Schema documentation for CDE_schema.xsd

october 24, 2018

Table of Contents

Schema(s) 2
Main schema `CDE_schema.xsd` 2
Element(s) 2
Element `data_element_set` 2
Element `data_element_set / id` 2
Element `name` 3
Element `description` 3
Element `data_element_set / url` 3
Element `index_codes` 3
Element `index_code` 3
Element `index_code / system` 4
Element `index_code / code` 4
Element `index_code / href` 4
Element `display` 4
Element `modality` 4
Element `modality / system` 4
Element `modality / code` 5
Element `modality / href` 5
Element `biological_sex` 5
Element `age_range` 5
Element `upper_bound` 6
Element `lower_bound` 6
Element `person` 6
Element `orcid_id` 6
Element `twitter_handle` 6
Element `person / url` 7
Element `person / role` 7
Element `organization` 7
Element `abbreviation` 7
Element `organization / url` 7
Element `comment` 8
Element `organization / role` 8
Element `event` 8
Element `date` 8
Element `status` 8
Element `elements` 9
Element `element` 9
Element `element / id` 10
Element `definition` 10
Element `version` 10
Element `version_number` 10
Element `integer_values` 10
Element `integer_values / min` 11
Element `integer_values / max` 11
Element `step` 11
Element `unit` 11
Element `float_values` 11
Element `float_values / min` 12
Element `float_values / max` 12
Element `boolean_values` 12
Element `value_set` 12
Element `min_cardinality` 12
Element `max_cardinality` 12
Element `value_set / value` 13
Element `value_set / value / value` 13
Element `images` 13
Element `image` 13
Element `image / url` 14
Element `height` 14
Element `width` 14
Element `caption` 14
Element `rights` 14
Element `source` 14

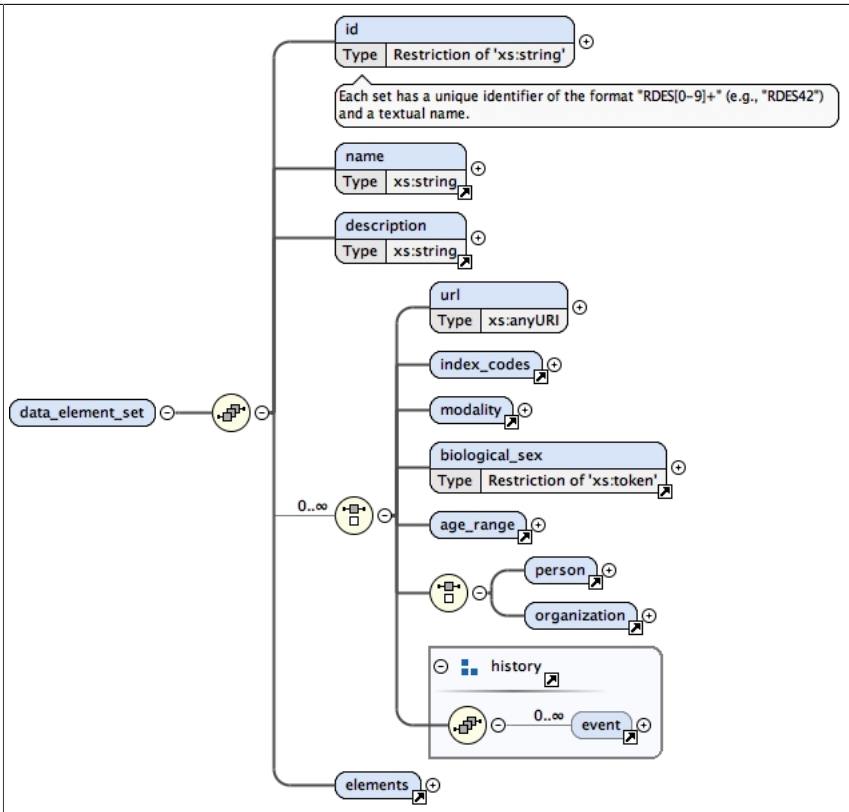
Element Group(s) 15
Element Group history 15
Element Group status_attrs 15
Element Group authors 15

Schema(s)

