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<xsd:schema targetNamespace="urn:oasis:names:tc:DSML:2:0:core"
  xmlns="urn:oasis:names:tc:DSML:2:0:core"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
<!-- Copyright (C) The Organization for the Advancement of Structured Information Standards [OASIS] 2001. All
Rights Reserved. -->
  <!-- DSML Requests -->
  <xsd:group name="DSMLRequests">
    <xsd:choice>
      <xsd:element name="authRequest" type="AuthRequest"/>
      <xsd:group ref="BatchRequests"/>
    </xsd:choice>
  </xsd:group>
  <xsd:group name="BatchRequests">
    <xsd:choice>
      <xsd:element name="searchRequest" type="SearchRequest"/>
      <xsd:element name="modifyRequest" type="ModifyRequest"/>
      <xsd:element name="addRequest" type="AddRequest"/>
      <xsd:element name="delRequest" type="DelRequest"/>
      <xsd:element name="modDNRequest" type="ModifyDNRequest"/>
      <xsd:element name="compareRequest" type="CompareRequest"/>
      <xsd:element name="abandonRequest" type="AbandonRequest"/>
      <xsd:element name="extendedRequest" type="ExtendedRequest"/>
    </xsd:choice>
  </xsd:group>
  <!-- DSML Responses -->
  <xsd:group name="DSMLResponses">
    <xsd:choice>
      <xsd:element name="authResponse" type="LDAPResult"/>
      <xsd:element name="searchResultEntry" type="SearchResultEntry"/>
      <xsd:element name="searchResultReference" type="SearchResultReference"/>
      <xsd:element name="searchResultDone" type="LDAPResult"/>
      <xsd:element name="modifyResponse" type="LDAPResult"/>
      <xsd:element name="addResponse" type="LDAPResult"/>
      <xsd:element name="delResponse" type="LDAPResult"/>
      <xsd:element name="modDNResponse" type="LDAPResult"/>
      <xsd:element name="compareResponse" type="LDAPResult"/>
      <xsd:element name="extendedResponse" type="ExtendedResponse"/>
      <xsd:element name="errorResponse" type="ErrorResponse"/>
    </xsd:choice>
  </xsd:group>
  <!-- ***** Batch Envelopes ***** -->
  <xsd:element name="batchRequest" type="BatchRequest"/>
  <xsd:element name="batchResponse" type="BatchResponse"/>
  <!-- **** Batch Request Envelope **** -->
  <xsd:complexType name="BatchRequest">
    <xsd:sequence>
      <xsd:element name="authRequest" type="AuthRequest" minOccurs="0" maxOccurs="1"/>
      <xsd:group ref="BatchRequests" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="requestID" type="RequestID" use="optional"/>
    <xsd:attribute name="processing" use="optional" default="sequential">
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="sequential"/>
          <xsd:enumeration value="parallel"/>
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:attribute>
    <xsd:attribute name="responseOrder" use="optional" default="sequential">
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="sequential"/>
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:attribute>
  </xsd:complexType>

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        <xsd:enumeration value="unordered"/>
    </xsd:restriction>
</xsd:simpleType>
</xsd:attribute>
<xsd:attribute name="onError" use="optional" default="exit">
    <xsd:simpleType>
        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="resume"/>
            <xsd:enumeration value="exit"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:attribute>
</xsd:complexType>
<!-- **** Batch Response Envelope **** -->
<xsd:complexType name="BatchResponse">
    <xsd:sequence>
        <xsd:group ref="BatchResponses" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="requestID" type="RequestID" use="optional"/>
</xsd:complexType>
<!-- **** Batch Responses **** -->
<xsd:group name="BatchResponses">
    <xsd:choice>
        <xsd:element name="searchResponse" type="SearchResponse"/>
        <xsd:element name="authResponse" type="LDAPResult"/>
        <xsd:element name="modifyResponse" type="LDAPResult"/>
        <xsd:element name="addResponse" type="LDAPResult"/>
        <xsd:element name="delResponse" type="LDAPResult"/>
        <xsd:element name="modDNResponse" type="LDAPResult"/>
        <xsd:element name="compareResponse" type="LDAPResult"/>
        <xsd:element name="extendedResponse" type="ExtendedResponse"/>
        <xsd:element name="errorResponse" type="ErrorResponse"/>
    </xsd:choice>
</xsd:group>
<!-- **** Search Response **** -->
<xsd:complexType name="SearchResponse">
    <xsd:sequence>
        <xsd:element name="searchResultEntry" type="SearchResultEntry"
            minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element name="searchResultReference" type="SearchResultReference"
            minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element name="searchResultDone" type="LDAPResult"/>
    </xsd:sequence>
    <xsd:attribute name="requestID" type="RequestID" use="optional"/>
</xsd:complexType>
<!-- ***** DsmlDN ***** -->
<xsd:simpleType name="DsmlDN">
    <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<!-- ***** DsmlRDN ***** -->
<xsd:simpleType name="DsmlRDN">
    <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<!-- ***** Request ID ***** -->
<xsd:simpleType name="RequestID">
    <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<!-- ***** AttributeDescriptionValue ***** -->
<xsd:simpleType name="AttributeDescriptionValue">
    <xsd:restriction base="xsd:string">
        <xsd:pattern value="((([0-2](\.[0-9]+)+)|([a-zA-Z]+([a-zA-Z0-9][\-\-])*)|([a-zA-Z0-9][\-\-]
+)*))/>
    </xsd:restriction>

