



# **Guide to Schemas for DHZM**

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## **DHZM Schema Guide**

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## Table of Contents

Chapter 1 - Introduction .....	1
1.1 - Purpose .....	1
Chapter 2 - Schema Files .....	2
2.1 - DHZM.xsd .....	2
2.2 - DHZM-guard.xsd .....	22
2.3 - SchemaGuideSchema.xsd .....	28

**Chapter 1 - Introduction**

**1.1 - Purpose**

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

Chapter 2 - Schema Files

2.1 - DHZM.xsd

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns="urn:us:gov:ic:digitalhazmat"
            xmlns:xhtml="http://www.w3.org/1999/xhtml-StopBrowserRendering"
            xmlns:dhzm="urn:us:gov:ic:digitalhazmat"
            xmlns:tdf="urn:us:gov:ic:tdf"
            targetNamespace="urn:us:gov:ic:digitalhazmat"
            elementFormDefault="qualified"
            attributeFormDefault="qualified"
            ism:DESVersion="202111"
            ism:ISMCAICESVersion="202205"
            ism:compliesWith="USGov USIC"
            ism:createDate="2019-09-18"
            ism:resourceElement="true"
            ism:classification="U"
            ism:ownerProducer="USA"
            version="202111">
  <xs:annotation>
    <xs:documentation>
      <xhtml:h1 ism:ownerProducer="USA" ism:classification="U">Intelligence Community Technical Specification XML Data
        Encoding Specification for DigitalHazMat Assertion
        (DHZM.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 DigitalHazMat Assertion
        (DHZM.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/DHZM/DesDhzmXml.pdf">XML
            Data Encoding Specification for DigitalHazMat Assertion</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
```

assertions:

```

    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 DHZM.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">A DHZM.XML instance is an
        instance of a TDO with a particular payload and assertions. Its structure is similar
        to:</xhtml:p>
    <xhtml:ul>
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            <xhtml:a href="DHZM-TDF_xsd_Element_TrustedDataObject.html#TrustedDataObject">DHZM-TDF tdf:TrustedDataObject</xhtml:a> has the following
        </xhtml:p>
        <xhtml:ul>
            <xhtml:li ism:ownerProducer="USA" ism:classification="U">
                <xhtml:a href="DHZM_xsd_Element_DigitalHazMatAssertion.html#DigitalHazMatAssertion">dhzm:DigitalHazMatAssertion</xhtml:a>
            </xhtml:li>
            <xhtml:li ism:ownerProducer="USA" ism:classification="U">
                <xhtml:a href="DHZM_xsd_Element_ProvenanceAssertion.html#ProvenanceAssertion">dhzm:ProvenanceAssertion</xhtml:a>
            </xhtml:li>
        </xhtml:ul>
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">A DHZM.XML instance can also be used with
            DHZMC-TDF which does not have tdf:HandlingAssertions.
            to:</xhtml:p>
    </xhtml:ul>
</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="DigitalHazMatAssertion" type="dhzm:DigitalHazMatAssertionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        The root node of a digital hazmat assertion for cross domain transfer.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<!-- Root Element -->

<xs:element name="ProvenanceAssertion" type="dhzm:ProvenanceAssertionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        The root node of a provenance assertion for cross domain transfer.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="DigitalHazMat" type="dhzm:DigitalHazMatType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        A notice on the assertion to inform the user not to decrypt the object,
        even though they may have the key with the payload,
        unless they are taking proper precautions.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentCollectionTimestamp"
  type="dhzm:ContentCollectionTimestampType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Date of collection of artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentSize" type="dhzm:ContentSizeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Size of the entire payload in bytes.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
```

```
</xs:element>

<xs:element name="ContentEncodingMethod" type="dhzm:ContentEncodingMethodType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Encoding to provide obfuscation to original data to
        prevent accidental execution or opening.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentEncodedSize" type="dhzm:ContentEncodedSizeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Size of the encoded content in bytes.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentCollectionHost" type="dhzm:ContentCollectionHostType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Host collection for artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentCollectionMethod" type="dhzm:ContentCollectionMethodType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Method of collection for artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentCollectionHostList"
  type="dhzm:ContentCollectionHostListType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        List of hosts collection for artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>
```



