type: | [VariableInfoType](#r602) [137], complex content |

zero or more variable elements are contained in a variables element. See VariableInfoType for more details on the information in the variable element

element <variablesResponse>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [VariablesResponseType](#r608) [140] |
| Content: | complex, 2 elements |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r353) [96] |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <variablesResponse> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r605)?, [variables](#r606) | |
| </variablesResponse> | |

Content model elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [variables](#r352) [95] |

XML Source

|  |
| --- |
| <xsi:element name="[**variablesResponse**](#r354)" type="[**VariablesResponseType**](#r608)"/> |

element <variableTimeInterval>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [TimePeriodType](#r536) [128] |
| Content: | empty |
| Defined: | [locally](#r227) within element [series](#r229) [71] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r355) [97] |

|  |
| --- |
| XML Representation Summary |
| <variableTimeInterval/> |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [series](#r229) (in [seriesCatalog](#r231)) [69] |  |

Annotation

this describes the time period that ana variable or observed parameter are available for. This is of TimePeriodType, which is presently: TimeIntervalType - definite begin and end TimeSingleType - single observation/datavalue TimePeriodRealTime - a floating time period for when data is available. This will have a xml schema type attribute: xsi:type="TimeIntervalType" xsi:type="TimeSingleType" xsi:type="TimePeriodRealTime"

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**variableTimeInterval**](#r227)" type="[**TimePeriodType**](#r536)"/> |

element <verticalDatum>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:string |
| Content: | simple |
| Defined: | [locally](#r506) within complexType [SiteInfoType](#r508) [123] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r357) [97] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <verticalDatum | | |
|  | *Content:* | { xsi:string } |
| </verticalDatum> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**verticalDatum**](#r506)" type="xsi:string"/> |

element <west>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | [Longitude](#r626) [145] |
| Content: | simple |
| Defined: | [locally](#r411) within complexType [LatLonBoxType](#r413) [107] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r359) [98] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <west | | |
|  | *Content:* | { xsi:double } |
| </west> | | |

Simple Content Detail:

|  |  |
| --- | --- |
| MaxInclusive: | 180.00 |
| MinInclusive: | -180.00 |

Included in content model of elements (1):

[latLonBox](#r91) [42]

Annotation

West Longitude

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:element name="[**west**](#r411)" type="[**Longitude**](#r626)"/> |

element <X>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:double |
| Content: | simple |
| Defined: | [locally](#r98) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r361) [98] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <X | | |
|  | *Content:* | { xsi:double } |
| </X> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [localSiteXY](#r102) (in [geoLocation](#r73)) [43] |  |

XML Source

|  |
| --- |
| <xsi:element name="[**X**](#r98)" type="xsi:double"/> |

element <Y>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:double |
| Content: | simple |
| Defined: | [locally](#r99) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r363) [98] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Y | | |
|  | *Content:* | { xsi:double } |
| </Y> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [localSiteXY](#r102) (in [geoLocation](#r73)) [43] |  |

XML Source

|  |
| --- |
| <xsi:element name="[**Y**](#r99)" type="xsi:double"/> |

element <Z>

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Type: | xsi:double |
| Content: | simple |
| Defined: | [locally](#r100) within element [localSiteXY](#r102) [44] in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r365) [99] |

|  |  |  |
| --- | --- | --- |
| XML Representation Summary | | |
| <Z | | |
|  | *Content:* | { xsi:double } |
| </Z> | | |

Included in content model of elements (1):

|  |  |
| --- | --- |
| [localSiteXY](#r102) (in [geoLocation](#r73)) [43] |  |

XML Source

|  |
| --- |
| <xsi:element maxOccurs="1" minOccurs="0" name="[**Z**](#r100)" type="xsi:double"/> |

complexType *"ContactInformationType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 5 [elements](#r374) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r368) [99] |
| Includes: | definitions of 5 [elements](#r374) |
| Used: | at 1 [location](#r367) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [ContactName](#r370), [TypeOfContact](#r373)?, [Phone](#r372)?, [Email](#r371)?, [Address](#r369)? | |
| </...> | |

Content Model Elements (5):

|  |  |
| --- | --- |
| [Address](#r11) (in [ContactInformation](#r20)) [24],  [ContactName](#r22) (in [ContactInformation](#r20)) [27],  [Email](#r52) (in [ContactInformation](#r20)) [33], | [Phone](#r162) (in [ContactInformation](#r20)) [57],  [TypeOfContact](#r301) (in [ContactInformation](#r20)) [85] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26] |  |

Annotation

Contains information about a contact. A contact can be a person or an agency. The name of the contact is required. And address, email or phone is suggested. (in 1.1 one of these will be required.

XML Source (w/o annotations (6))

|  |
| --- |
| <xsi:complexType name="[**ContactInformationType**](#r375)">  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="1" name="[**ContactName**](#r370)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**TypeOfContact**](#r373)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**Phone**](#r372)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**Email**](#r371)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**Address**](#r369)" type="xsi:anyType"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r375) component only; 5/5)

[Address](#r11) [24]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

Any address element structure that can be used to communicate contact information.

[ContactName](#r22) [27]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

name of contact, or title of organization

[Email](#r52) [33]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

email address

[Phone](#r162) [57]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

phone

[TypeOfContact](#r301) [85]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Type of contact, in open terms: Project Contact Data source contact HIS Admin Data Source Admin Data Base Admin

complexType *"DataSetInfoType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 6 [elements](#r384) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r377) [101] |
| Includes: | definitions of 6 [elements](#r384) |
| Used: | at 1 [location](#r376) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [dataSetIdentifier](#r379), [timeZoneInfo](#r383)?, [dataSetDescription](#r378)?, [note](#r382)\*, [dataSetLocation](#r380)?, [extension](#r381)? | |
| </...> | |

Content Model Elements (6):

|  |  |
| --- | --- |
| [dataSetDescription](#r32) (in [datasetInfo](#r36)) [29],  [dataSetIdentifier](#r34) (in [datasetInfo](#r36)) [29],  [dataSetLocation](#r38) (in [datasetInfo](#r36)) [30], | [extension](#r62) [35],  [note](#r126) (type [NoteType](#r441)) [49],  [timeZoneInfo](#r295) [83] |

All Direct / Indirect Based Elements (1):

[datasetInfo](#r36) [29]

Known Usage Locations

* As direct type of elements (1):

[datasetInfo](#r36) [29]

Annotation

DataSetInfoType describes time series derived from a dataset, such as a netCDF file, or a gridded model.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [SourceInfoType](#r511) [124]  **DataSetInfoType** (extension) |

XML Source (w/o annotations (7))

|  |
| --- |
| <xsi:complexType name="[**DataSetInfoType**](#r385)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**SourceInfoType**](#r511)">  <xsi:sequence>  <xsi:element name="[**dataSetIdentifier**](#r379)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**timeZoneInfo**](#r295)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**dataSetDescription**](#r378)" type="xsi:string"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r382)" type="[**NoteType**](#r441)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**dataSetLocation**](#r380)" type="[**GeogLocationType**](#r394)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r385) component only; 6/6)

[dataSetDescription](#r32) [29]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Text description describing the data source.

[dataSetIdentifier](#r34) [29]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

The indentifier which the original source uses to identify this dataset. This may be a unique indentifier, or a URL from which the data source was retireved

[dataSetLocation](#r38) [30]



|  |  |
| --- | --- |
| Type: | [GeogLocationType](#r394) [102], empty content |

geolocation describing the spatial coverage of a gridded dataset.

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in extension element

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information, about a dataset, or other properties should be encoded in zero or more &amp;lt;note&amp;gt; elmements. The name of the property should be @title, and the value should be inside the &lt;note&gt;value&lt;/note&gt;. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[timeZoneInfo](#r295) [83]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

the default time zone for this site (+00:00) and if this site shifts to daylight savings time (attribute: usesDaylightSavingsTime)

complexType *"DocumentationType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | mixed, 4 [attributes](#r388) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r386) [102] |
| Includes: | definition of 1 [attribute](#r388) |
| Used: | never |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [href](#r702) | = | xsi:string |
|  | [show](#r703) | = | xsi:string |
|  | [title](#r704) | = | xsi:string |
|  | [type](#r387) | = | (xsi:token | ("funding" | "history" | "processing\_level" | "rights" | "summary")) |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | {text} | | | |
| </...> | | | |

XML Source

|  |
| --- |
| <xsi:complexType mixed="true" name="[**DocumentationType**](#r389)">  <xsi:attribute name="[**type**](#r387)" type="[**DocumentationEnumTypes**](#r617)"/>  <xsi:attributeGroup ref="[**XLinkAttr**](#r706)"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r389) component only; 1/4)

type



|  |  |
| --- | --- |
| Type: | [DocumentationEnumTypes](#r617) [143] |
| Use: | optional |

Attribute Value

|  |
| --- |
| xsi:token | ("funding" | "history" | "processing\_level" | "rights" | "summary") |

complexType *"GeogLocationType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | empty, 1 [attribute](#r393) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r391) [103] |
| Includes: | definition of 1 [attribute](#r393) |
| Used: | at 4 [locations](#r390) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
| /> | | | |

Known Direct Subtypes (2):

[LatLonBoxType](#r413) [105], [LatLonPointType](#r419) [107]

All Direct / Indirect Based Elements (4):

|  |  |
| --- | --- |
| [dataSetLocation](#r38) (in [datasetInfo](#r36)) [30],  [geogLocation](#r68) (in [geoLocation](#r73)) [36], | [latLonBox](#r91) [42],  [latLonPoint](#r93) [42] |

Known Usage Locations

* In derivations of other global types (2):

|  |  |
| --- | --- |
| [LatLonBoxType](#r413) [105] (as extension base), | [LatLonPointType](#r419) [107] (as extension base) |

* As direct type of elements (2):

|  |  |
| --- | --- |
| [dataSetLocation](#r38) (in [datasetInfo](#r36)) [30], | [geogLocation](#r68) (in [geoLocation](#r73)) [36] |

Annotation

GeogLocationType is the base class for the two geometry types: LatLonPointType, and LatLonBoxType. Any additional types should derive from this type. The default spatial reference system is @srs is EPSG:4326 or Geographic lat long.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:complexType name="[**GeogLocationType**](#r394)">  <xsi:sequence/>  <xsi:attribute default="EPSG:4326" name="[**srs**](#r392)" type="xsi:string" use="optional"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r394) component only; 1/1)

srs



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

Attribute Value

|  |  |
| --- | --- |
| Default: | "EPSG:4326" |

complexType *"LabMethodType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r398), 5 [elements](#r404) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r396) [104] |
| Includes: | definitions of 1 [attribute](#r398) and 5 [elements](#r404) |
| Used: | at 1 [location](#r395) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [labMethodID](#r397) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [labName](#r402)?, [labOrganization](#r403)?, [LabMethodName](#r401)?, [labMethodDescription](#r399)?, [labMethodLink](#r400)? | | | |
| </...> | | | |

Content Model Elements (5):

|  |  |
| --- | --- |
| [labMethodDescription](#r77) (in [LabMethod](#r75)) [39],  [labMethodLink](#r79) (in [LabMethod](#r75)) [39],  [LabMethodName](#r81) (in [LabMethod](#r75)) [40], | [labName](#r83) (in [LabMethod](#r75)) [40],  [labOrganization](#r85) (in [LabMethod](#r75)) [40] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38] |  |

Annotation

contains descriptions of the laboratory methods used to analyze physical samples for specific constituents.

XML Source (w/o annotations (7))

|  |
| --- |
| <xsi:complexType name="[**LabMethodType**](#r405)">  <xsi:sequence>  <xsi:element minOccurs="0" name="[**labName**](#r402)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**labOrganization**](#r403)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**LabMethodName**](#r401)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**labMethodDescription**](#r399)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**labMethodLink**](#r400)" type="xsi:string"/>  </xsi:sequence>  <xsi:attribute name="[**labMethodID**](#r397)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r405) component only; 1/1)

labMethodID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Unique integer identifier for each laboratory method. This is the key used by the Samples table to reference a laboratory method.

Content Element Detail (defined in [this](#r405) component only; 5/5)

[labMethodDescription](#r77) [39]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Description of the method and protocols used for sample analysis.

[labMethodLink](#r79) [39]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Link to additional reference material on the analysis method.

[LabMethodName](#r81) [40]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Name of the method and protocols used for sample analysis. Suggest using nemi names and codes http://www.nemi.gov/ “USEPA-365.1”

[labName](#r83) [40]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Name of the laboratory responsible for processing the sample.