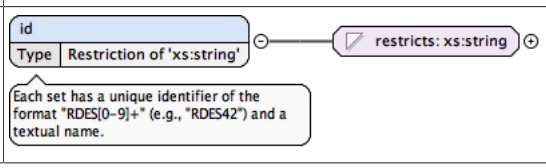
Main schema CDE_schema.xsd

Element(s)

Element data_element_set

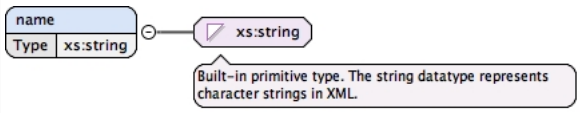
Diagram	
Model	id , name , description , (url | index_codes | modality | biological_sex | age_range | person | organization | (event*)) , elements
Instance	<data_element_set> <id>{1,1}</id> <name>{1,1}</name> <description>{1,1}</description> <url>{1,1}</url> <index_codes>{1,1}</index_codes> <modality>{1,1}</modality> <biological_sex>{1,1}</biological_sex> <age_range>{1,1}</age_range> <person>{1,1}</person> <organization>{1,1}</organization> <event>{0,unbounded}</event> <elements>{1,1}</elements> </data_element_set>

Element data_element_set / id

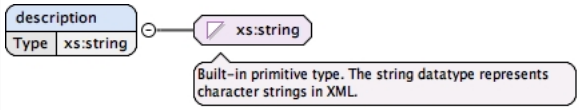
Annotations	Each set has a unique identifier of the format "RDES[0-9]+" (e.g., "RDES42") and a textual name.
Diagram	

Type	restriction of xs:string
Facets	pattern RDES\d+

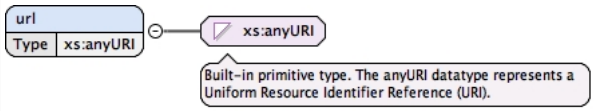
Element name

Diagram	
Type	xs:string
Used by	Elements data_element_set, element, organization, person, value_set/value

Element description

Diagram	
Type	xs:string
Used by	Element data_element_set

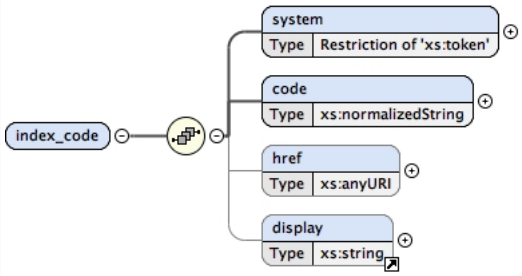
Element data_element_set / url

Diagram	
Type	xs:anyURI

Element index_codes

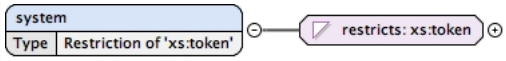
Diagram	
Used by	Elements data_element_set, element, value_set/value
Model	index_code+
Instance	<index_codes> <index_code>{1,unbounded}</index_code> </index_codes>

Element index_code

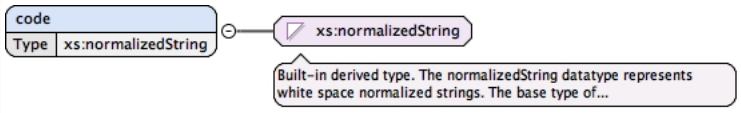
Diagram	
Used by	Element index_codes
Model	system , code , href{0,1} , display{0,1}
Instance	<index_code> <system>{1,1}</system> <code>{1,1}</code> <href>{0,1}</href> <display>{0,1}</display>

```
</index_code>
```

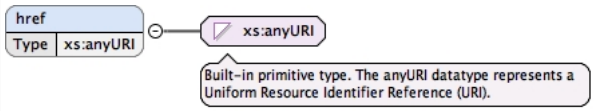
Element index_code / system

Diagram	
Type	restriction of xs:token
Facets	enumeration RADLEX enumeration SNOMEDCT enumeration LOINC

