



# **Guide to Schemas for CDSM**

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## **CDSM Schema Guide**

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**Chapter 1 - Introduction**

**1.1 - Purpose**

This is an informative supplement for CDSM. This guide is generated from the CDSM Schemas and provides a consolidated reference for the schemas of this specification.

Chapter 2 - Schema Files

2.1 - CDSM.xsd

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns="urn:us:gov:ic:cdsmanifest"
            xmlns:xhtml="http://www.w3.org/1999/xhtml-StopBrowserRendering"
            xmlns:cdsm="urn:us:gov:ic:cdsmanifest"
            xmlns:tdf="urn:us:gov:ic:tdf"
            xmlns:icsfhashv="urn:us:gov:ic:sf:hashverification"
            xmlns:icsf="urn:us:gov:ic:sf"
            targetNamespace="urn:us:gov:ic:cdsmanifest"
            elementFormDefault="qualified"
            attributeFormDefault="qualified"
            ism:compliesWith="USGov USIC"
            ism:DESVersion="201903.202010"
            ism:ISMCAICESVersion="202010"
            ism:createDate="2019-09-18"
            ism:resourceElement="true"
            ism:classification="U"
            ism:ownerProducer="USA"
            version="202101">
  <xs:import namespace="urn:us:gov:ic:sf:hashverification"
            schemaLocation="../../../IC-SF/HashVerification.xsd"/>
  <xs:import namespace="urn:us:gov:ic:sf" schemaLocation="../../../IC-SF/IC-SF.xsd"/>
  <xs:annotation>
    <xs:documentation>
      <xhtml:h1 ism:ownerProducer="USA" ism:classification="U">Intelligence Community Technical Specification XML Data
        Encoding Specification for Cross Domain System Manifest Assertion
        (CDSM.XML)</xhtml:h1>
    </xs:documentation>
    <xs:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Notices</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">Distribution Notice:
        This document has been approved for Public Release and is available for use without restriction.
      </xhtml:p>
    </xs:documentation>
    <xs:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Description</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">W3C XML
        Schema for the XML Data Encoding Specification for XML Data
        Encoding Specification for Cross Domain System Manifest Assertion
        (CDSM.XML).</xhtml:p>
    </xs:documentation>
    <xs:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Introduction</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This XML
        Schema file is one component of the XML Data Encoding
        Specification (DES). Please see the document titled<xhtml:i>
          <xhtml:a href="../../../Documents/CDSM/DesCdsml.pdf">XML
            Data Encoding Specification for Cross Domain System Manifest Assertion</xhtml:a>
          </xhtml:i>for a complete description of the encoding as
          well as list of all components.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:schema>
```

```

    <xhtml:p ism:ownerProducer="USA" ism:classification="U">It is
      envisioned that this schema or its components, as well
      as other parts of the DES may be overridden for
      localized implementations. Therefore, permission to use,
      copy, modify and distribute this XML Schema and the
      other parts of the DES for any purpose is hereby granted
      in perpetuity.</xhtml:p>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">Please
      reference the preceding two paragraphs in all copies or
      variations. The developers make no representation about
      the suitability of the schema or DES for any purpose. It
      is provided "as is" without expressed or implied
      warranty.</xhtml:p>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">If you
      modify this XML Schema in any way label your schema as a
      variant of CDSM.XML.</xhtml:p>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">Please
      direct all questions, bug reports, or suggestions for
      changes to the points of contact identified in the
      document referenced above.</xhtml:p>
  </xs:documentation>
  <xs:documentation>
    <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Implementation Notes</xhtml:h2>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">The root element for a Cross Domain System Manifest Assertion
      is <xhtml:a href="CDSM_xsd_Element_CdsManifestAssertion.html#CdsManifestAssertion">cdsm:CdsManifestAssertion</xhtml:a> and is implemented as a TDF
      assertion.
    </xhtml:p>
  </xs:documentation>
  <xs:documentation>
    <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Creators</xhtml:h2>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">Office of
      the Director of National Intelligence Intelligence
      Community Chief Information Officer</xhtml:p>
  </xs:documentation>
</xs:annotation>