[labOrganization](#r85) [40]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Organization responsible for sample analysis.

complexType *"LatLonBoxType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 attribute, 4 [elements](#r412) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r407) [106] |
| Includes: | definitions of 4 [elements](#r412) |
| Used: | at 1 [location](#r406) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [south](#r410), [west](#r411), [north](#r409), [east](#r408) | | | |
| </...> | | | |

Content Model Elements (4):

|  |  |
| --- | --- |
| [east](#r48) (in [latLonBox](#r91)) [32],  [north](#r122) (in [latLonBox](#r91)) [49], | [south](#r266) (in [latLonBox](#r91)) [79],  [west](#r360) (in [latLonBox](#r91)) [97] |

All Direct / Indirect Based Elements (1):

[latLonBox](#r91) [42]

Known Usage Locations

* As direct type of elements (1):

[latLonBox](#r91) [42]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [GeogLocationType](#r394) [102]  **LatLonBoxType** (extension) |

XML Source (w/o annotations (4))

|  |
| --- |
| <xsi:complexType name="[**LatLonBoxType**](#r413)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**GeogLocationType**](#r394)">  <xsi:sequence>  <xsi:element name="[**south**](#r410)" type="[**Latitude**](#r623)"/>  <xsi:element name="[**west**](#r411)" type="[**Longitude**](#r626)"/>  <xsi:element name="[**north**](#r409)" type="[**Latitude**](#r623)"/>  <xsi:element name="[**east**](#r408)" type="[**Longitude**](#r626)"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r413) component only; 4/4)

[east](#r48) [32]



|  |  |
| --- | --- |
| Type: | [Longitude](#r626) [145], simple content |

East longitude.

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 180.00 |
| minInclusive: | -180.00 |

[north](#r122) [49]



|  |  |
| --- | --- |
| Type: | [Latitude](#r623) [145], simple content |

North Latitude

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 90.00 |
| minInclusive: | -90.00 |

[south](#r266) [79]



|  |  |
| --- | --- |
| Type: | [Latitude](#r623) [145], simple content |

South Latitude

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 90.00 |
| minInclusive: | -90.00 |

[west](#r360) [97]



|  |  |
| --- | --- |
| Type: | [Longitude](#r626) [145], simple content |

West Longitude

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 180.00 |
| minInclusive: | -180.00 |

complexType *"LatLonPointType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 attribute, 2 [elements](#r418) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r415) [107] |
| Includes: | definitions of 2 [elements](#r418) |
| Used: | at 1 [location](#r414) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [srs](#r392) | = | xsi:string : "EPSG:4326" |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [latitude](#r416), [longitude](#r417) | | | |
| </...> | | | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [latitude](#r89) (in [latLonPoint](#r93)) [41], | [longitude](#r106) (in [latLonPoint](#r93)) [45] |

All Direct / Indirect Based Elements (1):

[latLonPoint](#r93) [42]

Known Usage Locations

* As direct type of elements (1):

[latLonPoint](#r93) [42]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [GeogLocationType](#r394) [102]  **LatLonPointType** (extension) |

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:complexType name="[**LatLonPointType**](#r419)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**GeogLocationType**](#r394)">  <xsi:sequence>  <xsi:element name="[**latitude**](#r416)" type="[**Latitude**](#r623)"/>  <xsi:element name="[**longitude**](#r417)" type="[**Longitude**](#r626)"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r419) component only; 2/2)

[latitude](#r89) [41]



|  |  |
| --- | --- |
| Type: | [Latitude](#r623) [145], simple content |

The latitude of the site in a decimal degrees as calculated in terms of the given datum.

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 90.00 |
| minInclusive: | -90.00 |

[longitude](#r106) [45]



|  |  |
| --- | --- |
| Type: | [Longitude](#r626) [145], simple content |

The longitude of the site in a decimal degrees as calculated in terms of the given datum.

Simple Content

|  |
| --- |
| xsi:double |

|  |  |
| --- | --- |
| maxInclusive: | 180.00 |
| minInclusive: | -180.00 |

complexType *"MetaDataType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 5 [elements](#r427) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r421) [109] |
| Includes: | definitions of 5 [elements](#r427) |
| Used: | at 1 [location](#r420) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [TopicCategory](#r426)?, [Title](#r425)?, [Abstract](#r422)?, [ProfileVersion](#r424)?, [MetadataLink](#r423)? | |
| </...> | |

Content Model Elements (5):

|  |  |
| --- | --- |
| [Abstract](#r9) (in [Metadata](#r108)) [23],  [MetadataLink](#r110) (in [Metadata](#r108)) [46],  [ProfileVersion](#r164) (in [Metadata](#r108)) [58], | [Title](#r297) (in [Metadata](#r108)) [84],  [TopicCategory](#r299) (in [Metadata](#r108)) [84] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [Metadata](#r108) (type [MetaDataType](#r428)) [45] |  |

Annotation

MetadataType contains the information from the ODM table IsoMetadata. It is anticpated that many data sources may not have this fully available. IsoMetadata table contains dataset and project level metadata required by the CUAHSI HIS metadata system (http://www.cuahsi.org/his/documentation.html) for compliance with standards such as the draft ISO 19115 or ISO 8601. The mandatory fields in this table must be populated to provide a complete set of ISO compliant metadata in the database.

XML Source (w/o annotations (6))

|  |
| --- |
| <xsi:complexType name="[**MetaDataType**](#r428)">  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**TopicCategory**](#r426)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Title**](#r425)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Abstract**](#r422)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**ProfileVersion**](#r424)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**MetadataLink**](#r423)" type="xsi:anyURI"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r428) component only; 5/5)

[Abstract](#r9) [23]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Abstract of data from a specific data source. Abstract field should be populated with a more complete text description of the data that the metadata record references. This field can be populated with “Unknown” if there is no abstract for the data.

[MetadataLink](#r110) [46]



|  |  |
| --- | --- |
| Type: | xsi:anyURI, predefined, simple content |

Link to additional metadata reference material.

[ProfileVersion](#r164) [58]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Name of metadata profile used by the data source

[Title](#r297) [84]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Title of data from a specific data source. Title field should be populated with a brief text description of what the referenced data represent. This field can be populated with “Unknown” if there is no title for the data.

[TopicCategory](#r299) [84]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Topic category keyword that gives the broad ISO19115 metadata topic category for data from this source. The controlled vocabulary of topic category keywords is given in the TopicCategoryCV table.

complexType *"MethodType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r432), 2 [elements](#r435) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r430) [110] |
| Includes: | definitions of 1 [attribute](#r432) and 2 [elements](#r435) |
| Used: | at 2 [locations](#r429) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [methodID](#r431) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [MethodDescription](#r433), [MethodLink](#r434)? | | | |
| </...> | | | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [MethodDescription](#r116) (type xsi:string) [47], | [MethodLink](#r118) (type xsi:string) [48] |

All Direct / Indirect Based Elements (2):

|  |  |
| --- | --- |
| [Method](#r114) (in [series](#r229)) [47], | [method](#r112) (in [values](#r325)) [46] |

Known Usage Locations

* As direct type of elements (2):

|  |  |
| --- | --- |
| [Method](#r114) (in [series](#r229)) [47], | [method](#r112) (in [values](#r325)) [46] |

Annotation

Method used to collect the data and any additional information about the method. @methodId is the link to value/@method As per communication from the ODM designers, multiple instruments observing the same variable, should be different methods. Methods should describe the manner in which the observation was collected (i.e., collected manually, or collected using an automated sampler) or measured (i.e., measured using a temperature sensor or measured using a turbidity sensor). Details about the specific sensor models and manufacturers can be included in the MethodDescription

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**MethodType**](#r436)">  <xsi:sequence>  <xsi:element name="[**MethodDescription**](#r433)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**MethodLink**](#r434)" type="xsi:string"/>  </xsi:sequence>  <xsi:attribute name="[**methodID**](#r431)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r436) component only; 1/1)

methodID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Content Element Detail (defined in [this](#r436) component only; 2/2)

[MethodDescription](#r116) [47]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Text description of each method.

[MethodLink](#r118) [48]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Link to additional reference material on the method.

complexType *"NoteType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | simple, 4 [attributes](#r440) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r438) [111] |
| Includes: | definition of 1 [attribute](#r440) |
| Used: | at 1 [location](#r437) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [href](#r702) | = | xsi:string |
|  | [show](#r703) | = | xsi:string |
|  | [title](#r704) | = | xsi:string |
|  | [type](#r439) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </...> | | | |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [note](#r126) (type [NoteType](#r441)) [49] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [note](#r126) (type [NoteType](#r441)) [49] |  |

Annotation

NoteType defines the note element available in many defined types. the value should the description of the note. @title should be the brief name that might be displayed as a lable @type can be used to allow for grouping of elements.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **NoteType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:complexType name="[**NoteType**](#r441)">  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**type**](#r439)" type="xsi:string"/>  <xsi:attributeGroup ref="[**XLinkAttr**](#r706)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType> |

Attribute Detail (defined in [this](#r441) component only; 1/4)

type



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

complexType *"OffsetType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r445), 5 [elements](#r451) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r443) [112] |
| Includes: | definitions of 1 [attribute](#r445) and 5 [elements](#r451) |
| Used: | at 1 [location](#r442) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [offsetTypeID](#r444) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [offsetValue](#r449), [offsetDescription](#r446), [units](#r450), [offsetIsVertical](#r448)?, [offsetHorizDirectionDegrees](#r447)? | | | |
| </...> | | | |

Content Model Elements (5):

|  |  |
| --- | --- |
| [offsetDescription](#r130) (in [offset](#r128)) [51],  [offsetHorizDirectionDegrees](#r132) (in [offset](#r128)) [52],  [offsetIsVertical](#r134) (in [offset](#r128)) [52], | [offsetValue](#r136) (in [offset](#r128)) [53],  [units](#r314) [87] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [offset](#r128) (in [values](#r325)) [51] |  |

Annotation

OffsetType contains full descriptive information for each of the measurement offsets. A set of observations may be done at an offset for the central location. offsetTypeID links to dataValue/@offsetTypeId

XML Source (w/o annotations (7))

|  |
| --- |
| <xsi:complexType name="[**OffsetType**](#r452)">  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="1" name="[**offsetValue**](#r449)" type="xsi:float"/>  <xsi:element maxOccurs="1" minOccurs="1" name="[**offsetDescription**](#r446)" type="xsi:string"/>  <xsi:element ref="[**units**](#r314)"/>  <xsi:element default="true" maxOccurs="1" minOccurs="0" name="[**offsetIsVertical**](#r448)" type="xsi:boolean"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**offsetHorizDirectionDegrees**](#r447)" type="xsi:int"/>  </xsi:sequence>  <xsi:attribute name="[**offsetTypeID**](#r444)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r452) component only; 1/1)

offsetTypeID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Unique integer identifier that identifies the type of measurement offset. Suggested that this is offsetType from ODM database.

Content Element Detail (defined in [this](#r452) component only; 5/5)

[offsetDescription](#r130) [51]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Full text description of the offset type. Field should be filled in with a complete text description of the offset that provides enough information to interpret the type of offset being used. For example, “Distance from stream bank” is ambiguous because it is not known which bank is being referred to.

[offsetHorizDirectionDegrees](#r132) [52]



|  |  |
| --- | --- |
| Type: | xsi:int, predefined, simple content |

if offsetIsVertical=false, then this is the direction of the offset

[offsetIsVertical](#r134) [52]



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined, simple content |

By default, the offset is vertical. If the offset is horizontal, then this becomes a direction, and distance from the observation point

Simple Content

|  |  |
| --- | --- |
| Default: | "true" |

[offsetValue](#r136) [53]



|  |  |
| --- | --- |
| Type: | xsi:float, predefined, simple content |

offsetValue element is value of offset. If 0, then offset is not needed, and offsetTypeId should not be included on the dataValue

[units](#r314) [87]



|  |  |
| --- | --- |
| Type: | [anonymous](#r312) (extension of xsi:string), simple content |

Units of the offsetValue

Simple Content

|  |
| --- |
| xsi:string |

complexType *"QualifiersType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [element](#r455) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r453) [114] |
| Includes: | definition of 1 [element](#r455) |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [qualifier](#r454) | |
| </...> | |

Content Model Elements (1):

|  |  |
| --- | --- |
| [qualifier](#r178) (type anonymous) [60] |  |

Annotation

qualifying comments that accompany the data

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**QualifiersType**](#r456)">  <xsi:sequence>  <xsi:element name="[**qualifier**](#r454)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**qualifierCode**](#r176)" type="xsi:token"/>  </xsi:sequence>  <xsi:attribute name="[**qualifierID**](#r174)" type="xsi:int"/>  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r456) component only; 1/1)

[qualifier](#r178) [60]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

qualifying comments that accompany the data. value/@qaulifier is a space delimted list of qualifiers for a data value. @qualifierCode is the link to the value/@qualifier for a single value The value inside provides the textual description. @qualifierCode is the reference code. @qualifierCode=A qualifier value=Approved @vocabulary and @network are suggested. For example a value from the USGS may qualifiers from multiple vocabularies, and the network would be the data service.

complexType *"QualityControlLevelType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | simple, 1 [attribute](#r460) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r458) [115] |
| Includes: | definition of 1 [attribute](#r460) |
| Used: | at 1 [location](#r457) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [qualityControlLevelID](#r459) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:string } | | | |
| </...> | | | |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [QualityControlLevel](#r190) (in [series](#r229)) [62] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [QualityControlLevel](#r190) (in [series](#r229)) [62] |  |

Annotation

Value is the text Code used to identify the level of quality control to which data values have been subjected.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **QualityControlLevelType** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:string |

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:complexType name="[**QualityControlLevelType**](#r461)">  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**qualityControlLevelID**](#r459)" type="xsi:int"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType> |

Attribute Detail (defined in [this](#r461) component only; 1/1)

qualityControlLevelID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Integer identifier that indicates the level of quality control that the data values have been subjected to.

complexType *"QueryInfoType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 6 [elements](#r470) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r463) [116] |
| Includes: | definitions of 6 [elements](#r470) |
| Used: | at 1 [location](#r462) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [creationTime](#r464)?, [queryURL](#r469)?, [querySQL](#r468)?, [criteria](#r465)?, [note](#r467)\*, [extension](#r466)? | |
| </...> | |

Content Model Elements (6):

|  |  |
| --- | --- |
| [creationTime](#r24) (in [queryInfo](#r195)) [27],  [criteria](#r30) (in [queryInfo](#r195)) [28],  [extension](#r62) [35], | [note](#r126) (type [NoteType](#r441)) [49],  [querySQL](#r197) (in [queryInfo](#r195)) [64],  [queryURL](#r199) (in [queryInfo](#r195)) [64] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63] |  |

Annotation

This contains information about the request, and is used to enable the XML responses (timeSeriesResponse, variablesResponse,siteResponse) to be stored on disk.