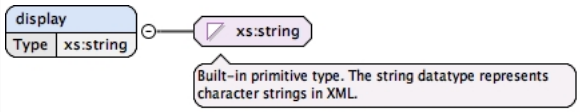
Element index_code / code

Diagram	
Type	xs:normalizedString

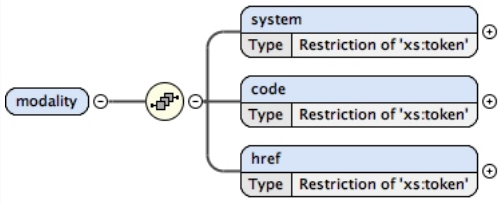
Element index_code / href

Diagram	
Type	xs:anyURI

Element display

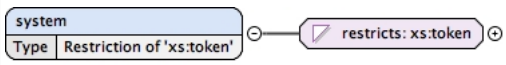
Diagram	
Type	xs:string
Used by	Element index_code

Element modality

Diagram	
Used by	Elements data_element_set, element
Model	system , code , href

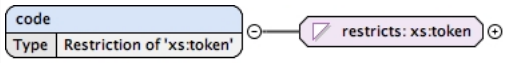
Instance	`<modality>`
	`  <system>{1,1}</system>`
	`  <code>{1,1}</code>`
	`  <href>{1,1}</href>`
	`</modality>`

Element modality / system

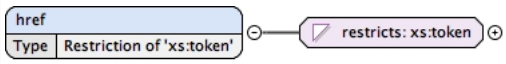
Diagram	

Type	restriction of xs:token	
Facets	enumeration	DICOM

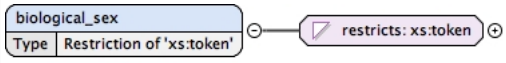
Element modality / code

Diagram		
Type	restriction of xs:token	
Facets	enumeration	CR
	enumeration	CT
	enumeration	DX
	enumeration	IVUS
	enumeration	MG
	enumeration	MR
	enumeration	NM
	enumeration	PT
	enumeration	RF
	enumeration	RG
	enumeration	US
	enumeration	XA

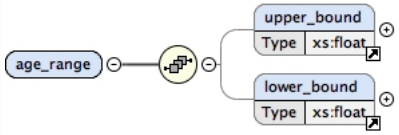
Element modality / href

Diagram		
Type	restriction of xs:token	
Facets	enumeration	http://dicom.nema.org/medical/dicom/current/output/html/part03.html#sect_C.7.3.1.1.1

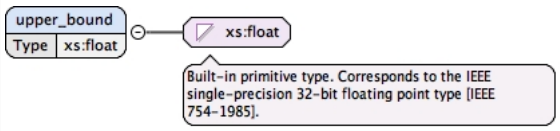
Element biological_sex

Diagram		
Type	restriction of xs:token	
Facets	enumeration	M
	enumeration	F
Used by	Elements	data_element_set, element

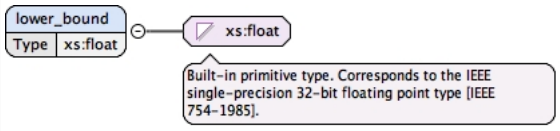
Element age_range

Diagram		
Used by	Elements	data_element_set, element
Model	upper_bound{0,1} , lower_bound{0,1}	
Instance	<age_range> <upper_bound>{0,1}</upper_bound> <lower_bound>{0,1}</lower_bound> </age_range>	

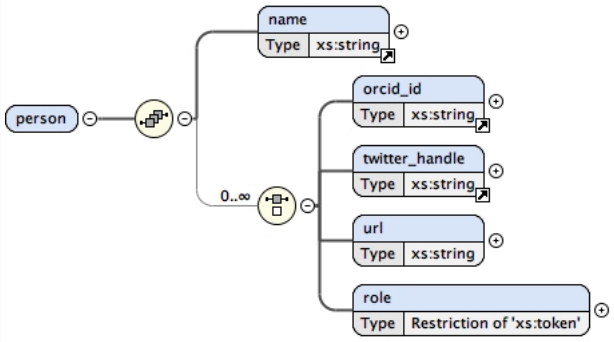
Element upper_bound

Diagram	
Type	xs:float
Used by	Element age_range

Element lower_bound

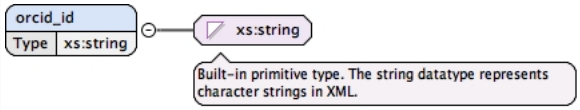
Diagram	
Type	xs:float
Used by	Element age_range

