



Information technology — Multimedia application format (MPEG-A) —

Part 6: Professional archival application format

TECHNICAL CORRIGENDUM 1

Technologies de l'information — Format pour application multimédia (MPEG-A) —

Partie 6: Format pour application d'archivage professionnel

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO/IEC 23000-6:2009 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

In the following, changes in existing text and tables are highlighted in gray.

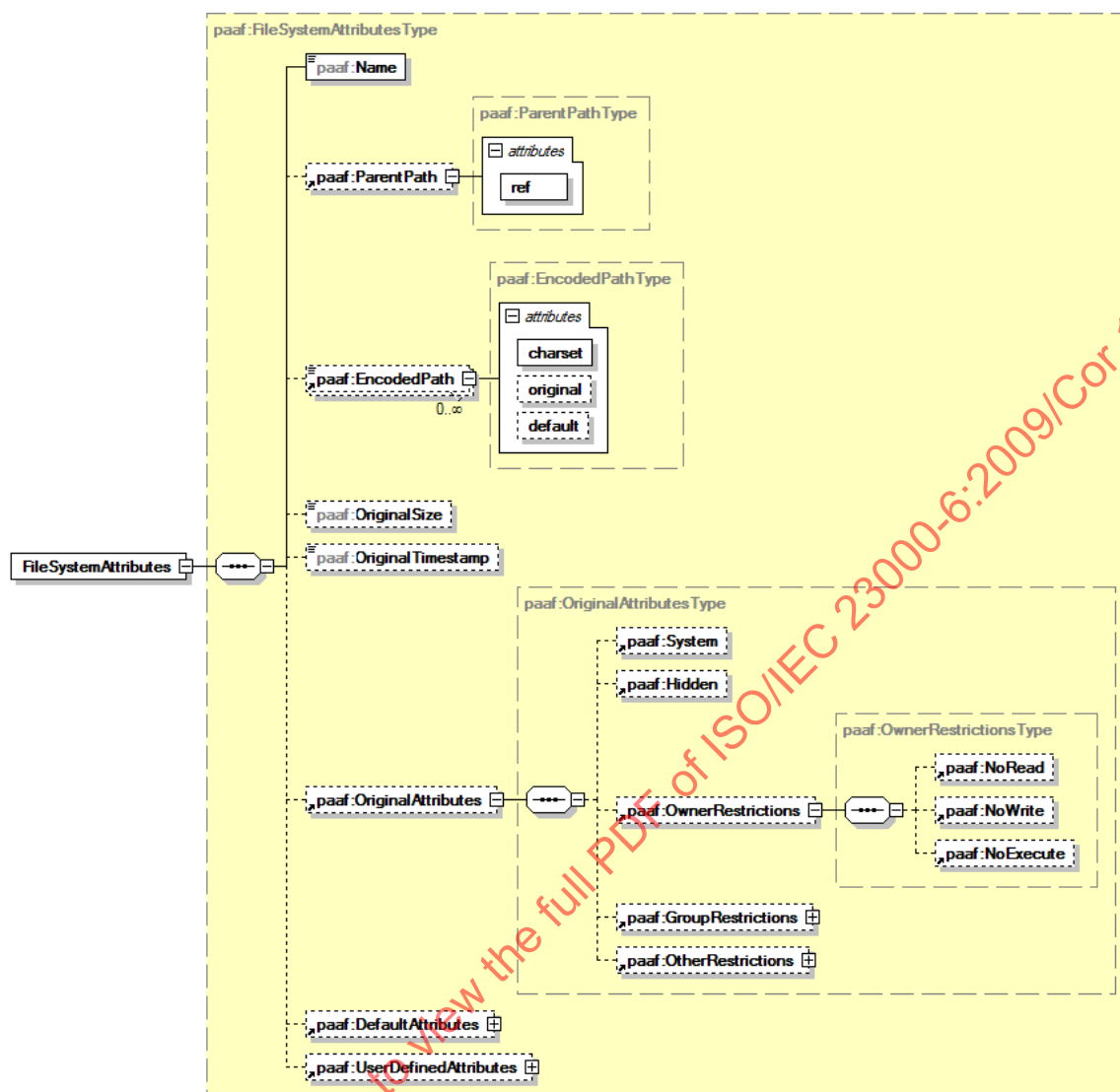
In Clause 2 Normative references, replace:

ISO 14721:2003, Space data and information transfer systems — Open archival information system — Reference mode

with:

ISO 14721:2003, Space data and information transfer systems — Open archival information system — Reference **model**

In 6.3 File Attribute Model, replace Figure 6 with:



In 7.2 MPEG-7 Multimedia Description Scheme Profile for PA-AF, Table 5, replace "PA-AF MAF" with "PA-AF".

