CodeSets and enumerations

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CodeSets and internal enums

- Validation in the current SIF Data Model is by;
  - A valid codeset – defined as a type in two ways;
    - E.g. IndigenousStatus is typed as AUCodeSetsIndigenousStatusType http://specification.sifassociation.org/Implementation/AU/3.4.4/CodeSets.html#AUCodeSetsIndigenousStatusType
    - CountryofBirth is typed as CountryType
    - http://specification.sifassociation.org/Implementation/AU/3.4.4/CommonTypes.html#CountryType
  - Restrictions in line;

CodeSets

- These typed codesets can be ‘simple’ or ‘complex’
  - Simple;
    - E.g. IndigenousStatus is typed as AUCodeSetsIndigenousStatusType http://specification.sifassociation.org/Implementation/AU/3.4.4/CodeSets.html#AUCodeSetsIndigenousStatusType
  - Complex;
    - AttendanceCode is typed as AttendanceCodeType
    - http://specification.sifassociation.org/Implementation/AU/3.4.4/CommonTypes.html#AttendanceCodeType

CodeSets

- Simple CodeSet validation
  - Is restricted to the list of values in the current specification
- The Complex type allows for an additional code value to be passed with the main SIF Code e.g.

```
<AttendanceCode>
  <Code>200</Code>
  <OtherCodeList>
    <OtherCode Codeset="Local">S</OtherCode>
    <OtherCode Codeset="Other">C</OtherCode>
  </OtherCodeList>
</AttendanceCode>
```

enums

- Restricted in line;

```
<xs:element name="AuthenticationSource">
     <xs:simpleType>
       <xs:restriction base="xs:token">
         <xs:enumeration value="AUAccessShibboleth" />
         <xs:enumeration value="MSActiveDirectory" />
         <xs:enumeration value="NovellNDS" />
         <xs:enumeration value="OpenDirectory" />
         <xs:enumeration value="OpenID" />
         <xs:enumeration value="Other" />
       </xs:restriction>
     </xs:simpleType>
 </xs:element>
```

Issue

- For most codesets and enums
- there is no way to allow for additional values in the payload

Support in a minor release

- Vic DET were considering using SIF_Extended_Elements to support their need to represent "legacy" values
- Using that idea we propose adding a "LocalCodeList" to every object
- To support additional values for local codesets or enums

LocalCodeList

- Vic DETs example of representing “SerbiaAndMontenegro” could be represented for CountryOfBirth and CountriesOfCitizenship as (note that listindex refers to the final list only);

```
<LocalCodeList>
  <LocalCode>
    <LocalisedCode>0921</LocalisedCode>
    <Description>Serbia Montenegro</Description>
    <Element>StudentPersonal/PersonInfo/Demographics/CountryOfBirth</Element>
  </LocalCode>
  <LocalCode>
    <LocalisedCode>0921</LocalisedCode>
    <Description>Serbia Montenegro</Description>
    <Element>StudentPersonal/PersonInfo/Demographics/CountriesOfCitizenship/CountryOfCitizenship</Element>
    <ListIndex>1</ListIndex>
  </LocalCode>
</LocalCodeList>
```

LocalCodeList

```
<!-- LocalCodeListType -->
<xs:complexType name="LocalCodeListType">
    <xs:sequence>
        <xs:element name="LocalCode" maxOccurs="unbounded" type="LocalCodeType"/>
    </xs:sequence>
</xs:complexType>
<!-- LocalCodeType -->
<xs:complexType name="LocalCodeType">
    <xs:sequence>
        <xs:element name="LocalisedCode" type="xs:token"/>
        <xs:element name="Description" minOccurs="0" nillable="true" type="xs:token"/>
        <xs:element name="Element" minOccurs="0" nillable="true" type="xs:normalizedString"/>
        <xs:element name="ListIndex" minOccurs="0" nillable="true" type="xs:integer"/>
    </xs:sequence>
</xs:complexType>
```

LocalCodeList

- This would also work if we needed to extend an enum;
- E.g. Identity/PasswordList/Password;
- Current possible values; MD5, SHA1, DES, TripleDES, RC2, AES, RSA

```
<LocalCodeList>
        <LocalCode>
                  <LocalisedCode>SHA-256</LocalisedCode>
                  <Description>This is the algorithm to use here.</Description>
                  <Element> PasswordList/Password[1]@Algorithm</Element>
                  <ListIndex>1</ListIndex>
        </LocalCode>
  </LocalCodeList>
```

LocalCodeList

- Where there are multiple lists – use full xPath for actual list element

```
<Element>
NAPStudentResponseSet/TestletList/Testlet[1]/ItemResponseList/ItemResponse[3]/SubscoreList/Subscore[4]/SubscoreType
</Element>
```

LocalCodeList - Example

```xml
<Identity RefId="4286194F-43ED-43C1-8EE2-F0A27C4BEF86">
  <SIF_RefId SIF_RefObject="StudentPersonal">23B08571-E4D6-45C3-B82A-3E52E5349925</SIF_RefId>
  <AuthenticationSource>MSActiveDirectory</AuthenticationSource>
  <IdentityAssertions>
    <IdentityAssertion SchemaName="sAmAccountName">user01</IdentityAssertion>
    <IdentityAssertion SchemaName="userPrincipalName">user01@asdf.edu.au</IdentityAssertion>
    <IdentityAssertion SchemaName="distinguishedName">cn=User01,cn=Users,dc=org</IdentityAssertion>
  </IdentityAssertions>
  <PasswordList>
    <Password Algorithm="SHA1" KeyName=" ">UGFzc3cwcmQ=</Password>
  </PasswordList>
  <AuthenticationSourceGlobalUID>23A08571-E4D6-45C3-B82A-3E52E5349925</AuthenticationSourceGlobalUID>
  <LocalCodeList>
    <LocalCode>
      <LocalisedCode> SHA-256 </LocalisedCode>
      <Description>This is the algorithm to use here.</Description>
      <Element>PasswordList/Password[1]/@Algorithm</Element>
      <ListIndex>1</ListIndex>
    </LocalCode>
  </LocalCodeList>
</Identity>
```