<!-- ***** -->

<!-- Start Elements -->

<!-- ***** -->

<!-- Root Element -->

<xs:element name="CdsManifestAssertion" type="cdsm:CdsAssertionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The root node of a CDS Manifest assertion for cross domain transfer.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="Originator" type="cdsm:OriginatorType">
```

```
<xs:annotation>
  <xs:documentation xml:lang="en">
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software vendor.</xhtml:p>
  </xs:documentation>
</xs:annotation>
</xs:element>

<xs:element name="Product" type="cdsm:ProductType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software product.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="PayloadVersion" type="cdsm:PayloadVersionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software version.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="CPE" type="cdsm:CPEType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software common platform enumeration (CPE).</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="Arch" type="cdsm:ArchType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software architecture.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="Routing" type="MediumStringType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents routing info.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="WorkFlowid" type="MediumStringType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents work flow id.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>
```

```
<xs:element name="Userkey" type="MediumStringType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents user key.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="VendorChecksum" type="cdsm:VendorChecksumType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software vendor checksum.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="VirusScanList" type="cdsm:VirusScanListType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a list of virus scans.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="VirusScan" type="cdsm:VirusScanType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a software virus scan.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="MD5" type="cdsm:MD5Type">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a vendor md5 checksum.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="SHA256" type="cdsm:SHA256Type">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a vendor sha256 checksum.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="SHA512" type="cdsm:SHA512Type">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a vendor sha512 checksum.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>
```



```

    </xs:annotation>
  </xs:element>

  <xs:element name="ScanVendor" type="cdsm:ScanVendorType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a virus scan vendor.</xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="ScanVersion" type="cdsm:ScanVersionType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a virus scan version.</xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="SignatureDate" type="cdsm:SignatureDateType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a signature date.</xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="ScanResult" type="cdsm:ScanResultType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">This element represents a virus scan result.</xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <!-- *****-->

  <!-- End Elements -->

  <!-- *****-->

  <!-- *****-->

  <!-- Start Attributes -->

  <!-- *****-->

  <xs:attribute name="DESVersion" type="cdsm:DESVersionType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">The version number of the DES</xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:attribute>

```

```
</xs:attribute>

<xs:attribute name="blockSize" type="cdsm:BlockSizeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The block size of a hash.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<xs:attribute name="hashType" type="cdsm:HashTypeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The type of a hash.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<xs:attribute name="totalBlocks" type="cdsm:TotalBlocksType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The total blocks of a hash.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<xs:attribute name="totalHash" type="cdsm:HashValueType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The total hash value.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<xs:attribute name="block" type="cdsm:BlockType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The hash block.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<xs:attribute name="value" type="cdsm:HashValueType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">The hash value.</xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:attribute>

<!--*****-->

<!--End Attributes -->
```

```
<!--*****-->

<!--*****-->

<!--Start Type Definitions      -->

<!--*****-->

<xs:complexType name="CdsAssertionType">
  <xs:all>
    <xs:element ref="cdsm:Originator" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:Product" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:PayloadVersion" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:CPE" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="cdsm:Arch" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:Routing" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="cdsm:Workflowid" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="cdsm:Userkey" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="icsfhashv:ContentEncodedHashVerification"
      minOccurs="1"
      maxOccurs="1">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            Represents the hash of the payload in its encrypted state.
            Hash value is not meant to be taken over the Base64-encoded
            state of the payload when used with a Base64Binary payload.
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element ref="cdsm:VendorChecksum" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="cdsm:VirusScanList" minOccurs="1" maxOccurs="1"/>
  </xs:all>
  <xs:attribute ref="cdsm:DESVersion" use="required"/>
  <xs:attribute ref="icsf:DESVersion" use="optional"/>
</xs:complexType>

<xs:complexType name="VirusScanListType">
  <xs:sequence>
    <xs:element ref="cdsm:VirusScan" minOccurs="1" maxOccurs="10"/>
  </xs:sequence>
</xs:complexType>