In A.1 MPEG-21 DIDL 2nd Edition Profile for PA-AF Schema Definition, replace Table A.2 with:

Table A.2 — DIDL schema definition for PA-AF

```
<?xml version="1.0"?>
<schema targetNamespace="urn:mpeg:mpeg21:2002:02-DIDL-NS"
xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:didl="urn:mpeg:mpeg21:2002:02-DIDL-NS"
xmlns:didmodel="urn:mpeg:mpeg21:2002:02-DIDMODEL-NS"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="0.01">
  <!--=====
  Import abstract types representing DID model entities:
  =====>
  <import namespace="urn:mpeg:mpeg21:2002:02-DIDMODEL-NS"
schemaLocation="didmodelforPAAF.xsd"/>
```

```

<!--=====-->
<attributeGroup name="ID_ATTRS">
  <attribute name="id" type="ID" use="optional"/>
</attributeGroup>
<!--=====-->

```

Container element may contain any number of Container elements followed by any number of Items.

```

=====-->
<element name="Container" type="didl:ContainerType"
substitutionGroup="didmodel:Container"/>
<complexType name="ContainerType">
  <complexContent>
    <extension base="didmodel:ContainerType">
      <sequence>
        <element ref="didmodel:Descriptor" minOccurs="0"
maxOccurs="unbounded"/>
        <element ref="didmodel:Container" minOccurs="0"
maxOccurs="unbounded"/>
        <element ref="didmodel:Item" minOccurs="0" maxOccurs="unbounded"/>
      </sequence>
      <attributeGroup ref="didl:ID_ATTRS"/>
      <anyAttribute namespace="##other" processContents="lax"/>
    </extension>
  </complexContent>
</complexType>
<!--=====-->

```

Item element contains any number Choice elements, followed by at least one Item or Component element. An Item may be conditional.

```

=====-->
<element name="Item" type="didl:ItemType" substitutionGroup="didmodel:Item"/>
<complexType name="ItemType">
  <complexContent>
    <extension base="didmodel:ItemType">
      <sequence>
        <element ref="didmodel:Descriptor" minOccurs="0"
maxOccurs="unbounded"/>
        <element ref="didmodel:Component" maxOccurs="unbounded"/>
      </sequence>
      <attributeGroup ref="didl:ID_ATTRS"/>
    </extension>
  </complexContent>
</complexType>
<!--=====-->

```

A Descriptor contains descriptive data about its parent element.

The Descriptor may be resource-based (comprised of a single Component), or text-based (comprised of a single Statement). A Descriptor may be conditional.

```

=====-->
<element name="Descriptor" type="didl:DescriptorType"
substitutionGroup="didmodel:Descriptor"/>
<complexType name="DescriptorType">

```

```

<complexContent>
  <extension base="didmodel:DescriptorType">
    <sequence>
      <element ref="didmodel:Statement"/>
    </sequence>
    <attributeGroup ref="didl:ID_ATTRS"/>
  </extension>
</complexContent>
</complexType>
<!--=====

```

A Statement contains textual descriptive data within a Descriptor.

Attribs:

MimeType - A string identifying the type of metadata

```

=====-->
<element name="Statement" type="didl:StatementType"
substitutionGroup="didmodel:Statement"/>
<complexType name="StatementType" mixed="true">
  <complexContent mixed="true">
    <extension base="didmodel:StatementType">
      <sequence>
        <any namespace="##any" processContents="lax" minOccurs="0"/>
      </sequence>
      <attribute name="mimeType" type="string" use="required"/>
    </extension>
  </complexContent>
</complexType>
<!--=====

```

Component element contains one or more Resource elements, followed by any number of Anchor elements.

