ACCESSIBILITY CONFIGURATION SPECIFICATION

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Revision History

Revision Description	Author/Modifier	Date
DRAFT Release	Alex Dean (Smarter Balanced)	November 4, 2016
Correction to the sample configuration file	Alex Dean (Smarter Balanced)	January 9, 2017

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References

Ref	Reference	Author	Version
1	Requirements-ART-Task Order 10.docx	American Institutes for Research	1.0
2	SmarterApp ISAAP Accessibility Feature Codes http://www.smarterapp.org/specs/ISAAP-AccessibilityFeatureCodes.html	Smarter Balanced	
3	AccessibilityConfig.xsd schema definition	American Institutes for Research	

4	AccessibilityConfig.xml sample configuration	American Institutes for Research	

Background and Purpose

The SmarterApp suite of assessment software affords a number of accessibility features to support student needs. The features and associated policies are described in the Smarter Balanced Usability, Accessibiliy, and Accommodations Guidelines (see http://www.smarterbalanced.org/parents-students/support-for-under-represented-students/). The codes associated with each accessibility feature are defined in the SmarterApp ISAAP Accessibility Feature Codes specification (see http://www.smarterapp.org/specs/ISAAP-AccessibilityFeatureCodes.html).

Originally, the accessibility features and associated codes were hard-coded into each of the assessment applications. The Accessibility Configuration File is shared among SmarterApp applications and provides a common description of the accessibility features. This allows changes to feature availability and policy without modifications to the assessment software other than the implementation of new features in the test delivery system.

The Accessibility Configuration File communicates the following information:

- Families of accessibility settings (E.g., "Color Contrast" or "American Sign Language")
- Settings for each family each with an associated code, label, description, and optional message. (E.g., "Yellow on Blue" for color contrast for "Show ASL Videos" for American Sign Language).
- Optional translations of labels, descriptions, and messages into multiple languages. For Smarter Balanced, this is to facilitate generating test reports in languages other than English. But it also facilitates multinational use of the assessment system.
- Availability of accessibility resources by subject and grade.

The Accessibility Configuration File may be used by accessibility tools in the following ways

- The ISAAP tool facilitates designation of accessibility features by educators in behalf of their students. The configuration file provides the selections that the tool makes available in its user interface.
- The Administration and Registration Tool (ART) manages registration of students for assessments and selection of accessibility resources for those students. As with the ISAAP tool, ART uses the configuration file to provide the selections to make available to users.
- The reporting system includes a section indicating which accommodations were made available to students during testing. It uses the configuration file to translate from the codes used in the test results to descriptions that are understandable to recipients of the report.

