



IMS Learner Information Package Accessibility for LIP XML Schema Binding

Version 1.0 Final Specification

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1. Introduction

This document describes the XML binding for the IMS Accessibility for LIP (ACCLIP) Information Model. It specifies an XML Schema binding conformant with the W3C's XML Schema Recommendation of 2001 May 02.

An XML binding using the Document Type Definition (DTD) format is specifically excluded from this binding specification. Other XML binding types such as Resource Description Format (RDF) may be added in the future.

The prose copy of the IMS ACCLIP Information Model contained within the Information Model document are the normative and definitive specification of IMS ACCLIP. All binding structures specified herein are not normative or definitive, with the exception of names for XSD structures.

1.1 XML Basics

The conceptual model for expressing accessibility definitions is a hierarchy. Hierarchical models are convenient for representing data consisting of many elements and sub-elements. XML is perfectly suited for representing hierarchical models. An XML document is a hierarchy comprised of **elements** that have **contents** and **attributes**.

1.1.1 Elements

An element is a component of a document that has been identified in a way a computer can understand. Each element has a **tag name**. When a tag name is shown as "<TAGNAME>", with less-than and greater-than symbols before and after the tag name, it serves as the **start-tag** to mark the beginning of an element. When that same tag name has a forward slash "/" added, it serves as an **end-tag** such as "</TAGNAME>". An element may have contents between its start and end-tags, and may have one or more **attributes**. When an XML element has a start and end-tag (also called an **opening** and **closing** tag) with a common name, it is considered to be "well-formed" XML. The contents of an element are placed between the start and end-tags as shown below:

```
<TAGNAME>contents</TAGNAME>
```

1.1.1.1 Element Contents

An element may contain other elements,Parsed Character Data (PCDATA), Character Data (CDATA), or a mixture of PCDATA and elements. The allowable contents of an element are its **content model**. XML parsers treat PCDATA with their special or reserved meaning unless they are specifically marked (or "escaped"). In contrast, CDATA can use special or reserved characters without having to escape them, as CDATA is not read by XML parsers.

1.1.1.2 Element Attributes

An attribute provides additional information about an element. Attributes are a way of attaching characteristics or properties to the elements of a document. An element may have more than one attribute. Attributes are contained within the start tag of an element. Attributes are represented by an attribute name followed by an equal sign and the attribute value in quotation marks:

```
<timeframe>
  <begin restrict="1"> 1999-07-23 </begin>
</timeframe>
```

In this example, the timeframe element contains another element: the begin element. The begin element has one attribute "restrict", with the value "1". The value for the element BEGIN is "1999-07-23". These two elements then make up a timeframe begin date.

1.1.1.3 Element Names

Each element has a unique name, referred to as the tag name. XML is case-sensitive in its processing of tag names. The IMS ACCLIP XML Binding Specification adheres to the following tag name rules:

- All tag names will conform to the rules for element naming as given within the XML 1.0 Specification.

- Names beginning with “XML” in any case or mix of cases are not permitted.
- The IMS binding will use camelCase tag and element names.
- Element names may not include words reserved by the XML specification. These include:
DOCTYPE
ELEMENT
ATTLIST
ENTITY
- Tag names defined by this IMS Binding may not be redefined.

1.1.2 Document Type Definitions

The tag name, content model, and attributes of elements were historically defined in a **Document Type Definition** (DTD) statement. A DTD is a kind of schema. It may exist as an external file or a block of text internal to an XML document. However, the DTD schema was developed before object-oriented programming concepts became prevalent within software development communities and before the use of entities drawn from multiple namespaces became a requirement. Those communities began working on other schema representations to provide more object-like structures and procedures and to support the flexible use of multiple namespaces than could be realized within the constraints of the Document Type Definition schema for describing and structuring the contents of XML documents. One such schema language has become today’s preferred representation language: XML Schema produced by the Worldwide Web Consortium (W3C).

1.1.3 XML Schemas

A schema is a formal specification of element names that indicates which elements are allowed in an XML instance, and in which combinations. New schema languages, such as those defined in the XML-Schemas Working Group, provide the same baseline functionality as a DTD. However, because these schema languages are extensible, developers can augment them with additional information, such as data types, inheritance, and presentation rules. This makes schema languages far more powerful than DTDs.

This specification defines a W3C XML Schema (imsacclip_bindv1p0.xsd) as a non-normative reference. Some XML editors may make use of these schemas to help guide the developer in creating the proper elements at the proper locations in an XML file. Other developers will make use of the schemas to validate their XML instances and/or to define extensions to the IMS Meta-Data Binding. Details of the construction of schemas are outside the scope of this document.

1.1.4 Valid Character Sets

An IMS ACCLIP definition instance must use UTF-8 encoding of the character sets as defined in ISO 10646. See the XML Version 1.0 for more details on the specification of well-formed XML.

2. Narrative Description of XML Schema Binding

This section of the specification uses a series of graph segments, accompanied by simple narrative, to describe the XML format of the XSD binding for the ACCLIP Model. XSD documents that implement this *abstract* format are referenced as non-normative parts of this specification.

The data and their relationships from the information model are expressed in XML Schema by means structuring entities are called elements, attributes, and groups. These structuring entities are further typified as complex types or simple types. The XML Schema structuring entities comprise a binding of an information model when expressed in a special instance of an XML document – an XML Schema definition (XSD).

The ACCLIP Model also defines values or vocabulary terms required by certain data model elements. These special {structuring} structures enable the grouping and use of elements as defined in a data model.

It is often necessary for bindings to create structuring entities with names that are not present in an information or data model that is being expressed in XML Schema. These special structuring enable the grouping and use of elements as defined in a data model.

These graphs will show individual elements encapsulated within larger structures, like complex types. Structures without child elements are not represented separately. The reader is referred to a binding document instance (.xsd) for the full lexical representation of all structures and values.

Key to graphical elements:

- Rectangle with square corners = element
- Rectangle with rounded corners, enclosed in red outline area = attribute
- Bold name in upper half of rectangle: element/attribute name
- Regular weight name in lower half of rectangle: type name

Circled Multiplicity indicator to left of element, attribute, or group:

- ? = 0..1
- * = 0..n
- + = 1..n
- D = 0..1, with default value if absent (attributes only)
- (no indicator) = 1

Red Branching lines = XML Schema grouping model connector

- Square bracket = Sequence
- Angle bracket = Choice

2.1 Extensions to Accessibility

2.1.1 accessForAll: root Element and complex Type

Implementation Notes

All accessibility preference information is contained within the <accessForAll> element. This element is a sibling of the <disability> element in the version 1.0 LIP Schema (item 3.6 in table 6.3 Accessibility of the LIP Information Model), and the <disability> element is deprecated. The other portions of table 6.3 of the LIP version 1.0 are left untouched.

Each <context> element defines a single set of access preferences. Individuals can thus define differing sets of preferences for different contexts of technology use (for example, work vs. home, or morning vs. evening). The method of determining which context is appropriate at any given time is not defined in this specification.

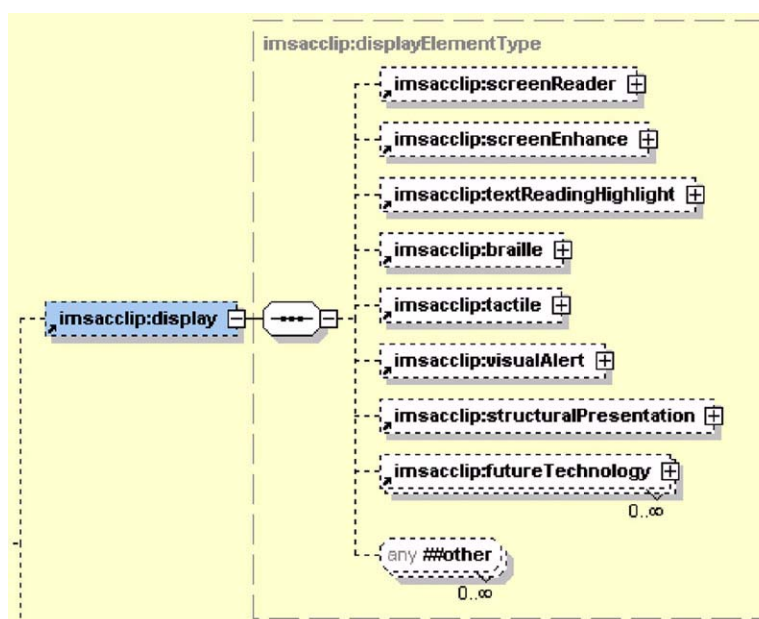
Note that the first <context> element in the XML instance is to be taken as the default context.

