

**ANSI/NIST-ITL 1-2000**

**Data Format for the Interchange  
of Fingerprint, Facial,  
& Scar Mark & Tattoo (SMT) Information**

**XML Recommendation : December 5-6, 2005**

The logo consists of a dark green rectangular background. On the right side of this background, the word "XML" is written in a large, white, serif font. Below it, the word "SCHEMA" is written in a smaller, white, serif font.

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Each item in this set represents a separate schema file. The “High-level Package Overview” schema *includes* the other files in this set. The high-level schema also *imports* other schema files documented separately.

## High-level Package Overview

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:j-ncic="http://www.it.ojp.gov/jxdm/ncic_2000/1.0"
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <!-- ===== -->
  <!-- IMPORTED SCHEMA -->
  <!-- ===== -->
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/proxy/codes" schemaLocation="NISTCodes-proxy.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/codes" schemaLocation="NISTCodes-detail.xsd"/>
  <xsd:include schemaLocation="ITL-1-common.xsd"/>
  <xsd:include schemaLocation="ITL-3-15-fingerprint.xsd"/>
  <xsd:include schemaLocation="ITL-7-16-usertestimage.xsd"/>
  <xsd:include schemaLocation="ITL-8-signature.xsd"/>
  <xsd:include schemaLocation="ITL-10-smt.xsd"/>
  <!-- ===== -->
  <!-- NIST-ITL BIOMETRIC INFORMATION EXCHANGE PACKAGE -->
  <!-- ===== -->
  <xsd:element name="NIST-ITLBiometricInformationExchangePackage" type="nist:NIST-
ITLBiometricInformationExchangePackageType"/>
  <!-- PACKAGE TYPE DEFINITION -->
  <xsd:complexType name="NIST-ITLBiometricInformationExchangePackageType">
    <xsd:complexContent>
      <xsd:extension base="j:SuperType">
        <xsd:sequence>
          <xsd:element ref="nist:ITLTransactionInformationRecord"/>
          <xsd:element ref="nist:ITLUserDefinedDescriptiveTextRecord" minOccurs="0"/>
          <xsd:element ref="nist:ITLFingerprintImageRecord" minOccurs="0" maxOccurs="unbounded"/>
          <xsd:element ref="nist:ITLUserDefinedImageRecord" minOccurs="0" maxOccurs="unbounded"/>
          <xsd:element ref="nist:ITLSignatureImageRecord" minOccurs="0" maxOccurs="unbounded"/>
          <xsd:element ref="nist:ITLFingerprintMinutiaeRecord" minOccurs="0"
maxOccurs="unbounded"/>
          <xsd:element ref="nist:ITLFacialAndSMTImageRecord" minOccurs="0" maxOccurs="unbounded"/>