Accessibility Configuration File Sample

```xml
<?xml version="1.0" encoding="utf-8"?>
<Accessibility>
  <MasterResourceFamily>
    <SingleSelectResource>
      <Code>AmericanSignLanguage</Code>
      <Order>1</Order>
      <DefaultSelection/>
      <ResourceType>Accommodation</ResourceType>
      <Text>
        <Language>eng</Language>
        <Label>American Sign Language</Label>
        <Description>Some students who are deaf or hard of hearing and who typically use ASL may need this accommodation when accessing text-based content
in the assessment. The use of this accommodation may result in the student needing additional overall time to complete the assessment. For many students
who are deaf or hard of hearing, viewing signs is the only way to access information presented orally. It is important to note, however, that some
students who are hard of hearing will be able to listen to information presented orally if provided with appropriate amplification and a setting in which
extraneous sounds do not interfere with clear presentation of the audio presentation in a listening test. (EMBEDDED)</Description>
      </Text>
      <Selection>
        <Code>TDS_ASL0</Code>
        <Order>1</Order>
        <Text>
          <Language>eng</Language>
          <Label>Do not show ASL videos</Label>
        </Text>
      </Selection>
      <Selection>
        <Code>TDS_ASL1</Code>
        <Order>2</Order>
        <Text>
          <Language>eng</Language>
          <Label>Show ASL videos</Label>
          <Message>ELA PTs do not have listening stimuli</Message>
        </Text>
      </Selection>
    </SingleSelectResource>
<MultiSelectResource>
    <Code>NonEmbeddedDesignatedSupports</Code>
    <Order>31</Order>
    <DefaultSelection>NEDS0</DefaultSelection>
    <ResourceType>DesignatedSupport</ResourceType>
    <Text>
      <Language>eng</Language>
```

```xml
        <Label>Non-Embedded Designated Supports</Label>
    </Text>
    <Selection>
     <Code>NEDS0</Code>
     <Order>1</Order>
     <MutuallyExclusive/>
     <Text>
        <Language>eng</Language>
        <Label>None</Label>
     </Text>
    </Selection>
    <Selection>
     <Code>NEDS_BD</Code>
     <Order>2</Order>
     <Text>
        <Language>eng</Language>
        <Label>Bilingual Dictionary</Label>
     </Text>
    </Selection>
    <Selection>
     <Code>NEDS_CC</Code>
     <Order>3</Order>
     <Text>
        <Language>eng</Language>
        <Label>Color Contrast</Label>
     </Text>
    </Selection>
    <Selection>
     <Code>NEDS_CO</Code>
     <Order>4</Order>
     <Text>
        <Language>eng</Language>
        <Label>Color Overlay</Label>
        <Description>Students with attention difficulties may need this support to view test content. This support also may be needed by some students
with visual impairments or other print disabilities (including learning disabilities). Choice of color should be informed by evidence of those colors
that meet the student's needs. (NON-EMBEDDED)</Description>
     </Text>
    </Selection>
    <Selection>
     <Code>NEDS_Mag</Code>
     <Order>5</Order>
     <Text>
        <Language>eng</Language>
        <Label>Magnification</Label>
        <Description>Students used to viewing enlarged text or graphics, or navigation buttons may need magnification to comfortably view content. This
support also may meet the needs of students with visual impairments and other print disabilities. The use of this designated support may result in the
```
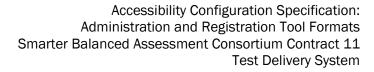
```xml
student needing additional overall time to complete the assessment. Use of this support will likely also require separate setting or extra time. (NON-
EMBEDDED)</Description>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_NoiseBuf</Code>
      <Order>6</Order>
      <Text>
        <Language>eng</Language>
        <Label>Noise buffers</Label>
        <Description>Student wears equipment to reduce environmental noises. Students may have these testing variations if regularly used in the
classroom. Students who use noise buffers will need headphones unless tested individually in a separate setting. (NON-EMBEDDED)</Description>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_RA_Items</Code>
      <Order>7</Order>
      <Text>
        <Language>eng</Language>
        <Label>Read Aloud Items-English</Label>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_RA_Stimuli</Code>
      <Order>8</Order>
      <Text>
        <Language>eng</Language>
        <Label>Read Aloud PT Stimuli-English</Label>
        <Description>This accommodation is appropriate for a very small number of students (estimated to be approximately 1-2% of students with
disabilities participating in a general assessment).<ul><li>For students in grades 3-5, read aloud will not be an available accommodation. Content
experts agree that this accommodation should not be provided during these grades because it would compromise the construct being measured.</li><li>For
students in grades 6-8 and 11, read aloud is available as an accommodation for students whose need is documented in an IEP or 504 plan. Reports can be
run to indicate the percent of students who had access to read aloud on reading test passages.</li></ul> Readers should be provided to students on an
individual basis - not to a group of students. A student should have the option of asking a reader to slow down or repeat text. Use of this support will
likely also require separate setting or extra time. (NON-EMBEDDED)</Description>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_RA_Items_ESN</Code>
      <Order>9</Order>
      <Text>
        <Language>eng</Language>
        <Label>Read Aloud Items-Spanish</Label>
      </Text>
    </Selection>
    <Selection>
```

```xml
      <Code>NEDS_RA_Stimuli_ESN</Code>
      <Order>10</Order>
      <Text>
        <Language>eng</Language>
        <Label>Read Aloud PT Stimuli-Spanish</Label>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_SC_Items</Code>
      <Order>11</Order>
      <Text>
        <Language>eng</Language>
        <Label>Scribe Items (Non-Writing)</Label>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_SS</Code>
      <Order>12</Order>
      <Text>
        <Language>eng</Language>
        <Label>Separate Setting</Label>
        <Description>Students who are easily distracted (or may distract others) in the presence of other students, for example, may need an alternate
location to be able to take the assessment. The separate setting may be in a different room that allows them to work individually or among a smaller
group, or in the same room but in a specific location (for example, away from windows, doors, or pencil sharpeners, in a study carrel, near the teacher's
desk, or in the front of a classroom). Some students may benefit from being in an environment that allows for movement, such as being able to walk
around. In some instances, students may need to interact with instructional or test content outside of school, such as in a hospital or their home. (NON-
EMBEDDED)</Description>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_TArabic</Code>
      <Order>13</Order>
      <Text>
        <Language>eng</Language>
        <Label>Glossary - Arabic</Label>
      </Text>
    </Selection>
    <Selection>
      <Code>NEDS_TCantonese</Code>
      <Order>14</Order>
      <Text>
        <Language>eng</Language>
        <Label>Glossary - Cantonese</Label>
      </Text>
    </Selection>
    <Selection>
```

```xml
  <Code>NEDS_TFilipino</Code>
  <Order>15</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Filipino (Ilokano and Tagalog)</Label>
  </Text>
</Selection>
<Selection>
  <Code>NEDS_TKorean</Code>
  <Order>16</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Korean</Label>
  </Text>
</Selection>
<Selection>
  <Code>NEDS_TMandarin</Code>
  <Order>17</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Mandarin</Label>
  </Text>
</Selection>
<Selection>
  <Code>NEDS_TPunjabi</Code>
  <Order>18</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Punjabi</Label>
  </Text>
</Selection>
<Selection>
  <Code>NEDS_TRussianGta</Code>
  <Order>19</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Russian</Label>
  </Text>
</Selection>
<Selection>
  <Code>NEDS_TSpanish</Code>
  <Order>20</Order>
  <Text>
    <Language>eng</Language>
    <Label>Glossary - Spanish</Label>
  </Text>
```
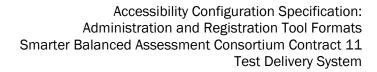
```xml
        </Selection>
        <Selection>
          <Code>NEDS_TUkrainian</Code>
          <Order>21</Order>
          <Text>
            <Language>eng</Language>
            <Label>Glossary - Ukrainian</Label>
          </Text>
        </Selection>
        <Selection>
          <Code>NEDS_TVietnamese</Code>
          <Order>22</Order>
          <Text>
            <Language>eng</Language>
            <Label>Glossary - Vietnamese</Label>
          </Text>
        </Selection>
        <Selection>
          <Code>NEDS_TransDirs</Code>
          <Order>23</Order>
          <Text>
            <Language>eng</Language>
            <Label>Translated test directions</Label>
            <Description>Students who have limited English language skills can use the translated directions support. This support should only be used for
students who are proficient readers in the other language and not proficient in English. (NON-EMBEDDED)</Description>
          </Text>
        </Selection>
      </MultiSelectResource>
</Accessibility>
```
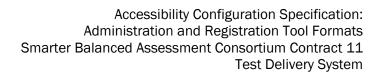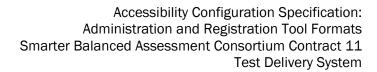
Accessibility Configuration Format Data Dictionary