XML Source (w/o annotations (12))

|  |
| --- |
| <xsi:complexType name="[**QueryInfoType**](#r471)">  <xsi:sequence>  <xsi:element minOccurs="0" name="[**creationTime**](#r464)" type="xsi:dateTime"/>  <xsi:element minOccurs="0" name="[**queryURL**](#r469)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**querySQL**](#r468)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**criteria**](#r465)">  <xsi:complexType>  <xsi:sequence minOccurs="0">  <xsi:element minOccurs="0" name="[**locationParam**](#r26)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**variableParam**](#r28)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**timeParam**](#r27)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**beginDateTime**](#r270)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**endDateTime**](#r271)" type="xsi:string"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r467)" type="[**NoteType**](#r441)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r471) component only; 6/6)

[creationTime](#r24) [27]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

When was this response originally created.

[criteria](#r30) [28]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

The criteria are the actual parameters that are passed into the method. If you are generate this without a XML helper class, be sure to properly encode these elements.

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in &lt;extension?

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information, properties like should be encoded in zero or more &amp;lt;note&amp;gt; elmements. The name of the property should be @title, and the value should be inside the &lt;note&gt;value&lt;/note&gt;. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[querySQL](#r197) [64]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

For debugging, the SQL used to generate this request may be placed in this element.

[queryURL](#r199) [64]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

The URL of the web page that was used as the original source for the response. Often requests scrap HTML pages. This should be the URL of that page. If the response is retreive from a rest URL. This is also a the location for the URL.

complexType *"SampleType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r474), 3 [elements](#r478) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r472) [117] |
| Includes: | definitions of 1 [attribute](#r474) and 3 [elements](#r478) |
| Used: | never |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [sampleID](#r473) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [labSampleCode](#r476), [SampleType](#r477), [LabMethod](#r475)? | | | |
| </...> | | | |

Content Model Elements (3):

|  |  |
| --- | --- |
| [LabMethod](#r75) (type [LabMethodType](#r405)) [38],  [labSampleCode](#r87) (type xsi:string) [41], | [SampleType](#r215) (type [sampleTypeEnum](#r635)) [68] |

Annotation

information about physical samples analyzed in a laboratory. @sampleID is the link to the datavalues/@sampleID LabSampleCode is the sample code. In WaterML 1.1 this will be the link to the dataValue SampleType describes the the sample type LabMethod is a LabMethodType containing infomration about lab methods

XML Source (w/o annotations (4))

|  |
| --- |
| <xsi:complexType name="[**SampleType**](#r479)">  <xsi:sequence>  <xsi:element name="[**labSampleCode**](#r476)" type="xsi:string"/>  <xsi:element name="[**SampleType**](#r477)" type="[**sampleTypeEnum**](#r635)"/>  <xsi:element minOccurs="0" name="[**LabMethod**](#r475)" type="[**LabMethodType**](#r405)"/>  </xsi:sequence>  <xsi:attribute name="[**sampleID**](#r473)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r479) component only; 1/1)

sampleID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Content Element Detail (defined in [this](#r479) component only; 3/3)

[LabMethod](#r75) [38]



|  |  |
| --- | --- |
| Type: | [LabMethodType](#r405) [103], complex content |

LabMethod is a LabMethodType containing infomration about lab methods

[labSampleCode](#r87) [41]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Code or label used to identify and track lab sample or sample container (e.g. bottle) during lab analysis.

[SampleType](#r215) [68]



|  |  |
| --- | --- |
| Type: | [sampleTypeEnum](#r635) [148], simple content |

Controlled vocabulary specifying the sample type from the SampleTypeEnum.

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "FD", "FF", "FL", "LF", "GW", "PB", "PD", "PE", "PI", "PW", "RE", "SE", "SR", "SS", "SW", "TE", "TI", "TW", "VE", "VI", "VW", "Grab", "Unknown", "No Sample" |

complexType *"seriesCatalogType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 [attributes](#r484), 3 [elements](#r488) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r481) [119] |
| Includes: | definitions of 2 [attributes](#r484) and 3 [elements](#r488) |
| Used: | at 1 [location](#r480) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [menuGroupName](#r482) | = | xsi:string |
|  | [serviceWsdl](#r483) | = | xsi:anyURI |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [note](#r486)\*, [series](#r487)\*, [extension](#r485)? | | | |
| </...> | | | |

Content Model Elements (3):

|  |  |
| --- | --- |
| [extension](#r62) [35],  [note](#r126) (type [NoteType](#r441)) [49], | [series](#r229) (in [seriesCatalog](#r231)) [69] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [seriesCatalog](#r231) (in [site](#r239)) [71] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [seriesCatalog](#r231) (in [site](#r239)) [71] |  |

Annotation

Series catalog represents a list of series, where each separate data series are for the purposes of identifying or displaying what data are available at each site.

XML Source (w/o annotations (13))

|  |
| --- |
| <xsi:complexType name="[**seriesCatalogType**](#r489)">  <xsi:sequence>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r486)" type="[**NoteType**](#r441)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**series**](#r487)">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**dataType**](#r217)" type="[**dataTypeEnum**](#r614)"/>  <xsi:element name="[**variable**](#r226)" type="[**VariableInfoType**](#r602)"/>  <xsi:element name="[**valueCount**](#r224)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:int">  <xsi:attribute name="[**countIsEstimated**](#r321)" type="xsi:boolean"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  <xsi:element name="[**variableTimeInterval**](#r227)" type="[**TimePeriodType**](#r536)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**valueType**](#r225)" type="[**valueTypeEnum**](#r641)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**generalCategory**](#r219)" type="[**generalCategoryEnum**](#r620)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**sampleMedium**](#r222)" type="[**SampleMediumEnum**](#r632)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Method**](#r220)" type="[**MethodType**](#r436)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Source**](#r223)" type="[**SourceType**](#r522)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**QualityControlLevel**](#r221)" type="[**QualityControlLevelType**](#r461)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  </xsi:sequence>  <xsi:attribute name="[**menuGroupName**](#r482)" type="xsi:string"/>  <xsi:attribute name="[**serviceWsdl**](#r483)" type="xsi:anyURI"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r489) component only; 2/2)

menuGroupName



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

For clients, this is the list of the html select group element. This would allow for groups or seriesCatalogs to appear in an HTML select menu.

serviceWsdl



|  |  |
| --- | --- |
| Type: | xsi:anyURI, predefined |
| Use: | optional |

(depreciated) location of the WaterOneFlow service that the client should execute GetValues call on. All services now proxy getValues methods from other sources.

Content Element Detail (defined in [this](#r489) component only; 3/3)

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information, properties like should be encoded in zero or more In seriesCatalog note elements are placed at the top, to simplify human identification, since there can be tens, or hundred of series for a location. The name of the property should be @title, and the value should be inside the note element. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[series](#r229) [69]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

Separate data series are for the purposes of identifying or displaying what data are available at each site. Site information is a parent of the series so that it does not need to be repeated (difference from the ODM. ). A Site contains one or more seriesCatalogs which contain one or more series. Assotiated with site, a series is a unique combination of the textual repesentation of ODM series: Variable,Method,Source,QualityControlLevel. An ODM series is a unique site/variable combinations are defined by unique combinations of SiteID, VariableID, MethodID, SourceID, and QualityControlLevelID.

complexType *"SiteInfoResponseType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 [elements](#r494) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r491) [120] |
| Includes: | definitions of 2 [elements](#r494) |
| Used: | at 1 [location](#r490) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r492)?, [site](#r493)\* | |
| </...> | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [site](#r239) [72] |

All Direct / Indirect Based Elements (1):

[sitesResponse](#r254) [76]

Known Usage Locations

* As direct type of elements (1):

[sitesResponse](#r254) [76]

Annotation

A sitesResponse contains a list of zero or more site elements. The siteInfo element contains the basic site information, siteName, location, siteCodes, properties. The seriesCatalog contains the list of observation series conducted at a site. A site element can have two parts: siteInfo, and one or more seriesCatalogs. Rules: GetSites(site[]) or GetSites(null), return no seriesCatalogs elements GetSiteInfo(site) return all information about a site, including the seriesCatalog.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**SiteInfoResponseType**](#r495)">  <xsi:sequence>  <xsi:element minOccurs="0" name="[**queryInfo**](#r492)" type="[**QueryInfoType**](#r471)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" ref="[**site**](#r239)"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r495) component only; 2/2)

[queryInfo](#r195) [63]



|  |  |
| --- | --- |
| Type: | [QueryInfoType](#r471) [115], complex content |

The parameter information passed to GetSiteInfo(site) or GetSites(site[]) should be placed in QueryInfoType/criteria/locationParam See QueryInfoType for more details.

[site](#r239) [72]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

A sitesResponse contains a list of zero or more site elements. A site element is

complexType *"SiteInfoType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 attributes, 9 [elements](#r507) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r497) [122] |
| Includes: | definitions of 9 [elements](#r507) |
| Used: | at 1 [location](#r496) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [siteName](#r504), [siteCode](#r503)+, [timeZoneInfo](#r505)?, [geoLocation](#r501)?, [elevation\_m](#r499)?, [verticalDatum](#r506)?, [note](#r502)\*, [extension](#r500)?, [altname](#r498)\* | | | |
| </...> | | | |

Content Model Elements (9):

|  |  |
| --- | --- |
| [altname](#r13) (in [siteInfo](#r250)) [24],  [elevation\_m](#r50) (in [siteInfo](#r250)) [33],  [extension](#r62) [35],  [geoLocation](#r73) (in [siteInfo](#r250)) [37],  [note](#r126) (type [NoteType](#r441)) [49], | [siteCode](#r248) (in [siteInfo](#r250)) [73],  [siteName](#r252) (in [siteInfo](#r250)) [75],  [timeZoneInfo](#r295) [83],  [verticalDatum](#r358) (in [siteInfo](#r250)) [97] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [siteInfo](#r250) (in [site](#r239)) [75] |  |

Annotation

A sampling station is any place where data are collected. SiteInfoType is the Element that for the core information about a point sampling location. The core information includes SiteName, SiteCode(s), location, elevation, timeZone information and note(s). SiteInfoType is <siteInfo> in a <site> of a <sitesResponse>. It is derived from SourceType so that other geographic location descriptions can be utilized in the <sourceInfo> of the <timeSeriesResponse>

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [SourceInfoType](#r511) [124]  **SiteInfoType** (extension) |

XML Source (w/o annotations (18))

|  |
| --- |
| <xsi:complexType name="[**SiteInfoType**](#r508)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**SourceInfoType**](#r511)">  <xsi:sequence>  <xsi:element name="[**siteName**](#r504)" type="xsi:string"/>  <xsi:element maxOccurs="unbounded" name="[**siteCode**](#r503)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attribute name="[**defaultId**](#r244)" type="xsi:boolean"/>  <xsi:attribute name="[**network**](#r245)" type="xsi:normalizedString" use="required"/>  <xsi:attribute name="[**siteID**](#r246)" type="xsi:normalizedString"/>  <xsi:attribute name="[**agencyCode**](#r242)" type="xsi:normalizedString"/>  <xsi:attribute name="[**agencyName**](#r243)" type="xsi:normalizedString"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  <xsi:element minOccurs="0" ref="[**timeZoneInfo**](#r295)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**geoLocation**](#r501)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**geogLocation**](#r70)" type="[**GeogLocationType**](#r394)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**localSiteXY**](#r71)">  <xsi:complexType>  <xsi:sequence>  <xsi:element name="[**X**](#r98)" type="xsi:double"/>  <xsi:element name="[**Y**](#r99)" type="xsi:double"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Z**](#r100)" type="xsi:double"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r97)" type="[**NoteType**](#r441)"/>  </xsi:sequence>  <xsi:attribute name="[**projectionInformation**](#r95)" type="xsi:string"/>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  <xsi:element maxOccurs="1" minOccurs="0" name="[**elevation\_m**](#r499)" type="xsi:double"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**verticalDatum**](#r506)" type="xsi:string"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r502)" type="[**NoteType**](#r441)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**extension**](#r62)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**altname**](#r498)" type="xsi:string"/>  </xsi:sequence>  <xsi:attributeGroup ref="[**DbIdentifiers**](#r649)"/>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r508) component only; 9/9)

[altname](#r13) [24]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Alternate name

[elevation\_m](#r50) [33]



|  |  |
| --- | --- |
| Type: | xsi:double, predefined, simple content |

Elevation in meters. A vertical datum should also be provided.