Examples

The following is a minimal implementation of a set of Learner Accessibility Preferences:

```
<accessForAll xml:lang = "en-US">
  <context identifier = "HomePreferences"/>
</accessForAll >
```

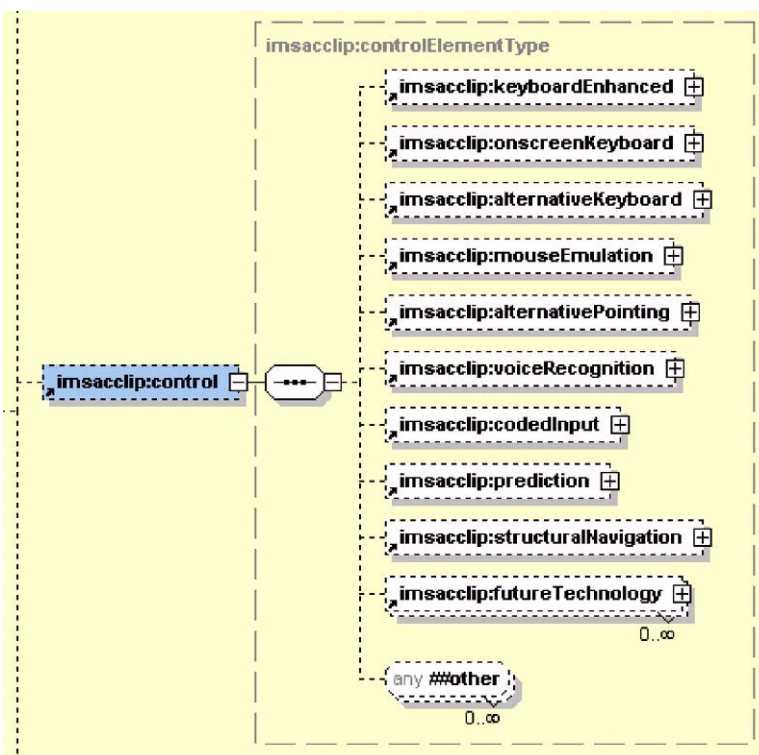
2.1.2 display: Element and complex Type



Implementation notes

Examples

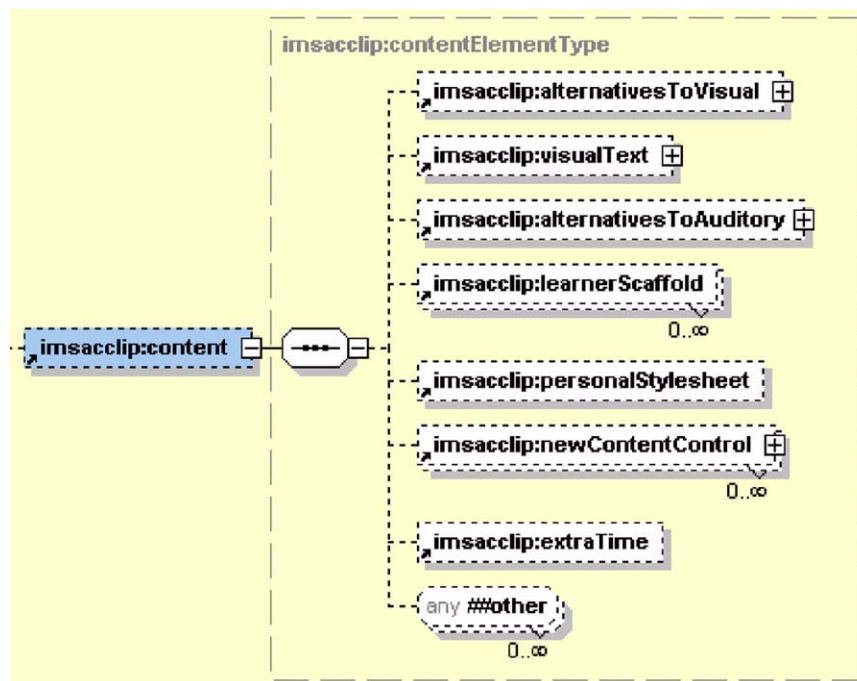
2.1.3 control: Element and complex Type



Implementation Notes

Examples

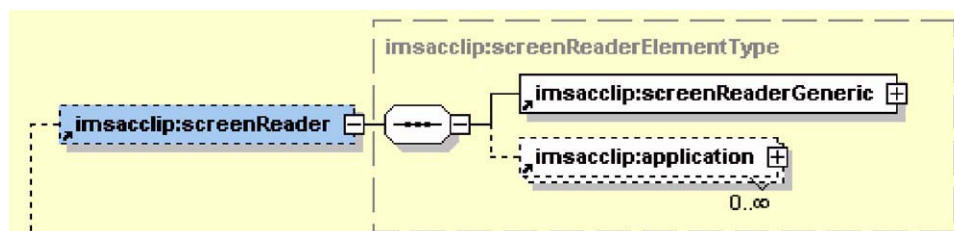
2.1.4 content: Element and complex Type



Implementation Notes

Examples

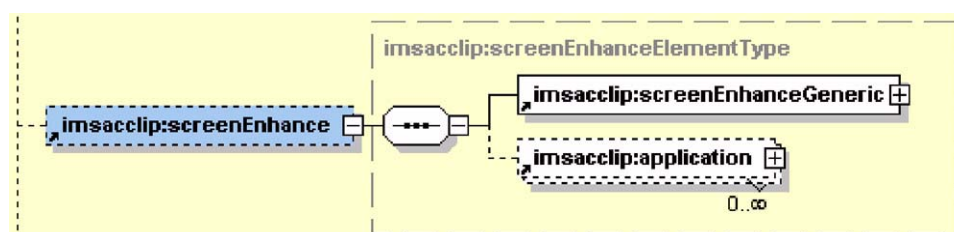
2.1.5 screenReader: Element and complex Type



Implementation Notes

Examples

2.1.6 screenEnhance: Element and complex Type

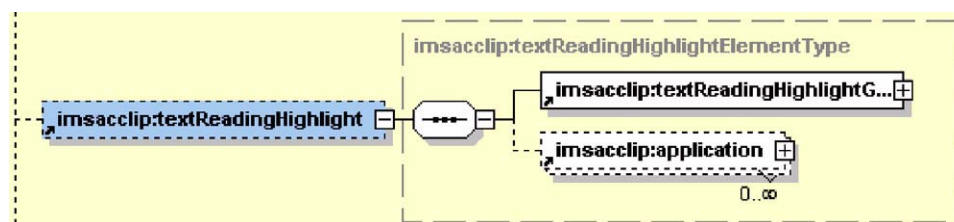


Implementation Notes

Note that all colors are bound as 4-octet hexadecimal strings (for example, “001122FF”) representing RGBA values. The first octet (“00” in the previous example) is for red, the second octet (“11”) is for green, the third octet (“22”) for blue, and the last octet (“FF”) for alpha. An alpha value of 00 is completely transparent, while an alpha value of FF is completely opaque.

Examples

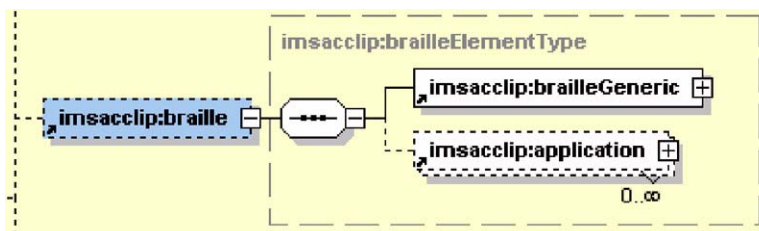
2.1.7 textReadingHighlight: Element and complex Type



Implementation Notes

Examples

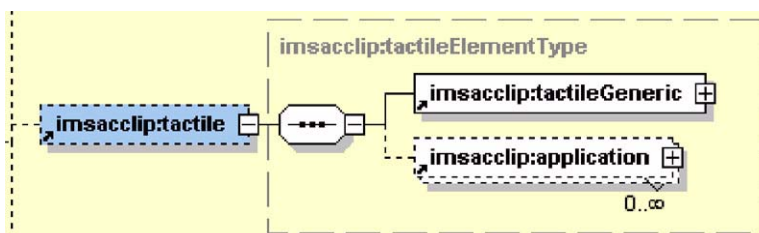
2.1.8 braille: Element and complex Type



Implementation Notes

Examples

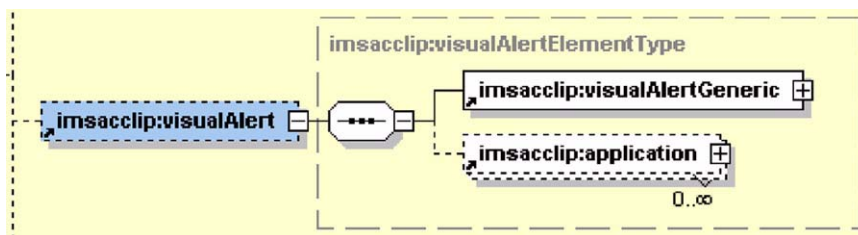
2.1.9 tactile: Element and complex Type



Implementation Notes

Examples

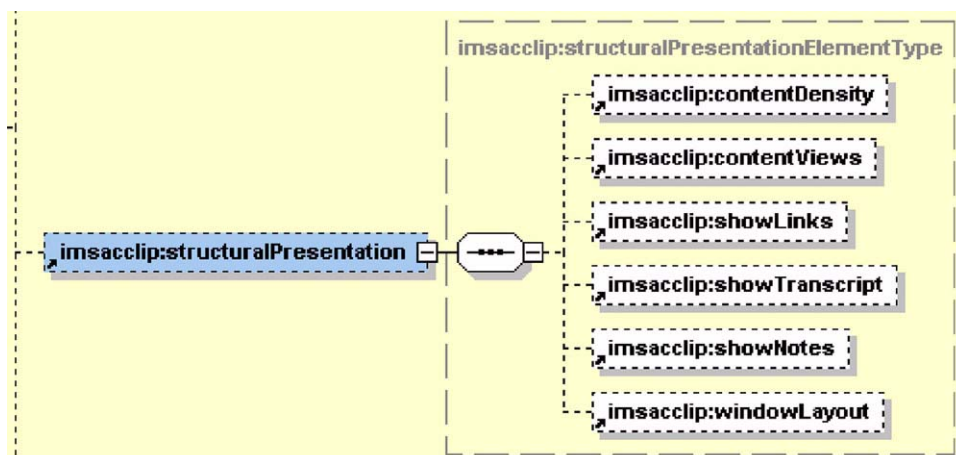
2.1.10 visualAlert: Element and complex Type



Implementation Notes

Examples

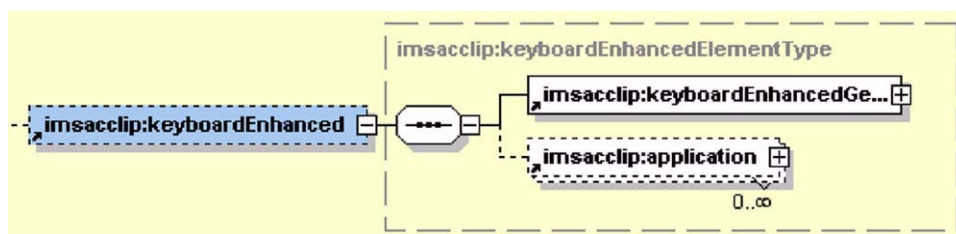
2.1.11 structuralPresentation: Element and complex Type