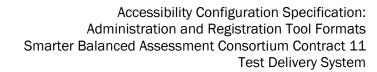| Category / Node (XML Element)	XML Hierarchy	Required	Data Element Description	Acceptable Values
Accessibility			Namespace where the elements and data types used in the schema originate. All further field elements and data types must be prefixed with "xsi".	URI
			References an XML Schema document that does not have a target namespace.	URI
MasterResourceFamily	Accessibility	Yes	A Master Resource Family element contains an ordered list of resource families. The master list provides the default list of elements maintains columnar consistency of resource families across subjects and grades. For example, a resource not required in a Resource Family for a specific subject/grade combination but defined in the Master Resource Family will still have a column for consistency. When a resource family exists that is not designated for a particular subject/grade then the corresponding selection should be empty or disabled.	N/A
SingleSelectResource or MultiSelectResource	Accessibility: MasterResourceFamily	No	A SingleSelectResource is a containing element for a resource description that is offered as a single select item. A MultiSelectResource is a containing element for a resource description that is offered as a multi-select item. At least one Resource is required.	N/A
Code	Accessibility: MasterResourceFamily: <SingleSelectResource |MultiSelectRecourse>	Yes	Every resource must be referenced by a unique code. The resource code is defined here in the Master Resource Family and cannot be overridden in Resource Families. The code represents a contract between the major components to identify the same resource.	Existing codes are defined in the ISAAP Accessibility Feature Codes specification.
Order	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>	Yes	The order of the resource must be defined and determines the order of presentation from left to right of the major component that uses the configuration file. The value can be any positive integer and does not have to be increment by one from a previous resource, but no other resource may have the same value. For example, a Master Resource Family with four resources may have Order values of 10, 100, 300 and 1000 are acceptable and clearly denote the sequence of presentation of the resources. The resource order must be defined in the Master Resource Family and cannot be changed by a Resource Family.	Positive integer
DefaultSelection	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>	No	A default resource may be optionally defined for the resource. It is not necessary for there to be an assigned default resource. If one is defined, the user interface will pre-select the resource with the default value.	String equal to one of the Resource Selection Code
Text	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>	Yes	A container element for strings used for display purposes in the user interface or validation purposes in the upload file	N/A
Language	Accessibility: MasterResourceFamily:	Yes	The Language element indicates the language of this translation. At least one English (language=eng is required.	Valid ISO 639-2 language code