A Component may be conditional.

```

=====-->
<element name="Component" type="didl:ComponentType"
substitutionGroup="didmodel:Component"/>
<complexType name="ComponentType">
  <complexContent>
    <extension base="didmodel:ComponentType">
      <sequence>
        <element ref="didmodel:Resource"/>
      </sequence>
      <attributeGroup ref="didl:ID_ATTRS"/>
    </extension>
  </complexContent>
</complexType>
<!--=====

```

Resource element contains or points to binary data. The contained data may be binary or any valid XML element.

Attribs:

mimeType - An identifier of a recognized scheme indicating the type of the resource.

ref - A URI from which the resource data can be obtained

```

=====-->
<element name="Resource" type="didl:ResourceType"
substitutionGroup="didmodel:Resource"/>
<complexType name="ResourceType" mixed="true">
  <complexContent mixed="true">
    <extension base="didmodel:ResourceType">
      <attribute name="mimeType" type="string" use="required"/>
      <attribute name="ref" type="anyURI"/>
      <attribute name="contentEncoding" type="NMTOKENS"/>
    </extension>
  </complexContent>
</complexType>
<!-- elements from here onward are unique to the DIDL representation-->
<!--=====-->

DIDL element may contain exactly one Container

=====-->
<element name="DIDL" type="didl:DIDLType"/>
<complexType name="DIDLType">
  <sequence>
    <element ref="didmodel:Container"/>
  </sequence>
  <attribute name="DIDLDocumentId" type="anyURI"/>
</complexType>
</schema>

```

In A.2 File Attribute Model Schema Definition, replace Table A.3 with:

Table A.3 — File attribute model schema definition

```

<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="urn:mpeg:mpeg21:2007:01-PAAF-NS"
xmlns:paaf="urn:mpeg:mpeg21:2007:01-PAAF-NS"
xmlns:mpeg7="urn:mpeg:mpeg7:schema:2001" xmlns="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="urn:mpeg:mpeg7:schema:2001"
schemaLocation="Mpeg7MDSforPAAF.xsd"/>
  <element name="FileSystemAttributes" type="paaf:FileSystemAttributesType"/>
  <complexType name="FileSystemAttributesType">
    <sequence>
      <element name="Name" type="string"/>
      <element ref="paaf:ParentPath" minOccurs="0"/>
      <element ref="paaf:EncodedPath" minOccurs="0" maxOccurs="unbounded"/>
      <element name="OriginalSize" type="unsignedLong" minOccurs="0"/>
      <element name="OriginalTimestamp" type="mpeg7:timePointType" minOccurs="0"/>
      <element ref="paaf:OriginalAttributes" minOccurs="0"/>
      <element ref="paaf:DefaultAttributes" minOccurs="0"/>
      <element ref="paaf:UserDefinedAttributes" minOccurs="0"/>
      <!--Validation Rule: optional for directory but has to present for file-->
    </sequence>
  </complexType>
  <element name="NoRead" type="paaf:NoReadType"/>
  <complexType name="NoReadType"/>
  <element name="NoWrite" type="paaf:NoWriteType"/>
  <complexType name="NoWriteType"/>
  <element name="NoExecute" type="paaf:NoExecuteType"/>
  <complexType name="NoExecuteType"/>