<xs:simpleType name="MediumStringType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="1024"/>
    <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
  </xs:restriction>
</xs:simpleType>
```

```

<xs:complexType name="VendorChecksumType">
  <xs:sequence>
    <xs:element ref="cdsm:MD5" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="cdsm:SHA256" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:SHA512" minOccurs="0" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="VirusScanType">
  <xs:sequence>
    <xs:element ref="cdsm:ScanVendor" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:ScanVersion" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:SignatureDate" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="cdsm:ScanResult" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>

<xs:simpleType name="OriginatorType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="50"/>
    <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ProductType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="256"/>
    <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="PayloadVersionType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="30"/>
    <xs:pattern value="([a-zA-Z0-9\.-])*"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="CPEType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        The regular expressions OR'ed together in this
        type were copied verbatim from the cpe22Type and
        cpe23Type definitions in
        <xhtml:a xhtml:href="https://csrc.nist.gov/schema/cpe/2.3/cpe-naming_2.3.xsd">
          the official CPE schema
        </xhtml:a>
        . The length restriction is added to constrain
        the values to a reasonable length for cross-domain
        use.
      </xs:documentation>
    </xs:annotation>
  </xs:simpleType>

```

```

        </xhtml:p>
    </xs:documentation>
</xs:annotation>
<xs:restriction base="xs:anyURI">
    <xs:minLength value="1"/>
    <xs:maxLength value="1024"/>
    <xs:pattern value="([c][pP][eE]:/[AHOaho]?(:[A-Za-z0-9\._\~%]*){0,6})|(cpe:2\.3:[aho\*-](:(((\?*|\*?)([a-zA-Z0-9\._]|(\[\[\*\?!&#34;#$$$&amp;'\\(\)\{ \}~]))+(\?*|\*?))|[\*-])){5}(:((([a-zA-Z]{2,3}(-([a-zA-Z]{2}|[0-9]{3}))?)|[\*-]))((((\?*|\*?)([a-zA-Z0-9\._]|(\[\[\*\?!&#34;#$$$&amp;'\\(\)\{ \}~]))+(\?*|\*?))|[\*-])){4})")/>
</xs:restriction>
</xs:simpleType>

<xs:simpleType name="ArchType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="i386"/>
        <xs:enumeration value="i486"/>
        <xs:enumeration value="i586"/>
        <xs:enumeration value="i686"/>
        <xs:enumeration value="x86_64"/>
        <xs:enumeration value="amd64"/>
        <xs:enumeration value="ia64"/>
        <xs:enumeration value="armv6l"/>
        <xs:enumeration value="armv7l"/>
        <xs:enumeration value="sparc"/>
        <xs:enumeration value="sparc64"/>
        <xs:enumeration value="sparc64v"/>
        <xs:enumeration value="ppc"/>
        <xs:enumeration value="ppc64"/>
        <xs:enumeration value="ppc64le"/>
        <xs:enumeration value="s390"/>
        <xs:enumeration value="s390x"/>
        <xs:enumeration value="64-bit"/>
        <xs:enumeration value="32-bit"/>
        <xs:enumeration value="none"/>
        <xs:enumeration value="noarch"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="BlockSizeType">
    <xs:restriction base="xs:positiveInteger">
        <xs:minInclusive value="134217728"/>
        <xs:maxInclusive value="536870912"/>
        <xs:enumeration value="134217728"/>
        <xs:enumeration value="268435456"/>
        <xs:enumeration value="536870912"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="HashTypeType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="CRC"/>
        <xs:enumeration value="MD5"/>
        <xs:enumeration value="SHA256"/>
        <xs:enumeration value="SHA384"/>
    </xs:restriction>
</xs:simpleType>

```