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	Accessibility			
	<SingleSelectResource | MultiSelectRecourse>: Text			
Label	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Text	Yes	Every resource requires a label that determines what is displayed above the resource in the major component UI or column heading upload file. The label should reflect the indicated language.	String
Description	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Text	Yes	An description of the resource should be provided. The label should reflect the indicated language.	String
Selection	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>	Yes	The Selection element defines one of the possible values that may be selected for the resource. If a resource is type = SingleSelect, only one selection may be made for the resource. A type = MultiSelect resource allows the selection of one or more selections.	N/A
Code	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection	Yes	Every resource must be referenced by a unique code. The resource code is defined here in the Master Resource Family and cannot be overridden in Resource Families. The code represents a contract between the major components to identify the same resource.	String
Order	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection	Yes	The order of the resource selection within the resource determines the order of presentation of drop-down single or multi-select elements. The order can only be defined in the Master Resource Family and cannot be overridden in a Resource Family. Resource Families may only select or omit resource selections as appropriate for the resource family.	Positive integer
MutuallyExclusive	Accessibility: MasterResourceFamily: MultiSelectResource: Selection	No		
Text	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>:	Yes	This is the container element for resource strings that are displayed in the user interface and validated in the file upload.	N/A

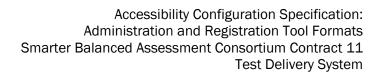|				
	Selection			
Label	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection: Text	Yes	A label is required for that indicates the resource selection in the user interface. This is the human-readable version of the resource selection code. At least one Text with Language="eng" is required.	String
Language	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection: Text	Yes	The Language element indicates the language of this translation. At least one English (language=eng is required.	Valid ISO 639-2 language code
Description	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection: Text	No	An optional resource selection description can be provided.	String
Message	Accessibility: MasterResourceFamily: <SingleSelectResource | MultiSelectRecourse>: Selection: Text	No	An optional user message can be provided that is displayed when the user makes this selection in the user interface.	String
EditResource	Accessibility: MasterResourceFamily			
Code	Accessibility: MasterResourceFamily: EditResource			
Order	Accessibility: MasterResourceFamily: EditResource			
Text	Accessibility: MasterResourceFamily:			