```

```

<element name="Hidden" type="paaf:HiddenType"/>
<complexType name="HiddenType"/>
<element name="System" type="paaf:SystemType"/>
<complexType name="SystemType"/>
<element name="EncodedPath" type="paaf:EncodedPathType"/>
<complexType name="EncodedPathType" mixed="true">
  <simpleContent>
    <extension base="base64Binary">
      <attribute name="charset" type="string" use="required"/>
      <attribute name="original" type="boolean" use="optional"/>
      <attribute name="default" type="boolean" use="optional"/>
    </extension>
  </simpleContent>
</complexType>
<element name="OwnerRestrictions" type="paaf:OwnerRestrictionsType"/>
<complexType name="OwnerRestrictionsType">
  <sequence>
    <element ref="paaf:NoRead" minOccurs="0"/>
    <element ref="paaf:NoWrite" minOccurs="0"/>
    <element ref="paaf:NoExecute" minOccurs="0"/>
  </sequence>
</complexType>
<element name="GroupRestrictions" type="paaf:GroupRestrictionsType"/>
<complexType name="GroupRestrictionsType">
  <sequence>
    <element ref="paaf:NoRead" minOccurs="0"/>
    <element ref="paaf:NoWrite" minOccurs="0"/>
    <element ref="paaf:NoExecute" minOccurs="0"/>
  </sequence>
</complexType>
<element name="OtherRestrictions" type="paaf:OtherRestrictionsType"/>
<complexType name="OtherRestrictionsType">
  <sequence>
    <element ref="paaf:NoRead" minOccurs="0"/>
    <element ref="paaf:NoWrite" minOccurs="0"/>
    <element ref="paaf:NoExecute" minOccurs="0"/>
  </sequence>
</complexType>
<element name="OriginalAttributes" type="paaf:OriginalAttributesType"/>
<complexType name="OriginalAttributesType">
  <sequence>
    <element ref="paaf:System" minOccurs="0"/>
    <element ref="paaf:Hidden" minOccurs="0"/>
    <element ref="paaf:OwnerRestrictions" minOccurs="0"/>
    <element ref="paaf:GroupRestrictions" minOccurs="0"/>
    <element ref="paaf:OtherRestrictions" minOccurs="0"/>
  </sequence>
</complexType>
<element name="DefaultAttributes" type="paaf:DefaultAttributesType"/>
<complexType name="DefaultAttributesType">
  <sequence>
    <element ref="paaf:System" minOccurs="0"/>
    <element ref="paaf:Hidden" minOccurs="0"/>
    <element ref="paaf:OwnerRestrictions" minOccurs="0"/>
    <element ref="paaf:GroupRestrictions" minOccurs="0"/>
    <element ref="paaf:OtherRestrictions" minOccurs="0"/>
  </sequence>
</complexType>
<element name="ParentPath" type="paaf:ParentPathType"/>
<complexType name="ParentPathType">

```

```

    <attribute name="ref" type="anyURI" use="required"/>
  </complexType>
  <element name="UserDefinedAttributes" type="paaf:UserDefinedAttributesType"/>
  <complexType name="UserDefinedAttributesType" mixed="true">
    <sequence>
      <any namespace="##any" processContents="lax"/>
    </sequence>
  </complexType>
</schema>

```

In A.4 MPEG-21 IPMP Components Base Profile for PA-AF Schema Definition, replace Table A.7 with:

Table A.7 — IPMP Information schema definition for PA-AF

```

<?xml version="1.0"?>
<!-- edited with XMLSPY v5 U (http://www.xmlspy.com) by 2user (information and
communications university) -->
<schema targetNamespace="urn:mpeg:mpeg21:2004:01-IPMPINFO-BASE-NS"
xmlns:dsig="http://www.w3.org/2000/09/xmldsig#" xmlns:r="urn:mpeg:mpeg21:2003:01-REL-R-
NS" xmlns:dii="urn:mpeg:mpeg21:2002:01-DII-NS"
xmlns:ipmpinfo="urn:mpeg:mpeg21:2004:01-IPMPINFO-BASE-NS"
xmlns="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"
attributeFormDefault="unqualified" version="0.01">
  <import namespace="http://www.w3.org/2000/09/xmldsig#" schemaLocation="
http://www.w3.org/TR/2002/REC-xmldsig-core-20020212/xmldsig-core-schema.xsd"/>
  <import namespace="urn:mpeg:mpeg21:2003:01-REL-R-NS" schemaLocation="rel-r.xsd"/>
  <import namespace="urn:mpeg:mpeg21:2002:01-DII-NS" schemaLocation="dii.xsd"/>
  <element name="IPMPInfoDescriptor" type="ipmpinfo:IPMPInfoDescriptorType"/>
  <complexType name="IPMPInfoDescriptorType">
    <sequence>
      <element ref="ipmpinfo:Tool" minOccurs="0" maxOccurs="unbounded"/>
      <element ref="dsig:Signature" minOccurs="0"/>
    </sequence>
  </complexType>
  <element name="Tool" type="ipmpinfo:ToolType"/>
  <complexType name="ToolType">
    <sequence>
      <element ref="ipmpinfo:ToolRef"/>
      <element ref="ipmpinfo:InitializationSettings" minOccurs="0"/>
    </sequence>
    <attribute name="order" type="positiveInteger"/>
  </complexType>
  <element name="ToolRef" type="ipmpinfo:ToolRef"/>
  <complexType name="ToolRef">
    <attribute name="localidref" type="IDREF" use="required"/>
  </complexType>
  <element name="IPMPToolID" type="anyURI"/>
  <element name="Remote" type="ipmpinfo:RemoteType"/>
  <complexType name="RemoteType">
    <attribute name="ref" type="anyURI"/>
  </complexType>
  <element name="RightsDescriptor" type="ipmpinfo:RightsDescriptorType"/>
  <complexType name="RightsDescriptorType">
    <choice minOccurs="0">
      <element ref="ipmpinfo:License"/>
      <element ref="ipmpinfo:LicenseReference"/>
    </choice>
  </complexType>
  <element name="License" type="ipmpinfo:LicenseType"/>