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in <extension?

[geoLocation](#r73) [37]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

The geoLocation speficies the details of the geographic location. It contains two portions, a geographic locaiton &amp;lt;geogLocation&amp;gt;, and a local location &amp;lt;localSiteXY&amp;gt;. In order to be discovered spatially, geogLocation is required. The geogLocation can be of GeogLocationType, which at present is either a latLonPoint or a latLongBox. There may be multiple localSiteXY, which might be used by data sources to provide other coordinated system information, like UTM and State Plane coordinates.

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information, like state, county, or other properties like HUC codes should be encoded in zero or more &lt;note&gt; elmements. The name of the property should be @title, and the value should be inside the <note>value</note>. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[siteCode](#r248) [73]



|  |  |
| --- | --- |
| Type: | [anonymous](#r240) (extension of xsi:string), simple content |

A &lt;siteCode&gt; is an identifier that this site is referred to as. This Code used by organization that collects the data to identify the site. A siteCode has a reference to it's source or network as the @network. For waterWebServices, a site/location is the network plus the value of the sitecode, eg '@network:siteCode' siteCode identifiers often change, so multiple siteCode elements are allowed There may be multiple siteCode elements. Only one should be labeled as the default using @defaultID (set attribute defaultID=true) Multiple siteCode elements can utilize different observation networks may refer to the same site with different identifiers.

Simple Content

|  |
| --- |
| xsi:string |

[siteName](#r252) [75]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Full name of the sampling site. eg “LOGAN RIVER ABOVE STATE DAM, NEAR LOGAN,UT”

[timeZoneInfo](#r295) [83]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

Specifies the time zone information about a site. The default time zone for this site (+00:00) and if this site shifts to daylight savings time (attribute: usesDaylightSavingsTime)

[verticalDatum](#r358) [97]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

complexType *"SourceInfoType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | empty |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r510) [124] |
| Used: | at 3 [locations](#r509) |

|  |
| --- |
| XML Representation Summary |
| <.../> |

Known Direct Subtypes (2):

[DataSetInfoType](#r385) [100], [SiteInfoType](#r508) [121]

All Direct / Indirect Based Elements (3):

|  |  |
| --- | --- |
| [datasetInfo](#r36) [29],  [siteInfo](#r250) (in [site](#r239)) [75], | [sourceInfo](#r262) (in [timeSeries](#r275)) [78] |

Known Usage Locations

* In derivations of other global types (2):

|  |  |
| --- | --- |
| [DataSetInfoType](#r385) [100] (as extension base), | [SiteInfoType](#r508) [121] (as extension base) |

* As direct type of elements (1):

|  |  |
| --- | --- |
| [sourceInfo](#r262) (in [timeSeries](#r275)) [78] |  |

Annotation

SourceInfoType is used to describe the data source in the timeSeriesResponse. SourceInfoType is the base type for data source information. At present, two types are derived from SourceInfoType: SiteInfoType, and DataSetInfoType. SiteInfoType describes tlocation for a timeseries where that time series is located at a site or a DataSetInfoType describes time series derived from a dataset, such as a netCDF file, or a gridded model.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:complexType name="[**SourceInfoType**](#r511)"/> |

complexType *"SourceType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r515), 5 [elements](#r521) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r513) [125] |
| Includes: | definitions of 1 [attribute](#r515) and 5 [elements](#r521) |
| Used: | at 2 [locations](#r512) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [sourceID](#r514) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [Organization](#r518)?, [SourceDescription](#r519)?, [Metadata](#r517)?, [ContactInformation](#r516)?, [SourceLink](#r520)? | | | |
| </...> | | | |

Content Model Elements (5):

|  |  |
| --- | --- |
| [ContactInformation](#r20) (type [ContactInformationType](#r375)) [26],  [Metadata](#r108) (type [MetaDataType](#r428)) [45],  [Organization](#r157) (type xsi:string) [56], | [SourceDescription](#r260) (type xsi:string) [77],  [SourceLink](#r264) (type xsi:anyURI) [78] |

All Direct / Indirect Based Elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Known Usage Locations

* As direct type of elements (2):

|  |  |
| --- | --- |
| [Source](#r258) (in [series](#r229)) [77], | [source](#r256) (in [values](#r325)) [76] |

Annotation

original sources of the data, providing information sufficient to retrieve and reconstruct the data value from the original data files if necessary

XML Source (w/o annotations (7))

|  |
| --- |
| <xsi:complexType name="[**SourceType**](#r522)">  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**Organization**](#r518)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**SourceDescription**](#r519)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**Metadata**](#r517)" type="[**MetaDataType**](#r428)"/>  <xsi:element minOccurs="0" name="[**ContactInformation**](#r516)" type="[**ContactInformationType**](#r375)"/>  <xsi:element minOccurs="0" name="[**SourceLink**](#r520)" type="xsi:anyURI"/>  </xsi:sequence>  <xsi:attribute name="[**sourceID**](#r514)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r522) component only; 1/1)

sourceID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Unique integer identifier that identifies each data source. link to datavalues/@sourceID

Content Element Detail (defined in [this](#r522) component only; 5/5)

[ContactInformation](#r20) [26]



|  |  |
| --- | --- |
| Type: | [ContactInformationType](#r375) [99], complex content |

Contact information about source.

[Metadata](#r108) [45]



|  |  |
| --- | --- |
| Type: | [MetaDataType](#r428) [108], complex content |

MetadataType contains the information from the ODM table IsoMetadata. It is anticpated that many data sources may not have this fully available.

[Organization](#r157) [56]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Name of the organization that collected the data. This should be the agency or organization that collected the data, even if it came out of a database consolidated from many sources such as STORET. “Utah Division of Water Quality”

[SourceDescription](#r260) [77]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Full text description of the source of the data. “Text file retrieved from the EPA STORET system indicating data originally from Utah Division of Water Quality”

[SourceLink](#r264) [78]



|  |  |
| --- | --- |
| Type: | xsi:anyURI, predefined, simple content |

Link that can be pointed at the original data file and/or associated metadata stored in the digital library or URL of data source.

complexType *"TimeIntervalType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 [elements](#r526) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r523) [126] |
| Includes: | definitions of 2 [elements](#r526) |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [beginDateTime](#r524), [endDateTime](#r525) | |
| </...> | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [beginDateTime](#r18) (type xsi:dateTime) [25], | [endDateTime](#r57) (type xsi:dateTime) [34] |

Annotation

For where a series has multiple observations, and a define beingDateTime as dateTime of the first data value in the series, and endDateTime dateTime of the last data value in the series.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [TimePeriodType](#r536) [128]  **TimeIntervalType** (extension) |

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**TimeIntervalType**](#r527)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**TimePeriodType**](#r536)">  <xsi:sequence>  <xsi:element name="[**beginDateTime**](#r524)" type="xsi:dateTime"/>  <xsi:element name="[**endDateTime**](#r525)" type="xsi:dateTime"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r527) component only; 2/2)

[beginDateTime](#r18) [25]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

dateTime of the first data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

[endDateTime](#r57) [34]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

Date of the last data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

complexType *"TimePeriodRealTimeType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 3 [elements](#r532) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r528) [127] |
| Includes: | definitions of 3 [elements](#r532) |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [realTimeDataPeriod](#r531), [beginDateTime](#r529), [endDateTime](#r530) | |
| </...> | |

Content Model Elements (3):

|  |  |
| --- | --- |
| [beginDateTime](#r18) (type xsi:dateTime) [25],  [endDateTime](#r57) (type xsi:dateTime) [34], | [realTimeDataPeriod](#r201) (type xsi:duration) [65] |

Annotation

Use where a site has an evolving period where data is available. The US Geological Survey real time data is available for 30 days, the realTimeDataPeriod element is an XML duration and woudl be "30d" The beginDateTime and endDateTime are provided to simplify usage by clients.They should be be calculated based on the duration stored in realTimeDataPeriod

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [TimePeriodType](#r536) [128]  **TimePeriodRealTimeType** (extension) |

XML Source (w/o annotations (4))

|  |
| --- |
| <xsi:complexType name="[**TimePeriodRealTimeType**](#r533)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**TimePeriodType**](#r536)">  <xsi:sequence>  <xsi:element name="[**realTimeDataPeriod**](#r531)" type="xsi:duration"/>  <xsi:element name="[**beginDateTime**](#r529)" type="xsi:dateTime"/>  <xsi:element name="[**endDateTime**](#r530)" type="xsi:dateTime"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r533) component only; 3/3)

[beginDateTime](#r18) [25]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

dateTime of the first data value in the series. This should be be calculated based on the duration stored in realTimeDataPeriod The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

[endDateTime](#r57) [34]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

Date of the last data value in the series. This should be be calculated based on the duration stored in realTimeDataPeriod The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

[realTimeDataPeriod](#r201) [65]



|  |  |
| --- | --- |
| Type: | xsi:duration, predefined, simple content |

Duration Data Type The duration data type is used to specify a time interval. The time interval is specified in the following form "PnYnMnDTnHnMnS" where: \* P indicates the period (required) \* nY indicates the number of years \* nM indicates the number of months \* nD indicates the number of days \* T indicates the start of a time section (required if you are going to specify hours, minutes, or seconds) \* nH indicates the number of hours \* nM indicates the number of minutes \* nS indicates the number of seconds

complexType *"TimePeriodType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | empty |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r535) [129] |
| Used: | at 4 [locations](#r534) |

|  |
| --- |
| XML Representation Summary |
| <.../> |

Known Direct Subtypes (3):

[TimeIntervalType](#r527) [126], [TimePeriodRealTimeType](#r533) [127], [TimeSingleType](#r557) [131]

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [variableTimeInterval](#r356) (in [series](#r229)) [96] |  |

Known Usage Locations

* In derivations of other global types (3):

|  |  |
| --- | --- |
| [TimeIntervalType](#r527) [126] (as extension base),  [TimePeriodRealTimeType](#r533) [127] (as extension base), | [TimeSingleType](#r557) [131] (as extension base) |

* As direct type of elements (1):

|  |  |
| --- | --- |
| [variableTimeInterval](#r356) (in [series](#r229)) [96] |  |

Annotation

time series (site-variable-observation) can have three types of time periods: 1) definite start and end time, or TimeIntervalType, 2) single observation, or TimeSingleType 3) Real Time station with moving window of data available, or TimeRealTimeType In order to simplify client development, all types now include beginDateTime, and endDateTime. A fourth type should be added: 4) continuing site, where start is known, and site is still collecting data. This could be a realTimeType, or rename the real time type to TimeDefinedPeriodType.

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:complexType name="[**TimePeriodType**](#r536)">  <xsi:sequence/>  </xsi:complexType> |

complexType *"TimeSeriesResponseType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 [elements](#r541) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r538) [129] |
| Includes: | definitions of 2 [elements](#r541) |
| Used: | at 1 [location](#r537) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r539)?, [timeSeries](#r540) | |
| </...> | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |

All Direct / Indirect Based Elements (1):

[timeSeriesResponse](#r277) [81]

Known Usage Locations

* As direct type of elements (1):

[timeSeriesResponse](#r277) [81]

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:complexType name="[**TimeSeriesResponseType**](#r542)">  <xsi:sequence>  <xsi:element minOccurs="0" name="[**queryInfo**](#r539)" type="[**QueryInfoType**](#r471)"/>  <xsi:element name="[**timeSeries**](#r540)" type="[**TimeSeriesType**](#r551)"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r542) component only; 2/2)

[queryInfo](#r195) [63]



|  |  |
| --- | --- |
| Type: | [QueryInfoType](#r471) [115], complex content |

the parameter information passed to Getvalues(location,variable,beginDate,endDate) should be placed in QueryInfoType/criteria/ See QueryInfoType for more details.