```
        <xs:enumeration value="SHA512"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="TotalBlocksType">
      <xs:restriction base="xs:nonNegativeInteger">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="4096"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="BlockType">
      <xs:restriction base="xs:positiveInteger">
        <xs:minInclusive value="1"/>
        <xs:maxInclusive value="4096"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="HashValueType">
      <xs:restriction base="xs:string">
        <xs:minLength value="16"/>
        <xs:maxLength value="128"/>
        <xs:pattern value="([a-fA-F0-9])*"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="MD5Type">
      <xs:restriction base="xs:string">
        <xs:minLength value="32"/>
        <xs:maxLength value="32"/>
        <xs:pattern value="([a-fA-F0-9])*"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="SHA256Type">
      <xs:restriction base="xs:string">
        <xs:minLength value="64"/>
        <xs:maxLength value="64"/>
        <xs:pattern value="([a-fA-F0-9])*"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="SHA512Type">
      <xs:restriction base="xs:string">
        <xs:minLength value="128"/>
        <xs:maxLength value="128"/>
        <xs:pattern value="([a-fA-F0-9])*"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="ScanVendorType">
      <xs:restriction base="xs:string">
        <xs:minLength value="3"/>
        <xs:maxLength value="20"/>
      </xs:restriction>
    </xs:simpleType>
```

```

        <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ScanVersionType">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="20"/>
        <xs:pattern value="([a-zA-Z0-9\.-])*"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="SignatureDateType">
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>

<xs:simpleType name="ScanResultType">
    <xs:restriction base="xs:string">
        <xs:pattern value="pass|clean|Pass|Clean"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="DESVersionType">
    <xs:restriction base="xs:string">
        <xs:pattern value="[0-9]{6}(\.[0-9]{6})?(\-.{1,23})?" />
    </xs:restriction>
</xs:simpleType>

<!--*****-->

<!--End Type Definitions -->

<!--*****-->

<xs:annotation>
    <xs:documentation>
        <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Formal Change List</xhtml:h2>
        <xhtml:table ism:ownerProducer="USA" ism:classification="U" id="ChangeHistory">
            <xhtml:caption>Change History</xhtml:caption>
            <xhtml:thead>
                <xhtml:tr>
                    <xhtml:th>Version</xhtml:th>
                    <xhtml:th>Date</xhtml:th>
                    <xhtml:th>By</xhtml:th>
                    <xhtml:th>Description</xhtml:th>
                </xhtml:tr>
            </xhtml:thead>
            <xhtml:tbody>
                <xhtml:tr>
                    <xhtml:td>2021-JAN</xhtml:td>
                    <xhtml:td>2020-12-01</xhtml:td>
                    <xhtml:td>ODNI/CIO/IAD</xhtml:td>
                    <xhtml:td>Initial creation, reference the change history in the DES.</xhtml:td>
                </xhtml:tr>
            </xhtml:tbody>
        </xhtml:table>
    </xs:documentation>
</xs:annotation>
```