Implementation Notes

Examples

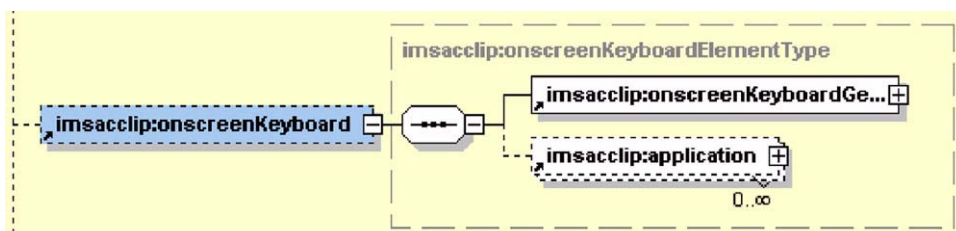
2.1.12 keyboardEnhanced: Element and complex Type



Implementation Notes

Examples

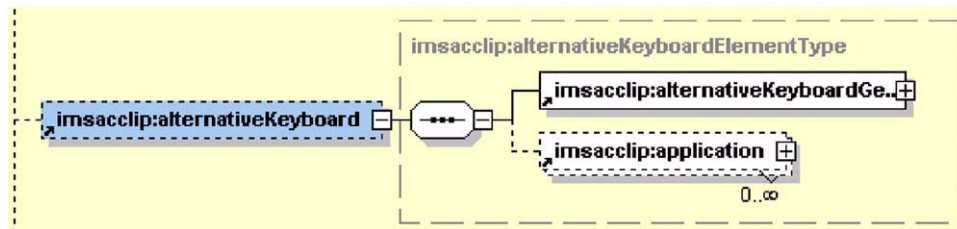
2.1.13 onscreenKeyboard: Element and complex Type



Implementation Notes

Examples

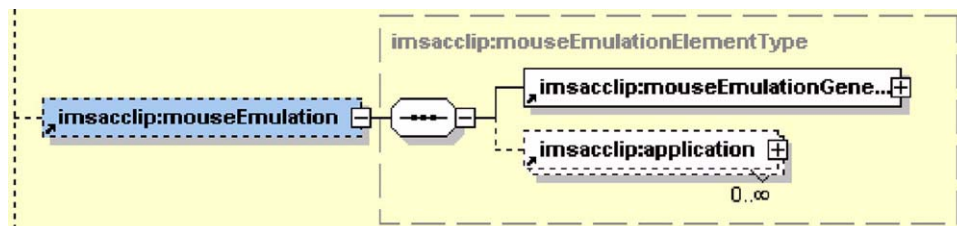
2.1.14 alternativeKeyboard: Element and complex Type



Implementation Notes

Examples

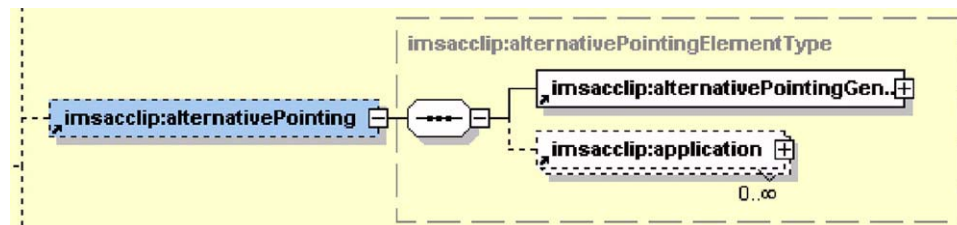
2.1.15 mouseEmulation: Element and complex Type



Implementation Notes

Examples

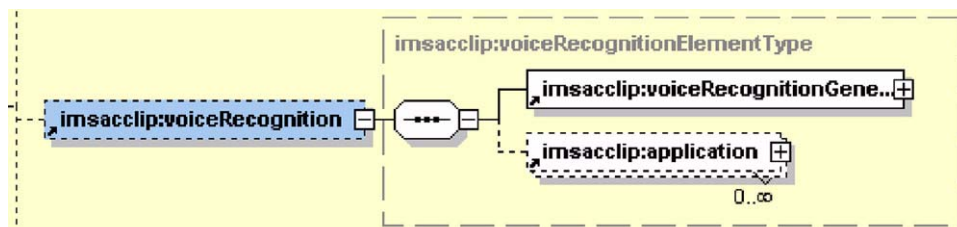
2.1.16 alternativePointing: Element and complex Type



Implementation Notes

Examples

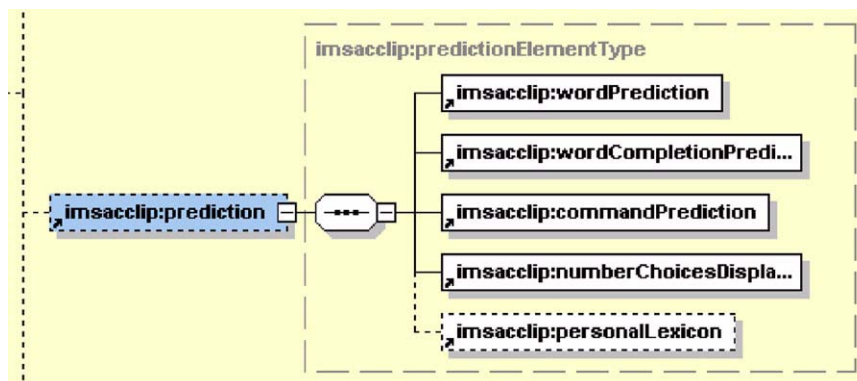
2.1.17 voiceRecognition: Element and complex Type



Implementation Notes

Examples

2.1.18 prediction: Element and complex Type



Implementation Notes

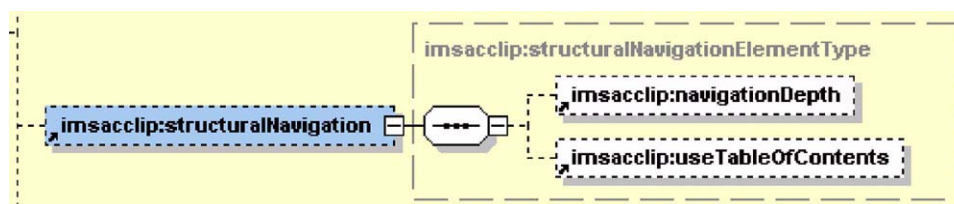
Examples

2.1.19 codedInput

Implementation Notes

Examples

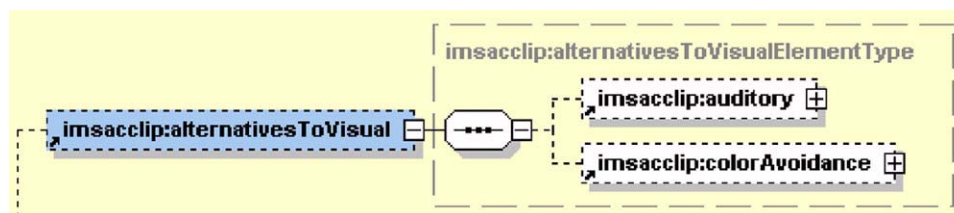
2.1.20 structuralNavigation: Element and complex Type



Implementation Notes

Examples

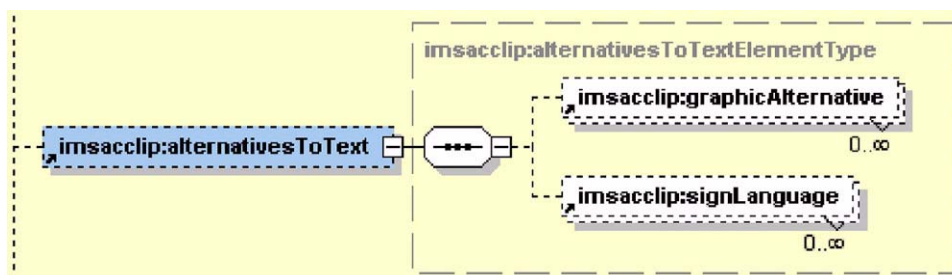
2.1.21 alternativesToVisual: Element and complex Type



Implementation Notes

Examples

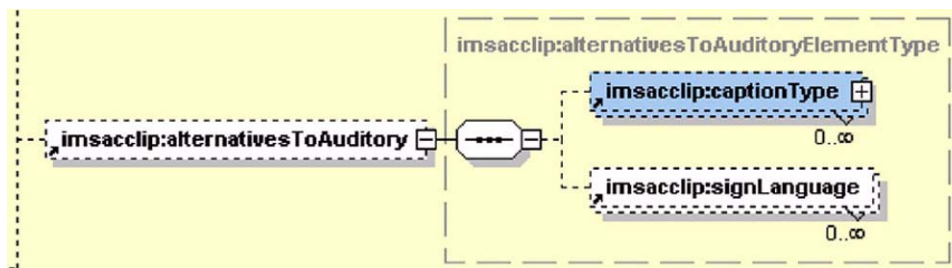
2.1.22 alternativesToText: Element and complex Type



Implementation Notes

Examples

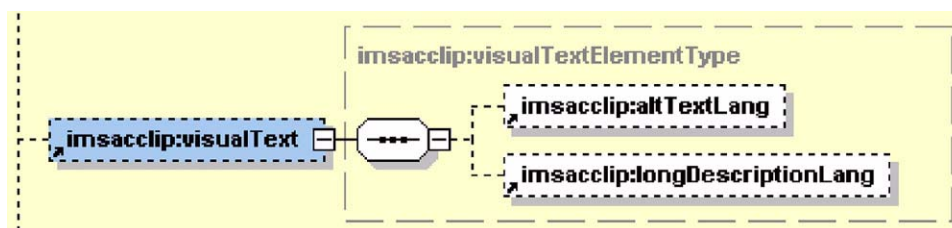
2.1.23 alternativesToAuditory: Element and complex Type