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```
maxOccurs="unbounded"/>
    <xsd:element ref="nist:ITLLatentprintImageRecord" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="nist:ITLVariableResolutionFingerprintImageRecord" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element ref="nist:ITLPalmprintImageRecord" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element ref="nist:ITLTestImageRecord" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:attribute name="version" type="xsd:string" use="optional"/>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:schema>
```

## Transaction, User-defined Descriptive Text, and Common Elements

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:j-ncic="http://www.it.ojp.gov/jxdm/ncic_2000/1.0"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <!-- ===== -->
  <!-- IMPORTED SCHEMA -->
  <!-- ===== -->
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/proxy/codes" schemaLocation="NISTCodes-proxy.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/codes" schemaLocation="NISTCodes-detail.xsd"/>
  <!-- ===== -->
  <!-- COMMON ELEMENTS FOR MOST TRANSACTIONS -->
  <!-- ===== -->
  <xsd:attribute name="typeCode" type="nist-code:RecordTypeCodeType"/>
  <xsd:attribute name="typeText" type="xsd:string"/>
  <xsd:attribute name="fieldID" type="nist-code:FieldIDType"/>
  <xsd:attribute name="fieldMnemonic" type="nist-code:FieldMnemonicType"/>
  <xsd:element name="UserDefinedFields" type="nist:UserDefinedFieldsType"/>
  <xsd:element name="LogicalRecordLength" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageDesignationCharacter" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageDesignationCharacterByte" type="nist:ByteWithFieldAttributesType"/>
  <xsd:element name="Image" type="nist:ImageType"/>
  <xsd:element name="ImageColorSpaceCode" type="nist-proxy:ImageColorSpaceCodeType"/>
  <xsd:element name="ImageScanningResolutionCode" type="nist-proxy:ImageScanningResolutionCodeType"/>
  <xsd:element name="ImageHorizontalLineLength" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageVerticalLineLength" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageScaleUnitsCode" type="nist-proxy:ImageScaleUnitsCodeType"/>
  <xsd:element name="ImageHorizontalPixelScale" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageVerticalPixelScale" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageCompressionAlgorithmCode" type="nist:StringWithFieldAttributesType"/>
  <xsd:element name="ImageCompressionAlgorithmText" type="nist:StringWithFieldAttributesType"/>
  <xsd:element name="ImageBitsPerPixel" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageCommentText" type="nist:StringWithFieldAttributesType"/>
  <xsd:element name="ImageObject.Base64" type="nist:BinaryWithFieldAttributesType"/>
  <xsd:element name="SourceAgency" type="nist:OrganizationType"/>
```

```

<!-- ===== -->
<!-- TRANSACTION INFORMATION RECORD TYPE 1 -->
<!-- ===== -->
<!-- RECORD ELEMENT: Every ITL Package must have one Type 1 record, and at least one Type 2 record -->
<xsd:element name="ITLTransactionInformationRecord" type="nist:ITLTransactionInformationRecordType"/>
<xsd:element name="ITLUserDefinedDescriptiveTextRecord" type="nist:ITLUserDefinedDescriptiveTextRecordType"/>
<!-- CHILD ELEMENTS for Transaction Type 1 record -->
<xsd:element name="ITLVersionNumber" type="nist:ITLVersionNumberType"/>
<xsd:element name="ITLMajorVersionNumber" type="xsd:string"/>
<xsd:element name="ITLMinorVersionNumber" type="xsd:string"/>
<xsd:element name="PackageContentSummary" type="nist:PackageContentSummaryType"/>
<xsd:element name="PackageContentFirstRecord" type="nist:PackageContentFirstRecordType"/>
<xsd:element name="RecordTypeCode" type="nist-code:RecordTypeCodeType"/>
<xsd:element name="PackageRecordCount" type="xsd:integer"/>
<xsd:element name="PackageContentDataRecord" type="nist:PackageContentDataRecordType"/>
<xsd:element name="TransactionType" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="TransactionDate" type="nist:DateWithFieldAttributesType"/>
<xsd:element name="TransactionPriority" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="DestinationAgency" type="nist:OrganizationType"/>
<xsd:element name="OriginatingAgency" type="nist:OrganizationType"/>
<xsd:element name="TransactionControlNumber" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="TransactionControlReference" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="NativeScanningResolution" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="NominalTransmittingResolution" type="nist:StringWithFieldAttributesType"/>
<xsd:element name="ITLDomain" type="nist:ITLDomainType"/>
<xsd:element name="ITLDomainFormattingAgencyName" type="xsd:string"/>
<xsd:element name="ITLDomainVersionNumber" type="xsd:string"/>
<xsd:element name="GreenwichMeanTime" type="nist:DateTimeWithFieldAttributesType"/>
<xsd:element name="CharacterSetDirectory" type="nist:CharacterSetDirectoryType"/>
<xsd:element name="CharacterSetDetail" type="nist:CharacterSetDetailType"/>
<xsd:element name="CharacterSetIndexCode" type="nist-proxy:CharacterSetIndexCodeType"/>
<xsd:element name="CharacterSetCommonNameText" type="nist-proxy:CharacterSetCommonNameTextType"/>
<xsd:element name="CharacterSetVersionNumber" type="xsd:string"/>
<!-- CHILD ELEMENTS for User Defined Descriptive Text Type 2 record -->
<xsd:element name="UserDefinedDescriptiveText" type="nist:UserDefinedDescriptiveTextType"/>
<xsd:element name="DomainDefinedDescriptiveText" type="nist:UserDefinedFieldsType"/>
<xsd:element name="OtherDescriptiveText" type="nist:UserDefinedFieldsType"/>
<!-- RECORD TYPE 1 -->
<xsd:complexType name="ITLTransactionInformationRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength"/>
        <xsd:element ref="nist:ITLVersionNumber"/>
        <xsd:element ref="nist:PackageContentSummary"/>