```
<xs:element name="ContentCollectionMethodList"
  type="dhzm:ContentCollectionMethodListType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        List of methods of collection for artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="ContentCollectionExternalId"
  type="dhzm:ContentCollectionExternalIdType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        External reference (mission) to collection.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="OriginContentUid" type="dhzm:OriginContentUidType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        User ID of the artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="OriginContentOwner" type="dhzm:OriginContentOwnerType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Owner of the artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="OriginContentGroup" type="dhzm:OriginContentGroupType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Group ownership of the artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
</xs:element>

<xs:element name="OriginContentInode" type="dhzm:OriginContentInodeType">
  <xs:annotation>
```

```

        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Inode of the artifact.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentDevice" type="dhzm:OriginContentDeviceType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Any identifier for the device on which the payload artifact was found
                or from which it was collected. e.g., a filesystem UUID for files collected
                from a single volume, a hard drive serial number for a disk image, or
                a MAC for the NIC on which a packet dump was captured.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentPathList" type="dhzm:OriginContentPathListType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                List of full paths from the root folder (break for each folder).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentPath" type="dhzm:OriginContentPathType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Full path from the root folder (break for each folder).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentFilename" type="dhzm:OriginContentFilenameType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Filename of the artifact.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentCreated" type="dhzm:OriginContentCreatedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
```

```

        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            Date artifact was created (from host filesystem).
        </xhtml:p>
    </xs:documentation>
</xs:annotation>
</xs:element>

<xs:element name="OriginContentLastModified"
    type="dhzm:OriginContentLastModifiedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Date artifact was last modified (from host filesystem).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentLastAccessed"
    type="dhzm:OriginContentLastAccessedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Date artifact was last accessed (from host filesystem).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentOS" type="dhzm:OriginContentOSType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Operating Systems (OS) of where the artifact was collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentOSVersion" type="dhzm:OriginContentOSVersionType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Operating Systems (OS) version of where the artifact was collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

<xs:element name="OriginContentArch" type="dhzm:OriginContentArchType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                CPU Architecture of where the artifact was collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
</xs:element>

```

```

        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="OriginContentSourceMac" type="dhzm:OriginContentSourceMacType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          MAC address of where artifact is collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="OriginContentSourceIpv4" type="dhzm:OriginContentSourceIpv4Type">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          IPv4 adress of where the artifact is collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="OriginContentSourceIpv6" type="dhzm:OriginContentSourceIpv6Type">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          IPv6 adress of where the artifact is collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="OriginContentSourceSystem"
    type="dhzm:OriginContentSourceSystemType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          A symbolic name for domain/network (FQDN) where the artifact is collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

  <xs:element name="SourceDomain" type="dhzm:SourceDomainType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          A symbolic name for domain/network where the artifact is sourced.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
  </xs:element>

```

```

    </xs:element>

    <xs:element name="DestinationDomain" type="dhzm:DestinationDomainType">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            A symbolic name for domain/network where the artifact is destined.
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
    </xs:element>

    <xs:element name="WorkFlowId" type="dhzm:WorkFlowIdType">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            An identifier to associate this document with a reference in an external system, such
            as a project management or ticket tracking tool. Specific meaning is user-defined. When
            suitable for the use case, an RFC 4122 compliant UUID is recommended.
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
    </xs:element>

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

<!-- End Elements -->

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

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

<!-- Start Attributes -->

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

<xs:attribute name="DESVersion" type="dhzm: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>

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

<!--End Attributes -->

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

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

<!--Start Type Definitions          -->

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

<xs:complexType name="DigitalHazMatAssertionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        The root node of a digital hazmat assertion for cross domain transfer.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:all>
    <!-- required -->

    <xs:element ref="dhzm:DigitalHazMat" minOccurs="1" maxOccurs="1"/>
  </xs:all>
  <xs:attribute ref="dhzm:DESVersion" use="required"/>
</xs:complexType>

<xs:complexType name="ProvenanceAssertionType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        The root node of a provenance assertion for cross domain transfer.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:all>
    <!-- required -->

    <xs:element ref="dhzm:ContentCollectionTimestamp" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="dhzm:ContentSize" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="dhzm:ContentEncodedSize" minOccurs="1" maxOccurs="1"/>
    <xs:element ref="dhzm:ContentEncodingMethod" minOccurs="1" maxOccurs="1"/>