Implementation Notes

Examples

2.1.24 visualText: Element and complex Type



Implementation Notes

Examples

2.1.25 learnerScaffold: Element and complex Type

Implementation Notes

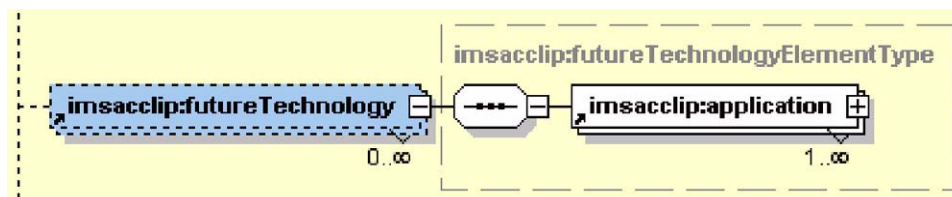
Examples

2.1.26 personalStylesheet: Element and complex Type

Implementation Notes

Examples

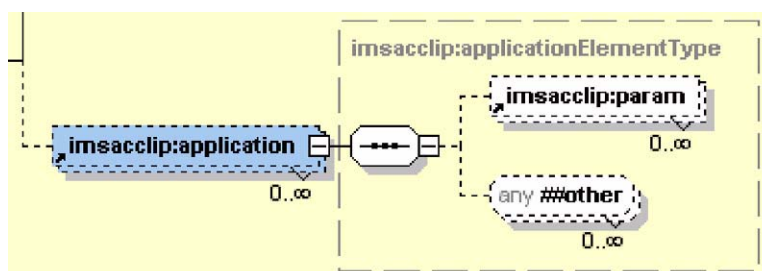
2.1.27 futureTechnology: Element and complex Type



Implementation Notes

Examples

2.1.28 application: Element and complex Type



Implementation Notes

Examples

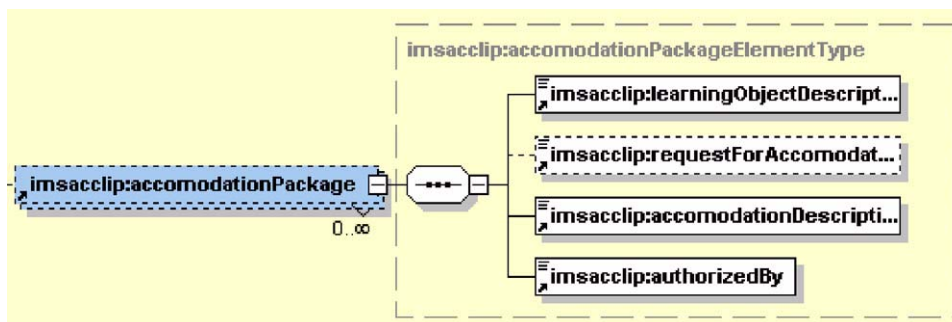
2.2 Extensions to Eligibility

2.2.1 accommodation: Element

Implementation Notes

Examples

2.2.2 accommodationPackage: Element



Implementation Notes

Examples

3. ACCLIP Element Mapping

This section contains several tables. Table 3.1 maps <accessForAll> elements by number and name as listed in the ACCLIP Information Model specification to the XML Schema entity used to represent it in the XML Schema binding. Table 3.2 does the same thing for <context> elements. The Schema entity's name, kind of structure, and type are provided. Note that all "usage" attributes are of type "usageType"; this is not explicitly noted in the table.

The ACCLIP Information Model identifies data elements in a dot-delimited enumeration and by name. The dot-delimited enumeration typifies the relationship of elements to each other, where elements with a numeral following a dot are subordinate to elements that share the same numeric value to the left of a dot. The enumeration typically does **not** imply a strict sequence or order of occurrence. It merely implies a group relationship.

Table 3.1 also includes references to additional XML Schema structures used to properly express the relationships or controlled lists of <accessibility> element values. These additional XML Schema structures are inserted into Table 3.1 in proximity to the <accessibility> elements they describe.

XSD elements of type *complexType* and *simpleType* may be nested. Table 3.1 does not show this nesting. Separate tables in this section provide the further details for nested elements defined as *complexType* or *simpleType*. In those tables, the element number from the Accessibility model and the XML Schema element name are used to associate a nested Schema structuring entity with the appropriate element from the Accessibility model.

Table 3.1 - <accessForAll> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	accessForAll	accessForAll	Element	accessForAllElementType
1.1	context	context	Element	contextElementType

Table 3.2 - <context> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	context	context	Element	contextElementType
1.1	identifier	identifier	Attribute	
1.2	external	external	Attribute	
1.3	language	xml:lang	Attribute	
	default		Implicit	No type; true for the first context element in the XML instance, false otherwise.
1.4	display	display	Element	displayElementType
1.5	control	screenReader	Element	screenReaderElementType
1.6	content	screenReaderGeneric	Element	ScreenReaderGenericElementType

Table 3.3 - <display> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	<i>display</i>	display	Element	displayElementType
1.1	<i>screenReader</i>	screenReader	Element	screenReaderElementType
1.1.1	<i>screenReaderGeneric</i>	screenReaderGeneric	Element	ScreenReaderGenericElementType
1.1.1.1	<i>link</i>	link/@value	Attribute	linkActionType
1.1.1.1.1	<i>usage</i>	link/@usage	Attribute	string

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.1.1.2	<i>speechRate</i>	speechRate/@value	Attribute	speechRateType
1.1.1.2.1	<i>usage</i>	speechRate/@usage	Attribute	string
1.1.1.3	<i>pitch</i>	pitch/@value	Attribute	sliderType
1.1.1.3.1	<i>usage</i>	pitch/@usage	Attribute	string
1.1.1.4	<i>volume</i>	volume/@value	Attribute	sliderType
1.1.1.4.1	<i>usage</i>	volume/@usage	Attribute	string
1.1.2	<i>application</i>	application	Element	See Application Element Sub-table
1.2	<i>screenEnhance</i>	screenEnhance	Element	screenEnhanceElementType
1.2.1	<i>screenEnhanceGeneric</i>	screenEnhanceGeneric	Element	screenEnhanceGenericElementType
1.2.1.1	<i>fontFace</i>	fontFace	Element	fontFaceElementType
1.2.1.1.1	<i>fontName</i>	fontName/@value	Attribute	string
1.2.1.1.1.1	<i>usage</i>	fontName/@usage	Attribute	string
1.2.1.1.2	<i>genericFace</i>	genericFace/@value	Attribute	genericFaceType
1.2.1.1.2.1	<i>usage</i>	genericFace/@usage	Attribute	string
1.2.1.2	<i>fontSize</i>	fontSize/@value	Attribute	positiveInteger
1.2.1.2.1	<i>usage</i>	fontSize/@usage	Attribute	string
1.2.1.3	<i>foregroundColor</i>	foregroundColor/@value	Attribute	colorType
1.2.1.3.1	<i>usage</i>	foregroundColor/@usage	Attribute	string
1.2.1.4	<i>backgroundColor</i>	backgroundColor/@value	Attribute	colorType
1.2.1.4.1	<i>usage</i>	backgroundColor/@usage	Attribute	string
1.2.1.5	<i>highlightColor</i>	highlightColor/@value	Attribute	colorType
1.2.1.5.1	<i>usage</i>	highlightColor/@usage	Attribute	string
1.2.1.6	<i>cursorSize</i>	cursorSize/@value	Attribute	cursorSizeType
1.2.1.6.1	<i>usage</i>	cursorSize/@usage	Attribute	string
1.2.1.7	<i>cursorColor</i>	cursorColor/@value	Attribute	colorType
1.2.1.7.1	<i>usage</i>	cursorColor/@usage	Attribute	string
1.2.1.8	<i>cursorTrails</i>	cursorTrails/@value	Attribute	sliderType
1.2.1.8.1	<i>usage</i>	cursorTrails/@usage	Attribute	string
1.2.2	<i>invertColorChoice</i>	invertColorChoice/@value	Attribute	Boolean
1.2.2.1	<i>usage</i>	invertColorChoice/@usage	Attribute	string
1.2.3	<i>tracking</i>	tracking	Element	trackingElementType
1.2.3.1	<i>mouse</i>	mouse/@value	Attribute	boolean
1.2.3.1.1	<i>usage</i>	mouse/@usage	Attribute	string
1.2.3.2	<i>caret</i>	caret/@value	Attribute	boolean
1.2.3.2.1	<i>usage</i>	caret/@usage	Attribute	string
1.2.3.3	<i>focus</i>	focus/@value	Attribute	boolean
1.2.3.3.1	<i>usage</i>	focus/@usage	Attribute	string
1.2.4	<i>magnification</i>	magnification/@value	Attribute	integer
1.2.4.1	<i>usage</i>	magnification/@usage	Attribute	string