        <xsd:element ref="nist:TransactionType"/>

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        <xsd:element ref="nist:TransactionDate"/>
        <xsd:element ref="nist:TransactionPriority" minOccurs="0"/>
        <xsd:element ref="nist:DestinationAgency"/>
        <xsd:element ref="nist:OriginatingAgency"/>
        <xsd:element ref="nist:TransactionControlNumber"/>
        <xsd:element ref="nist:TransactionControlReference" minOccurs="0"/>
        <xsd:element ref="nist:NativeScanningResolution"/>
        <xsd:element ref="nist:NominalTransmittingResolution"/>
        <xsd:element ref="nist:ITLDomain" minOccurs="0"/>
        <xsd:element ref="nist:GreenwichMeanTime" minOccurs="0"/>
        <xsd:element ref="nist:CharacterSetDirectory" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute ref="nist:typeCode" use="optional"/>
    <xsd:attribute ref="nist:typeText" use="optional"/>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<!-- RECORD TYPE 2 -->
<xsd:complexType name="ITLUserDefinedDescriptiveTextRecordType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:LogicalRecordLength"/>
                <xsd:element ref="nist:ImageDesignationCharacter"/>
                <xsd:element ref="nist:UserDefinedDescriptiveText"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:typeCode" use="optional"/>
            <xsd:attribute ref="nist:typeText" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- COMPLEX DATA TYPES FOR TRANSACTION INFORMATION RECORD -->
<xsd:complexType name="ITLVersionNumberType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:ITLMajorVersionNumber"/>
                <xsd:element ref="nist:ITLMinorVersionNumber"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PackageContentSummaryType">
    <xsd:complexContent>

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        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:PackageContentFirstRecord"/>
                <xsd:element ref="nist:PackageContentDataRecord" minOccurs="0" maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PackageContentFirstRecordType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:RecordTypeCode"/>
                <xsd:element ref="nist:PackageRecordCount"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PackageContentDataRecordType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:RecordTypeCode"/>
                <xsd:element ref="nist:ImageDesignationCharacter"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ITLDomainType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:ITLDomainFormattingAgencyName"/>
                <xsd:element ref="nist:ITLDomainVersionNumber" minOccurs="0"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="CharacterSetDirectoryType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>

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                <xsd:element ref="nist:CharacterSetDetail" maxOccurs="unbounded" />
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional" />
            <xsd:attribute ref="nist:fieldMnemonic" use="optional" />
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="CharacterSetDetailType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:CharacterSetIndexCode" />
                <xsd:element ref="nist:CharacterSetCommonNameText" />
                <xsd:element ref="nist:CharacterSetVersionNumber" minOccurs="0" />
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="UserDefinedFieldsType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded" />
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional" />
            <xsd:attribute ref="nist:fieldMnemonic" use="optional" />
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- COMPLEX DATA TYPES FOR USER-DEFINED DESCRIPTIVE TEXT RECORD Type 2 -->
<xsd:complexType name="UserDefinedDescriptiveTextType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:DomainDefinedDescriptiveText" />
                <xsd:element ref="nist:OtherDescriptiveText" minOccurs="0" />
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- COMMON COMPLEX DATA TYPES -->
<xsd:complexType name="ImageType">
    <xsd:complexContent>
        <xsd:extension base="j:ImageType">
            <xsd:sequence>
                <xsd:element ref="nist:ImageScanningResolutionCode" minOccurs="0" />
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```



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        <xsd:element ref="nist:ImageHorizontalLineLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageVerticalLineLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageScaleUnitsCode" minOccurs="0"/>
        <xsd:element ref="nist:ImageHorizontalPixelScale" minOccurs="0"/>
        <xsd:element ref="nist:ImageVerticalPixelScale" minOccurs="0"/>
        <xsd:element ref="nist:ImageCompressionAlgorithmCode" minOccurs="0"/>
        <xsd:element ref="nist:ImageCompressionAlgorithmText" minOccurs="0"/>
        <xsd:element ref="nist:ImageColorSpaceCode" minOccurs="0"/>
        <xsd:element ref="nist:ImageBitsPerPixel" minOccurs="0"/>
        <xsd:element ref="nist:ImageCommentText" minOccurs="0"/>
        <xsd:element ref="nist:ImageObject.Base64"/>
    </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="OrganizationType">
    <xsd:complexContent>
        <xsd:extension base="j:OrganizationType">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="StringWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:string">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="IntegerWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:integer">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="ByteLimitedType">
    <xsd:restriction base="xsd:integer">
        <xsd:maxInclusive value="255" />
    </xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="ByteWithFieldAttributesType">
    <xsd:simpleContent>