    <!-- optional -->

    <xs:element ref="dhzm:ContentCollectionHostList" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:ContentCollectionMethodList" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:ContentCollectionExternalId" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentUid" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentOwner" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentGroup" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentInode" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentDevice" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentPathList" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentFilename" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentCreated" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentLastModified" minOccurs="0" maxOccurs="1"/>
    <xs:element ref="dhzm:OriginContentLastAccessed" minOccurs="0" maxOccurs="1"/>
  </xs:all>
</xs:complexType>
```

```
<xs:element ref="dhzm:OriginContentOS" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentOSVersion" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentArch" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentSourceMac" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentSourceIpv4" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentSourceIpv6" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:OriginContentSourceSystem" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:SourceDomain" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:DestinationDomain" minOccurs="0" maxOccurs="1"/>
<xs:element ref="dhzm:WorkflowId" minOccurs="0" maxOccurs="1"/>
</xs:all>
<xs:attribute ref="dhzm:DESVersion" use="required"/>
</xs:complexType>

<xs:simpleType name="ContentCollectionTimestampType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Date of collection of artifact.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:dateTime"/>
</xs:simpleType>

<xs:simpleType name="ContentSizeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Size of the entire payload in bytes.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:integer"/>
</xs:simpleType>

<xs:simpleType name="ContentEncodingMethodType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Encoding to provide obfuscation to original data to
        prevent accidental execution or opening.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:enumeration value="XOR"/>
    <xs:enumeration value="ENCRYPTED"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ContentEncodedSizeType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
```

```
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            Size of the encoded content in bytes.
        </xhtml:p>
    </xs:documentation>
</xs:annotation>
<xs:restriction base="xs:integer"/>
</xs:simpleType>

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

<xs:simpleType name="ContentCollectionHostType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Host collection for artifact.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:minLength value="1" />
        <xs:maxLength value="255" />
        <xs:pattern value="([a-zA-Z0-9_\. -])*" />
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ContentCollectionMethodType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Method of collection for artifact.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:enumeration value="LOG" />
        <xs:enumeration value="FILE" />
        <xs:enumeration value="MEMORY-DUMP" />
        <xs:enumeration value="PACKET-CAPTURE" />
        <xs:enumeration value="OTHER" />
    </xs:restriction>
</xs:simpleType>

<xs:complexType name="ContentCollectionHostListType">
```



```

        <xs:annotation>
          <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
              List of hosts collection for artifact.
            </xhtml:p>
          </xs:documentation>
        </xs:annotation>
      <xs:sequence>
        <xs:element ref="dhzm:ContentCollectionHost" minOccurs="1" maxOccurs="5"/>
      </xs:sequence>
    </xs:complexType>

    <xs:complexType name="ContentCollectionMethodListType">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            List of methods of collection for artifact.
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
      <xs:sequence>
        <xs:element ref="dhzm:ContentCollectionMethod" minOccurs="1" maxOccurs="5"/>
      </xs:sequence>
    </xs:complexType>

    <xs:complexType name="OriginContentPathListType">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            List of full paths from the root folder (break for each folder).
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
      <xs:sequence>
        <xs:element ref="dhzm:OriginContentPath" minOccurs="1" maxOccurs="256"/>
      </xs:sequence>
    </xs:complexType>

    <xs:simpleType name="ContentCollectionExternalIdType">
      <xs:annotation>
        <xs:documentation xml:lang="en">
          <xhtml:p ism:ownerProducer="USA" ism:classification="U">
            External reference (mission) to collection.
          </xhtml:p>
        </xs:documentation>
      </xs:annotation>
      <xs:restriction base="xs:anyURI">
        <xs:maxLength value="1024"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="OriginContentUIdType">
      <xs:annotation>
        <xs:documentation xml:lang="en">

```

```
                <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                    User ID of the artifact.
                </xhtml:p>
            </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="1"/>
            <xs:maxInclusive value="65335"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="OriginContentOwnerType">
        <xs:annotation>
            <xs:documentation xml:lang="en">
                <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                    Owner of the artifact.
                </xhtml:p>
            </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
            <xs:maxLength value="255"/>
            <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="OriginContentGroupType">
        <xs:annotation>
            <xs:documentation xml:lang="en">
                <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                    Group ownership of the artifact.
                </xhtml:p>
            </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:minLength value="1"/>
            <xs:maxLength value="255"/>
            <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
        </xs:restriction>
    </xs:simpleType>