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.2.5	<i>application</i>	application	Element	See Application Element Sub-table
1.3	<i>textReadingHighlight</i>	textReadingHighlight	Element	textReadingHighlightElementType
1.3.1	<i>textReadingHighlightGeneric</i>	textReadingHighlightGeneric	Element	textReadingHighlightGenericElementType
1.3.1.1	<i>speechRate</i>	speechRate/@value	Attribute	speechRateType
1.3.1.1.1	<i>usage</i>	speechRate/@usage	Attribute	string
1.3.1.2	<i>pitch</i>	pitch/@value	Attribute	sliderType
1.3.1.2.1	<i>usage</i>	pitch/@usage	Attribute	string
1.3.1.3	<i>volume</i>	volume/@value	Attribute	sliderType
1.3.1.3.1	<i>usage</i>	volume/@usage	Attribute	string
1.3.1.4	<i>highlight</i>	highlight/@value	Attribute	highlightType
1.3.1.4.1	<i>usage</i>	highlight/@usage	Attribute	string
1.3.1.5	<i>speakAltText</i>	speakAltText/@value	Attribute	boolean
1.3.1.5.1	<i>usage</i>	speakAltText/@usage	Attribute	string
1.3.1.6	<i>speakWhenTabbing</i>	speakWhenTabbing/@value	Attribute	boolean
1.3.1.6.1	<i>usage</i>	speakWhenTabbing/@usage	Attribute	string
1.3.1.7	<i>readingUnit</i>	readingUnit/@value	Attribute	readingUnitType
1.3.1.7.1	<i>usage</i>	readingUnit/@usage	Attribute	string
1.3.2	<i>application</i>	application	Element	See Application Element Sub-table
1.4	<i>braille</i>	braille	Element	brailleElementType
1.4.1	<i>brailleGeneric</i>	brailleGeneric	Element	brailleGenericElementType
1.4.1.1	<i>grade</i>	grade/@value	Attribute	brailleGradeType
1.4.1.1.1	<i>usage</i>	grade/@usage	Attribute	string
1.4.1.2	<i>numDots</i>	numDots/@value	Attribute	brailleDotCountType
1.4.1.2.1	<i>usage</i>	numDots/@usage	Attribute	string
1.4.1.3	<i>numCells</i>	numCells/@value	Attribute	brailleCellCountType
1.4.1.3.1	<i>usage</i>	numCells/@usage	Attribute	string
1.4.1.4	<i>markHighlight</i>	markHighlight/@value	Attribute	boolean
1.4.1.4.1	<i>usage</i>	markHighlight/@usage	Attribute	string
1.4.1.5	<i>markBold</i>	markBold/@value	Attribute	boolean
1.4.1.5.1	<i>usage</i>	markBold/@usage	Attribute	string
1.4.1.6	<i>markUnderline</i>	markUnderline/@value	Attribute	boolean
1.4.1.6.1	<i>usage</i>	markUnderline/@usage	Attribute	string
1.4.1.7	<i>markItalic</i>	markItalic/@value	Attribute	boolean
1.4.1.7.1	<i>usage</i>	markItalic/@usage	Attribute	string
1.4.1.8	<i>markStrikeout</i>	markStrikeout/@value	Attribute	boolean
1.4.1.8.1	<i>usage</i>	markStrikeout/@usage	Attribute	string
1.4.1.9	<i>markColor</i>	markColor/@value	Attribute	boolean
1.4.1.9.1	<i>usage</i>	markColor/@usage	Attribute	string
1.4.1.10	<i>dotPressure</i>	dotPressure/@value	Attribute	sliderType

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.4.1.10.1	<i>usage</i>	dotPressure/@usage	Attribute	string
1.4.1.11	<i>statusCell</i>	statusCell/@value	Attribute	brailleStatusCellType
1.4.1.11.1	<i>usage</i>	statusCell/@usage	Attribute	string
1.4.2	<i>application</i>	application	Element	See Application Element Sub-table
1.5	<i>tactile</i>	tactile	Element	tactileElementType
1.5.1	<i>tactileGeneric</i>	tactileGeneric	Element	tactileGenericElementType
1.5.2	<i>application</i>	application	Element	See Application Element Sub-table
1.6	<i>visualAlert</i>	visualAlert	Element	visualAlertElementType
1.6.1	<i>visualAlertGeneric</i>	visualAlertGeneric	Element	visualAlertGenericElementType
1.6.1.1	<i>systemSounds</i>	systemSounds/@value	Attribute	soundReplacementType
1.6.1.1.1	<i>usage</i>	systemSounds/@usage	Attribute	string
1.6.1.2	<i>captions</i>	captions/@value	Attribute	boolean
1.6.1.2.1	<i>usage</i>	captions/@usage	Attribute	string
1.6.2	<i>application</i>	application	Element	See Application Element Sub-table
1.7	<i>structuralPresentation</i>	structuralPresentation	Element	structuralPresentationElementType
1.7.1	<i>contentDensity</i>	contentDensity/@value	Attribute	contentDensityType
1.7.1.1	<i>usage</i>	contentDensity/@usage	Attribute	string
1.7.2	<i>contentViews</i>	contentViews/@value	Attribute	contentViewsType
1.7.2.1	<i>usage</i>	contentViews/@usage	Attribute	string
1.7.3	<i>showLinks</i>	showLinks/@value	Attribute	boolean
1.7.3.1	<i>usage</i>	showLinks/@usage	Attribute	string
1.7.4	<i>showTranscript</i>	showTranscript/@value	Attribute	boolean
1.7.4.1	<i>usage</i>	showTranscript/@usage	Attribute	string
1.7.5	<i>showNotes</i>	showNotes/@value	Attribute	boolean
1.7.5.1	<i>usage</i>	showNotes/@usage	Attribute	string
1.7.6	<i>windowLayout</i>	windowLayout/@value	Attribute	windowLayoutElementType
1.7.6.1	<i>usage</i>	windowLayout/@usage	Attribute	string
1.8	<i>futureTechnology</i>	futureTechnology	Element	futureTechnologyElementType
1.8.1	<i>application</i>	application	Element	See Application Element Sub-table

Table 3.4 - <control> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	<i>control</i>	control	Element	controlElementType
1.1	<i>keyboardEnhanced</i>	keyboardEnhanced	Element	keyboardEnhancedElementType
1.1.1	<i>keyboardEnhancedGeneric</i>	keyboardEnhancedGeneric	Element	keyboardEnhancedGenericElementType
1.1.1.1	<i>alphaLayoutInternal</i>	alphaLayoutInternal/@value	Attribute	keyboardLayoutType

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.1.1.1.1	<i>usage</i>	alphaLayoutInternal/@usage	Attribute	string
1.1.1.1.2	<i>alphaLayoutExternal</i>	alphaLayoutExternal/@value	Attribute	anyURI
1.1.1.2.1	<i>usage</i>	alphaLayoutExternal/@usage	Attribute	string
1.1.1.2	<i>stickyKeys</i>	stickyKeys/@value	Attribute	boolean
1.1.1.2.1	<i>usage</i>	stickyKeys/@usage	Attribute	string
1.1.1.2.2	<i>playSound</i>	playSound/@value	Attribute	boolean
1.1.1.2.2.1	<i>usage</i>	playSound/@usage	Attribute	string
1.1.1.3	<i>repeatKeys</i>	repeatKeys/@value	Attribute	boolean
1.1.1.3.1	<i>usage</i>	repeatKeys/@usage	Attribute	string
1.1.1.3.2	<i>autoDelay</i>	autoDelay/@value	Attribute	sliderType
1.1.1.3.2.1	<i>usage</i>	autoDelay/@usage	Attribute	string
1.1.1.3.2.2	<i>autoRate</i>	autoRate/@value	Attribute	sliderType
1.1.1.3.2.2.1	<i>usage</i>	autoRate/@usage	Attribute	string
1.1.1.4	<i>slowKeys</i>	slowKeys/@value	Attribute	boolean
1.1.1.4.1	<i>usage</i>	slowKeys/@usage	Attribute	string
1.1.1.4.1	<i>slowKeysInterval</i>	slowKeysInterval/@value	Attribute	sliderType
1.1.1.4.1.1	<i>usage</i>	slowKeysInterval/@usage	Attribute	string
1.1.1.5	<i>debounce</i>	debounce/@value	Attribute	boolean
1.1.1.5.1	<i>usage</i>	debounce/@usage	Attribute	string
1.1.1.5.2	<i>debounceInterval</i>	debounceInterval/@value	Attribute	secondsType
1.1.1.5.2.1	<i>usage</i>	debounceInterval/@usage	Attribute	string
1.1.2	<i>application</i>	application	Element	See Application Element Sub-table
1.2	<i>onscreenKeyboard</i>	onscreenKeyboard	Element	onscreenKeyboardElementType
1.2.1	<i>onscreenKeyboardGeneric</i>	onscreenKeyboardGeneric	Element	onscreenKeyboardGenericElementType
1.2.1.1	<i>alphaLayoutInternal</i>	alphaLayoutInternal/@value	Attribute	keyboardLayoutType
1.2.1.1.1	<i>usage</i>	alphaLayoutInternal/@usage	Attribute	string
1.2.1.2	<i>alphaLayoutExternal</i>	alphaLayoutExternal/@value	Attribute	anyURI
1.2.1.2.1	<i>usage</i>	alphaLayoutExternal/@usage	Attribute	string
1.2.1.3	<i>pointAndClick</i>	pointAndClick	Element	pointAndClickElementType
1.2.1.3.1	<i>usage</i>	pointAndClick/@usage	Attribute	string
1.2.1.3.2	<i>switchDelay</i>	switchDelay/@value	Attribute	secondsType
1.2.1.3.2.1	<i>usage</i>	switchDelay/@usage	Attribute	string
1.2.1.4	<i>pointAndDwell</i>	pointAndDwell	Element	pointAndDwellElementType
1.2.1.4.1	<i>usage</i>	pointAndDwell/@usage	Attribute	string
1.2.1.4.2	<i>dwellTime</i>	dwellTime/@value	Attribute	secondsType
1.2.1.4.2.1	<i>usage</i>	dwellTime/@usage	Attribute	string
1.2.1.5	<i>autoScanning</i>	autoScanning	Element	autoScanningElementType
1.2.1.5.1	<i>usage</i>	autoScanning/@usage	Attribute	string
1.2.1.5.1	<i>scanSpeed</i>	scanSpeed/@value	Attribute	secondsType