```

```

<complexType name="LicenseType" mixed="true">
  <sequence>
    <any namespace="##any" processContents="lax" minOccurs="0"/>
  </sequence>
</complexType>
<element name="LicenseReference" type="ipmpinfo:LicenseReferenceType"/>
<complexType name="LicenseReferenceType">
  <simpleContent>
    <extension base="anyURI"/>
  </simpleContent>
</complexType>
<element name="InitializationSettings" type="ipmpinfo:InitializationSettingsType"/>
<complexType name="InitializationSettingsType" mixed="true">
  <sequence>
    <element ref="ipmpinfo:InitializationData"/>
  </sequence>
</complexType>
<element name="InitializationData" type="ipmpinfo:InitializationDataType"/>
<complexType name="InitializationDataType" mixed="true">
  <sequence>
    <any namespace="##any" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
  </sequence>
</complexType>
</schema>

```

In B.2, replace B.2 with:

B.2 File Extraction

The file extraction procedure is as follows:

1. Fetch an Item element that models the desired file to be extracted.
2. For each child Component element, resolve Content Information's address as described in B.1.
3. Extract all Content Information.
4. If there are more than one Content Information, append them according to the order of Component elements to obtain one file.
5. Extract the File Attribute Model value associated with the extracted file. The File Attribute Model can be found from the Descriptor child element Item obtained in step 1.
6. Try to use the original pathname set in a "paaf:EncodedPath" element, which has an attribute "original=true".
7. If it is not possible to use the original pathname, try to use another entry of "paaf:EncodedPath" elements.
8. If there is no suitable entry of the "paaf:EncodedPath" for the target platform, then generate a pathname by using the default pathname set in the "paaf:EncodedPath" element, which has an attribute "default=true".
9. Try to use the original file attribute set in "paaf:OriginalAttributes".
10. If it is not possible to use the original attributes, then try to use another entry of "paaf:DefaultAttributes" elements.
11. If there is no suitable entry of "paaf:OriginalAttributes" and "paaf:DefaultAttributes" for the target platform, then generate attributes based on attributes set in "paaf:OriginalAttributes" and "paaf:DefaultAttributes".
12. If applicable, extract and restore user defined file attributes that are carried under the "paaf:UserDefineFileAttributes" element.

Replace the title of Table C.1:

"Table C.1 — List of the mimeTypeypes for the content_type field and the content_encoding field"

with:

"Table C.1 — List of the mimeTypeypes for the content_type field"

In C.3 Content Encoding, replace the following sentences:

Table C.4 shows a list of possible values of data encryption tools defined by <http://www.w3.org/TR/2002/REC-xmlenc-core-20021210/#sec-AlgID>.

Note that tools listed in both Table C.3 and C4 are not exhaustive and inclusion of more tools in the future is possible.

with:

Table C.4 shows a list of possible values of data encryption tools defined by <http://www.w3.org/TR/2002/REC-xmlenc-core-20021210/#sec-AlgID>.

Table C.5 shows a list of possible values of integrity checking schemes defined by <http://www.w3.org/TR/2002/REC-xmlsig-core-20020212/#SHA1> and RFC4051.

Note that tools listed in both Table C.3, C4 and C5 are not exhaustive and inclusion of more tools in the future is possible.