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</xsd:simpleType>
<xsd:simpleType name="NumericOID">
  <xsd:restriction base="xsd:string">
    <xsd:pattern value="[0-2]\.[0-9]+(\.[0-9]+)*"/>
  </xsd:restriction>
</xsd:simpleType>
<!-- ***** MAX Integer ***** -->
<xsd:simpleType name="MAXINT">
  <xsd:restriction base="xsd:unsignedInt">
    <xsd:maxInclusive value="2147483647"/>
  </xsd:restriction>
</xsd:simpleType>
<!-- ***** DSML Value ***** -->
<xsd:simpleType name="DsmIValue">
  <xsd:union memberTypes="xsd:string xsd:base64Binary xsd:anyURI"/>
</xsd:simpleType>
<!-- ***** DSML Control ***** -->
<xsd:complexType name="Control">
  <xsd:sequence>
    <xsd:element name="controlValue" type="xsd:anyType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="type" type="NumericOID" use="required"/>
  <xsd:attribute name="criticality" type="xsd:boolean" use="optional" default="false"/>
</xsd:complexType>
<!-- ***** DSML Filter ***** -->
<xsd:complexType name="Filter">
  <xsd:group ref="FilterGroup"/>
</xsd:complexType>
<xsd:group name="FilterGroup">
  <xsd:sequence>
    <xsd:choice>
      <xsd:element name="and" type="FilterSet"/>
      <xsd:element name="or" type="FilterSet"/>
      <xsd:element name="not" type="Filter"/>
      <xsd:element name="equalityMatch" type="AttributeValueAssertion"/>
      <xsd:element name="substrings" type="SubstringFilter"/>
      <xsd:element name="greaterOrEqual" type="AttributeValueAssertion"/>
      <xsd:element name="lessOrEqual" type="AttributeValueAssertion"/>
      <xsd:element name="present" type="AttributeDescription"/>
      <xsd:element name="approxMatch" type="AttributeValueAssertion"/>
      <xsd:element name="extensibleMatch" type="MatchingRuleAssertion"/>
    </xsd:choice>
  </xsd:sequence>
</xsd:group>
<xsd:complexType name="FilterSet">
  <xsd:sequence>
    <xsd:group ref="FilterGroup" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="AttributeValueAssertion">
  <xsd:sequence>
    <xsd:element name="value" type="DsmIValue"/>
  </xsd:sequence>
  <xsd:attribute name="name" type="AttributeDescriptionValue" use="required"/>
</xsd:complexType>
<xsd:complexType name="AttributeDescription">
  <xsd:attribute name="name" type="AttributeDescriptionValue" use="required"/>
</xsd:complexType>
<xsd:complexType name="SubstringFilter">
  <xsd:sequence>
    <xsd:element name="initial" type="DsmIValue" minOccurs="0"/>
    <xsd:element name="any" type="DsmIValue" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="final" type="DsmIValue" minOccurs="0"/>
  </xsd:sequence>