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.2.1.5.1.1	<i>usage</i>	scanSpeed/@usage	Attribute	string
1.2.1.5.2	<i>scanSwitchDelay</i>	scanSwitchDelay/@value	Attribute	secondsType
1.2.1.5.2.1	<i>usage</i>	scanSwitchDelay/@usage	Attribute	string
1.2.1.5.3	<i>switchType</i>	switchType	Element	switchTypeElementType
1.2.1.5.3.1	<i>usage</i>	switchType/@usage	Attribute	string
1.2.1.5.4	<i>autoScanInitDelay</i>	autoScanInitDelay/@value	Attribute	secondsType
1.2.1.5.4.1	<i>usage</i>	autoScanInitDelay/@usage	Attribute	string
1.2.1.5.5	<i>autoScanRepeat</i>	autoScanRepeat/@value	Attribute	autoScanRepeatType
1.2.1.5.5.1	<i>usage</i>	autoScanRepeat/@usage	Attribute	string
1.2.1.5.6	<i>switchAssignment</i>	switchAssignment/@value	Attribute	groupItemSwitchAssignmentType
1.2.1.5.6.1	<i>number</i>	switchAssignment/@number	Attribute	positive integer
1.2.1.5.6.2	<i>usage</i>	switchAssignment/@usage	Attribute	string
1.2.1.6	<i>inverseScanning</i>	inverseScanning	Element	inverseScanningElementType
1.2.1.6.1	<i>usage</i>	inverseScanning/@usage	Attribute	string
1.2.1.6.1	<i>scanSpeed</i>	scanSpeed/@value	Attribute	secondsType
1.2.1.6.1.1	<i>usage</i>	scanSpeed/@usage	Attribute	string
1.2.1.6.2	<i>scanSwitchDelay</i>	scanSwitchDelay/@value	Attribute	secondsType
1.2.1.6.2.1	<i>usage</i>	scanSwitchDelay/@usage	Attribute	string
1.2.1.6.3	<i>switchType</i>	switchType	Element	switchTypeElementType
1.2.1.6.3.1	<i>usage</i>	switchType/@usage	Attribute	string
1.2.1.6.4	<i>dwelTime</i>	dwelTime/@value	Attribute	secondsType
1.2.1.6.4.1	<i>usage</i>	dwelTime/@usage	Attribute	string
1.2.1.6.5	<i>switchAssignment</i>	switchAssignment/@value	Attribute	groupItemSwitchAssignmentType
1.2.1.6.5.1	<i>number</i>	switchAssignment/@number	Attribute	positive integer
1.2.1.6.5.1.2	<i>usage</i>	switchAssignment/@usage	Attribute	string
1.2.1.7	<i>directedScanning</i>	directedScanning	Element	directedScanningElementType
1.2.1.7.1	<i>usage</i>	directedScanning/@usage	Attribute	string
1.2.1.7.1	<i>scanSpeed</i>	scanSpeed/@value	Attribute	secondsType
1.2.1.7.1.1	<i>usage</i>	scanSpeed/@usage	Attribute	string
1.2.1.7.2	<i>scanSwitchDelay</i>	scanSwitchDelay/@value	Attribute	secondsType
1.2.1.7.2.1	<i>usage</i>	scanSwitchDelay/@usage	Attribute	string
1.2.1.7.3	<i>switchType</i>	switchType	Element	switchTypeElementType
1.2.1.7.3.1	<i>usage</i>	switchType/@usage	Attribute	string
1.2.1.7.4	<i>dwelTime</i>	dwelTime/@value	Attribute	secondsType
1.2.1.7.4.1	<i>usage</i>	dwelTime/@usage	Attribute	string
1.2.1.7.5	<i>switchAssignment</i>	switchAssignment/@value	Attribute	groupItemSwitchAssignmentType
1.2.1.7.5.1	<i>number</i>	switchAssignment/@number	Attribute	positive integer
1.2.1.7.5.2	<i>usage</i>	switchAssignment/@usage	Attribute	string
1.2.1.8	<i>codeSelection</i>	codeSelection	Element	codeSelectionType

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.2.1.9	<i>keyHeight</i>	keyHeight/@value	Attribute	keyHeightPercentageType
1.2.1.9.1	<i>usage</i>	keyHeight/@usage	Attribute	string
1.2.1.10	<i>keyWidth</i>	keyWidth/@value	Attribute	keyWidthPercentageType
1.2.1.10.1	<i>usage</i>	keyWidth/@usage	Attribute	string
1.2.1.11	<i>keySpacing</i>	keySpacing/@value	Attribute	keySpacingPercentageType
1.2.1.11.1	<i>usage</i>	keySpacing/@usage	Attribute	string
1.2.1.12	<i>sound</i>	sound/@value	Attribute	boolean
1.2.1.12.1	<i>usage</i>	sound/@usage	Attribute	string
1.2.2	<i>application</i>	application	Element	See Application Element Sub-table
1.3	<i>alternativeKeyboard</i>	alternativeKeyboard	Element	alternativeKeyboardElementType
1.3.1	<i>alternativeKeyboardGeneric</i>	alternativeKeyboardGeneric	Element	alternativeKeyboardGenericElementType
1.3.1.1	<i>alphaLayoutInternal</i>	alphaLayoutInternal/@value	Attribute	keyboardLayoutType
1.3.1.1.1	<i>usage</i>	alphaLayoutInternal/@usage	Attribute	string
1.3.1.2	<i>alphaLayoutExternal</i>	alphaLayoutExternal/@value	Attribute	anyURI
1.3.1.2.1	<i>usage</i>	alphaLayoutExternal/@usage	Attribute	string
1.3.1.2	<i>stickyKeys</i>	stickyKeys/@value	Attribute	boolean
1.3.1.2.1	<i>usage</i>	stickyKeys/@usage	Attribute	
1.3.1.3	<i>repeatKeys</i>	repeatKeys/@value	Attribute	boolean
1.3.1.3.1	<i>usage</i>	repeatKeys/@usage	Attribute	string
1.3.1.3.2	<i>autoRepeatDelay</i>	autoRepeatDelay/@value	Attribute	sliderType
1.3.1.3.2.1	<i>usage</i>	autoRepeatDelay/@usage	Attribute	string
1.3.1.3.3	<i>autoRepeatRate</i>	autoRepeatRate/@value	Attribute	sliderType
1.3.1.3.3.1	<i>usage</i>	autoRepeatRate/@usage	Attribute	string
1.3.1.4	<i>slowKeys</i>	slowKeys/@value	Attribute	boolean
1.3.1.4.1	<i>usage</i>	slowKeys/@usage	Attribute	string
1.3.1.4.2	<i>slowKeysInterval</i>	slowKeysInterval/@value	Attribute	sliderType
1.3.1.4.2.1	<i>usage</i>	slowKeysInterval/@usage	Attribute	string
1.3.1.5	<i>debounce</i>	debounce/@value	Attribute	boolean
1.3.1.5.1	<i>usage</i>	debounce/@usage	Attribute	string
1.3.1.5.2	<i>debounceInterval</i>	debounceInterval/@value	Attribute	secondsType
1.3.1.5.2.1	<i>usage</i>	debounceInterval/@usage	Attribute	string
1.3.1.6	<i>resizableKeys</i>	resizableKeys	Element	resizableKeysElementType
1.3.1.6.1	<i>usage</i>	resizableKey/@usage	Attribute	string
1.3.1.6.2	<i>keyWidth</i>	keyWidth/@value	Attribute	keyWidthMMType
1.3.1.6.2.1	<i>usage</i>	keyWidth/@usage	Attribute	string
1.3.1.6.3	<i>keyHeight</i>	keyHeight/@value	Attribute	keyHeightMMType
1.3.1.6.3.1	<i>usage</i>	keyHeight/@usage	Attribute	string
1.3.1.6.4	<i>keySpacing</i>	keySpacing/@value	Attribute	keySpacingMMType
1.3.1.6.4.1	<i>usage</i>	keySpacing/@usage	Attribute	string

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.3.2	<i>application</i>	application	Element	See Application Element Sub-table
1.4	<i>mouseEmulation</i>	mouseEmulation	Element	mouseEmulationElementType
1.4.1	<i>mouseEmulationGeneric</i>	mouseEmulationGeneric	Element	mouseEmulationGenericElementType
1.4.1.1	<i>speed</i>	speed/@value	Attribute	sliderType
1.4.1.1.1	<i>usage</i>	speed/@usage	Attribute	string
1.4.1.2	<i>acceleration</i>	acceleration/@value	Attribute	sliderType
1.4.1.2.1	<i>usage</i>	acceleration/@usage	Attribute	string
1.4.1.3	<i>device</i>	device/@value	Attribute	inputDeviceType
1.4.1.3.1	<i>usage</i>	device/@usage	Attribute	string
1.4.2	<i>application</i>	application	Element	See Application Element Sub-table
1.5	<i>alternativePointing</i>	alternativePointing	Element	alternativePointingElementType
1.5.1	<i>alternativePointingGeneric</i>	alternativePointingGeneric	Element	alternativePointingGenericElementType
1.5.1.1	<i>relativePointing</i>	relativePointing	Element	relativePointingElementType
1.5.1.1.1	<i>speed</i>	speed/@value	Attribute	sliderType
1.5.1.1.1.1	<i>usage</i>	speed/@usage	Attribute	string
1.5.1.1.2	<i>acceleration</i>	acceleration/@value	Attribute	sliderType
1.5.1.1.2.1	<i>usage</i>	acceleration/@usage	Attribute	string
1.5.1.1	<i>absolutePointing</i>	absolutePointing	Element	absolutePointingElementType
1.5.1.2	<i>handedness</i>	handedness/@value	Attribute	handednessType
1.5.1.2.1	<i>usage</i>	handedness/@usage	Attribute	string
1.5.1.3	<i>doubleClickSpeed</i>	doubleClickSpeed/@value	Attribute	secondsType
1.5.1.3.1	<i>usage</i>	doubleClickSpeed/@usage	Attribute	string
1.5.1.4	<i>buttonAssignmentExternal</i>	buttonAssignmentExternal/@value	Attribute	anyURI
1.5.1.4.1	<i>usage</i>	buttonAssignmentExternal/@usage	Attribute	string
1.5.2	<i>application</i>	application	Element	See Application Element Sub-table
1.6	<i>voiceRecognition</i>	voiceRecognition	Element	voiceRecognitionElementType
1.6.1	<i>voiceRecognitionGeneric</i>	voiceRecognitionGeneric	Element	voiceRecognitionGenericElementType
1.6.1.1	<i>microphoneGain</i>	microphoneGain/@value	Attribute	sliderType
1.6.1.1.1	<i>usage</i>	microphoneGain/@usage	Attribute	string
1.6.1.2	<i>controlsWindow</i>	controlsWindow/@value	Attribute	boolean
1.6.1.2.1	<i>usage</i>	controlsWindow/@usage	Attribute	string
1.6.1.3	<i>dictation</i>	dictation	Element	dictationElementType
1.6.1.3.1	<i>usage</i>	dictation/@usage	Attribute	string
1.6.1.3.2	<i>voiceProfileExternal</i>	voiceProfileExternal/@value	Attribute	anyURI
1.6.1.3.2.1	<i>usage</i>	voiceProfileExternal/@usage	Attribute	string
1.6.1.4	<i>commandControl</i>	commandControl	Element	commandControlElementType
1.6.1.4.1	<i>usage</i>	commandControl/@usage	Attribute	string
1.6.1.4.2	<i>vocabulary</i>	vocabulary/@value	Attribute	vocabularyContextType