Replace Table C.3 with:

Table C.3 — List of possible values of the contentEncoding and corresponding tools

Identification	Corresponding coders	MimeTypes the coder can be applied to
(NULL string)	Not encoded (binary)	Any type
Identity	Not encoded (binary)	Any type
x-mp4als	MPEG-4 ALS (ALS bit-stream contained in MP4)	audio/x-wav, audio/x-aiff, audio/x-bwf
x-zip	Zip	Any type
x-gzip	GNU zip	Any type

Replace Table C.4 with:

Table C.4 — List of possible values of data encryption and corresponding tools

Identification	Corresponding coders	MimeTypes the coder can be applied to
http://www.w3.org/2001/04/xmlenc#tripleDES-cbc	Triple DES encryption / decryption	Any type
http://www.w3.org/2001/04/xmlenc#aes128-cbc	AES encryption / decryption with key length 128	Any type
http://www.w3.org/2001/04/xmlenc#aes192-cbc	AES encryption / decryption with key length 192	Any type
http://www.w3.org/2001/04/xmlenc#aes256-cbc	AES encryption / decryption with key length 256	Any type

Add Table C.5 after Table C.4:

Table C.5 — List of possible values of the integrity checking schemes

Identification	Corresponding coders	MimeTypes the coder can be applied to
http://www.w3.org/2000/09/xmlsig#sha1	SHA-1 hash	Any type
http://www.w3.org/2001/04/xmlsig-more#md5	MD5 hash	Any type

Replace Table D.2 with:

Table D.2 — Example of instance using file attribute model metadata

```
<?xml version="1.0" encoding="UTF-8"?>
<DIDL xmlns="urn:mpeg:mpeg21:2002:02-DIDL-NS" xmlns:paaf="urn:mpeg:mpeg21:2007:01-
PAAF-NS"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:mpeg:mpeg21:2002:02-DIDL-NS DIDL.xsd
urn:mpeg:mpeg21:2007:01-PAAF-NS PAAF-FileAttribute.xsd">
  <Container>
    <!--Root Container-->
    <Container>
      <Descriptor>
        <Statement mimeType="text/xml">
          <paaf:FileSystemAttributes>
            <paaf:Name>Directory-1</paaf:Name>
            <paaf:ParentPath ref="C://ParentDirectoryOfMyArchive"/>
          </paaf:FileSystemAttributes>
        </Statement>
      </Descriptor>
    </Item>
```

```

<Descriptor>
  <Statement mimeType="text/xml">
    <paaf:FileSystemAttributes>
      <paaf:Name>File-1-UnderDirectory-1</paaf:Name>
      <paaf:OriginalSize>1024</paaf:OriginalSize>
      <paaf:EncodedPath charset="shift_JIS" original="yes">
        !--put path here--
      </paaf:EncodedPath>
      <paaf:EncodedPath charset="EUC-KR">
        !--put path here--
      </paaf:EncodedPath>
      <paaf:EncodedPath charset="UTF-8" default="yes">
        !--put path here--
      </paaf:EncodedPath>
      <paaf:OriginalAttributes>
        <System/>
        <Hidden/>
        <paaf:OwnerRestrictions>
          <paaf:NoExecute/>
        </paaf:OwnerRestrictions>
      </paaf:OriginalAttributes>
      <paaf:DefaultAttributes>
        <paaf:GroupRestrictions>
          <paaf:NoWrite/>
          <paaf:NoExecute/>
        </paaf:GroupRestrictions>
        <paaf:OtherRestrictions>
          <paaf:NoWrite/>
          <paaf:NoExecute/>
        </paaf:OtherRestrictions>
      </paaf:DefaultAttributes>
    </paaf:FileSystemAttributes>
  </Statement>
</Descriptor>
<Component>
  <Resource mimeType="audio/mp4" ref="myAudioFile"/>
</Component>
</Item>
</Container>
</Container>
</DIDL>

```

In Tables D.3 and D.4, replace:

"urn:mpeg:mpeg7:schema:2001 Mpeg7-2001.xsd"

with:

"urn:mpeg:mpeg7:schema:2001 Mpeg7MDSforPAAF.xsd"

In Table D.5, replace:

"urn:mpeg:mpeg7:schema:2001 mds-2001_for_pa_af.xsd"

with:

"urn:mpeg:mpeg7:schema:2001 Mpeg7MDSforPAAF.xsd"

In Tables D.7 and D.9, replace:

"urn:mpeg:mpeg21:2002:02-DIDL-NS DIDLforPA-AF.xsd"

with:

"urn:mpeg:mpeg21:2002:02-DIDL-NS DIDLforPAAF.xsd"