```

                </xhtml:tr>
            </xhtml:tbody>
        </xhtml:table>
    </xs:documentation>
</xs:annotation>
</xs:schema>
```



## 2.2 - CDSM-guard.xsd

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns="urn:us:gov:ic:cdsmanifest"
            xmlns:cdsm="urn:us:gov:ic:cdsmanifest"
            xmlns:tdf="urn:us:gov:ic:tdf"
            xmlns:icsfhashv="urn:us:gov:ic:sf:hashverification"
            xmlns:icsf="urn:us:gov:ic:sf"
            targetNamespace="urn:us:gov:ic:cdsmanifest"
            elementFormDefault="qualified"
            attributeFormDefault="qualified"
            version="202101">
  <xs:import namespace="urn:us:gov:ic:sf:hashverification"
            schemaLocation="../IC-SF/HashVerification.xsd"/>
  <xs:import namespace="urn:us:gov:ic:sf" schemaLocation="../IC-SF/IC-SF.xsd"/>
  <xs:element name="CdsManifestAssertion" type="cdsm:CdsAssertionType"/>
  <xs:element name="Originator" type="cdsm:OriginatorType"/>
  <xs:element name="Product" type="cdsm:ProductType"/>
  <xs:element name="PayloadVersion" type="cdsm:PayloadVersionType"/>
  <xs:element name="CPE" type="cdsm:CPEType"/>
  <xs:element name="Arch" type="cdsm:ArchType"/>
  <xs:element name="Routing" type="MediumStringType"/>
  <xs:element name="WorkFlowid" type="MediumStringType"/>
  <xs:element name="Userkey" type="MediumStringType"/>
  <xs:element name="VendorChecksum" type="cdsm:VendorChecksumType"/>
  <xs:element name="VirusScanList" type="cdsm:VirusScanListType"/>
  <xs:element name="VirusScan" type="cdsm:VirusScanType"/>
  <xs:element name="MD5" type="cdsm:MD5Type"/>
  <xs:element name="SHA256" type="cdsm:SHA256Type"/>
  <xs:element name="SHA512" type="cdsm:SHA512Type"/>
  <xs:element name="ScanVendor" type="cdsm:ScanVendorType"/>
  <xs:element name="ScanVersion" type="cdsm:ScanVersionType"/>
  <xs:element name="SignatureDate" type="cdsm:SignatureDateType"/>
  <xs:element name="ScanResult" type="cdsm:ScanResultType"/>
  <xs:attribute name="DESVersion" type="cdsm:DESVersionType"/>
  <xs:attribute name="blockSize" type="cdsm:BlockSizeType"/>
  <xs:attribute name="hashType" type="cdsm:HashTypeType"/>
  <xs:attribute name="totalBlocks" type="cdsm:TotalBlocksType"/>
  <xs:attribute name="totalHash" type="cdsm:HashValueType"/>
  <xs:attribute name="block" type="cdsm:BlockType"/>
  <xs:attribute name="value" type="cdsm:HashValueType"/>
  <xs:complexType name="CdsAssertionType">
    <xs:all>
      <xs:element ref="cdsm:Originator"/>
      <xs:element ref="cdsm:Product"/>
      <xs:element ref="cdsm:PayloadVersion"/>
      <xs:element ref="cdsm:CPE" minOccurs="0"/>
      <xs:element ref="cdsm:Arch"/>
      <xs:element ref="cdsm:Routing" minOccurs="0"/>
      <xs:element ref="cdsm:WorkFlowid" minOccurs="0"/>
      <xs:element ref="cdsm:Userkey" minOccurs="0"/>
      <xs:element ref="icsfhashv:ContentEncodedHashVerification"/>
      <xs:element ref="cdsm:VendorChecksum" minOccurs="0"/>
      <xs:element ref="cdsm:VirusScanList"/>
    </xs:all>
  </xs:complexType>
</xs:schema>
```

```

    </xs:all>
    <xs:attribute ref="cdsm:DESVersion" use="required"/>
    <xs:attribute ref="icsf:DESVersion" use="optional"/>
  </xs:complexType>
  <xs:complexType name="VirusScanListType">
    <xs:sequence>
      <xs:element ref="cdsm:VirusScan" maxOccurs="10"/>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="MediumStringType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="1024"/>
      <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:complexType name="VendorChecksumType">
    <xs:sequence>
      <xs:element ref="cdsm:MD5" minOccurs="0"/>
      <xs:element ref="cdsm:SHA256"/>
      <xs:element ref="cdsm:SHA512" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="VirusScanType">
    <xs:sequence>
      <xs:element ref="cdsm:ScanVendor"/>
      <xs:element ref="cdsm:ScanVersion"/>
      <xs:element ref="cdsm:SignatureDate"/>
      <xs:element ref="cdsm:ScanResult"/>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="OriginatorType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="50"/>
      <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ProductType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="256"/>
      <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="PayloadVersionType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="30"/>
      <xs:pattern value="([a-zA-Z0-9\.-])*"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="CPEType">
    <xs:restriction base="xs:anyURI">