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.6.1.4.2.1	<i>usage</i>	vocabulary/@usage	Attribute	string
1.6.1.4.3	<i>feedback</i>	feedback/@value	Attribute	boolean
1.6.1.4.3.1	<i>usage</i>	feedback/@usage	Attribute	string
1.6.1.4.4	<i>mouse</i>	mouse/@value	Attribute	boolean
1.6.1.4.4.1	<i>usage</i>	mouse/@usage	Attribute	string
1.6.2	<i>application</i>	application	Element	See Application Element Sub-table
1.7	<i>codedInput</i>	codedInput	Element	codedInputElementType
1.7.1	<i>code</i>	code/@value	Attribute	codeType
1.7.1.1	<i>usage</i>	code/@usage	Attribute	string
1.7.2	<i>codeSwitchNumber</i>	codeSwitchNumber/@value	Attribute	codeSwitchNumberType
1.7.2.1	<i>usage</i>	codeSwitchNumber/@usage	Attribute	string
1.7.3	<i>codeTermination</i>	codeTermination/@value	Attribute	codeTerminationType
1.7.3.1	<i>usage</i>	codeTermination/@usage	Attribute	string
1.7.3.2	<i>codeRate</i>	codeRate/@value	Attribute	secondsType
1.7.3.2.1	<i>usage</i>	codeRate/@usage	Attribute	string
1.7.4	<i>codeSelect</i>	codeSelect/@value	Attribute	directSelectionType
1.7.4.1	<i>usage</i>	codeSelect/@usage	Attribute	string
1.7.5	<i>switchType</i>	switchType/@value	Attribute	string
1.7.5.1	<i>usage</i>	switchType/@usage	Attribute	string
1.7.6	<i>codeExternal</i>	codeExternal/@value	Attribute	anyURI
1.7.6.1	<i>usage</i>	codeExternal/@usage		
1.8	<i>prediction</i>	prediction	Element	predictionElementType
1.8.1	<i>wordPrediction</i>	wordPrediction/@value	Attribute	boolean
1.8.1.1	<i>usage</i>	wordPrediction/@usage	Attribute	string
1.8.2	<i>wordCompletionPrediction</i>	wordCompletionPrediction/@value	Attribute	boolean
1.8.2.1	<i>usage</i>	wordCompletionPrediction/@usage	Attribute	string
1.8.3	<i>commandPrediction</i>	commandPrediction/@value	Attribute	boolean
1.8.3.1	<i>usage</i>	commandPrediction/@usage	Attribute	string
1.8.4	<i>numberChoicesDisplayed</i>	numberChoicesDisplayed/@value	Attribute	positive integer
1.8.4.1	<i>usage</i>	numberChoicesDisplayed/@usage	Attribute	string
1.8.5	<i>personalLexicon</i>	personalLexicon/@value	Attribute	anyURI
1.8.5.1	<i>usage</i>	personalLexicon/@usage	Attribute	string
1.9	<i>structuralNavigation</i>	structuralNavigation	Element	structuralNavigationElementType
1.9.1	<i>navigationDepth</i>	navigationDepth/@value	Attribute	navigationDepthType
1.9.1.1	<i>usage</i>	navigationDepth/@usage	Attribute	string
1.9.2	<i>useTableOfContents</i>	useTableOfContents/@value	Attribute	boolean
1.9.2.1	<i>usage</i>	useTableOfContents/@usage	Attribute	string
1.10	<i>futureTechnology</i>	futureTechnology	Element	futureTechnologyElementType
1.10.1	<i>application</i>	application	Element	See Application Element Sub-table

Table 3.5 - <content> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	<i>content</i>	content	Element	contentElementType
1.1	<i>alternativesToVisual</i>	alternativesToVisual	Element	alternativesToVisualElementType
1.1.1	<i>audioDescription</i>	audioDescription/@type	Attribute	audioDescriptionType
1.1.1.1	<i>xml:lang</i>	audioDescription/@xml:lang	Attribute	xs:language
1.1.1.2	<i>usage</i>	audioDescription/@usage	Attribute	string
1.1.2	<i>altTextLang</i>	altTextLang/@xml:lang	Attribute	xs:language
1.1.2.1	<i>usage</i>	altTextLang/@usage	Attribute	string
1.1.3	<i>longDescriptionLang</i>	longDescriptionLang/@xml:lang	Attribute	xs:language
1.1.3.1	<i>usage</i>	longDescriptionLang/@usage	Attribute	string
1.1.4	<i>colorAvoidance</i>	colorAvoidance	Element	colorAvoidanceElementType
1.1.4.1	<i>avoidRed</i>	avoidRed/@value	Attribute	boolean
1.1.4.1.1	<i>usage</i>	avoidRed/@usage	Attribute	string
1.1.4.2	<i>avoidRedGreen</i>	avoidRedGreen/@value	Attribute	boolean
1.1.4.2.1	<i>usage</i>	avoidRedGreen/@usage	Attribute	string
1.1.4.3	<i>avoidBlueYellow</i>	avoidBlueYellow/@value	Attribute	boolean
1.1.4.3.1	<i>usage</i>	avoidBlueYellow/@usage	Attribute	string
1.1.4.4	<i>avoidGreenYellow</i>	avoidGreenYellow/@value	Attribute	boolean
1.1.4.4.1	<i>usage</i>	avoidGreenYellow/@usage	Attribute	string
1.1.4.5	<i>avoidOrange</i>	avoidOrange/@value	Attribute	Boolean
1.1.4.5.1	<i>usage</i>	avoidOrange/@usage	Attribute	string
1.1.4.6	<i>avoidRedBlack</i>	avoidRedBlack/@value	Attribute	Boolean
1.1.4.6.1	<i>usage</i>	avoidRedBlack/@usage	Attribute	string
1.1.4.7	<i>avoidPurpleGray</i>	avoidPurpleGray/@value	Attribute	Boolean
1.1.4.7.1	<i>usage</i>	avoidPurpleGray/@usage	Attribute	string
1.1.4.8	<i>useMaximumContrastMonochrome</i>	useMaximumContrastMonochrome/@value	Attribute	Boolean
1.1.4.8.1	<i>usage</i>	useMaximumContrastMonochrome/@usage	Attribute	string
1.2	<i>alternativesToText</i>	alternativesToText	Element	alternativesToTextElementType
1.2.1	<i>graphicAlternative</i>	graphicAlternative/@value	Attribute	boolean
1.2.1.1	<i>usage</i>	graphicAlternative/@usage	Attribute	string
1.2.2	<i>signLanguage</i>	signLanguage/@value	Attribute	signLanguageType
1.2.2.1	<i>usage</i>	signLanguage/@usage	Attribute	string
1.3	<i>alternativesToAuditory</i>	alternativesToAuditory	Element	alternativesToAuditoryElementType
1.3.1	<i>captionType</i>	captionType	Element	captionTypeElementType
1.3.1.1	<i>usage</i>	captionType/@usage	Attribute	string
1.3.1.2	<i>verbatim</i>	verbatim/@value	Attribute	boolean
1.3.1.2.1	<i>usage</i>	verbatim/@usage	Attribute	string

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.3.1.3	<i>reducedReadingLevel</i>	reducedReadingLevel/@value	Attribute	boolean
1.3.1.3.1	<i>usage</i>	reducedReadingLevel/@usage	Attribute	string
1.3.1.4	<i>reducedSpeed</i>	reducedSpeed/@value	Attribute	boolean
1.3.1.4.1	<i>usage</i>	reducedSpeed/@usage	Attribute	string
1.3.1.4.2	<i>captionRate</i>	captionRate/@value	Attribute	captionRateType
1.3.1.4.2.1	<i>usage</i>	captionRate/@usage	Attribute	string
1.3.1.5	<i>enhancedCaption</i>	enhancedCaption/@value	Attribute	boolean
1.3.1.5.1	<i>usage</i>	enhancedCaption/@usage	Attribute	string
1.3.2	<i>signLanguage</i>	signLanguage/@value	Attribute	signLanguageType
1.3.2.1	<i>usage</i>	signLanguage/@usage	Attribute	string
1.4	<i>learnerScaffold</i>	learnerScaffold/@value	Element	scaffoldingType
1.4.1	<i>usage</i>	learnerScaffold/@usage	Attribute	string
1.5	<i>personalStylesheet</i>	personalStylesheet/@value	Attribute	anyURI
1.5.1	<i>usage</i>	personalStylesheet/@usage	Attribute	string
1.6	<i>extraTime</i>	extraTime/@value	Attribute	float
1.6.1	<i>usage</i>	extraTime/@usage	Attribute	string
1.7	<i>futureTechnology</i>	futureTechnology	Element	futureTechnologyElementType

Table 3.6 - <application> Element Sub-table.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	application	application	Element	applicationElementType
1.1		name	Attribute	String
1.2		version	Attribute	String
1.3		priority	Attribute	priorityType
1.4	param	param	Element	paramElementType
1.4.1		name	Attribute	String
1.4.2		value	Attribute	String

Table 3.7 - <eligibility> elements mapped to XML Schema (XSD) structures.

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1	accommodation	accommodation	Element	accommodationElementType
1.1	accommodationPackage	accommodationPackage	Element	accommodationPackageType
1.1.1	learningObjectDescription	learningObjectDescription	Element	string
1.1.2	accommodationDescription	accommodationDescription	Element	string

No.	IM Element Name	XSD Entity Name	XSD Structure	XSD Type
1.1.3	requestForAccommodations	requestForAccommodations	Element	string
1.1.4	authorizedBy	authorizedBy	Element	string
1.1.5	authorizedDate	authorizedDate	Attribute	dateTime
1.1.6	expirationDate	expirationDate	Attribute	dateTime

3.1 Mapping ACCLIP Vocabularies to XSD Entities of simpleType

Table 3.8 - simpleTypes with Restricted Enumerations.