[timeSeries](#r275) [80]



|  |  |
| --- | --- |
| Type: | [TimeSeriesType](#r551) [130], complex content |

Contains the source of the time series, the variable, and values element which is an array of value elements and thier associated metadata (qualifiers, methods, sources, quality control level, samples)

complexType *"TimeSeriesType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r546), 3 [elements](#r550) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r544) [130] |
| Includes: | definitions of 1 [attribute](#r546) and 3 [elements](#r550) |
| Used: | at 1 [location](#r543) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [name](#r545) | = | xsi:string |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [sourceInfo](#r547), [variable](#r549), [values](#r548) | | | |
| </...> | | | |

Content Model Elements (3):

|  |  |
| --- | --- |
| [sourceInfo](#r262) (in [timeSeries](#r275)) [78],  [values](#r325) (in [timeSeries](#r275)) [90], | [variable](#r333) (type [VariableInfoType](#r602)) [92] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [timeSeries](#r275) (in [timeSeriesResponse](#r277)) [80] |  |

Annotation

Contains the source of the time series, the variable, and values element which is an array of value elements and thier associated metadata (qualifiers, methods, sources, quality control level, samples)

XML Source (w/o annotations (4))

|  |
| --- |
| <xsi:complexType name="[**TimeSeriesType**](#r551)">  <xsi:sequence>  <xsi:element name="[**sourceInfo**](#r547)" type="[**SourceInfoType**](#r511)"/>  <xsi:element name="[**variable**](#r549)" type="[**VariableInfoType**](#r602)"/>  <xsi:element name="[**values**](#r548)" type="[**TsValuesSingleVariableType**](#r571)"/>  </xsi:sequence>  <xsi:attribute name="[**name**](#r545)" type="xsi:string" use="required"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r551) component only; 1/1)

name



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | required |

Name of the time series. optional.

Content Element Detail (defined in [this](#r551) component only; 3/3)

[sourceInfo](#r262) [78]



|  |  |
| --- | --- |
| Type: | [SourceInfoType](#r511) [124], empty content |

[values](#r325) [90]



|  |  |
| --- | --- |
| Type: | [TsValuesSingleVariableType](#r571) [132], complex content |

A list of values and associated metadata. It is the values element in the timeSerissResponse

[variable](#r333) [92]



|  |  |
| --- | --- |
| Type: | [VariableInfoType](#r602) [137], complex content |

Contains full descriptive information about a variable, as described by the ODM. This includes one or more variable codes, the short variable name, a detailed variable description, and suggest. See VariableInforType for full details.

complexType *"TimeSingleType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 3 [elements](#r556) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r552) [131] |
| Includes: | definitions of 3 [elements](#r556) |
| Used: | never |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [timeSingle](#r555), [beginDateTime](#r553), [endDateTime](#r554) | |
| </...> | |

Content Model Elements (3):

|  |  |
| --- | --- |
| [beginDateTime](#r18) (type xsi:dateTime) [25],  [endDateTime](#r57) (type xsi:dateTime) [34], | [timeSingle](#r279) (type xsi:dateTime) [81] |

Annotation

For where a series is a single observation. timeSingle, beginDateTime, and endDateTime will have the same value. The beginDateTime and endDateTime are provided to simplify usage by clients.They should be be calculated based on the duration stored in realTimeDataPeriod

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  [TimePeriodType](#r536) [128]  **TimeSingleType** (extension) |

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**TimeSingleType**](#r557)">  <xsi:complexContent mixed="false">  <xsi:extension base="[**TimePeriodType**](#r536)">  <xsi:sequence>  <xsi:element name="[**timeSingle**](#r555)" type="xsi:dateTime"/>  <xsi:element name="[**beginDateTime**](#r553)" type="xsi:dateTime"/>  <xsi:element name="[**endDateTime**](#r554)" type="xsi:dateTime"/>  </xsi:sequence>  </xsi:extension>  </xsi:complexContent>  </xsi:complexType> |

Content Element Detail (defined in [this](#r557) component only; 3/3)

[beginDateTime](#r18) [25]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

dateTime of the first data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

[endDateTime](#r57) [34]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

Date of the last data value in the series. The dateTime is specified in the following form "YYYY-MM-DDThh:mm:ss" where: \* YYYY indicates the year \* MM indicates the month \* DD indicates the day \* T indicates the start of the required time section \* hh indicates the hour \* mm indicates the minute \* ss indicates the second Note: All components are required!

[timeSingle](#r279) [81]



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined, simple content |

complexType *"TsValuesSingleVariableType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 6 [attributes](#r563), 6 [elements](#r570) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r559) [133] |
| Includes: | definitions of 3 [attributes](#r563) and 6 [elements](#r570) |
| Used: | at 1 [location](#r558) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [count](#r560) | = | xsi:nonNegativeInteger |
|  | [timeZoneShiftApplied](#r561) | = | xsi:boolean |
|  | [unitsAbbreviation](#r671) | = | xsi:normalizedString |
|  | [unitsAreConverted](#r562) | = | xsi:boolean : "false" |
|  | [unitsCode](#r672) | = | xsi:token |
|  | [unitsType](#r673) | = | ("Angle" | "Area" | "Dimensionless" | "Energy" | "Energy Flux" | "Flow" | "Force" | "Frequency" | "Length" | "Light" | "Mass" | "Permeability" | "Power" | "Pressure/Stress" | "Resolution" | "Scale" | "Temperature" | "Time" | "Velocity" | "Volume") |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [value](#r569)+, [qualifier](#r566)\*, [qualityControlLevel](#r567)\*, [method](#r564)\*, [source](#r568)\*, [offset](#r565)\* | | | |
| </...> | | | |

Content Model Elements (6):

|  |  |
| --- | --- |
| [method](#r112) (in [values](#r325)) [46],  [offset](#r128) (in [values](#r325)) [51],  [qualifier](#r172) [58], | [qualityControlLevel](#r188) [61],  [source](#r256) (in [values](#r325)) [76],  [value](#r318) (in [values](#r325)) [88] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [values](#r325) (in [timeSeries](#r275)) [90] |  |

Annotation

TsValuesSingleVariableTypea aggregates the list of values and associated metadata. It is the values element in the timeSereisResponse Attributes are optional, but use @count is encouraged. The atrributes @unitsAreConverted, @untsCode,@unitsAbbreviation, and @unitsType were originally included to allow for translation from orignal variable units. Thier use is not encouraged. Get unit information from the Variable element.

XML Source (w/o annotations (11))

|  |
| --- |
| <xsi:complexType name="[**TsValuesSingleVariableType**](#r571)">  <xsi:sequence>  <xsi:element maxOccurs="unbounded" minOccurs="1" name="[**value**](#r569)" type="[**ValueSingleVariable**](#r584)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" ref="[**qualifier**](#r172)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" ref="[**qualityControlLevel**](#r188)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**method**](#r564)" type="[**MethodType**](#r436)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**source**](#r568)" type="[**SourceType**](#r522)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**offset**](#r565)" type="[**OffsetType**](#r452)"/>  </xsi:sequence>  <xsi:attribute name="[**timeZoneShiftApplied**](#r561)" type="xsi:boolean" use="optional"/>  <xsi:attributeGroup ref="[**unitsAttr**](#r675)"/>  <xsi:attribute name="[**count**](#r560)" type="xsi:nonNegativeInteger"/>  <xsi:attribute default="false" name="[**unitsAreConverted**](#r562)" type="xsi:boolean"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r571) component only; 3/6)

count



|  |  |
| --- | --- |
| Type: | xsi:nonNegativeInteger, predefined |
| Use: | optional |

timeZoneShiftApplied



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

If a webservice has transformed the time zone from the original data.

unitsAreConverted



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

True if a webservice has transformed the data from the original units.

Attribute Value

|  |  |
| --- | --- |
| Default: | "false" |

Content Element Detail (defined in [this](#r571) component only; 6/6)

[method](#r112) [46]



|  |  |
| --- | --- |
| Type: | [MethodType](#r436) [109], complex content |

Multiple &amp;amp;lt;method&amp;amp;gt;s lists the methods used to collect the data and any additional information about the method. @methodID is the link between the values, and method. Different instruments should be represented as different methods, according to ODM best practices

[offset](#r128) [51]



|  |  |
| --- | --- |
| Type: | [OffsetType](#r452) [112], complex content |

<offset> is of type OffsetType. offset lists full descriptive information for each of the measurement offsets. @offsetID is the link between offset, and values.

[qualifier](#r172) [58]



|  |  |
| --- | --- |
| Type: | [anonymous](#r167) (extension of xsi:string), simple content |

multiple <qualifier>s containg the data qualifying comments that accompany the data.

Simple Content

|  |
| --- |
| xsi:string |

[qualityControlLevel](#r188) [61]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

<qualityControlLevel> contains the quality control levels that are used for versioning data within the data values

[source](#r256) [76]



|  |  |
| --- | --- |
| Type: | [SourceType](#r522) [124], complex content |

The Sources the original sources of the data, providing information sufficient to retrieve the data value. @sourceID is the link bewteen source the values.

[value](#r318) [88]



|  |  |
| --- | --- |
| Type: | [ValueSingleVariable](#r584) [135], simple content |

Multiple <value>s represent the data series.

Simple Content

|  |
| --- |
| xsi:decimal |

complexType *"UnitsType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 1 [attribute](#r575), 4 [elements](#r580) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r573) [135] |
| Includes: | definitions of 1 [attribute](#r575) and 4 [elements](#r580) |
| Used: | at 1 [location](#r572) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [UnitID](#r574) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [UnitName](#r578)?, [UnitDescription](#r577)?, [UnitType](#r579)?, [UnitAbbreviation](#r576)? | | | |
| </...> | | | |

Content Model Elements (4):

|  |  |
| --- | --- |
| [UnitAbbreviation](#r305) (in [unit](#r303)) [86],  [UnitDescription](#r307) (in [unit](#r303)) [86], | [UnitName](#r309) (in [unit](#r303)) [87],  [UnitType](#r316) (in [unit](#r303)) [88] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [unit](#r303) (in [timeSupport](#r286)) [85] |  |

XML Source

|  |
| --- |
| <xsi:complexType name="[**UnitsType**](#r581)">  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitName**](#r578)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitDescription**](#r577)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitType**](#r579)" type="[**UnitsTypeEnum**](#r638)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**UnitAbbreviation**](#r576)" type="xsi:string"/>  </xsi:sequence>  <xsi:attribute name="[**UnitID**](#r574)" type="xsi:int"/>  </xsi:complexType> |

Attribute Detail (defined in [this](#r581) component only; 1/1)

UnitID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

Content Element Detail (defined in [this](#r581) component only; 4/4)

[UnitAbbreviation](#r305) [86]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

[UnitDescription](#r307) [86]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

[UnitName](#r309) [87]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

[UnitType](#r316) [88]



|  |  |
| --- | --- |
| Type: | [UnitsTypeEnum](#r638) [149], simple content |

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Angle", "Area", "Dimensionless", "Energy", "Energy Flux", "Flow", "Force", "Frequency", "Length", "Light", "Mass", "Permeability", "Power", "Pressure/Stress", "Resolution", "Scale", "Temperature", "Time", "Velocity", "Volume" |

complexType *"ValueSingleVariable"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | simple, 17 attributes |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r583) [136] |
| Used: | at 1 [location](#r582) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [accuracyStdDev](#r679) | = | xsi:double |
|  | [censorCode](#r680) | = | ("lt" | "gt" | "nc" | "nd" | "pnq") |
|  | [codedVocabulary](#r681) | = | xsi:boolean |
|  | [codedVocabularyTerm](#r682) | = | xsi:string |
|  | [dateTime](#r683) | = | xsi:dateTime |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [methodID](#r684) | = | xsi:int |
|  | [offsetDescription](#r653) | = | xsi:string |
|  | [offsetTypeID](#r654) | = | xsi:int |
|  | [offsetUnitsAbbreviation](#r655) | = | xsi:string |
|  | [offsetUnitsCode](#r656) | = | xsi:string |
|  | [offsetValue](#r657) | = | xsi:double |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | [qualifiers](#r685) | = | xsi:string |
|  | [qualityControlLevel](#r686) | = | ("Raw data" | "Quality controlled data" | "Derived products" | "Interpreted products" | "Knowledge products" | "Unknown") |
|  | [sampleID](#r687) | = | xsi:int |
|  | [sourceID](#r688) | = | xsi:int |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | { xsi:decimal } | | | |
| </...> | | | |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [value](#r318) (in [values](#r325)) [88] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [value](#r318) (in [values](#r325)) [88] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:decimal  **ValueSingleVariable** (extension) |

|  |  |
| --- | --- |
| Derivation: | extension of xsi:decimal |

XML Source

|  |
| --- |
| <xsi:complexType name="[**ValueSingleVariable**](#r584)">  <xsi:simpleContent>  <xsi:extension base="xsi:decimal">  <xsi:attributeGroup ref="[**ValueAttr**](#r690)"/>  <xsi:attributeGroup ref="[**offsetAttr**](#r659)"/>  <xsi:attributeGroup ref="[**DbIdentifiers**](#r649)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType> |

complexType *"VariableInfoType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 attributes, 14 [elements](#r601) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r586) [137] |
| Includes: | definitions of 14 [elements](#r601) |
| Used: | at 1 [location](#r585) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [oid](#r647) | = | xsi:normalizedString |
|  | > | | |
|  | |  |  | | --- | --- | | *Content:* | [variableCode](#r598)+, [variableName](#r600)?, [variableDescription](#r599)?, [valueType](#r597)?, [dataType](#r587)?, [generalCategory](#r589)?, [sampleMedium](#r594)?, [units](#r596)?, [options](#r592)?, [note](#r591)\*, [related](#r593)?, [extension](#r588)?, [NoDataValue](#r590)?, [timeSupport](#r595)? | | | |
| </...> | | | |