    <xs:simpleType name="OriginContentInodeType">
        <xs:annotation>
            <xs:documentation xml:lang="en">
                <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                    Inode of the artifact.
                </xhtml:p>
            </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:integer"/>
    </xs:simpleType>

    <xs:simpleType name="OriginContentDeviceType">
        <xs:annotation>
```

```

        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Any identifier for the device on which the payload artifact was found
                or from which it was collected. e.g., a filesystem UUID for files collected
                from a single volume, a hard drive serial number for a disk image, or
                a MAC for the NIC on which a packet dump was captured.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:maxLength value="255"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentCreatedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Date artifact was created (from host filesystem).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>

<xs:simpleType name="OriginContentLastModifiedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Date artifact was last modified (from host filesystem).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>

<xs:simpleType name="OriginContentLastAccessedType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Date artifact was last accessed (from host filesystem).
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>

<xs:simpleType name="OriginContentOSType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Operating Systems (OS) of where the artifact was collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:maxLength value="255"/>
    </xs:restriction>
</xs:simpleType>
```

```

    </xs:annotation>
    <xs:restriction base="xs:string">
      <xs:enumeration value="windows"/>
      <xs:enumeration value="macOS"/>
      <xs:enumeration value="linux"/>
      <xs:enumeration value="android"/>
      <xs:enumeration value="iOS"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="OriginContentOSVersionType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          Operating Systems (OS) version of where the artifact was collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="255"/>
      <xs:pattern value="([a-zA-Z0-9\.-])*"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="OriginContentArchType">
    <xs:annotation>
      <xs:documentation xml:lang="en">
        <xhtml:p ism:ownerProducer="USA" ism:classification="U">
          CPU Architecture of where the artifact was collected.
        </xhtml:p>
      </xs:documentation>
    </xs:annotation>
    <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:restriction>
  </xs:simpleType>

```

```

        <xs:enumeration value="noarch"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentSourceMacType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                MAC address of where artifact is collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:hexBinary">
        <xs:minLength value="6"/>
        <xs:maxLength value="7"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentSourceIpv4Type">
    <xs:annotation>
        <xs:documentation>
            <xhtml:p>A four-byte IPv4 address of the system where the payload was collected.</xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:hexBinary">
        <xs:length value="4"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentSourceIpv6Type">
    <xs:annotation>
        <xs:documentation>
            <xhtml:p>A 16-byte IPv6 address of the system where the payload was collected.</xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:hexBinary">
        <xs:length value="16"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentSourceSystemType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                A symbolic name for domain/network (FQDN) where the artifact is collected.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9\._-])*"/>
    </xs:restriction>
</xs:simpleType>

```

```
<xs:simpleType name="SourceDomainType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        A symbolic name for domain/network where the artifact is sourced.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="255"/>
    <xs:pattern value="([a-zA-Z0-9])*"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="DestinationDomainType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        A symbolic name for domain/network where the artifact is destined.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="255"/>
    <xs:pattern value="([a-zA-Z0-9])*"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="DigitalHazMatType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        A notice on the assertion to inform the user not to decrypt the object,
        even though they may have the key with the payload,
        unless they are taking proper precautions.
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:pattern value="\s*This\s+element\s+describes\s+an\s+obfuscated\s+payload\s+which\s+is\s+either\s+known\s+or\s+suspected\s+to\s+contain\s+software\s+or\s
+similar\s+data\s+which\s+could\s+cause\s+harm\s+to\s+information\s+processing\s+systems\.\s+It\s+has\s+been\s+encapsulated\s+to\s+render\s+it\s+inert\.\s+Any\s+attempt\s+to\s+decode\s+this\s
+payload\s+outside\s+a\s+safe\s+analysis\s+environment\s+may\s+pose\s+a\s+danger\s+to\s+your\s+system\.\s*" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentPathType">
  <xs:annotation>
    <xs:documentation xml:lang="en">
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        Full path from the root folder (break for each folder).
      </xhtml:p>
    </xs:documentation>
  </xs:annotation>
  <xs:restriction base="xs:string">
    <xs:pattern value="([a-zA-Z0-9\\])*"/>
  </xs:restriction>
</xs:simpleType>
```