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        </xsd:sequence>
        <xsd:attribute name="name" type="AttributeDescriptionValue" use="required"/>
    </xsd:complexType>
    <xsd:complexType name="MatchingRuleAssertion">
        <xsd:sequence>
            <xsd:element name="value" type="DsmIValue"/>
        </xsd:sequence>
        <xsd:attribute name="dnAttributes" type="xsd:boolean" use="optional" default="false"/>
        <xsd:attribute name="matchingRule" type="xsd:string" use="optional"/>
        <xsd:attribute name="name" type="AttributeDescriptionValue" use="optional"/>
    </xsd:complexType>
    <!-- ***** DSML MESSAGE ***** -->
    <xsd:complexType name="DsmIMessage">
        <xsd:sequence>
            <xsd:element name="control" type="Control" minOccurs="0" maxOccurs="unbounded"/>
        </xsd:sequence>
        <xsd:attribute name="requestID" type="RequestID" use="optional"/>
    </xsd:complexType>
    <!-- ***** LDAP RESULT ***** -->
    <xsd:simpleType name="LDAPResultCode">
        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="success"/>
            <xsd:enumeration value="operationsError"/>
            <xsd:enumeration value="protocolError"/>
            <xsd:enumeration value="timeLimitExceeded"/>
            <xsd:enumeration value="sizeLimitExceeded"/>
            <xsd:enumeration value="compareFalse"/>
            <xsd:enumeration value="compareTrue"/>
            <xsd:enumeration value="authMethodNotSupported"/>
            <xsd:enumeration value="strongAuthRequired"/>
            <xsd:enumeration value="referral"/>
            <xsd:enumeration value="adminLimitExceeded"/>
            <xsd:enumeration value="unavailableCriticalExtension"/>
            <xsd:enumeration value="confidentialityRequired"/>
            <xsd:enumeration value="sasIBindInProgress"/>
            <xsd:enumeration value="noSuchAttribute"/>
            <xsd:enumeration value="undefinedAttributeType"/>
            <xsd:enumeration value="inappropriateMatching"/>
            <xsd:enumeration value="constraintViolation"/>
            <xsd:enumeration value="attributeOrValueExists"/>
            <xsd:enumeration value="invalidAttributeSyntax"/>
            <xsd:enumeration value="noSuchObject"/>
            <xsd:enumeration value="aliasProblem"/>
            <xsd:enumeration value="invalidDNsyntax"/>
            <xsd:enumeration value="aliasDereferencingProblem"/>
            <xsd:enumeration value="inappropriateAuthentication"/>
            <xsd:enumeration value="invalidCredentials"/>
            <xsd:enumeration value="insufficientAccessRights"/>
            <xsd:enumeration value="busy"/>
            <xsd:enumeration value="unavailable"/>
            <xsd:enumeration value="unwillingToPerform"/>
            <xsd:enumeration value="loopDetect"/>
            <xsd:enumeration value="namingViolation"/>
            <xsd:enumeration value="objectClassViolation"/>
            <xsd:enumeration value="notAllowedOnNonLeaf"/>
            <xsd:enumeration value="notAllowedOnRDN"/>
            <xsd:enumeration value="entryAlreadyExists"/>
            <xsd:enumeration value="objectClassModsProhibited"/>
            <xsd:enumeration value="affectMultipleDSAs"/>
            <xsd:enumeration value="other"/>
        </xsd:restriction>
    </xsd:simpleType>
    <xsd:complexType name="ResultCode">

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        <xsd:attribute name="code" type="xsd:int" use="required"/>
        <xsd:attribute name="descr" type="LDAPResultCode" use="optional"/>
    </xsd:complexType>
    <xsd:complexType name="LDAPResult">
        <xsd:complexContent>
            <xsd:extension base="Dsm1Message">
                <xsd:sequence>
                    <xsd:element name="resultCode" type="ResultCode"/>
                    <xsd:element name="errorMessage" type="xsd:string" minOccurs="0"/>
                    <xsd:element name="referral" type="xsd:anyURI" minOccurs="0"
maxOccurs="unbounded"/>
                </xsd:sequence>
                <xsd:attribute name="matchedDN" type="Dsm1DN" use="optional"/>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
    <xsd:complexType name="ErrorResponse">
        <xsd:sequence>
            <xsd:element name="message" type="xsd:string" minOccurs="0"/>
            <xsd:element name="detail" minOccurs="0">
                <xsd:complexType>
                    <xsd:sequence>
                        <xsd:any/>
                    </xsd:sequence>
                </xsd:complexType>
            </xsd:element>
        </xsd:sequence>
        <xsd:attribute name="requestID" type="RequestID" use="optional"/>
        <xsd:attribute name="type">
            <xsd:simpleType>
                <xsd:restriction base="xsd:string">
                    <xsd:enumeration value="notAttempted"/>
                    <xsd:enumeration value="couldNotConnect"/>
                    <xsd:enumeration value="connectionClosed"/>
                    <xsd:enumeration value="malformedRequest"/>
                    <xsd:enumeration value="gatewayInternalError"/>
                    <xsd:enumeration value="authenticationFailed"/>
                    <xsd:enumeration value="unresolvableURI"/>
                    <xsd:enumeration value="other"/>
                </xsd:restriction>
            </xsd:simpleType>
        </xsd:attribute>
    </xsd:complexType>
<!-- ***** Auth ***** -->
    <xsd:complexType name="AuthRequest">
        <xsd:complexContent>
            <xsd:extension base="Dsm1Message">
                <xsd:attribute name="principal" type="xsd:string" use="required"/>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
<!-- ***** Search ***** -->
    <xsd:complexType name="AttributeDescriptions">
        <xsd:sequence minOccurs="0" maxOccurs="unbounded">
            <xsd:element name="attribute" type="AttributeDescription"/>
        </xsd:sequence>
    </xsd:complexType>
    <xsd:complexType name="SearchRequest">
        <xsd:complexContent>
            <xsd:extension base="Dsm1Message">
                <xsd:sequence>
                    <xsd:element name="filter" type="Filter"/>
                    <xsd:element name="attributes" type="AttributeDescriptions"