```

```
<xs:minLength value="1"/>
<xs:maxLength value="1024"/>
<xs:pattern value="([c][pP][eE]:/[AHOaho]?(:[A-Za-z0-9\._-~%]{0,6})|(cpe:2\.3:[aho\*-](:(\?*\?)([a-zA-Z0-9\._]|(\[\[\*\?!&#34;#$$$&amp;'\"(\)\+,/:;&lt;=&gt;@\[\]\^`\"{~}~]))+(\?*\?|\"{-}))\{5\}(:([a-zA-Z]{2,3}(-[a-zA-Z]{2}|[0-9]{3}))?)|\"{-}))(:((\?*\?)([a-zA-Z0-9\._]|(\[\[\*\?!&#34;#$$$&amp;'\"(\)\+,/:;&lt;=&gt;@\[\]\^`\"{~}~]))+(\?*\?|\"{-}))\{4\})"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="ArchType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="i386"/>
    <xs:enumeration value="i486"/>
    <xs:enumeration value="i586"/>
    <xs:enumeration value="i686"/>
    <xs:enumeration value="x86_64"/>
    <xs:enumeration value="amd64"/>
    <xs:enumeration value="ia64"/>
    <xs:enumeration value="armv6l"/>
    <xs:enumeration value="armv7l"/>
    <xs:enumeration value="sparc"/>
    <xs:enumeration value="sparc64"/>
    <xs:enumeration value="sparc64v"/>
    <xs:enumeration value="ppc"/>
    <xs:enumeration value="ppc64"/>
    <xs:enumeration value="ppc64le"/>
    <xs:enumeration value="s390"/>
    <xs:enumeration value="s390x"/>
    <xs:enumeration value="64-bit"/>
    <xs:enumeration value="32-bit"/>
    <xs:enumeration value="none"/>
    <xs:enumeration value="noarch"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="BlockSizeType">
  <xs:restriction base="xs:positiveInteger">
    <xs:minInclusive value="134217728"/>
    <xs:maxInclusive value="536870912"/>
    <xs:enumeration value="134217728"/>
    <xs:enumeration value="268435456"/>
    <xs:enumeration value="536870912"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="HashTypeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="CRC"/>
    <xs:enumeration value="MD5"/>
    <xs:enumeration value="SHA256"/>
    <xs:enumeration value="SHA384"/>
    <xs:enumeration value="SHA512"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="TotalBlocksType">
  <xs:restriction base="xs:nonNegativeInteger">
    <xs:minInclusive value="0"/>
    <xs:maxInclusive value="4096"/>
  </xs:restriction>
</xs:simpleType>
```

```
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="BlockType">
  <xs:restriction base="xs:positiveInteger">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="4096"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="HashValueType">
  <xs:restriction base="xs:string">
    <xs:minLength value="16"/>
    <xs:maxLength value="128"/>
    <xs:pattern value="([a-fA-F0-9])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="MD5Type">
  <xs:restriction base="xs:string">
    <xs:minLength value="32"/>
    <xs:maxLength value="32"/>
    <xs:pattern value="([a-fA-F0-9])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SHA256Type">
  <xs:restriction base="xs:string">
    <xs:minLength value="64"/>
    <xs:maxLength value="64"/>
    <xs:pattern value="([a-fA-F0-9])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SHA512Type">
  <xs:restriction base="xs:string">
    <xs:minLength value="128"/>
    <xs:maxLength value="128"/>
    <xs:pattern value="([a-fA-F0-9])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ScanVendorType">
  <xs:restriction base="xs:string">
    <xs:minLength value="3"/>
    <xs:maxLength value="20"/>
    <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ScanVersionType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="20"/>
    <xs:pattern value="([a-zA-Z0-9\.-])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SignatureDateType">
  <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
<xs:simpleType name="ScanResultType">
```

```
        <xs:restriction base="xs:string">
          <xs:pattern value="pass|clean|Pass|Clean"/>
        </xs:restriction>
      </xs:simpleType>
      <xs:simpleType name="DESVersionType">
        <xs:restriction base="xs:string">
          <xs:pattern value="[0-9]{6}(\.[0-9]{6})?(\-{1,23})?" />
        </xs:restriction>
      </xs:simpleType>
    </xs:schema>
```