```

        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:anyURI">
        <xs:maxLength value="1024"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="OriginContentFilenameType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                Filename of the artifact.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="1024"/>
    </xs:restriction>
</xs:simpleType>

<xs:simpleType name="WorkflowIdType">
    <xs:annotation>
        <xs:documentation xml:lang="en">
            <xhtml:p ism:ownerProducer="USA" ism:classification="U">
                An identifier to associate this document with a reference in an external system, such
                as a project management or ticket tracking tool. Specific meaning is user-defined. When
                suitable for the use case, an RFC 4122 compliant UUID is recommended.
            </xhtml:p>
        </xs:documentation>
    </xs:annotation>
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9\s:\.\_\-])*/>
    </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>
				</xs:schema>



## 2.2 - DHZM-guard.xsd

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns="urn:us:gov:ic:digitalhazmat"
            xmlns:dhzm="urn:us:gov:ic:digitalhazmat"
            xmlns:tdf="urn:us:gov:ic:tdf"
            targetNamespace="urn:us:gov:ic:digitalhazmat"
            elementFormDefault="qualified"
            attributeFormDefault="qualified"
            version="202111">
  <xs:element name="DigitalHazMatAssertion" type="dhzm:DigitalHazMatAssertionType"/>
  <xs:element name="ProvenanceAssertion" type="dhzm:ProvenanceAssertionType"/>
  <xs:element name="DigitalHazMat" type="dhzm:DigitalHazMatType"/>
  <xs:element name="ContentCollectionTimestamp"
            type="dhzm:ContentCollectionTimestampType"/>
  <xs:element name="ContentSize" type="dhzm:ContentSizeType"/>
  <xs:element name="ContentEncodingMethod" type="dhzm:ContentEncodingMethodType"/>
  <xs:element name="ContentEncodedSize" type="dhzm:ContentEncodedSizeType"/>
  <xs:element name="ContentCollectionHost" type="dhzm:ContentCollectionHostType"/>
  <xs:element name="ContentCollectionMethod" type="dhzm:ContentCollectionMethodType"/>
  <xs:element name="ContentCollectionHostList"
            type="dhzm:ContentCollectionHostListType"/>
  <xs:element name="ContentCollectionMethodList"
            type="dhzm:ContentCollectionMethodListType"/>
  <xs:element name="ContentCollectionExternalId"
            type="dhzm:ContentCollectionExternalIdType"/>
  <xs:element name="OriginContentUid" type="dhzm:OriginContentUidType"/>
  <xs:element name="OriginContentOwner" type="dhzm:OriginContentOwnerType"/>
  <xs:element name="OriginContentGroup" type="dhzm:OriginContentGroupType"/>
  <xs:element name="OriginContentInode" type="dhzm:OriginContentInodeType"/>
  <xs:element name="OriginContentDevice" type="dhzm:OriginContentDeviceType"/>
  <xs:element name="OriginContentPathList" type="dhzm:OriginContentPathListType"/>
  <xs:element name="OriginContentPath" type="dhzm:OriginContentPathType"/>
  <xs:element name="OriginContentFilename" type="dhzm:OriginContentFilenameType"/>
  <xs:element name="OriginContentCreated" type="dhzm:OriginContentCreatedType"/>
  <xs:element name="OriginContentLastModified"
            type="dhzm:OriginContentLastModifiedType"/>
  <xs:element name="OriginContentLastAccessed"
            type="dhzm:OriginContentLastAccessedType"/>
  <xs:element name="OriginContentOS" type="dhzm:OriginContentOSType"/>
  <xs:element name="OriginContentOSVersion" type="dhzm:OriginContentOSVersionType"/>
  <xs:element name="OriginContentArch" type="dhzm:OriginContentArchType"/>
  <xs:element name="OriginContentSourceMac" type="dhzm:OriginContentSourceMacType"/>
  <xs:element name="OriginContentSourceIpv4" type="dhzm:OriginContentSourceIpv4Type"/>
  <xs:element name="OriginContentSourceIpv6" type="dhzm:OriginContentSourceIpv6Type"/>
  <xs:element name="OriginContentSourceSystem"
            type="dhzm:OriginContentSourceSystemType"/>
  <xs:element name="SourceDomain" type="dhzm:SourceDomainType"/>
  <xs:element name="DestinationDomain" type="dhzm:DestinationDomainType"/>
  <xs:element name="WorkflowId" type="dhzm:WorkflowIdType"/>
  <xs:attribute name="DESVersion" type="dhzm:DESVersionType"/>
  <xs:complexType name="DigitalHazMatAssertionType">
    <xs:all>
      <xs:element ref="dhzm:DigitalHazMat"/>
    </xs:all>
  </xs:complexType>

```