Content Model Elements (14):

|  |  |
| --- | --- |
| [dataType](#r42) (type [dataTypeEnum](#r614)) [30],  [extension](#r62) [35],  [generalCategory](#r66) (type [generalCategoryEnum](#r620)) [36],  [NoDataValue](#r120) (in [variable](#r333)) [48],  [note](#r126) (type [NoteType](#r441)) [49],  [options](#r155) [55],  [related](#r206) (in [variable](#r333)) [65], | [sampleMedium](#r213) (type [SampleMediumEnum](#r632)) [67],  [timeSupport](#r286) (in [variable](#r333)) [82],  [units](#r314) [87],  [valueType](#r329) (type [valueTypeEnum](#r641)) [91],  [variableCode](#r340) [93],  [variableDescription](#r342) (in [variable](#r333)) [94],  [variableName](#r344) (in [variable](#r333)) [94] |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [variable](#r333) (type [VariableInfoType](#r602)) [92] |  |

Annotation

VariableInfoType is a complex type containting full descriptive information about a variable, as described by the ODM. This includes one or more variable codes, the short variable name, a detailed variable description, and suggest It also extends the ODM model, in several methods: - options contain extended reuqest information. - note(s) are for generic extenstion. - extension is an element where additional namespace information should be placed. - related allows for parent and child relationships between variables to be communicated.

XML Source (w/o annotations (18))

|  |
| --- |
| <xsi:complexType name="[**VariableInfoType**](#r602)">  <xsi:sequence>  <xsi:sequence>  <xsi:element maxOccurs="unbounded" minOccurs="1" ref="[**variableCode**](#r340)"/>  <xsi:element minOccurs="0" name="[**variableName**](#r600)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**variableDescription**](#r599)" type="xsi:string"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**valueType**](#r597)" type="[**valueTypeEnum**](#r641)"/>  <xsi:element minOccurs="0" name="[**dataType**](#r587)" type="[**dataTypeEnum**](#r614)"/>  <xsi:element minOccurs="0" name="[**generalCategory**](#r589)" type="[**generalCategoryEnum**](#r620)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**sampleMedium**](#r594)" type="[**SampleMediumEnum**](#r632)"/>  <xsi:element minOccurs="0" ref="[**units**](#r314)"/>  <xsi:element maxOccurs="1" minOccurs="0" ref="[**options**](#r155)"/>  <xsi:element maxOccurs="unbounded" minOccurs="0" name="[**note**](#r591)" type="[**NoteType**](#r441)"/>  <xsi:element minOccurs="0" name="[**related**](#r593)">  <xsi:complexType>  <xsi:sequence maxOccurs="unbounded">  <xsi:element name="[**parentID**](#r203)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  <xsi:element name="[**relatedID**](#r204)">  <xsi:complexType>  <xsi:simpleContent>  <xsi:extension base="xsi:string">  <xsi:attributeGroup ref="[**VocabularyAttributes**](#r698)"/>  </xsi:extension>  </xsi:simpleContent>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:complexType>  </xsi:element>  <xsi:element minOccurs="0" ref="[**extension**](#r62)"/>  <xsi:element minOccurs="0" name="[**NoDataValue**](#r590)" type="xsi:string"/>  <xsi:element minOccurs="0" name="[**timeSupport**](#r595)" nillable="true">  <xsi:complexType>  <xsi:sequence>  <xsi:element maxOccurs="1" minOccurs="0" name="[**unit**](#r284)" type="[**UnitsType**](#r581)"/>  <xsi:element maxOccurs="1" minOccurs="0" name="[**timeInterval**](#r283)" type="xsi:int"/>  </xsi:sequence>  <xsi:attribute name="[**isRegular**](#r281)" type="xsi:boolean"/>  </xsi:complexType>  </xsi:element>  </xsi:sequence>  </xsi:sequence>  <xsi:attributeGroup ref="[**DbIdentifiers**](#r649)"/>  </xsi:complexType> |

Content Element Detail (defined in [this](#r602) component only; 14/14)

[dataType](#r42) [30]



|  |  |
| --- | --- |
| Type: | [dataTypeEnum](#r614) [142], simple content |

Text value that identifies the data values as one of several types from the dataTypeEnum A default value of “Unknown” can be used where the data type is unknown.

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Continuous", "Instantaneous", "Cumulative", "Incremental", "Average", "Maximum", "Minimum", "Constant Over Interval", "Categorical", "Best Easy Systematic Estimator ", "Unknown", "Variance", "Median", "Mode", "Best Easy Systematic Estimator", "Standard Deviation", "Skewness", "Equivalent Mean", "Sporadic", "Unknown" |

[extension](#r62) [35]



|  |  |
| --- | --- |
| Type: | xsi:anyType, any content |

In order to simplify comprehension, data sources are encouraged to put additional informaiton in the extension area, using thier own namespace. Clients need not understand information in &lt;extension?

[generalCategory](#r66) [36]



|  |  |
| --- | --- |
| Type: | [generalCategoryEnum](#r620) [144], simple content |

General category of the data values from the generalCategoryEnum. A default value of “Unknown” can be used where the general category is unknown.

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Water Quality", "Climate", "Hydrology", "Geology", "Biota", "Unknown", "Instrumentation" |

[NoDataValue](#r120) [48]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

Numeric value used to encode no data values for this variable.

[note](#r126) [49]



|  |  |
| --- | --- |
| Type: | [NoteType](#r441) [111], simple content |

Additional information, properties like should be encoded in zero or more &amp;lt;note&amp;gt; elmements. The name of the property should be @title, and the value should be inside the &lt;note&gt;value&lt;/note&gt;. Attribute @type is provided so that notes can be grouped.

Simple Content

|  |
| --- |
| xsi:string |

[options](#r155) [55]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

A list of options. Option elements are key-value pair elements that control how a variable maght be utilized in a service. Examples: MODIS web service. Information is aggreated over land or ocean or both. The plotarea option can include: plotarea=land, plotarea=land, plotarea=landocean USGS uses a statistic code, 0003, to repesent a value type of 'Average'. The USGS statistic codes also several options that do not fit the ODM data model.

[related](#r206) [65]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

This can be used to build up relationships between variables.

[sampleMedium](#r213) [67]



|  |  |
| --- | --- |
| Type: | [SampleMediumEnum](#r632) [147], simple content |

Only terms from the SampleMediumEnume can be used to populate the sampleMedium element. A default value of “Unknown” is used where the sample medium is unknown.

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Surface Water", "Ground Water", "Sediment", "Soil", "Air", "Tissue", "Precipitation", "Unknown", "Other", "Snow", "Not Relevant" |

[timeSupport](#r286) [82]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |
| Nillable: | (can be declared as nil using xsi:nil attribute in instance XML documents) |

Element containing the time support (or temporal footprint) of the data values. @isRegular indicates if the spacing is regular. In waterML 1.0, there is a divergence of mean between ODM, and WaterML. WaterML only communcates the regularity, and the spacing of the observations (timeInterval). Whereas timesupport in the ODM is associated with the dataType, and time support. This will be addressed in 1.1

[units](#r314) [87]



|  |  |
| --- | --- |
| Type: | [anonymous](#r312) (extension of xsi:string), simple content |

The units of the measurements asociated withthe variable. This will be changed to UnitsType in WaterML 1.1

Simple Content

|  |
| --- |
| xsi:string |

[valueType](#r329) [91]



|  |  |
| --- | --- |
| Type: | [valueTypeEnum](#r641) [150], simple content |

Text value indicating what type of data value is being recorded. For 1.0 this must be from the valueTypeEnum type. A default value of “Unknown” can be used where the value type is unknown.

Simple Content

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Field Observation", "Sample", "Model Simulation Result", "Derived Value", "Unknown" |

[variableCode](#r340) [93]



|  |  |
| --- | --- |
| Type: | [anonymous](#r336) (extension of xsi:token), simple content |

One of more elements representing the Text code used by the organization that collects the data to identify the variable.

Simple Content

|  |
| --- |
| xsi:token |

[variableDescription](#r342) [94]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

A detailed description of the variable. May include processing information and other details.

[variableName](#r344) [94]



|  |  |
| --- | --- |
| Type: | xsi:string, predefined, simple content |

A brief name of the variable that could be shown in a menu

complexType *"VariablesResponseType"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | complex, 2 [elements](#r607) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r604) [141] |
| Includes: | definitions of 2 [elements](#r607) |
| Used: | at 1 [location](#r603) |

|  |  |
| --- | --- |
| XML Representation Summary | |
| <...> | |
|  | |  |  | | --- | --- | | *Content:* | [queryInfo](#r605)?, [variables](#r606) | |
| </...> | |

Content Model Elements (2):

|  |  |
| --- | --- |
| [queryInfo](#r195) (type [QueryInfoType](#r471)) [63], | [variables](#r352) [95] |

All Direct / Indirect Based Elements (1):

[variablesResponse](#r354) [96]

Known Usage Locations

* As direct type of elements (1):

[variablesResponse](#r354) [96]

Annotation

VariablesResponseType is object type returned by the method GetVariableInfo. The elemnt name is variablesResponse. The request will contain a variables element containing a list of variable elements.

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:complexType name="[**VariablesResponseType**](#r608)">  <xsi:sequence>  <xsi:element minOccurs="0" name="[**queryInfo**](#r605)" type="[**QueryInfoType**](#r471)"/>  <xsi:element minOccurs="1" ref="[**variables**](#r352)"/>  </xsi:sequence>  </xsi:complexType> |

Content Element Detail (defined in [this](#r608) component only; 2/2)

[queryInfo](#r195) [63]



|  |  |
| --- | --- |
| Type: | [QueryInfoType](#r471) [115], complex content |

the parameter information passed to GetVariableInfo(variable) should be placed in QueryInfoType/criteria/variableParam See QueryInfoType for more details.

[variables](#r352) [95]



|  |  |
| --- | --- |
| Type: | anonymous, complex content |

variables element contains a list of variable elements

simpleType *"CensorCodeEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r610) [142] |
| Used: | at 1 [location](#r609) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "lt", "gt", "nc", "nd", "pnq" |

All Direct / Indirect Based Attributes (1):

|  |  |
| --- | --- |
| [ValueAttr](#r690)/@[censorCode](#r680) [156] |  |

Known Usage Locations

* As direct type of attributes within attributeGroups (1):

[ValueAttr](#r690)/@[censorCode](#r680) [156]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **CensorCodeEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "lt", "gt", "nc", "nd", "pnq" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**CensorCodeEnum**](#r611)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="lt"/>  <xsi:enumeration value="gt"/>  <xsi:enumeration value="nc"/>  <xsi:enumeration value="nd"/>  <xsi:enumeration value="pnq"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"dataTypeEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r613) [143] |
| Used: | at 1 [location](#r612) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Continuous", "Instantaneous", "Cumulative", "Incremental", "Average", "Maximum", "Minimum", "Constant Over Interval", "Categorical", "Best Easy Systematic Estimator ", "Unknown", "Variance", "Median", "Mode", "Best Easy Systematic Estimator", "Standard Deviation", "Skewness", "Equivalent Mean", "Sporadic", "Unknown" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [dataType](#r42) (type [dataTypeEnum](#r614)) [30] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [dataType](#r42) (type [dataTypeEnum](#r614)) [30] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **dataTypeEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Continuous", "Instantaneous", "Cumulative", "Incremental", "Average", "Maximum", "Minimum", "Constant Over Interval", "Categorical", "Best Easy Systematic Estimator ", "Unknown", "Variance", "Median", "Mode", "Best Easy Systematic Estimator", "Standard Deviation", "Skewness", "Equivalent Mean", "Sporadic", "Unknown" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**dataTypeEnum**](#r614)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Continuous"/>  <xsi:enumeration value="Instantaneous"/>  <xsi:enumeration value="Cumulative"/>  <xsi:enumeration value="Incremental"/>  <xsi:enumeration value="Average"/>  <xsi:enumeration value="Maximum"/>  <xsi:enumeration value="Minimum"/>  <xsi:enumeration value="Constant Over Interval"/>  <xsi:enumeration value="Categorical"/>  <xsi:enumeration value="Best Easy Systematic Estimator "/>  <xsi:enumeration value="Unknown"/>  <xsi:enumeration value="Variance"/>  <xsi:enumeration value="Median"/>  <xsi:enumeration value="Mode"/>  <xsi:enumeration value="Best Easy Systematic Estimator"/>  <xsi:enumeration value="Standard Deviation"/>  <xsi:enumeration value="Skewness"/>  <xsi:enumeration value="Equivalent Mean"/>  <xsi:enumeration value="Sporadic"/>  <xsi:enumeration value="Unknown"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"DocumentationEnumTypes"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r616) [143] |
| Used: | at 1 [location](#r615) |

|  |
| --- |
| Simple Content Model |
| xsi:token | ("funding" | "history" | "processing\_level" | "rights" | "summary") |