Element person

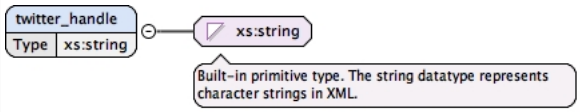
Diagram	
Used by	Elements data_element_set, image Element Group authors
Model	name , (orcid_id | twitter_handle | url | role)

Instance	`<person>`
	`  <name>{1,1}</name>`
	`  <orcid_id>{1,1}</orcid_id>`
	`  <twitter_handle>{1,1}</twitter_handle>`
	`  <url>{1,1}</url>`
	`  <role>{1,1}</role>`
	`</person>`

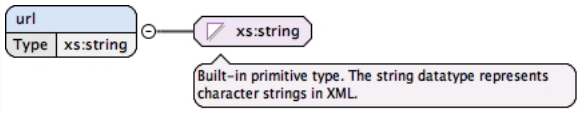
Element orcid_id

Diagram	
Type	xs:string
Used by	Element person

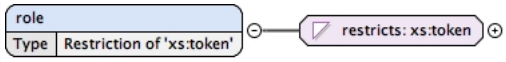
Element twitter_handle

Diagram	
Type	xs:string
Used by	Element person

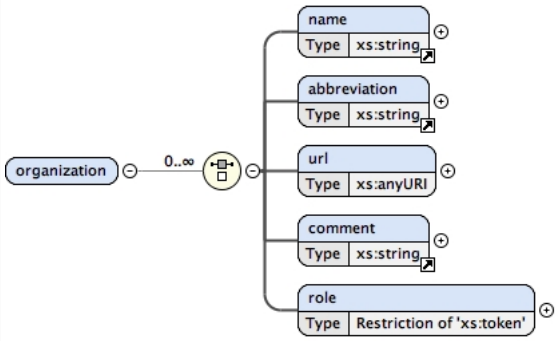
Element person / url

Diagram	
Type	xs:string

Element person / role

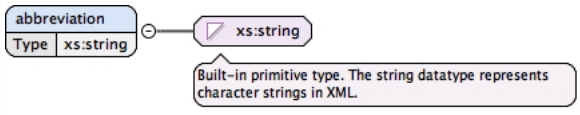
Diagram	
Type	restriction of xs:token
Facets	enumeration `author` enumeration `editor` enumeration `translator` enumeration `reviewer` enumeration `contributor`

Element organization

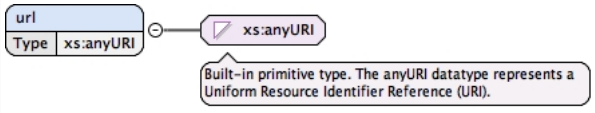
Diagram	
Used by	Elements: data_element_set, image Element Group: authors
Model	name | abbreviation | url | comment | role

Instance	`<organization>`
	`  <name>{1,1}</name>`
	`  <abbreviation>{1,1}</abbreviation>`
	`  <url>{1,1}</url>`
	`  <comment>{1,1}</comment>`
	`  <role>{1,1}</role>`
	`</organization>`

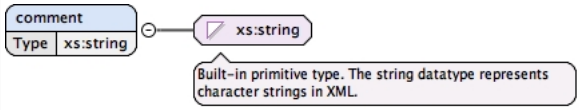
Element abbreviation

Diagram	
Type	xs:string
Used by	Element: organization

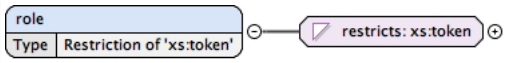
Element organization / url

Diagram	
Type	xs:anyURI

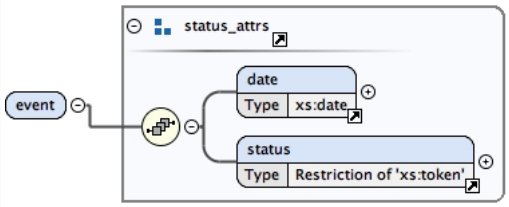
Element comment

Diagram	
Type	xs:string
Used by	Element organization

Element organization / role

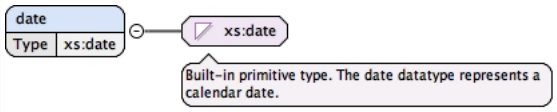
Diagram	
Type	restriction of xs:token
Facets	enumeration `contributor` enumeration `sponsor` enumeration `translator` enumeration `reviewer` enumeration `author`