```

    </xs:all>
    <xs:attribute ref="dhzm:DESVersion" use="required"/>
  </xs:complexType>
  <xs:complexType name="ProvenanceAssertionType">
    <xs:all>
      <xs:element ref="dhzm:ContentCollectionTimestamp"/>
      <xs:element ref="dhzm:ContentSize"/>
      <xs:element ref="dhzm:ContentEncodedSize"/>
      <xs:element ref="dhzm:ContentEncodingMethod"/>
      <xs:element ref="dhzm:ContentCollectionHostList" minOccurs="0"/>
      <xs:element ref="dhzm:ContentCollectionMethodList" minOccurs="0"/>
      <xs:element ref="dhzm:ContentCollectionExternalId" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentUid" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentOwner" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentGroup" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentInode" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentDevice" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentPathList" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentFilename" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentCreated" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentLastModified" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentLastAccessed" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentOS" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentOSVersion" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentArch" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentSourceMac" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentSourceIpv4" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentSourceIpv6" minOccurs="0"/>
      <xs:element ref="dhzm:OriginContentSourceSystem" minOccurs="0"/>
      <xs:element ref="dhzm:SourceDomain" minOccurs="0"/>
      <xs:element ref="dhzm:DestinationDomain" minOccurs="0"/>
      <xs:element ref="dhzm:WorkflowId" minOccurs="0"/>
    </xs:all>
    <xs:attribute ref="dhzm:DESVersion" use="required"/>
  </xs:complexType>
  <xs:simpleType name="ContentCollectionTimestampType">
    <xs:restriction base="xs:dateTime"/>
  </xs:simpleType>
  <xs:simpleType name="ContentSizeType">
    <xs:restriction base="xs:integer"/>
  </xs:simpleType>
  <xs:simpleType name="ContentEncodingMethodType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="XOR"/>
      <xs:enumeration value="ENCRYPTED"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="ContentEncodedSizeType">
    <xs:restriction base="xs:integer"/>
  </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:simpleType>
<xs:simpleType name="ContentCollectionHostType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="255"/>
    <xs:pattern value="([a-zA-Z0-9_\. -])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ContentCollectionMethodType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="LOG"/>
    <xs:enumeration value="FILE"/>
    <xs:enumeration value="MEMORY-DUMP"/>
    <xs:enumeration value="PACKET-CAPTURE"/>
    <xs:enumeration value="OTHER"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="ContentCollectionHostListType">
  <xs:sequence>
    <xs:element ref="dhzm:ContentCollectionHost" maxOccurs="5"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ContentCollectionMethodListType">
  <xs:sequence>
    <xs:element ref="dhzm:ContentCollectionMethod" maxOccurs="5"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="OriginContentPathListType">
  <xs:sequence>
    <xs:element ref="dhzm:OriginContentPath" maxOccurs="256"/>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="ContentCollectionExternalIdType">
  <xs:restriction base="xs:anyURI">
    <xs:maxLength value="1024"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentUidType">
  <xs:restriction base="xs:integer">
    <xs:minInclusive value="1"/>
    <xs:maxInclusive value="65335"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentOwnerType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="255"/>
    <xs:pattern value="([a-zA-Z0-9\s_-])*"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentGroupType">
  <xs:restriction base="xs:string">
    <xs:minLength value="1"/>
    <xs:maxLength value="255"/>
  </xs:restriction>
</xs:simpleType>
```

```
        <xs:pattern value="([a-zA-Z0-9\s_-])*/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentInodeType">
    <xs:restriction base="xs:integer"/>
</xs:simpleType>
<xs:simpleType name="OriginContentDeviceType">
    <xs:restriction base="xs:string">
        <xs:maxLength value="255"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentCreatedType">
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
<xs:simpleType name="OriginContentLastModifiedType">
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
<xs:simpleType name="OriginContentLastAccessedType">
    <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
<xs:simpleType name="OriginContentOSType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="windows"/>
        <xs:enumeration value="macOS"/>
        <xs:enumeration value="linux"/>
        <xs:enumeration value="android"/>
        <xs:enumeration value="iOS"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentOSVersionType">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9\.-])*/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentArchType">
    <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:restriction>
</xs:simpleType>
```