```

```
        <xsd:extension base="nist:ByteLimitedType">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="DateWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:date">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="TimeWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:time">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="DateTimeWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:dateTime">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="BinaryWithFieldAttributesType">
    <xsd:simpleContent>
        <xsd:extension base="xsd:base64Binary">
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:simpleContent>
</xsd:complexType>
</xsd:schema>
```

## Fingerprint, Palmprint, Minutiae, and Latentprints

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:j-ncic="http://www.it.ojp.gov/jxdm/ncic_2000/1.0"
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <!-- ===== -->
  <!-- IMPORTED SCHEMA -->
  <!-- ===== -->
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/proxy/codes" schemaLocation="NISTCodes-proxy.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/codes" schemaLocation="NISTCodes-detail.xsd"/>
  <!-- ===== -->
  <!-- FINGERPRINT IMAGE RECORDS TYPE 3, 4, 5, 6 -->
  <!-- MINUTIAE DATA RECORD TYPE 9 -->
  <!-- LATENTPRINT IMAGE RECORD TYPE 13 -->
  <!-- TENPRINT IMAGE RECORD TYPE 14 -->
  <!-- PALMPRINT IMAGE RECORD TYPE 15 -->
  <!-- ===== -->
  <!-- RECORD ELEMENTS -->
  <xsd:element name="ITLFingerprintImageRecord" type="nist:ITLFingerprintImageRecordType"/>
  <xsd:element name="ITLFingerprintMinutiaeRecord" type="nist:ITLFingerprintMinutiaeRecordType"/>
  <xsd:element name="ITLLatentprintImageRecord" type="nist:ITLLatentprintImageRecordType"/>
  <xsd:element name="ITLVariableResolutionFingerprintImageRecord"
type="nist:ITLVariableResolutionFingerprintImageRecordType"/>
  <xsd:element name="ITLPalmprintImageRecord" type="nist:ITLPalmprintImageRecordType"/>
  <!-- FINGER and PALM PRINT IMAGE CHILD ELEMENTS -->
  <xsd:element name="PersonFingerprint" type="nist:PersonFingerprintType"/>
  <xsd:element name="PersonPalmprint" type="nist:PersonPalmprintType"/>
  <xsd:element name="PersonLatentprint" type="nist:PersonLatentprintType"/>
  <xsd:element name="FingerImpressionTypeCode" type="nist-proxy:FingerImpressionTypeCodeType"/>
  <xsd:element name="FingerOrPalmImpressionTypeCode" type="nist-proxy:FingerOrPalmImpressionTypeCodeType"/>
  <xsd:element name="PalmImpressionTypeCode" type="nist-proxy:PalmImpressionTypeCodeType"/>
  <xsd:element name="FingerPattern" type="nist:FingerPatternType"/>
  <xsd:element name="FingerPatternDetail" type="nist:FingerPatternDetailType"/>
  <xsd:element name="FingerPatternCodeSourceCode" type="nist-proxy:FingerPatternCodeSourceCodeType"/>
  <xsd:element name="FingerPatternCode" type="nist-proxy:FingerPatternCodeType"/>
```

```

<xsd:element name="PatternCorePosition" type="nist:PatternPositionType"></xsd:element>
<xsd:element name="PatternDeltaPosition" type="nist:PatternPositionType"></xsd:element>
<xsd:element name="PatternPositionDetail" type="nist:PatternPositionDetailType"></xsd:element>
<xsd:element name="FingerPosition" type="nist:FingerPositionType"/>
<xsd:element name="FingerOrPalmPosition" type="nist:FingerOrPalmPositionType"/>
<xsd:element name="PalmPosition" type="nist:PalmPositionType"/>
<xsd:element name="FingerPositionCode" type="nist-proxy:FingerPositionCodeType"/>
<xsd:element name="PalmPositionCode" type="nist-proxy:PalmPositionCodeType"/>
<xsd:element name="LatentprintCaptureDate" type="nist:DateWithFieldAttributesType"/>
<xsd:element name="TenprintCaptureDate" type="nist:DateWithFieldAttributesType"/>
<xsd:element name="PalmprintCaptureDate" type="nist:DateWithFieldAttributesType"/>
<xsd:element name="FingerOrPalmCharacteristics" type="nist:FingerOrPalmCharacteristicsType"></xsd:element>
<xsd:element name="MinutiaeFormatCode" type="nist-proxy:MinutiaeFormatCodeType"></xsd:element>
<xsd:element name="MinutiaeReadingSystem" type="nist:MinutiaeReadingSystemType"></xsd:element>
<xsd:element name="MinutiaeReadingSystemName" type="xsd:string"></xsd:element>
<xsd:element name="MinutiaeCodingMethodCode" type="nist-proxy:MinutiaeCodingMethodCodeType"></xsd:element>
<xsd:element name="MinutiaeReadingSubsystemID" type="j:IDType"></xsd:element>
<xsd:element name="MinutiaeCount" type="nist:IntegerWithFieldAttributesType"></xsd:element>
<xsd:element name="MinutiaeRidgeCountIndicatorCode" type="nist-
proxy:MinutiaeRidgeCountIndicatorCodeType"></xsd:element>
<xsd:element name="MinutiaeAndRidgeCountData" type="nist:MinutiaeAndRidgeCountDataType"></xsd:element>
<xsd:element name="MinutiaAndRidgeCountDetail" type="nist:MinutiaAndRidgeCountDetailType"></xsd:element>
<xsd:element name="MinutiaIndexNumber" type="xsd:integer"></xsd:element>
<xsd:element name="MinutiaLocationDetail" type="nist:MinutiaLocationDetailType"></xsd:element>
<xsd:element name="ThetaAngle" type="xsd:integer"></xsd:element>
<xsd:element name="MinutiaQualityMeasure" type="nist:IntegerWithFieldAttributesType"></xsd:element>
<xsd:element name="MinutiaTypeCode" type="nist-proxy:MinutiaTypeCodeType"></xsd:element>
<xsd:element name="MinutiaRidgeCountData" type="nist:MinutiaRidgeCountDataType"></xsd:element>
<xsd:element name="MinutiaRidgeCountDetail" type="nist:MinutiaRidgeCountDetailType"></xsd:element>
<xsd:element name="MinutiaRidgeCount" type="xsd:integer"></xsd:element>
<!-- ===== -->
<!-- definition of ALL COMPLEX types -->
<!-- ===== -->
<!-- RECORD TYPES 3, 4, 5, 6 -->
<xsd:complexType name="ITLFingerprintImageRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageDesignationCharacterByte"/>
        <xsd:element ref="nist:PersonFingerprint"/>
        <xsd:element ref="nist:Image"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:typeCode" use="optional"/>
      <xsd:attribute ref="nist:typeText" use="optional"/>
    </xsd:extension>
  </complexContent>
</complexType>

```