	EditResource			
Language	Accessibility: MasterResourceFamily: EditResource: Text			
Label	Accessibility: MasterResourceFamily: EditResource: Text			
Description	Accessibility: MasterResourceFamily: EditResource: Text			
ResourceFamily	Accessibility	No	This is the containing element for a resource family. If no resource family is defined in the configuration file, the major component will use the resources and resource selections in the Master Resource Family for all subjects and student enrolled grades. Resource Families inherit all the attributes defined in the master resource family. One is able to override some definitions in the master resource family, but anything defined in the master resource family that is not overridden in the resource family is automatically inherited in full by the resource family.	N/A
Subject	Accessibility: ResourceFamily	Yes	Subject is the containing node for information that describes for which subject this resource family is intended.	N/A
Code	Accessibility: ResourceFamily: Subject	Yes	The subject code (e.g. ELA).	ELA MATH
Name	Accessibility: ResourceFamily: Subject	Yes	This is the full name of the subject (e.g. English Language Arts).	English Language Arts Mathematics
Grade	Accessibilty: ResourceFamily	Yes	This resource family must apply to at least one grade and may apply to any number of grades.	IT, PR, PK, TK, KG, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, PS, UG
SingleSelectResource or MultiSelectResource	Accessibilty: ResourceFamily	Yes	If a resource family is defined, it must contain at least one overridden resource. Please note that the order or type elements cannot be overridden. A resource must be in the same location and of the same type as the master resource.	N/A

Code	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>	Yes	A code from a resource in the master resource family is only duplicated in a resource family so that some element of the resource can be modified for this resource family. That may be a resource label or translation. Resource selections may be omitted but no new resource selections can be added that do not already appear in the master resource family. Resource selection labels, defaults and translations can also be overridden. The resource code,	String equal to one of the master resource codes
Disabled	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>	No		
DefaultSelection	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>	No	The resource default selection may be overridden or left as defined by the resource in the master resource family (even if the master resource family defines no default selection).	String
Selection	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>	No	A resource selected for override in a resource family may have no selections, some selections or all of the selections defined in the master resource family. No selections: If a resource is selected for override in a resource family but no selections are defined in the resource family, then the resource will appear for the resource family but no selections can be made. This is how an entire resource can be "deleted" from a resource family while keeping the place for the resource as defined in the master resource family. Some selections: omitting one or more of selections for a resource deletes the omitted selections and includes the defined selections. Elements of the included selection(s) can be overridden. All selections: this option would not omit any selection from the master resource but may override some aspects of the selections such as labels and translations.	N/A
Code	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>: Selection	Yes	Having a selection element with a code equal to one of the resource selection codes defined in the master resource causes the selection to be included. If a resource selection is defined in the master resource but does not appear as one of the codes for the resources in this resource family, then the selection will not be available for this resource family. No new resource selection codes may be defined here that are not defined in the master resource family.	String equal to one of the master resource selection codes
MutuallyExclusive	Accessibility: ResourceFamily: MultiSelectResource	No		
Text	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>: Selection	No	This is the container element for resource strings that are displayed in the user interface and validated in the file upload.	N/A
Language	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>:	Yes	The Language element indicates the language of this resource selection translation. At least one English (language=eng) is required.	Valid ISO 639-2 language code

	Selection: Text			
Label	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>: Selection: Text	Yes	The master resource selection label can be optionally overridden. If there is a Text group for selection override, them the Label must be provided at a minimum.	String
Description	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>: Selection: Text	No	The master resource selection description can be optionally overridden.	String
Message	Accessibility: ResourceFamily: <SingleSelectResource | MultiSelectResource>: Selection: Text	No	The master resource selection message can be optionally overridden.	String
EditResource	Accessibility: ResourceFamily	No		
Code	Accessibility: ResourceFamily: EditResource	Yes		
Disabled	Accessibility: ResourceFamily: EditResource	No		