2.3 - SchemaGuideSchema.xsd

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
            xmlns:xhtml="http://www.w3.org/1999/xhtml-StopBrowserRendering"
            attributeFormDefault="qualified"
            ism:compliesWith="USGov USIC"
            ism:resourceElement="true"
            ism:createDate="2019-09-18"
            ism:DESVersion="201903.202010"
            ism:ISMATCESVersion="202010"
            ism:classification="U"
            ism:ownerProducer="USA"
            version="202101"
            elementFormDefault="qualified"
            targetNamespace="urn:schema:guide:schema:cdsmanifest"
            xml:lang="en">
  <xsd:annotation>
    <xsd:documentation>
      <xhtml:h1 ism:ownerProducer="USA" ism:classification="U">Intelligence Community
Technical Specification XML Data Encoding Specification for Cross Domain System Manifest (CDSM.XML) SchemaGuide</xhtml:h1>
    </xsd:documentation>

    <xsd:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Notices</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U"> Distribution Notice:
This document has been approved for Public Release and is available for use without restriction.

</xhtml:p>
    </xsd:documentation>
    <xsd:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Description</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U"> W3C XML Schema used to
facilitate generation of the SchemaGuide for the XML Data Encoding Specification for
Cross Domain System Manifest (CDSM.XML). </xhtml:p>
    </xsd:documentation>
    <xsd:documentation>
      <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Introduction</xhtml:h2>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U"> This XML Schema file is only
used to produce the schemaGuide for the XML Data Encoding Specification (DES).
Please see the document titled <xhtml:i>
      <xhtml:a href="../../Documents/CDSM/DesCdsml.pdf">XML Data Encoding Specification for
Cross Domain System Manifest Assertion
(CDSM.XML)</xhtml:a>
      </xhtml:i> for a complete description of the encoding as well as list of all
components. </xhtml:p>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U"> It is envisioned that this
schema or its components, as well as other parts of the DES may be overridden for
localized implementations. Therefore, permission to use, copy, modify and distribute
this XML Schema and the other parts of the DES for any purpose is hereby granted in
perpetuity. </xhtml:p>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U"> Please reference the preceding
two paragraphs in all copies or variations. The developers make no representation
about the suitability of the schema or DES for any purpose. It is provided "as is"
without expressed or implied warranty. </xhtml:p>
```

```

    <xhtml:p ism:ownerProducer="USA" ism:classification="U"> If you modify this XML Schema
in any way label your schema as a variant of
(CDSM.XML). </xhtml:p>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U"> Please direct all questions,
bug reports,or suggestions for changes to the points of contact identified in the
document referenced above. </xhtml:p>
  </xsd:documentation>
  <xsd:documentation>
    <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Implementation Notes</xhtml:h2>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">A CDSM.XML instance is an
instance of a CDSM-TDO or a TDO with particular payload and assertions. Its structure is similar
to:</xhtml:p>
    <xhtml:ul>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">A <xhtml:a href="CDSM-TDF_xsd_Element_TrustedDataObject.html#TrustedDataObject">
tdf:TrustedDataObject</xhtml:a> and has the following assertion:
    </xhtml:p>
      <xhtml:ul>
        <xhtml:li ism:ownerProducer="USA" ism:classification="U">
          <xhtml:a href="CDSM_xsd_Element_CdsManifestAssertion.html#CdsManifestAssertion">csm:CdsManifestAssertion</xhtml:a>
        </xhtml:li>
      </xhtml:ul>
    </xhtml:ul>
  </xsd:documentation>

  <xsd:documentation>
    <xhtml:h2 ism:ownerProducer="USA" ism:classification="U">Creators</xhtml:h2>
    <xhtml:p ism:ownerProducer="USA" ism:classification="U">Office of the Director of
National Intelligence Intelligence Community Chief Information Officer</xhtml:p>
  </xsd:documentation>
</xsd:annotation>
  <!-- Import the schema for each "dependent" spec. This schema is only used to generate a SchemaGuide -->

<!-- IRM schema because that is the main spec -->

<xsd:import namespace="urn:us:gov:ic:cdsmanifest" schemaLocation="CDSM.xsd"/>

  <!-- TDF schema because an CDSM.XML goes inside a CDSM-TDO -->

<xsd:import namespace="urn:us:gov:ic:tdf" schemaLocation="../CDSM-TDF/CDSM-TDF.xsd"/>
</xsd:schema>
```