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minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="dn" type="DsmIDN" use="required"/>
    <xsd:attribute name="scope" use="required">
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:enumeration value="baseObject"/>
                <xsd:enumeration value="singleLevel"/>
                <xsd:enumeration value="wholeSubtree"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:attribute>
    <xsd:attribute name="derefAliases" use="required">
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:enumeration value="neverDerefAliases"/>
                <xsd:enumeration value="derefInSearching"/>
                <xsd:enumeration value="derefFindingBaseObj"/>
                <xsd:enumeration value="derefAlways"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:attribute>
    <xsd:attribute name="sizeLimit" type="MAXINT" use="optional" default="0"/>
    <xsd:attribute name="timeLimit" type="MAXINT" use="optional" default="0"/>
    <xsd:attribute name="typesOnly" type="xsd:boolean" use="optional"
default="false"/>
    </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<!-- ***** Search Result Entry ***** -->
<xsd:complexType name="SearchResultEntry">
    <xsd:complexContent>
        <xsd:extension base="DsmMessage">
            <xsd:sequence>
                <xsd:element name="attr" type="DsmAttr" minOccurs="0"
maxOccurs="unbounded"/>
            </xsd:sequence>
            <xsd:attribute name="dn" type="DsmIDN" use="required"/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="DsmAttr">
    <xsd:sequence>
        <xsd:element name="value" type="DsmValue" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="name" type="AttributeDescriptionValue" use="required"/>
</xsd:complexType>
<xsd:complexType name="DsmModification">
    <xsd:sequence>
        <xsd:element name="value" type="DsmValue" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
    <xsd:attribute name="name" type="AttributeDescriptionValue" use="required"/>
    <xsd:attribute name="operation" use="required">
        <xsd:simpleType>
            <xsd:restriction base="xsd:string">
                <xsd:enumeration value="add"/>
                <xsd:enumeration value="delete"/>
                <xsd:enumeration value="replace"/>
            </xsd:restriction>
        </xsd:simpleType>
    </xsd:attribute>
</xsd:complexType>
<!-- ***** Search Result Reference ***** -->

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<xsd:complexType name="SearchResultReference">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:sequence>
        <xsd:element name="ref" type="xsd:anyURI" maxOccurs="unbounded"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** MODIFY ***** -->
<xsd:complexType name="ModifyRequest">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:sequence>
        <xsd:element name="modification" type="Dsm1Modification"
minOccurs="0" maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="dn" type="Dsm1DN" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** ADD ***** -->
<xsd:complexType name="AddRequest">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:sequence>
        <xsd:element name="attr" type="Dsm1Attr" minOccurs="0"
maxOccurs="unbounded"/>
      </xsd:sequence>
      <xsd:attribute name="dn" type="Dsm1DN" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** DELETE ***** -->
<xsd:complexType name="DelRequest">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:attribute name="dn" type="Dsm1DN" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** MODIFY DN ***** -->
<xsd:complexType name="ModifyDNRequest">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:attribute name="dn" type="Dsm1DN" use="required"/>
      <xsd:attribute name="newrdn" type="Dsm1RDN" use="required"/>
      <xsd:attribute name="deleteoldrdn" type="xsd:boolean" use="optional"
default="true"/>
      <xsd:attribute name="newSuperior" type="Dsm1DN" use="optional"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** COMPARE ***** -->
<xsd:complexType name="CompareRequest">
  <xsd:complexContent>
    <xsd:extension base="Dsm1Message">
      <xsd:sequence>
        <xsd:element name="assertion" type="AttributeValueAssertion"/>
      </xsd:sequence>
      <xsd:attribute name="dn" type="Dsm1DN" use="required"/>
    </xsd:extension>
  </xsd:complexContent>

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</xsd:complexType>
<!-- ***** ABANDON ***** -->
<xsd:complexType name="AbandonRequest">
  <xsd:complexContent>
    <xsd:extension base="DsmIMessage">
      <xsd:attribute name="abandonID" type="RequestID" use="required"/>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- ***** EXTENDED OPERATION ***** -->
<xsd:complexType name="ExtendedRequest">
  <xsd:complexContent>
    <xsd:extension base="DsmIMessage">
      <xsd:sequence>
        <xsd:element name="requestName" type="NumericOID"/>
        <xsd:element name="requestValue" type="xsd:anyType" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="ExtendedResponse">
  <xsd:complexContent>
    <xsd:extension base="LDAPResult">
      <xsd:sequence>
        <xsd:element name="responseName" type="NumericOID"
minOccurs="0"/>
        <xsd:element name="response" type="xsd:anyType" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<!-- *****END base SCHEMA ***** -->
</xsd:schema>

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