Table 1: Accessibility Configuration XML Format Description

Accessibility Configuration Format XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="Accessibility">
    <xs:complexType>
      <xs:sequence>
```

```xml
<xs:element name="MasterResourceFamily" minOccurs="1" maxOccurs="1">
  <xs:complexType>
    <xs:choice maxOccurs="unbounded">
      <xs:element name="SingleSelectResource" minOccurs="0" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
            <xs:element name="Order" type="xs:positiveInteger" minOccurs="1" maxOccurs="1"/>
            <xs:element name="DefaultSelection" minOccurs="0" maxOccurs="1"/>
            <xs:element name="Text" minOccurs="1" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Language" type="LanguageType"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Label" type="xs:string"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Description" type="xs:string"  minOccurs="0" maxOccurs="1"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
            <xs:element name="Selection" minOccurs="0" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Code" minOccurs="1" maxOccurs="1" type="xs:string"/>
                  <xs:element name="Order" minOccurs="1" maxOccurs="1" type="xs:positiveInteger"/>
                  <xs:element name="Text" minOccurs="1" maxOccurs="unbounded" >
                    <xs:complexType>
                      <xs:sequence>
                        <xs:element name="Language" type="LanguageType" minOccurs="1" maxOccurs="1"/>
                        <xs:element name="Label" type="xs:string" minOccurs="1" maxOccurs="1"/>
                        <xs:element name="Description" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="Message" type="xs:string" minOccurs="0" maxOccurs="1"/>
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="MultiSelectResource" minOccurs="0" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
            <xs:element name="Order" type="xs:positiveInteger" minOccurs="1" maxOccurs="1"/>
            <xs:element name="DefaultSelection" minOccurs="0" maxOccurs="1"/>
            <xs:element name="Text" minOccurs="1" maxOccurs="unbounded">
```

```xml
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Language" type="LanguageType"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Label" type="xs:string"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Description" type="xs:string"  minOccurs="0" maxOccurs="1"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
            <xs:element name="Selection" minOccurs="0" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Code" minOccurs="1" maxOccurs="1" type="xs:string"/>
                  <xs:element name="Order" minOccurs="1" maxOccurs="1" type="xs:positiveInteger"/>
                  <xs:element name="MutuallyExclusive" minOccurs="0" maxOccurs="1"><xs:complexType></xs:complexType></xs:element>
                  <xs:element name="Text" minOccurs="1" maxOccurs="unbounded" >
                    <xs:complexType>
                      <xs:sequence>
                        <xs:element name="Language" type="LanguageType" minOccurs="1" maxOccurs="1"/>
                        <xs:element name="Label" type="xs:string" minOccurs="1" maxOccurs="1"/>
                        <xs:element name="Description" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="Message" type="xs:string" minOccurs="0" maxOccurs="1"/>
                      </xs:sequence>
                    </xs:complexType>
                  </xs:element>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="EditResource" minOccurs="0" maxOccurs="unbounded">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
            <xs:element name="Order" type="xs:positiveInteger" minOccurs="1" maxOccurs="1"/>
            <xs:element name="Text" minOccurs="1" maxOccurs="unbounded">
              <xs:complexType>
                <xs:sequence>
                  <xs:element name="Language" type="LanguageType"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Label" type="xs:string"  minOccurs="1" maxOccurs="1"/>
                  <xs:element name="Description" type="xs:string"  minOccurs="0" maxOccurs="1"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
```
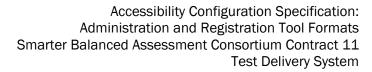
```xml
          </xs:element>
        </xs:choice>
      </xs:complexType>
    </xs:element>
    <xs:element name="ResourceFamily" minOccurs="0" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Subject" minOccurs="1" maxOccurs="unbounded">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
                <xs:element name="Name" type="xs:string" minOccurs="1" maxOccurs="1"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="Grade" type="GradeType" minOccurs="1" maxOccurs="unbounded"/>
          <xs:element name="SingleSelectResource" minOccurs="0" maxOccurs="unbounded">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
                <xs:element name="Disabled" minOccurs="0" maxOccurs="1"><xs:complexType></xs:complexType></xs:element>
                  <xs:sequence>
                    <xs:element name="DefaultSelection" minOccurs="0" maxOccurs="1"/>
                    <xs:element name="Selection" minOccurs="0" maxOccurs="unbounded">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
                          <xs:element name="Text" minOccurs="0" maxOccurs="unbounded">
                            <xs:complexType>
                              <xs:sequence>
                                <xs:element name="Language" type="LanguageType"  minOccurs="1" maxOccurs="1"/>
                                <xs:element name="Label" type="xs:string"  minOccurs="1" maxOccurs="1"/>
                                <xs:element name="Description" type="xs:string"  minOccurs="0" maxOccurs="1"/>
                                <xs:element name="Message" type="xs:string" minOccurs="0" maxOccurs="1" />
                              </xs:sequence>
                            </xs:complexType>
                          </xs:element>
                        </xs:sequence>
                      </xs:complexType>
                    </xs:element>
                  </xs:sequence>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="MultiSelectResource" minOccurs="0" maxOccurs="unbounded">
            <xs:complexType>
```