Element event

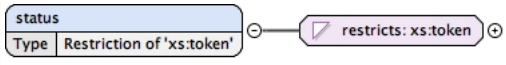
Diagram	
Used by	Element Group history
Model	date , status

Instance	`<event>`
	`  <date>{1,1}</date>`
	`  <status>{1,1}</status>`
	`</event>`

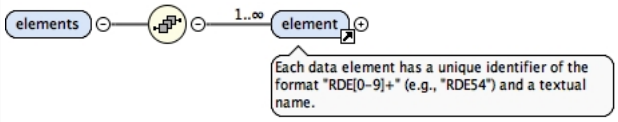
Element date

Diagram	
Type	xs:date
Used by	Element Group status_attrs

Element status

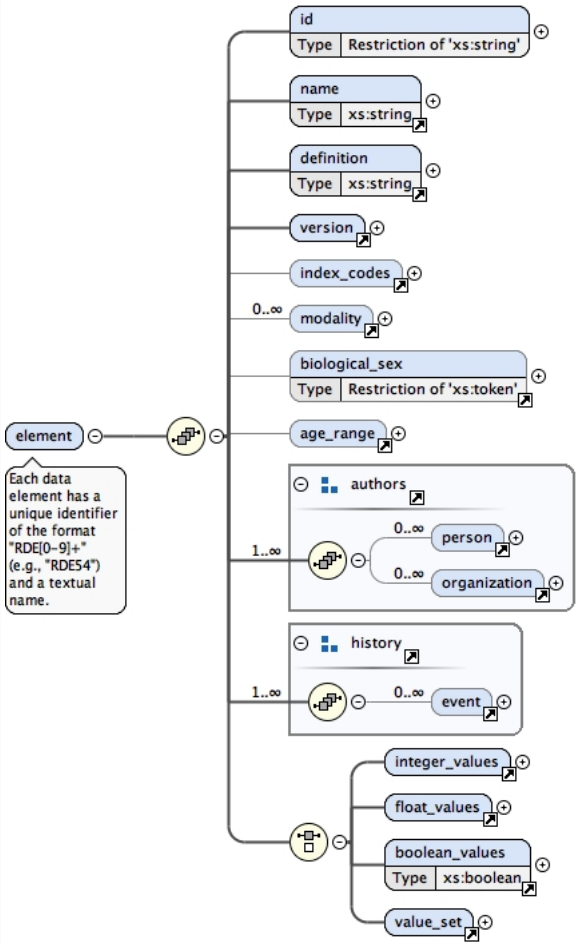
Diagram	
Type	restriction of xs:token
Facets	enumeration `proposed` enumeration `approved` enumeration `published` enumeration `deprecated`
Used by	Element Group status_attrs

Element `elements`

Diagram	
Used by	Element data_element_set
Model	element+

Instance	`<elements>`
	`  <element>{1,unbounded}</element>`
	`</elements>`

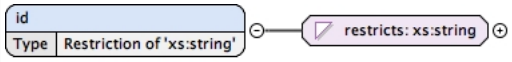
Element `element`

Annotations	Each data element has a unique identifier of the format "RDE[0-9]+" (e.g., "RDE54") and a textual name.
Diagram	
Used by	Element elements
Model	id , name , definition , version , index_codes{0,1} , modality* , biological_sex{0,1} , age_range{0,1} , person* , organization* , event* , (integer_values | float_values | boolean_values | value_set)