No.	XSD Name	XSD Data Type	XSD Enumeration Value	ACCLIP Model Values
	audioDescriptionType	token	standard	standard
			expanded	expanded
	autoScanRepeatType	token	1	1
			2	2
			3	3
			4	4
			5	5
			infinity	infinity
	brailleDotCountType	integer	6	6
			8	8
	brailleGradeType	token	1	1
			2	2
			contracted	contracted
			uncontracted	uncontracted
	brailleStatusCellType	token	left	left
			right	right
			off	off
	codeTerminationType	token	switch	switch
			timed	timed
	codeType	token	morse	morse
			quartering	quartering
			eightCell	eightCell
			chordic	chordic
	contentDensityType	token	expanded	expanded
			collapsed	collapsed
	contentViewsType	token	imageIntensive	imageIntensive
			textIntensive	textIntensive
	cursorSizeType	token	standard	standard
			large	large
			extraLarge	extraLarge

No.	XSD Name	XSD Data Type	XSD Enumeration Value	ACCLIP Model Values
	directSelectionType	token	pointAndClick	pointAndClick
			pointAndDwell	pointAndDwell
	enhancedCaptioningType	token	verbatim	verbatim
			enhancedDescription	enhancedDescription
			reducedReadingLevel	reducedReadingLevel
			speedReduced	speedReduced
	genericFaceType	token	serif	serif
			sansSerif	sansSerif
			monospaced	monospaced
	handednessType	token	left	left
			right	right
	highlightType	token	word	word
			sentence	sentence
	inputDeviceType	token	keypad	keypad
			keyboard	keyboard
			switch	switch
	keyboardLayoutType	token	standard	standard
			sequential	sequential
			frequency	frequency
	linkActionType	token	differentVoice	differentVoice
			speakLink	speakLink
			soundEffect	soundEffect
			none	none
	navigationDepthType	token	breadthFirst	breadthFirst
			depthFirst	depthFirst
	readingUnitType	token	word	word
			sentence	sentence
			paragraph	paragraph
			continuous	continuous
	scaffoldingType	token	dictionary	dictionary
			calculator	calculator
			abacus	abacus
			noteTaking	noteTaking
			peerInteraction	peerInteraction
			thesaurus	thesaurus
	scanSelectionType	token	singleSwitchAuto	singleSwitchAuto
			inverse	inverseScanning
	signLanguageType	token	American-ASL	
			Australian-Auslan	
			Austrian	

No.	XSD Name	XSD Data Type	XSD Enumeration Value	ACCLIP Model Values
			British-BSL	
			Danish-DSL	
			French-LSF	
			German-DGS	
			Irish-ISL	
			Italian-LIS	
			Japanese-JSL	
			Malaysian-MSL	
			Mexican-LSM	
			Native-American	
			Norwegian-NSL	
			Russian-RSL	
			Quebec-LSQ	
			Singapore-SLS	
			Netherlands-NGT	
			Spanish-LSE	
			Swedish	
			other	
	soundReplacementType	token	desktop	desktop
			window	window
			captionBar	captionBar
			none	none
	structuralLayoutElementType	token	tiled	tiled
			overlap	overlap
			frontMost	frontMost
	switchInputType	token	mouse	mouse
			game	game
			serial	serial
			usb	usb
			firewire	firewire
			infrared	infrared
			bluetooth	bluetooth
	usageType	token	required	required
			preferred	preferred
			optionallyUse	optionallyUse
			notUse	notUse
	vocabularyContextType	token	natural	natural
			context	context

Table 3.9 - simpleTypes with Restricted Numerical Types.

No.	XSD Name	XSD Base Type	MinInclusive	MaxInclusive
	codeSwitchNumberType	integer	1	150
	brailleCellCountType	integer	8	120
	millimetersType	integer	1	
	priorityType	integer	1	
	secondsType	float	0	
	sliderType	float	0	1
	speechRateType	integer	1	1000

Table 3.10 - Simple Types with Other Restricted Types.

No.	XSD Name	XSD Base Type	Length
	colorType	hexBinary	4

4. Normative Points

4.1 XML Schema File Naming Conventions

Conformant with IMS file naming conventions, an IMS ACCLIP XML Schema binding instance shall be named according to this syntactical model: `imsacclip_vmpn[pr[ps]].xsd`, where

- “imsacclip_” signifies that the file pertains to the IMS ACCLIP specification,
- “vm” is a major version of the IMS ACCLIP specification defined by a binding instance, where “m” is the major version number, and is always followed by
- “pn”, which signifies a minor version of the IMS ACCLIP specification defined by a binding instance, where “n” is minor version number, and where
- [pr[ps]] is an optional set of major release and minor release numbers (as indicated by the brackets which are *not* part of the file name), depending on changes to schema instances themselves that are not driven by a change to a normative instance of the IMS ACCLIP specification, with
- “pr” representing a major release component without an additional minor release part, where “r” is the major release number, and with
- “ps” representing a minor release component modifying an major release component, where “s” is the minor release number.

Non-normative examples of XML Schema file names for IMS ACCLIP:

- “imsacclip_v1p0.xsd” is a binding tied to IMS ACCLIP v1.0,
- “imsacclip_v1p0p1.xsd” is a ‘major’ revision of the imsss_v1p0.xsd binding instance,
- “imsacclip_v1p0p1p1.xsd” is ‘minor’ revision of imsss_v1p0p1.xsd binding instance.

4.2 Namespace URI (Namespace Identifier)

The namespace URI for IMS ACCLIP shall be <http://www.imsglobal.org/xsd/imsacclip>

4.2.1 Location of Current IMS ACCLIP Binding Instance

The.xsd file found at <http://www.imsglobal.org/xsd/imsacclip/> shall be the current XML Schema binding instance of the IMS ACCLIP Information Model normative elements and values. This file will change.

4.2.2 Location of Versioned IMS ACCLIP Binding Instances

Versioned instances of each binding for IMS ACCLIP, including all major or minor release instances of that version’s binding, can be found at <http://www.imsglobal.org/xsd/imsacclip/vmpn/>, where “vmpn” is a folder named for a versioned instance of the specification. These instances will not change.

For example, the non-normative examples of XML Schema files named for various binding instances of IMS ACCLIP v1.0 would be held at this location: <http://www.imsglobal.org/xsd/imsss/v1p0/>.

4.3 Namespace Name

The namespace Name used as the prefix of an XML Namespace Qualified Name instance of an IMS ACCLIP binding instance used in other XML documents shall be *imsacclip*.

For example, when declaring the IMS ACCLIP namespace URI in an IMS manifest, this attribute representation would be used:

```
xmlns:imsacclip="http://www.imsglobal.org/xsd/imsacclip"
```

An element of the IMS ACCLIP declared in an XML document where the `imsacclip` namespace is declared would appear like this:

```
<imsacclip:accessForAll></imsacclip:accessForAll>
```

4.4 Versioning a Binding Instance

A binding version of the IMS ACCLIP specification shall always reflect the current version number of the IMS ACCLIP specification, whether or not binding structures change across specification instances. That is, the file name of the current binding instance shall share the same major and minor *version* number of the IMS ACCLIP specification.

A change to binding structures without a related change to a specification version shall result in an increment of the major or minor revision level component of a binding's file name.

Changes to binding structures without a related change in a specification shall result in an increment of the *major revision* level.

Changes to structure names or values without changes in structures themselves or the meaning associated with a value shall result in an increment of the *minor revision* level.

All versioning and revisioning shall be reflected in a binding's file name and complete version information. This new binding shall become the current binding found at <http://www.imsglobal.org/xsd/imsacclip>. The obsolete binding shall be moved to its place within the `imsacclip` file path structure based on the value of its version level component, excluding the revision level component.

4.5 Localization

4.5.1 Localizing Binding Structure Names and Values

An IMS ACCLIP binding's structure names and values shall be represented as depicted in the Tables within Section 3 of this document. This will ensure machine-level interoperability of accessibility information.

US English annotations and comment strings within an IMS binding shall occur in all binding instances of an IMS ACCLIP binding. Localized annotations and comments may be *added* to the US English annotations and comment strings within an IMS binding as deemed necessary by IMS stakeholders. Such localization activity in a binding shall promote a binding instance to the next increment in *minor* revision level.

4.5.2 Localizing this Document

This binding document may be rendered into different lingual representations except for the US English representations of:

- binding structure names
- binding structure values
- file naming syntax and examples
- binding namespace URI
- binding file path representation
- binding namespace name

Localization of this document shall *not* cause any change in specification version numbering or binding revision instance numbering.

4.6 Extensibility

The IMS ACCLIP Binding provides several mechanisms for extending binding instances. There is a “wildcard” element contained in the following ACCLIP elements: <accessForAll>, <context>, <content>, <control>, <display>, <application>, and any element whose name ends in “Generic”. Further, wildcard attributes are permitted on the following ACCLIP elements: <accessForAll>, <context>, <content>, <control>, <display>, and any element that has a “usage” attribute. All other extensions to binding instances are prohibited. This means:

- The IMS ACCLIP XML Schema Definition File shall not be modified;
- Elements within the IMS ACCLIP namespace shall not be modified;
- All elements in an instance document that are defined to be within the IMS ACCLIP namespace shall conform exactly to the definition of that element provided in this binding description document;
- Elements in another namespace shall not be substituted for elements in the IMS ACCLIP namespace (via the XML Schema substitution group mechanism, for example, or via any other mechanism);
- The vocabularies defined for elements and attributes within the IMS ACCLIP namespace shall not be extended or restricted within the IMS ACCLIP namespace.

The IMS ACCLIP XML Schema Definition file enforces these restrictions by defining blockDefault=”#all” on the root schema element in the IMS ACCLIP namespace.

Further, extensions to the IMS ACCLIP namespace are prohibited. This means:

- All extensions shall be in a namespace other than the IMS ACCLIP namespace.

The IMS ACCLIP XML Schema Definition file enforces this restriction by defining namespace=”##other” on all wildcard elements and attributes defined within the IMS ACCLIP namespace.

As a potential aid to implementers, the types defined in the IMS ACCLIP XML Schema Definition file may be imported into other namespaces and reused within those other namespaces. However, any such reuse shall be consistent with the restrictions defined in the IMS ACCLIP specification document, and shall be consistent with the restrictions defined in this document.

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