```xml
            <xs:sequence>
              <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
              <xs:element name="Disabled" minOccurs="0" maxOccurs="1"><xs:complexType></xs:complexType></xs:element>
              <xs:element name="DefaultSelection" minOccurs="0" maxOccurs="1"/>
              <xs:element name="Selection" minOccurs="0" maxOccurs="unbounded">
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                  <xs:sequence>
                    <xs:element name="Code" type="xs:string" minOccurs="1" maxOccurs="1"/>
                    <xs:element name="MutuallyExclusive" minOccurs="0" maxOccurs="1"/>
                    <xs:element name="Text" minOccurs="0" maxOccurs="unbounded">
                      <xs:complexType>
                        <xs:sequence>
                          <xs:element name="Language" type="LanguageType"  minOccurs="1" maxOccurs="1"/>
                          <xs:element name="Label" type="xs:string"  minOccurs="1" maxOccurs="1"/>
                          <xs:element name="Description" type="xs:string"  minOccurs="0" maxOccurs="1"/>
                          <xs:element name="Message" type="xs:string" minOccurs="0" maxOccurs="1" />
                        </xs:sequence>
                      </xs:complexType>
                    </xs:element>
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="EditResource" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
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            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:simpleType name="LanguageType">
   <xs:restriction base="xs:string">
    <xs:enumeration value="eng"/>
    <xs:enumeration value="ara"/>
    <xs:enumeration value="chi"/>
    <xs:enumeration value="fil"/>
    <xs:enumeration value="kor"/>
```

```xml
        <xs:enumeration value="pan"/>
        <xs:enumeration value="rus"/>
        <xs:enumeration value="spa"/>
        <xs:enumeration value="ukr"/>
        <xs:enumeration value="vie"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="GradeType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="01"/>
        <xs:enumeration value="02"/>
        <xs:enumeration value="03"/>
        <xs:enumeration value="04"/>
        <xs:enumeration value="05"/>
        <xs:enumeration value="06"/>
        <xs:enumeration value="07"/>
        <xs:enumeration value="08"/>
        <xs:enumeration value="09"/>
        <xs:enumeration value="10"/>
        <xs:enumeration value="11"/>
        <xs:enumeration value="12"/>
        <xs:enumeration value="IT"/>
        <xs:enumeration value="PR"/>
        <xs:enumeration value="PK"/>
        <xs:enumeration value="TK"/>
        <xs:enumeration value="KG"/>
        <xs:enumeration value="PS"/>
        <xs:enumeration value="UG"/>
    </xs:restriction>
</xs:simpleType>
</xs:schema>
```