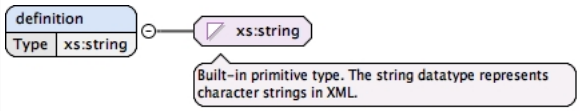
Instance	`<element>`
	`  <id>{1,1}</id>`
	`  <name>{1,1}</name>`
	`  <definition>{1,1}</definition>`
	`  <version>{1,1}</version>`
	`  <index_codes>{0,1}</index_codes>`
	`  <modality>{0,unbounded}</modality>`
	`  <biological_sex>{0,1}</biological_sex>`
	`  <age_range>{0,1}</age_range>`
	`  <person>{0,unbounded}</person>`
	`  <organization>{0,unbounded}</organization>`
	`  <event>{0,unbounded}</event>`
	`  <integer_values>{1,1}</integer_values>`

```
  <float_values>{1,1}</float_values>
  <boolean_values>{1,1}</boolean_values>
  <value_set>{1,1}</value_set>
</element>
```

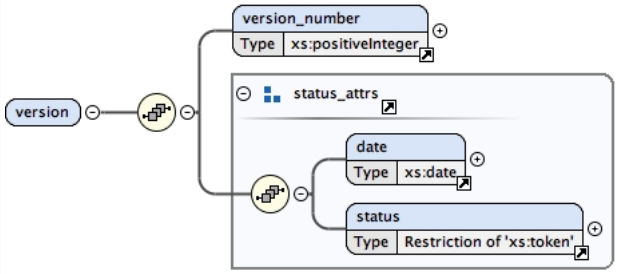
Element element / id

Diagram	
Type	restriction of xs:string
Facets	pattern RDE\d+

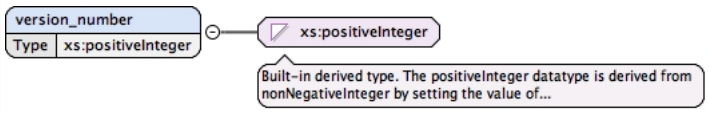
Element definition

Diagram	
Type	xs:string
Used by	Elements element, value_set/value

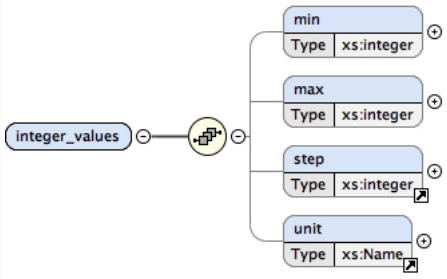
Element version

Diagram	
Used by	Element element
Model	version_number , date , status
Instance	<version> <version_number>{1,1}</version_number> <date>{1,1}</date> <status>{1,1}</status> </version>

Element version_number

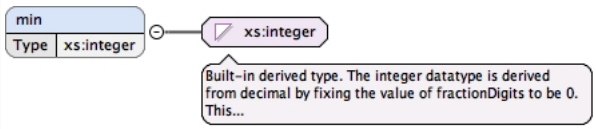
Diagram	
Type	xs:positiveInteger
Used by	Element version

Element integer_values

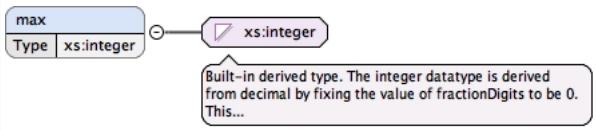
Diagram	

Used by	Element element
Model	min{0,1} , max{0,1} , step{0,1} , unit{0,1}
Instance	<integer_values> <min>{0,1}</min> <max>{0,1}</max> <step>{0,1}</step> <unit>{0,1}</unit> </integer_values>