All Direct / Indirect Based Attributes (1):

|  |  |
| --- | --- |
| [DocumentationType](#r389)/@[type](#r387) [102] |  |

Known Usage Locations

* As direct type of attributes within complexTypes (1):

[DocumentationType](#r389)/@[type](#r387) [102]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  union of (xsi:token | restriction of xsi:token)  **DocumentationEnumTypes** |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**DocumentationEnumTypes**](#r617)">  <xsi:union memberTypes="xsi:token">  <xsi:simpleType>  <xsi:restriction base="xsi:token">  <xsi:enumeration value="funding"/>  <xsi:enumeration value="history"/>  <xsi:enumeration value="processing\_level"/>  <xsi:enumeration value="rights"/>  <xsi:enumeration value="summary"/>  </xsi:restriction>  </xsi:simpleType>  </xsi:union>  </xsi:simpleType> |

simpleType *"generalCategoryEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r619) [144] |
| Used: | at 1 [location](#r618) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Water Quality", "Climate", "Hydrology", "Geology", "Biota", "Unknown", "Instrumentation" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [generalCategory](#r66) (type [generalCategoryEnum](#r620)) [36] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [generalCategory](#r66) (type [generalCategoryEnum](#r620)) [36] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **generalCategoryEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Water Quality", "Climate", "Hydrology", "Geology", "Biota", "Unknown", "Instrumentation" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**generalCategoryEnum**](#r620)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Water Quality"/>  <xsi:enumeration value="Climate"/>  <xsi:enumeration value="Hydrology"/>  <xsi:enumeration value="Geology"/>  <xsi:enumeration value="Biota"/>  <xsi:enumeration value="Unknown"/>  <xsi:enumeration value="Instrumentation"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"Latitude"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r622) [145] |
| Used: | at 3 [locations](#r621) |

|  |
| --- |
| Simple Content Model |
| xsi:double |

Simple Content Restrictions:

|  |  |
| --- | --- |
| MaxInclusive: | 90.00 |
| MinInclusive: | -90.00 |

All Direct / Indirect Based Elements (3):

|  |  |
| --- | --- |
| [latitude](#r89) (in [latLonPoint](#r93)) [41],  [north](#r122) (in [latLonBox](#r91)) [49], | [south](#r266) (in [latLonBox](#r91)) [79] |

Known Usage Locations

* As direct type of elements (3):

|  |  |
| --- | --- |
| [latitude](#r89) (in [latLonPoint](#r93)) [41],  [north](#r122) (in [latLonBox](#r91)) [49], | [south](#r266) (in [latLonBox](#r91)) [79] |

Annotation

The latitude of the site in a decimal degrees as calculated in terms of the given datum.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:double  **Latitude** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:double |
| Facets: | |  |  | | --- | --- | | maxInclusive: | 90.00 | | minInclusive: | -90.00 | |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:simpleType name="[**Latitude**](#r623)">  <xsi:restriction base="xsi:double">  <xsi:minInclusive value="-90.00"/>  <xsi:maxInclusive value="90.00"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"Longitude"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r625) [146] |
| Used: | at 3 [locations](#r624) |

|  |
| --- |
| Simple Content Model |
| xsi:double |

Simple Content Restrictions:

|  |  |
| --- | --- |
| MaxInclusive: | 180.00 |
| MinInclusive: | -180.00 |

All Direct / Indirect Based Elements (3):

|  |  |
| --- | --- |
| [east](#r48) (in [latLonBox](#r91)) [32],  [longitude](#r106) (in [latLonPoint](#r93)) [45], | [west](#r360) (in [latLonBox](#r91)) [97] |

Known Usage Locations

* As direct type of elements (3):

|  |  |
| --- | --- |
| [east](#r48) (in [latLonBox](#r91)) [32],  [longitude](#r106) (in [latLonPoint](#r93)) [45], | [west](#r360) (in [latLonBox](#r91)) [97] |

Annotation

The longitude of the site in a decimal degrees as calculated in terms of the given datum.

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:double  **Longitude** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:double |
| Facets: | |  |  | | --- | --- | | maxInclusive: | 180.00 | | minInclusive: | -180.00 | |

XML Source (w/o annotations (1))

|  |
| --- |
| <xsi:simpleType name="[**Longitude**](#r626)">  <xsi:restriction base="xsi:double">  <xsi:minInclusive value="-180.00"/>  <xsi:maxInclusive value="180.00"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"QualityControlLevelEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r628) [147] |
| Used: | at 1 [location](#r627) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Raw data", "Quality controlled data", "Derived products", "Interpreted products", "Knowledge products", "Unknown" |

All Direct / Indirect Based Attributes (1):

|  |  |
| --- | --- |
| [ValueAttr](#r690)/@[qualityControlLevel](#r686) [157] |  |

Known Usage Locations

* As direct type of attributes within attributeGroups (1):

[ValueAttr](#r690)/@[qualityControlLevel](#r686) [157]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **QualityControlLevelEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Raw data", "Quality controlled data", "Derived products", "Interpreted products", "Knowledge products", "Unknown" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**QualityControlLevelEnum**](#r629)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Raw data"/>  <xsi:enumeration value="Quality controlled data"/>  <xsi:enumeration value="Derived products"/>  <xsi:enumeration value="Interpreted products"/>  <xsi:enumeration value="Knowledge products"/>  <xsi:enumeration value="Unknown"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"SampleMediumEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r631) [148] |
| Used: | at 1 [location](#r630) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Surface Water", "Ground Water", "Sediment", "Soil", "Air", "Tissue", "Precipitation", "Unknown", "Other", "Snow", "Not Relevant" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [sampleMedium](#r213) (type [SampleMediumEnum](#r632)) [67] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [sampleMedium](#r213) (type [SampleMediumEnum](#r632)) [67] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **SampleMediumEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Surface Water", "Ground Water", "Sediment", "Soil", "Air", "Tissue", "Precipitation", "Unknown", "Other", "Snow", "Not Relevant" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**SampleMediumEnum**](#r632)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Surface Water"/>  <xsi:enumeration value="Ground Water"/>  <xsi:enumeration value="Sediment"/>  <xsi:enumeration value="Soil"/>  <xsi:enumeration value="Air"/>  <xsi:enumeration value="Tissue"/>  <xsi:enumeration value="Precipitation"/>  <xsi:enumeration value="Unknown"/>  <xsi:enumeration value="Other"/>  <xsi:enumeration value="Snow"/>  <xsi:enumeration value="Not Relevant"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"sampleTypeEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r634) [149] |
| Used: | at 1 [location](#r633) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "FD", "FF", "FL", "LF", "GW", "PB", "PD", "PE", "PI", "PW", "RE", "SE", "SR", "SS", "SW", "TE", "TI", "TW", "VE", "VI", "VW", "Grab", "Unknown", "No Sample" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [SampleType](#r215) (type [sampleTypeEnum](#r635)) [68] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [SampleType](#r215) (type [sampleTypeEnum](#r635)) [68] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **sampleTypeEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "FD", "FF", "FL", "LF", "GW", "PB", "PD", "PE", "PI", "PW", "RE", "SE", "SR", "SS", "SW", "TE", "TI", "TW", "VE", "VI", "VW", "Grab", "Unknown", "No Sample" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**sampleTypeEnum**](#r635)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="FD"/>  <xsi:enumeration value="FF"/>  <xsi:enumeration value="FL"/>  <xsi:enumeration value="LF"/>  <xsi:enumeration value="GW"/>  <xsi:enumeration value="PB"/>  <xsi:enumeration value="PD"/>  <xsi:enumeration value="PE"/>  <xsi:enumeration value="PI"/>  <xsi:enumeration value="PW"/>  <xsi:enumeration value="RE"/>  <xsi:enumeration value="SE"/>  <xsi:enumeration value="SR"/>  <xsi:enumeration value="SS"/>  <xsi:enumeration value="SW"/>  <xsi:enumeration value="TE"/>  <xsi:enumeration value="TI"/>  <xsi:enumeration value="TW"/>  <xsi:enumeration value="VE"/>  <xsi:enumeration value="VI"/>  <xsi:enumeration value="VW"/>  <xsi:enumeration value="Grab"/>  <xsi:enumeration value="Unknown"/>  <xsi:enumeration value="No Sample"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"UnitsTypeEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r637) [150] |
| Used: | at 2 [locations](#r636) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Angle", "Area", "Dimensionless", "Energy", "Energy Flux", "Flow", "Force", "Frequency", "Length", "Light", "Mass", "Permeability", "Power", "Pressure/Stress", "Resolution", "Scale", "Temperature", "Time", "Velocity", "Volume" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [UnitType](#r316) (in [unit](#r303)) [88] |  |

All Direct / Indirect Based Attributes (1):

|  |  |
| --- | --- |
| [unitsAttr](#r675)/@[unitsType](#r673) [155] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [UnitType](#r316) (in [unit](#r303)) [88] |  |

* As direct type of attributes within attributeGroups (1):

[unitsAttr](#r675)/@[unitsType](#r673) [155]

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **UnitsTypeEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Angle", "Area", "Dimensionless", "Energy", "Energy Flux", "Flow", "Force", "Frequency", "Length", "Light", "Mass", "Permeability", "Power", "Pressure/Stress", "Resolution", "Scale", "Temperature", "Time", "Velocity", "Volume" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**UnitsTypeEnum**](#r638)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Angle"/>  <xsi:enumeration value="Area"/>  <xsi:enumeration value="Dimensionless"/>  <xsi:enumeration value="Energy"/>  <xsi:enumeration value="Energy Flux"/>  <xsi:enumeration value="Flow"/>  <xsi:enumeration value="Force"/>  <xsi:enumeration value="Frequency"/>  <xsi:enumeration value="Length"/>  <xsi:enumeration value="Light"/>  <xsi:enumeration value="Mass"/>  <xsi:enumeration value="Permeability"/>  <xsi:enumeration value="Power"/>  <xsi:enumeration value="Pressure/Stress"/>  <xsi:enumeration value="Resolution"/>  <xsi:enumeration value="Scale"/>  <xsi:enumeration value="Temperature"/>  <xsi:enumeration value="Time"/>  <xsi:enumeration value="Velocity"/>  <xsi:enumeration value="Volume"/>  </xsi:restriction>  </xsi:simpleType> |

simpleType *"valueTypeEnum"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r640) [151] |
| Used: | at 1 [location](#r639) |

|  |
| --- |
| Simple Content Model |
| *enumeration of* xsi:string |

Simple Content Restrictions:

|  |  |
| --- | --- |
| Enumeration: | "Field Observation", "Sample", "Model Simulation Result", "Derived Value", "Unknown" |

All Direct / Indirect Based Elements (1):

|  |  |
| --- | --- |
| [valueType](#r329) (type [valueTypeEnum](#r641)) [91] |  |

Known Usage Locations

* As direct type of elements (1):

|  |  |
| --- | --- |
| [valueType](#r329) (type [valueTypeEnum](#r641)) [91] |  |

Type Definition Detail

|  |
| --- |
| Type Derivation Tree  xsi:string  **valueTypeEnum** (restriction) |

|  |  |
| --- | --- |
| Derivation: | restriction of xsi:string |
| Facets: | |  |  | | --- | --- | | enumeration: | "Field Observation", "Sample", "Model Simulation Result", "Derived Value", "Unknown" | |

XML Source

|  |
| --- |
| <xsi:simpleType name="[**valueTypeEnum**](#r641)">  <xsi:restriction base="xsi:string">  <xsi:enumeration value="Field Observation"/>  <xsi:enumeration value="Sample"/>  <xsi:enumeration value="Model Simulation Result"/>  <xsi:enumeration value="Derived Value"/>  <xsi:enumeration value="Unknown"/>  </xsi:restriction>  </xsi:simpleType> |

attributeGroup *"DbIdentifiers"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 2 [attributes](#r648) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r645) [152] |
| Includes: | definitions of 2 [attributes](#r648) |
| Used: | at 5 [locations](#r644) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [metadataDateTime](#r646) | = | xsi:dateTime |
|  | [oid](#r647) | = | xsi:normalizedString |
| ...> | | | |

Annotation

thei attribute group provides provenance information for when an object is retrieved from a database.