```
        <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="OriginContentSourceMacType">
    <xs:restriction base="xs:hexBinary">
        <xs:minLength value="6"/>
        <xs:maxLength value="7"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentSourceIpv4Type">
    <xs:restriction base="xs:hexBinary">
        <xs:length value="4"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentSourceIpv6Type">
    <xs:restriction base="xs:hexBinary">
        <xs:length value="16"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentSourceSystemType">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9\._-])*"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SourceDomainType">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9])*"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="DestinationDomainType">
    <xs:restriction base="xs:string">
        <xs:minLength value="1"/>
        <xs:maxLength value="255"/>
        <xs:pattern value="([a-zA-Z0-9])*"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="DigitalHazMatType">
    <xs:restriction base="xs:string">
        <xs:pattern value="\s*This\s+element\s+describes\s+an\s+obfuscated\s+payload\s+which\s+is\s+either\s+known\s+or\s+suspected\s+to\s+contain\s+software\s+or\s+similar\s
+data\s+which\s+could\s+cause\s+harm\s+to\s+information\s+processing\s+systems\.\s+It\s+has\s+been\s+encapsulated\s+to\s+render\s+it\s+inert\.\s+Any\s+attempt\s+to\s+decode\s+this\s+payload\s
+outside\s+a\s+safe\s+analysis\s+environment\s+may\s+pose\s+a\s+danger\s+to\s+your\s+system\.\s*" />
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="OriginContentPathType">
    <xs:restriction base="xs:anyURI">
        <xs:maxLength value="1024"/>
    </xs:restriction>
</xs:simpleType>
```

```

    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="OriginContentFilenameType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="1024"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="WorkflowIdType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
      <xs:maxLength value="255"/>
      <xs:pattern value="([a-zA-Z0-9\s:\.\_~])*"/>
    </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="202111"
            ism:ISMCAICESVersion="202205"
            ism:classification="U"
            ism:ownerProducer="USA"
            version="202111"
            elementFormDefault="qualified"
            targetNamespace="urn:schema:guide:schema:digitalhazmat"
            xml:lang="en">
  <xsd:annotation>
    <xsd:documentation>
      <xhtml:h1 ism:ownerProducer="USA" ism:classification="U">Intelligence Community
Technical Specification XML Data Encoding Specification for DigitalHazMat Assertion (DHZM.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
DigitalHazMat Assertion (DHZM.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/DHZM/DesDhzmXml.pdf">XML Data Encoding Specification for
DigitalHazMat Assertion
(DHZM.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
(DHZM.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 DHZM.XML instance is an
instance of a TDO with a particular payload and assertions. Its structure is similar
to:</xhtml:p>
    <xhtml:ul>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">
        <xhtml:a href="DHZM-TDF_xsd_Element_TrustedDataObject.html#TrustedDataObject">DHZM-TDF tdf:TrustedDataObject</xhtml:a> has the following assertions:
</xhtml:p>
        <xhtml:ul>
          <xhtml:li ism:ownerProducer="USA" ism:classification="U">
            <xhtml:a href="DHZM_xsd_Element_DigitalHazMatAssertion.html#DigitalHazMatAssertion">dhzm:DigitalHazMatAssertion</xhtml:a>
          </xhtml:li>
          <xhtml:li ism:ownerProducer="USA" ism:classification="U">
            <xhtml:a href="DHZM_xsd_Element_ProvenanceAssertion.html#ProvenanceAssertion">dhzm:ProvenanceAssertion</xhtml:a>
          </xhtml:li>
        </xhtml:ul>
      <xhtml:p ism:ownerProducer="USA" ism:classification="U">A DHZM.XML instance can also be used with
DHZMC-TDF which does not have tdf:HandlingAssertions.
to:</xhtml:p>
    </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 -->

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

  <xsd:import namespace="urn:us:gov:ic:digitalhazmat" schemaLocation="DHZM.xsd"/>

  <!-- TDF schema because an DHZM.XML goes inside a DHZMC-TDO, DHZM-TDO -->

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