```

        </xsd:complexContent>
</xsd:complexType>
<!-- RECORD TYPE 9 -->
<xsd:complexType name="ITLFingerprintMinutiaeRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageDesignationCharacter"/>
        <xsd:element ref="nist:FingerOrPalmImpressionTypeCode"/>
        <xsd:element ref="nist:FingerOrPalmPosition"/>
        <xsd:element ref="nist:FingerOrPalmCharacteristics"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:typeCode" use="optional"/>
      <xsd:attribute ref="nist:typeText" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- RECORD TYPE 13 -->
<xsd:complexType name="ITLLatentprintImageRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageDesignationCharacter"/>
        <xsd:element ref="nist:SourceAgency"/>
        <xsd:element ref="nist:LatentprintCaptureDate"/>
        <xsd:element ref="nist:PersonLatentprint"/>
        <xsd:element ref="nist:UserDefinedFields" />
        <xsd:element ref="nist:Image"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:typeCode" use="optional"/>
      <xsd:attribute ref="nist:typeText" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- RECORD TYPE 14 -->
<xsd:complexType name="ITLVariableResolutionFingerprintImageRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
        <xsd:element ref="nist:ImageDesignationCharacter"/>
        <xsd:element ref="nist:SourceAgency"/>
        <xsd:element ref="nist:TenprintCaptureDate"/>
        <xsd:element ref="nist:PersonFingerprint"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

```

                <xsd:element ref="nist:UserDefinedFields" />
                <xsd:element ref="nist:Image"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:typeCode" use="optional"/>
            <xsd:attribute ref="nist:typeText" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- RECORD TYPE 15 -->
<xsd:complexType name="ITLPalmprintImageRecordType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
                <xsd:element ref="nist:ImageDesignationCharacter"/>
                <xsd:element ref="nist:SourceAgency"/>
                <xsd:element ref="nist:PalmprintCaptureDate"/>
                <xsd:element ref="nist:PersonPalmprint"/>
                <xsd:element ref="nist:UserDefinedFields" />
                <xsd:element ref="nist:Image"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:typeCode" use="optional"/>
            <xsd:attribute ref="nist:typeText" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- COMPLEX DATA TYPES -->
<xsd:complexType name="PersonFingerprintType">
    <xsd:complexContent>
        <xsd:extension base="j:FingerprintType">
            <xsd:sequence>
                <xsd:element ref="nist:FingerImpressionTypeCode"/>
                <xsd:element ref="nist:FingerPosition"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PersonPalmprintType">
    <xsd:complexContent>
        <xsd:extension base="j:FingerprintType">
            <xsd:sequence>
                <xsd:element ref="nist:PalmImpressionTypeCode"/>
                <xsd:element ref="nist:PalmPosition"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```

```

</xsd:complexType>
<xsd:complexType name="PersonLatentprintType">
  <xsd:complexContent>
    <xsd:extension base="j:FingerprintType">
      <xsd:sequence>
        <xsd:element ref="nist:FingerOrPalmImpressionTypeCode"/>
        <xsd:element ref="nist:FingerOrPalmPosition"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FingerPositionType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:FingerPositionCode" minOccurs="1" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FingerOrPalmPositionType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:FingerPositionCode" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="nist:PalmPositionCode" minOccurs="0" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PalmPositionType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:PalmPositionCode" minOccurs="1" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FingerPatternType">

```

```

<xsd:complexContent>
  <xsd:extension base="j:SuperType">
    <xsd:sequence>
      <xsd:element ref="nist:FingerPatternDetail" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute ref="nist:fieldID" use="optional"/>
    <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FingerPatternDetailType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:FingerPatternCodeSourceCode"/>
        <xsd:element ref="nist:FingerPatternCode"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FingerOrPalmCharacteristicsType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:MinutiaeFormatCode"/>
        <xsd:element ref="nist:MinutiaeReadingSystem"/>
        <xsd:element ref="nist:FingerPattern" minOccurs="0"/>
        <xsd:element ref="nist:PatternCorePosition"/>
        <xsd:element ref="nist:PatternDeltaPosition"/>
        <xsd:element ref="nist:MinutiaeCount"/>
        <xsd:element ref="nist:MinutiaeRidgeCountIndicatorCode"/>
        <xsd:element ref="nist:MinutiaeAndRidgeCountData"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="MinutiaeReadingSystemType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:MinutiaeReadingSystemName"/>
        <xsd:element ref="nist:MinutiaeCodingMethodCode"/>
        <xsd:element ref="nist:MinutiaeReadingSubsystemID"/>
      </xsd:sequence>
    <xsd:attribute ref="nist:fieldID" use="optional"/>
    <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>

```



