Aware Biometrics Software

a complete set of development tools for standard-compliant, interoperable biometrics systems

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Commercial Experience Converting between ANSI/NIST-ITL 1-2000 and XML

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Provide Standardized Method for Supporting XML Conversions

Background:
- Our customers sometimes wish to convert ANSI/NIST formatted data to an XML format- “NIST to XML”
- We have supported this conversion in our software tools for several years now
- Less frequently we are asked to support “XML to NIST”
- This is more complicated because each Domain defines its own record and field requirements
- Also, we have always provided the ability to read/write ANSI/NIST formatted data
  - “Use your preferred XML parser and write ANSI/NIST with our software” is what we suggested
Most recently we have added XML to ANSI/NIST conversion support to our software tools

**Recommendation:**

- ANSI/NIST-ITL 1-2000 should not be converted to a pure XML format
- The standard is very widely used and it very efficiently solves the problem it was designed to solve
  - Parsable, fully interchangeable, compact file that holds fingerprint images, facial images and biographic data
- Guidelines or templates for converting between the standard and an XML schema could be provided in the new revision
Option

- Provide a bridge to the XML world through a minimalist XML schema that mimics the structure of ANSI/NIST-ITL 1-2000
- This schema elements have the format…
  - Transaction
  - Record
  - Field
  - Subfield
  - Item
- Images can be exported as separate objects or base-64 encoded and embedded into the XML
Domain Independent Schema

- Advantages:
  - A single schema that can be used for any ANSI/NIST file
  - Mirrors the structure of the ANSI/NIST file
  - Users can take this “bridge schema” and use any number of available tools to parse or convert to another XML schema
<record type="2">
  <field number="2" name="T2_IDC">
    <subfield>
      <item>00</item>
    </subfield>
  </field>
  <field number="5" name="T2_RET">
    <subfield>
      <item>Y</item>
    </subfield>
  </field>
  <field number="6" name="T2_ATN">
    <subfield>
      <item>SA J Q SMITH, RM 4569</item>
    </subfield>
  </field>
</record>
Domain Specific Schema

Option

- Reflect domain specific requirements for TOTs, record types, and all type 2 record requirements in the element tags
- Our solution:
  - Use an Aware devised schema that can support any ANSI/NIST domain
  - Use one of numerous conversion tools to convert between original schema and Aware domain specific schema
  - Our tools can read and convert to/from ANSI/NIST
Domain Specific Schema

- Advantages
  - Element tag names identify field content making XML files more readable.
Example

<Type2>
<T2_IDC>
<subfield>
  <item>00</item>
</subfield>
</T2_IDC>
<T2_RET>
<subfield>
  <item>Y</item>
</subfield>
</T2_RET>
<T2_ATN>
<subfield>
  <item>SA J Q SMITH, RM 4569</item>
</subfield>
.
.
</Type2>
Thank-you!