Replace Table D.8 with:

Table D.8 — Archiving one file with compression

```
<?xml version="1.0" encoding="UTF-8"?>
<DIDL xmlns="urn:mpeg:mpeg21:2002:02-DIDL-NS"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:mpeg:mpeg21:2002:02-DIDL-NS DIDLforPAAF.xsd">
  <Container>
    <Item>
      <Descriptor>
        <Statement mimeType="text/xml">
          <!--Put file attribute description here-->
        </Statement>
      </Descriptor>
      <Descriptor>
        <Statement mimeType="text/xml">
          <!--Put creation information here-->
        </Statement>
      </Descriptor>
      <Component>
        <Resource mimeType="audio/x-bwf" contentEncoding="x-mp4als"
          ref="MyAudio.bwf"/>
        </Component>
      </Item>
    </Container>
  </DIDL>
```

Replace Table D.10 with:

Table D.10 — Archiving a compressed and protected file with ContentEncoding

```
<?xml version="1.0" encoding="UTF-8"?>
<DIDL xmlns="urn:mpeg:mpeg21:2002:02-DIDL-NS" xmlns:dii="urn:mpeg:mpeg21:2002:01-
DII-NS" xmlns:ipmpdidl="urn:mpeg:mpeg21:2004:01-IPMPDIDL-NS"
  xmlns:ipmpinfo="urn:mpeg:mpeg21:2004:01-IPMPINFO-BASE-NS"
  xmlns:mx="urn:mpeg:mpeg21:2003:01-REL-MX-NS"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="urn:mpeg:mpeg21:2003:01-REL-MX-NS rel-mx.xsd
  urn:mpeg:mpeg21:2004:01-IPMPINFO-BASE-NS IPMPGeneralInfoforPAAF.xsd
  urn:mpeg:mpeg21:2004:01-IPMPDIDL-NS IPMPDIDLforPAAF.xsd
  urn:mpeg:mpeg21:2002:01-DII-NS dii.xsd">
  <Container>
    <Descriptor>
      <Statement mimeType="text/xml">
        <ipmpinfo:IPMPGeneralInfoDescriptor>
          <ipmpinfo:ToolList>
            <ipmpinfo:ToolDescription localID="AESEncrypt">
              <ipmpinfo:IPMPToolID>http://www.w3.org/2001/04/xmlenc#aes128-
              cbc</ipmpinfo:IPMPToolID>
```

```

        <impinfo:Remote ref="urn:IPMPToolsServer:ToolEnc005-3485"/>
      </impinfo:ToolDescription>
    </impinfo:ToolList>
  </impinfo:IPMPGeneralInfoDescriptor>
</Statement>
</Descriptor>
<Item id="MyAudioFile">
  <Descriptor>
    <Statement mimeType="text/xml">
      <!--Put file attribute description here-->
    </Statement>
  </Descriptor>
  <Descriptor>
    <Statement mimeType="text/xml">
      <!--Put creation information here-->
    </Statement>
  </Descriptor>
  <Component>
    <Resource mimeType="application/mp21-IPMP">
      <impdidl:ProtectedAsset mimeType="audio/x-bwf">
        <impdidl:Identifier>
          <dii:Identifier>IPMPId001</dii:Identifier>
        </impdidl:Identifier>
        <impdidl:Info>
          <impinfo:IPMPInfoDescriptor>
            <impinfo:Tool>
              <impinfo:ToolRef localidref="AEEncrypt"/>
              <impinfo:InitializationSettings>
                <impinfo:InitializationData>
                  <key_length>128</key_length>
                  <operating_mode>PBE</operating_mode>
                  <encrypt_format>Based64</encrypt_format>
                </impinfo:InitializationData>
                <impinfo:InitializationSettings>
                  <impinfo:Tool>
                    <impinfo:IPMPInfoDescriptor>
                      <impdidl:Info>
                        <impdidl:ContentInfo>
                          <Resource mimeType="audio/x-bwf" contentEncoding="x-mp4als"/>
                        </impdidl:ContentInfo>
                        <impdidl:Contents ref="protectedAudio.au"/>
                      </impdidl:ProtectedAsset>
                    </Resource>
                  </Component>
                </Item>
              </Container>
            </DIDL>

```