```

        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PatternPositionType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:PatternPositionDetail" maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PatternPositionDetailType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:XCoordinate"/>
                <xsd:element ref="nist:YCoordinate"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="MinutiaeAndRidgeCountDataType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:MinutiaAndRidgeCountDetail" maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:fieldID" use="optional"/>
            <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="MinutiaAndRidgeCountDetailType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:MinutiaIndexNumber"/>
                <xsd:element ref="nist:MinutiaLocationDetail"/>
                <xsd:element ref="nist:MinutiaQualityMeasure" minOccurs="0"/>
                <xsd:element ref="nist:MinutiaTypeCode" minOccurs="0"/>
                <xsd:element ref="nist:MinutiaRidgeCountData" minOccurs="0"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>

```

```
        </xsd:complexContent>
    </xsd:complexType>
    <xsd:complexType name="MinutiaLocationDetailType">
        <xsd:complexContent>
            <xsd:extension base="j:SuperType">
                <xsd:sequence>
                    <xsd:element ref="nist:XCoordinate"/>
                    <xsd:element ref="nist:YCoordinate"/>
                    <xsd:element ref="nist:ThetaAngle"/>
                </xsd:sequence>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
    <xsd:complexType name="MinutiaRidgeCountDataType">
        <xsd:complexContent>
            <xsd:extension base="j:SuperType">
                <xsd:sequence>
                    <xsd:element ref="nist:MinutiaRidgeCountDetail" maxOccurs="unbounded"/>
                </xsd:sequence>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
    <xsd:complexType name="MinutiaRidgeCountDetailType">
        <xsd:complexContent>
            <xsd:extension base="j:SuperType">
                <xsd:sequence>
                    <xsd:element ref="nist:MinutiaIndexNumber"/>
                    <xsd:element ref="nist:MinutiaRidgeCount"/>
                </xsd:sequence>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
</xsd:schema>
```

## Signatures

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:j-ncic="http://www.it.ojp.gov/jxdm/ncic_2000/1.0"
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <!-- ===== -->
  <!-- IMPORTED SCHEMA -->
  <!-- ===== -->
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/proxy/codes" schemaLocation="NISTCodes-proxy.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/codes" schemaLocation="NISTCodes-detail.xsd"/>
  <!-- ===== -->
  <!-- SIGNATURE IMAGE RECORD TYPE 8-->
  <!-- ===== -->
  <!-- RECORD ELEMENT -->
  <xsd:element name="ITLSignatureImageRecord" type="nist:ITLSignatureImageRecordType"/>
  <!-- SIGNATURE IMAGE RECORD CHILD ELEMENTS -->
  <xsd:element name="PersonSignature" type="nist:PersonSignatureType"/>
  <xsd:element name="SignatureTypeCode" type="nist-proxy:SignatureTypeCodeType"/>
  <xsd:element name="SignatureRepresentationCode" type="nist-proxy:SignatureRepresentationCodeType"/>
  <xsd:element name="SignatureRepresentation" type="nist:SignatureRepresentationType"/>
  <xsd:element name="SignatureVectorImage" type="nist:SignatureVectorImageType"/>
  <xsd:element name="SignatureVectorDetail" type="nist:SignatureVectorDetailType"/>
  <xsd:element name="XCoordinate" type="xsd:integer"/>
  <xsd:element name="YCoordinate" type="xsd:integer"/>
  <xsd:element name="PenPressure" type="xsd:integer"/>
  <!-- ===== -->
  <!-- definition of ALL COMPLEX types -->
  <!-- ===== -->
  <!-- RECORD TYPES -->
  <xsd:complexType name="ITLSignatureImageRecordType">
    <xsd:complexContent>
      <xsd:extension base="j:SuperType">
        <xsd:sequence>
          <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
          <xsd:element ref="nist:ImageDesignationCharacterByte"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>

```

```

                <xsd:element ref="nist:PersonSignature"/>
                <xsd:element ref="nist:SignatureRepresentationCode"/>
                <xsd:element ref="nist:SignatureRepresentation"/>
            </xsd:sequence>
            <xsd:attribute ref="nist:typeCode" use="optional"/>
            <xsd:attribute ref="nist:typeText" use="optional"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<!-- COMPLEX DATA TYPES FOR SIGNATURE IMAGE RECORD Type 8 -->
<xsd:complexType name="PersonSignatureType">
    <xsd:complexContent>
        <xsd:extension base="j:BiometricType">
            <xsd:sequence>
                <xsd:element ref="nist:SignatureTypeCode"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="SignatureRepresentationType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:choice>
                <xsd:element ref="nist:Image" />
                <xsd:element ref="nist:SignatureVectorImage" />
            </xsd:choice>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="SignatureVectorImageType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:SignatureVectorDetail" maxOccurs="unbounded"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="SignatureVectorDetailType">
    <xsd:complexContent>
        <xsd:extension base="j:SuperType">
            <xsd:sequence>
                <xsd:element ref="nist:XCoordinate"/>
                <xsd:element ref="nist:YCoordinate"/>
                <xsd:element ref="nist:PenPressure"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```