Known Usage Locations

* In definitions of global complexTypes (3):

[SiteInfoType](#r508) [121], [ValueSingleVariable](#r584) [135], [VariableInfoType](#r602) [137]

* In definitions of anonymous complexTypes of elements (2):

[qualifier](#r172) [58], [qualityControlLevel](#r188) [61]

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:attributeGroup name="[**DbIdentifiers**](#r649)">  <xsi:attribute name="[**oid**](#r647)" type="xsi:normalizedString"/>  <xsi:attribute name="[**metadataDateTime**](#r646)" type="xsi:dateTime"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r649) component only; 2/2)

metadataDateTime



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined |
| Use: | optional |

time object was created in the database.

oid



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

object identifier, or guid for an object

attributeGroup *"offsetAttr"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 5 [attributes](#r658) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r652) [152] |
| Includes: | definitions of 5 [attributes](#r658) |
| Used: | at 1 [location](#r651) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [offsetDescription](#r653) | = | xsi:string |
|  | [offsetTypeID](#r654) | = | xsi:int |
|  | [offsetUnitsAbbreviation](#r655) | = | xsi:string |
|  | [offsetUnitsCode](#r656) | = | xsi:string |
|  | [offsetValue](#r657) | = | xsi:double |
| ...> | | | |

Known Usage Locations

* In definitions of global complexTypes (1):

[ValueSingleVariable](#r584) [135]

XML Source

|  |
| --- |
| <xsi:attributeGroup name="[**offsetAttr**](#r659)">  <xsi:attribute name="[**offsetValue**](#r657)" type="xsi:double"/>  <xsi:attribute name="[**offsetTypeID**](#r654)" type="xsi:int"/>  <xsi:attribute name="[**offsetDescription**](#r653)" type="xsi:string"/>  <xsi:attribute name="[**offsetUnitsAbbreviation**](#r655)" type="xsi:string"/>  <xsi:attribute name="[**offsetUnitsCode**](#r656)" type="xsi:string"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r659) component only; 5/5)

offsetDescription



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

offsetTypeID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

offsetUnitsAbbreviation



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

offsetUnitsCode



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

offsetValue



|  |  |
| --- | --- |
| Type: | xsi:double, predefined |
| Use: | optional |

attributeGroup *"timeZoneAttr"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 2 [attributes](#r665) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r662) [153] |
| Includes: | definitions of 2 [attributes](#r665) |
| Used: | at 2 [locations](#r661) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [ZoneAbbreviation](#r663) | = | xsi:normalizedString |
|  | [ZoneOffset](#r664) | = | xsi:string |
| ...> | | | |

Known Usage Locations

* In definitions of anonymous complexTypes of elements (2):

[daylightSavingsTimeZone](#r44) (in [timeZoneInfo](#r295)) [31], [defaultTimeZone](#r46) (in [timeZoneInfo](#r295)) [32]

XML Source (w/o annotations (2))

|  |
| --- |
| <xsi:attributeGroup name="[**timeZoneAttr**](#r666)">  <xsi:attribute name="[**ZoneAbbreviation**](#r663)" type="xsi:normalizedString" use="optional"/>  <xsi:attribute name="[**ZoneOffset**](#r664)" type="xsi:string" use="required"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r666) component only; 2/2)

ZoneAbbreviation



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

the standard abbreviation for this time zone (GMT; EST)

ZoneOffset



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | required |

Hours and minutes offset for this time zone (+00:00).

attributeGroup *"unitsAttr"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 3 [attributes](#r674) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r670) [154] |
| Includes: | definitions of 3 [attributes](#r674) |
| Used: | at 2 [locations](#r669) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [unitsAbbreviation](#r671) | = | xsi:normalizedString |
|  | [unitsCode](#r672) | = | xsi:token |
|  | [unitsType](#r673) | = | ("Angle" | "Area" | "Dimensionless" | "Energy" | "Energy Flux" | "Flow" | "Force" | "Frequency" | "Length" | "Light" | "Mass" | "Permeability" | "Power" | "Pressure/Stress" | "Resolution" | "Scale" | "Temperature" | "Time" | "Velocity" | "Volume") |
| ...> | | | |

Known Usage Locations

* In definitions of global complexTypes (1):

[TsValuesSingleVariableType](#r571) [132]

* In definitions of anonymous complexTypes of elements (1):

[units](#r314) [87]

XML Source

|  |
| --- |
| <xsi:attributeGroup name="[**unitsAttr**](#r675)">  <xsi:attribute name="[**unitsAbbreviation**](#r671)" type="xsi:normalizedString"/>  <xsi:attribute name="[**unitsCode**](#r672)" type="xsi:token"/>  <xsi:attribute name="[**unitsType**](#r673)" type="[**UnitsTypeEnum**](#r638)"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r675) component only; 3/3)

unitsAbbreviation



|  |  |
| --- | --- |
| Type: | xsi:normalizedString, predefined |
| Use: | optional |

unitsCode



|  |  |
| --- | --- |
| Type: | xsi:token, predefined |
| Use: | optional |

unitsType



|  |  |
| --- | --- |
| Type: | [UnitsTypeEnum](#r638) [149] |
| Use: | optional |

Attribute Value

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Angle", "Area", "Dimensionless", "Energy", "Energy Flux", "Flow", "Force", "Frequency", "Length", "Light", "Mass", "Permeability", "Power", "Pressure/Stress", "Resolution", "Scale", "Temperature", "Time", "Velocity", "Volume" |

attributeGroup *"ValueAttr"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 10 [attributes](#r689) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r678) [155] |
| Includes: | definitions of 10 [attributes](#r689) |
| Used: | at 1 [location](#r677) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [accuracyStdDev](#r679) | = | xsi:double |
|  | [censorCode](#r680) | = | ("lt" | "gt" | "nc" | "nd" | "pnq") |
|  | [codedVocabulary](#r681) | = | xsi:boolean |
|  | [codedVocabularyTerm](#r682) | = | xsi:string |
|  | [dateTime](#r683) | = | xsi:dateTime |
|  | [methodID](#r684) | = | xsi:int |
|  | [qualifiers](#r685) | = | xsi:string |
|  | [qualityControlLevel](#r686) | = | ("Raw data" | "Quality controlled data" | "Derived products" | "Interpreted products" | "Knowledge products" | "Unknown") |
|  | [sampleID](#r687) | = | xsi:int |
|  | [sourceID](#r688) | = | xsi:int |
| ...> | | | |

Annotation

valueAttr contains the possible attributes that can be associated with a data value element.

Known Usage Locations

* In definitions of global complexTypes (1):

[ValueSingleVariable](#r584) [135]

XML Source (w/o annotations (10))

|  |
| --- |
| <xsi:attributeGroup name="[**ValueAttr**](#r690)">  <xsi:attribute name="[**qualifiers**](#r685)" type="xsi:string"/>  <xsi:attribute name="[**censorCode**](#r680)" type="[**CensorCodeEnum**](#r611)"/>  <xsi:attribute name="[**dateTime**](#r683)" type="xsi:dateTime" use="required"/>  <xsi:attribute name="[**qualityControlLevel**](#r686)" type="[**QualityControlLevelEnum**](#r629)"/>  <xsi:attribute name="[**methodID**](#r684)" type="xsi:int"/>  <xsi:attribute name="[**sourceID**](#r688)" type="xsi:int"/>  <xsi:attribute name="[**accuracyStdDev**](#r679)" type="xsi:double"/>  <xsi:attribute name="[**codedVocabulary**](#r681)" type="xsi:boolean"/>  <xsi:attribute name="[**codedVocabularyTerm**](#r682)" type="xsi:string"/>  <xsi:attribute name="[**sampleID**](#r687)" type="xsi:int"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r690) component only; 10/10)

accuracyStdDev



|  |  |
| --- | --- |
| Type: | xsi:double, predefined |
| Use: | optional |

Numeric value that describes the measurement accuracy of the data value. If not given, it is interpreted as unknown.

censorCode



|  |  |
| --- | --- |
| Type: | [CensorCodeEnum](#r611) [141] |
| Use: | optional |

indication of whether the data value is censored @censorCode codelist is censorCodeEnum.

Attribute Value

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "lt", "gt", "nc", "nd", "pnq" |

codedVocabulary



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

If a value is categorical, then @codedVocabulary is set to true, and the categorical term is placed in@codedVocabularyTerm, and a numeric value put in the value. While not a good practice, allows for categorical and numeric values to be intermixed.

codedVocabularyTerm



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

dateTime



|  |  |
| --- | --- |
| Type: | xsi:dateTime, predefined |
| Use: | required |

XML date and time at which the data value was observed. This is an ISO specified string, that can contain a time zone offset, if apprpriate. If no time offset is specificed, the data is in the local time zone of the station.

methodID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

@qualifier contains a identifier whose details are described in the values/method element(s)

qualifiers



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

@qualifier contains a qualifier code whose details are described in the values/ qualifier element(s) Space delimit multiple qualifier codes.

qualityControlLevel



|  |  |
| --- | --- |
| Type: | [QualityControlLevelEnum](#r629) [146] |
| Use: | optional |

text string giving the level of quality control that the value has been subjected to. Codelist is from qualityControlLevelEnum.

Attribute Value

|  |
| --- |
| *enumeration of* xsi:string |

|  |  |
| --- | --- |
| Enumeration: | "Raw data", "Quality controlled data", "Derived products", "Interpreted products", "Knowledge products", "Unknown" |

sampleID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

@sampleId contains a n identifier whose details are described in the values/samples element(s) This is required only if the data value resulted from a physical sample processed in a lab.

sourceID



|  |  |
| --- | --- |
| Type: | xsi:int, predefined |
| Use: | optional |

@methodID contains an identifier whose details are described in the values/method element(s)

attributeGroup *"VocabularyAttributes"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 3 [attributes](#r697) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r693) [157] |
| Includes: | definitions of 3 [attributes](#r697) |
| Used: | at 6 [locations](#r692) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [default](#r694) | = | xsi:boolean |
|  | [network](#r695) | = | xsi:string |
|  | [vocabulary](#r696) | = | xsi:string |
| ...> | | | |

Annotation

Tthe attribute group vocabularyAttributes contains common attributes used to differentiate data source codes. A network should be provided with a siteCode, and a vocabular should be provided with a variableCode. If there is more than one code, one code should be provided as the default code for the service.

Known Usage Locations

* In definitions of anonymous complexTypes of elements (6):

[parentID](#r160) (in [related](#r206)) [57], [qualifier](#r172) [58], [qualifier](#r178) (type anonymous) [60], [qualityControlLevel](#r188) [61], [relatedID](#r209) (in [related](#r206)) [67], [variableCode](#r340) [93]

XML Source (w/o annotations (3))

|  |
| --- |
| <xsi:attributeGroup name="[**VocabularyAttributes**](#r698)">  <xsi:attribute name="[**network**](#r695)" type="xsi:string"/>  <xsi:attribute name="[**vocabulary**](#r696)" type="xsi:string"/>  <xsi:attribute name="[**default**](#r694)" type="xsi:boolean"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r698) component only; 3/3)

default



|  |  |
| --- | --- |
| Type: | xsi:boolean, predefined |
| Use: | optional |

network



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

@netowrk codespace for the siteCode datasource. Submitted to webservice as 'network:sitecode'

vocabulary



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

@vocabulary codespace for the variableCode for a datasource. Submitted to webservice as 'vocabulary:vocabularyCode'

attributeGroup *"XLinkAttr"*

|  |  |
| --- | --- |
| Namespace: | [http://www.cuahsi.org/waterML/1.0/](#r6) |
| Content: | 3 [attributes](#r705) |
| Defined: | globally in [cuahsiTimeSeries\_v1\_0.xsd](#r7), see [XML source](#r701) [158] |
| Includes: | definitions of 3 [attributes](#r705) |
| Used: | at 2 [locations](#r700) |

|  |  |  |  |
| --- | --- | --- | --- |
| XML Representation Summary | | | |
| <... | | | |
|  | [href](#r702) | = | xsi:string |
|  | [show](#r703) | = | xsi:string |
|  | [title](#r704) | = | xsi:string |
| ...> | | | |

Known Usage Locations

* In definitions of global complexTypes (2):

[DocumentationType](#r389) [102], [NoteType](#r441) [111]

XML Source

|  |
| --- |
| <xsi:attributeGroup name="[**XLinkAttr**](#r706)">  <xsi:attribute name="[**href**](#r702)" type="xsi:string"/>  <xsi:attribute name="[**title**](#r704)" type="xsi:string"/>  <xsi:attribute name="[**show**](#r703)" type="xsi:string"/>  </xsi:attributeGroup> |

Attribute Detail (defined in [this](#r706) component only; 3/3)

href



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

show



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

title



|  |  |
| --- | --- |
| Type: | xsi:string, predefined |
| Use: | optional |

|  |
| --- |
| XML schema documentation generated with [DocFlex/XML RE](http://www.filigris.com/products/docflex_xml/#docflex-xml-re) 1.7.2 using [DocFlex/XML XSDDoc](http://www.filigris.com/products/docflex_xml/xsddoc/) 2.1.0 template set |