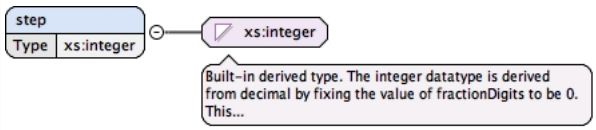
Element integer_values / min

Diagram	
Type	xs:integer

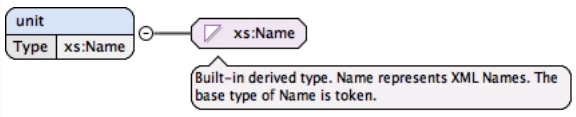
Element integer_values / max

Diagram	
Type	xs:integer

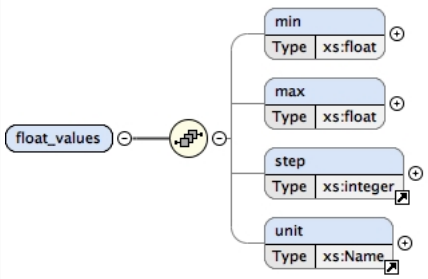
Element step

Diagram	
Type	xs:integer
Used by	Elements float_values, integer_values

Element unit

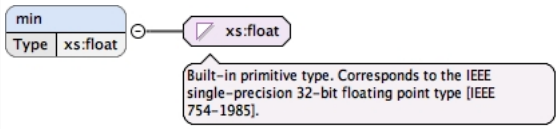
Diagram	
Type	xs:Name
Used by	Elements float_values, integer_values

Element float_values

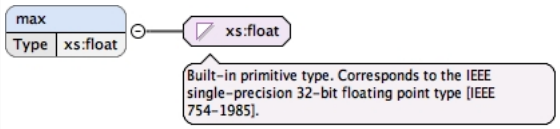
Diagram	
Used by	Element element
Model	min{0,1} , max{0,1} , step{0,1} , unit{0,1}
Instance	<float_values> <min>{0,1}</min> <max>{0,1}</max>

```
  <step>{0,1}</step>
  <unit>{0,1}</unit>
</float_values>
```

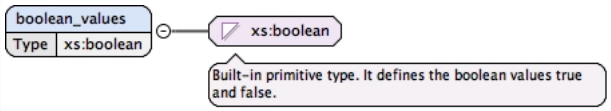
Element `float_values / min`

Diagram	
Type	xs:float

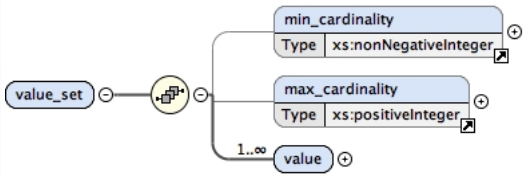
Element `float_values / max`

Diagram	
Type	xs:float

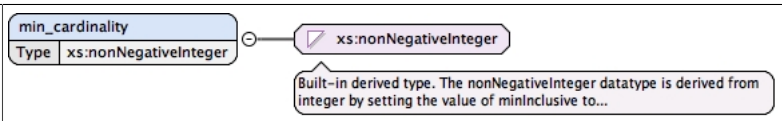
Element `boolean_values`

Diagram	
Type	xs:boolean
Used by	Element element

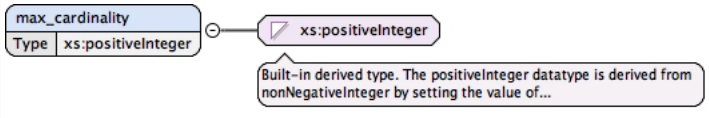
Element `value_set`

Diagram	
Used by	Element element
Model	min_cardinality{0,1} , max_cardinality{0,1} , value+
Instance	<value_set> <min_cardinality>{0,1}</min_cardinality> <max_cardinality>{0,1}</max_cardinality> <value>{1,unbounded}</value> </value_set>

Element `min_cardinality`

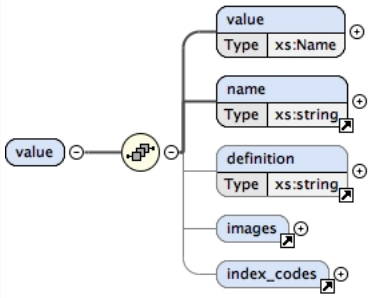
Diagram	
Type	xs:nonNegativeInteger
Used by	Element value_set

Element `max_cardinality`

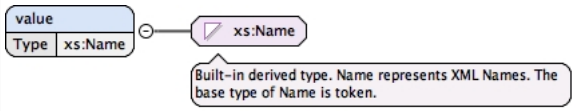
Diagram	

Type	xs:positiveInteger
Used by	Element value_set

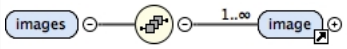
Element value_set / value

Diagram	
Model	value , name , definition{0,1} , images{0,1} , index_codes{0,1}
Instance	<value> <value>{1,1}</value> <name>{1,1}</name> <definition>{0,1}</definition> <images>{0,1}</images> <index_codes>{0,1}</index_codes> </value>