```
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
</xsd:schema>
```

## Facial and SMT Images

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:c="http://www.incits.org/tc-home/ml.htm" xmlns:user="http://www.user.org/"
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000" elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <!-- ===== -->
  <!-- IMPORTED SCHEMA -->
  <!-- ===== -->
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
    schemaLocation="NISTCodes-proxy.xsd"/>
  <xsd:import namespace="http://fingerprint.nist.gov/itl-1-2000/codes"
    schemaLocation="NISTCodes-detail.xsd"/>

  <!-- ===== -->
  <!-- FACIAL AND SMT IMAGE RECORD Type 10-->
  <!-- ===== -->
  <!-- RECORD ELEMENT -->
  <xsd:element name="ITLFacialAndSMTImageRecord" type="nist:ITLFacialAndSMTImageRecordType"/>
  <!-- CHILE ELEMENTS -->
  <xsd:element name="FacialAttributeCode" type="nist-proxy:FacialAttributeCodeType"/>
  <xsd:element name="FacialAttributeText" type="xsd:string"/>
  <xsd:element name="FacialAttribute" type="nist:FacialAttributeType"/>
  <xsd:element name="ImageTypeCode" type="nist-proxy:ImageTypeCodeType"/>
  <xsd:element name="ImagePoseOffsetAngle" type="nist:IntegerWithFieldAttributesType"/>
  <xsd:element name="ImageSubjectPoseCode" type="nist-proxy:SubjectPoseCodeType"/>
  <xsd:element name="NCICPhysicalFeatureDesignation" type="nist:NCICPhysicalFeatureDesignationType"/>
  <xsd:element name="PersonDigitalFaceImage" type="nist:PersonDigitalFaceImageType"/>
  <xsd:element name="PersonFacialFeatures" type="nist:PersonFacialFeaturesType"/>
  <xsd:element name="PersonPhysicalFeature" type="nist:PersonPhysicalFeatureType"/>
  <xsd:element name="PhysicalFeatureDescriptors" type="nist:PhysicalFeatureDescriptorsType"/>
  <xsd:element name="PhysicalFeatureDescriptorDetail" type="nist:PhysicalFeatureDescriptorDetailType"/>
  <xsd:element name="PhysicalFeatureCategoryCode" type="nist-proxy:PhysicalFeatureCategoryCodeType"/>
  <xsd:element name="PhysicalFeatureSize" type="nist:PhysicalFeatureSizeType"/>
  <xsd:element name="PhysicalFeatureHeightMeasure" type="xsd:integer"/>
  <xsd:element name="PhysicalFeatureWidthMeasure" type="xsd:integer"/>
  <xsd:element name="PhysicalFeatureColor" type="nist:PhysicalFeatureColorType"/>
```

```

<xsd:element name="PhysicalFeaturePrimaryColorCode" type="nist-proxy:ColorCodeType"/>
<xsd:element name="PhysicalFeatureSecondaryColorCode" type="nist-proxy:ColorCodeType"/>
<xsd:element name="PhotoCaptureDate" type="nist:DateWithFieldAttributesType"/>
<xsd:element name="TattooClassCode" type="nist-proxy:TattooClassCodeType"/>
<xsd:element name="TattooSubClassCode" type="nist-proxy:TattooSubClassCodeType"/>
<!-- FACIAL AND SMT IMAGE RECORD TYPE 10 -->
<xsd:complexType name="ITLFacialAndSMTImageRecordType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:LogicalRecordLength"/>
        <xsd:element ref="nist:ImageDesignationCharacter"/>
        <xsd:element ref="nist:SourceAgency"/>
        <xsd:element ref="nist:PhotoCaptureDate"/>
        <xsd:element ref="nist:ImageTypeCode"/>
        <xsd:choice>
          <xsd:sequence>
            <xsd:element ref="nist:PersonFacialFeatures"/>
            <xsd:element ref="nist:UserDefinedFields"/>
            <xsd:element ref="nist:PersonDigitalFaceImage"/>
          </xsd:sequence>
          <xsd:sequence>
            <xsd:element ref="nist:PersonPhysicalFeature"/>
            <xsd:element ref="nist:UserDefinedFields"/>
            <xsd:element ref="nist:Image"/>
          </xsd:sequence>
        </xsd:choice>
      </xsd:sequence>
      <xsd:attribute ref="nist:typeCode" use="optional"/>
      <xsd:attribute ref="nist:typeText" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ===== -->
<!-- definition of CHILD COMPLEX types -->
<!-- ===== -->
<!-- FACIAL IMAGE -->
<xsd:complexType name="PersonDigitalFaceImageType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:ImageSubjectPoseCode" minOccurs="0"/>
        <xsd:element ref="nist:ImagePoseOffsetAngle" minOccurs="0"/>
        <xsd:element ref="nist:Image"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