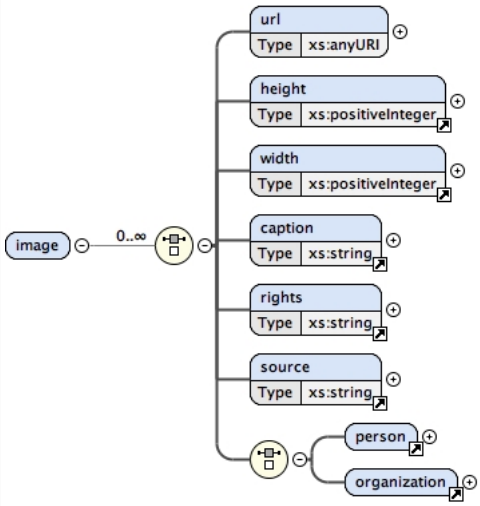
Element value_set / value / value

Diagram	
Type	xs:Name

Element images

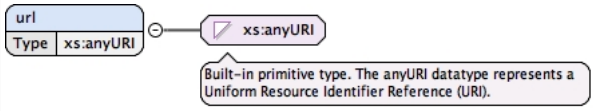
Diagram	
Used by	Element value_set/value
Model	image+
Instance	<images> <image>{1,unbounded}</image> </images>

Element image

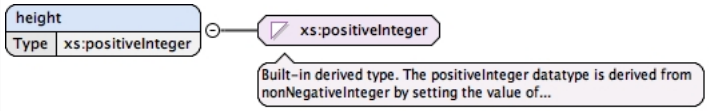
Diagram	
Used by	Element images

Model	url | height | width | caption | rights | source | person | organization
Instance	<image> <url>{1,1}</url> <height>{1,1}</height> <width>{1,1}</width> <caption>{1,1}</caption> <rights>{1,1}</rights> <source>{1,1}</source> <person>{1,1}</person> <organization>{1,1}</organization> </image>

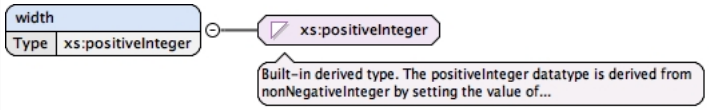
Element image / url

Diagram	
Type	xs:anyURI

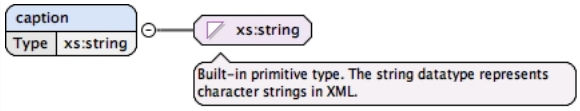
Element height

Diagram	
Type	xs:positiveInteger
Used by	Element image

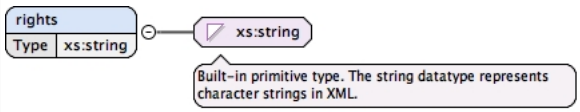
Element width

Diagram	
Type	xs:positiveInteger
Used by	Element image

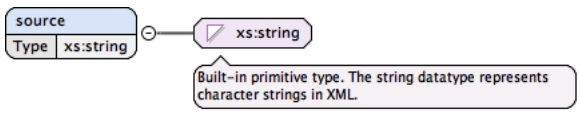
Element caption

Diagram	
Type	xs:string
Used by	Element image

Element rights

Diagram	
Type	xs:string
Used by	Element image

Element source

Diagram	

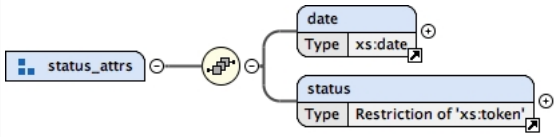
Type	xs:string
Used by	Element image

Element Group(s)

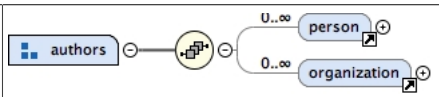
Element Group `history`

Diagram	
Used by	Elements data_element_set, element
Model	event*

Element Group `status_attrs`

Diagram	
Used by	Elements event, version
Model	date , status

Element Group `authors`

Diagram	
Used by	Element element
Model	person* , organization*