```

        </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PersonFacialFeaturesType">
  <xsd:complexContent>
    <xsd:extension base="j:BiometricType">
      <xsd:sequence>
        <xsd:element ref="nist:FacialAttribute" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="FacialAttributeType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:FacialAttributeCode"/>
        <xsd:element ref="nist:FacialAttributeText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- SCAR MARK TATTOO IMAGE -->
<xsd:complexType name="PersonPhysicalFeatureType">
  <xsd:complexContent>
    <xsd:extension base="j:PhysicalFeatureType">
      <xsd:sequence>
        <xsd:element ref="nist:NCICPhysicalFeatureDesignation"/>
        <xsd:element ref="nist:PhysicalFeatureSize" minOccurs="0"/>
        <xsd:element ref="nist:PhysicalFeatureDescriptors" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="NCICPhysicalFeatureDesignationType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="j:PhysicalFeatureTypeCode" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```



```

<xsd:complexType name="PhysicalFeatureSizeType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:PhysicalFeatureHeightMeasure"/>
        <xsd:element ref="nist:PhysicalFeatureWidthMeasure"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PhysicalFeatureDescriptorsType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:PhysicalFeatureDescriptorDetail" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PhysicalFeatureDescriptorDetailType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:PhysicalFeatureCategoryCode"/>
        <xsd:element ref="nist:TattooClassCode"/>
        <xsd:element ref="nist:TattooSubClassCode"/>
        <xsd:element ref="j:PhysicalFeatureDescriptionText"/>
        <xsd:element ref="nist:PhysicalFeatureColor" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="PhysicalFeatureColorType">
  <xsd:complexContent>
    <xsd:extension base="j:SuperType">
      <xsd:sequence>
        <xsd:element ref="nist:PhysicalFeaturePrimaryColorCode"/>
        <xsd:element ref="nist:PhysicalFeatureSecondaryColorCode" minOccurs="0"
maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute ref="nist:fieldID" use="optional"/>
      <xsd:attribute ref="nist:fieldMnemonic" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

```
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
</xsd:schema>
```

## User-defined and Test Records

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:nist="http://fingerprint.nist.gov/itl-1-2000"
  xmlns:nist-code="http://fingerprint.nist.gov/itl-1-2000/codes"
  xmlns:nist-proxy="http://fingerprint.nist.gov/itl-1-2000/proxy/codes"
  xmlns:j="http://www.it.ojp.gov/jxdm/3.0.2"
  xmlns:efts="http://home.leo.gov/lesig/cjis/iafis-efts-7.00"
  xmlns:j-ncic="http://www.it.ojp.gov/jxdm/ncic_2000/1.0"
  targetNamespace="http://fingerprint.nist.gov/itl-1-2000"
  elementFormDefault="qualified"
  attributeFormDefault="unqualified">
  <xsd:import namespace="http://www.it.ojp.gov/jxdm/3.0.2" schemaLocation="jxdm.xsd"/>
  <!-- ===== -->
  <!-- USER DEFINED IMAGE RECORD TYPE 7 -->
  <!-- TEST IMAGE RECORD TYPE 16 -->
  <!-- ===== -->
  <!-- RECORD ELEMENT -->
  <xsd:element name="ITLUserDefinedImageRecord" type="nist:ITLUserDefinedImageRecordType"/>
  <xsd:element name="ITLTestImageRecord" type="nist:ITLTestImageRecordType"/>
  <!-- ===== -->
  <!-- definition of ALL COMPLEX -->
  <!-- ===== -->
  <!-- RECORD TYPES -->
  <xsd:complexType name="ITLUserDefinedImageRecordType">
    <xsd:complexContent>
      <xsd:extension base="j:SuperType">
        <xsd:sequence>
          <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>
          <xsd:element ref="nist:ImageDesignationCharacterByte"/>
          <xsd:element ref="nist:UserDefinedFields"/>
        </xsd:sequence>
        <xsd:attribute ref="nist:typeCode" use="optional"/>
        <xsd:attribute ref="nist:typeText" use="optional"/>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="ITLTestImageRecordType">
    <xsd:complexContent>
      <xsd:extension base="j:SuperType">
        <xsd:sequence>
          <xsd:element ref="nist:LogicalRecordLength" minOccurs="0"/>

```

```
        <xsd:element ref="nist:ImageDesignationCharacter"/>
        <xsd:element ref="nist:UserDefinedFields" maxOccurs="2"/>
        <xsd:element ref="nist:Image"/>
    </xsd:sequence>
    <xsd:attribute ref="nist:typeCode" use="optional"/>
    <xsd:attribute ref="nist:typeText" use="optional"/>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:schema>
```