

			represented. Enumerated values are: SIGNED_INT8 SIGNED_INT16 SIGNED_INT32 UNSIGNED_INT8 UNSIGNED_INT16 UNSIGNED_INT32 FLOAT32 FLOAT64
>>minValue	O	A	The minimum value that this component takes on. If this XML Attribute is missing, this is the minimum value that can be represented by the Datatype.
>>maxValue	O	A	The maximum value that this component takes on. If this XML Attribute is missing, this is the maximum value that can be represented by the Datatype.
>>Semantics	R	1	A coded value describing what this component represents.
>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7180.
>>Unit	R	1	A coded value describing what units this dimension is in.
>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7181.
>Dimension	R	1-n	Describes a dimension.
>>idNumber	R	A	Identifies this particular dimension, with numbering starting from 1. Dimensions with a lower idNumber vary faster than those with a higher idNumber.
>>numberOfSamples	R	A	The number of samples in this dimension, for example: the number of columns along the X-axis, the number of rows along the Y-axis, the number of slices along the Z-axis, the number of qualitative descriptions.
>>Semantics	R	1	A coded value describing what this dimension represents.
>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7182
>> Regular	C	1	Used to describe regularly spaced samples in this dimension. Required if neither Irregular nor Qualitative are present. Shall not be present otherwise.

>>>width	R	A	The sample width.
>>>spacing	R	A	The sample spacing.
>>>Unit	R	1	A coded value describing what units the sample width and spacing are in.
>>>> <i>Include 'Coded Terminology Macro' Table 10.1-1</i>			Defined Context ID is 7183.
>>>AxisDirection	O	1	The direction of the axis of this dimension. Note: This XML Element might only be applicable to spatial dimensions, such as those dealing with linear displacement. Typically this is in relationship to the patient.
>>>> <i>Include 'Coded Terminology Macro' Table 10.1-1</i>			Defined Context ID is 7184
>>>AxisOrientation	O	1	The orientation of the axis of this dimension along which values are increasing. Note: This XML Element might only be applicable to spatial dimensions, such as those dealing with linear displacement. Typically this is in relationship to the patient.
>>>> <i>Include 'Coded Terminology Macro' Table 10.1-1</i>			Defined Context ID is 7185
>>Irregular	C	1	Used to describe irregularly spaced samples in this dimension. Required if neither Regular nor Qualitative are present. Shall not be present otherwise.
>>>origin	R	A	The reference location from which each of the sample locations are measured.
>>>SampleLocation	R	1-n	Describes the locations of each sample as an offset from the origin. There shall be numberOfSamples SampleLocation XML Elements in this sequence.
>>>>index	R	A	The index value of this sample location, with numbering starting from 1 and increasing to numberOfSamples.
>>>>width	R	A	The sample width.
>>>>distanceToOrigin	R	A	The distance of this sample location from the Origin location.
>>>Unit	R	1	A coded value describing what units the sample widths and locations are in.
>>>> <i>Include 'Coded Terminology Macro' Table 10.1-1</i>			Defined Context ID is 7183.

>>>AxisDirection	O	1	The direction of the axis of this dimension. Note: This XML Element might only be applicable to spatial dimensions, such as those dealing with linear displacement. Typically this is in relationship to the patient.
>>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7184
>>>AxisOrientation	O	1	The orientation of the axis of this dimension along which values are increasing. Note: This XML Element might only be applicable to spatial dimensions, such as those dealing with linear displacement. Typically this is in relationship to the patient.
>>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7185
>>Qualitative	C	1	Used to describe a qualitative dimension. Required if neither Regular nor Irregular are present. Shall not be present otherwise.
>>>Sample	R	1-n	Description of what each sample along this dimension represents. There shall be numberOfSamples Sample XML Elements in this sequence.
>>>>index	R	A	The index value of this sample, with numbering starting from 1 and increasing to numberOfSamples.
>>>>Semantics	R	1	A coded value describing what this sample represents.
>>>>> Include 'Coded Terminology Macro' Table 10.1-1			Defined Context ID is 7186
>>Origin	O	0-n	Specifies the spatial position in the coordinate system of the Abstract Multi-Dimensional Image Model of the spatial frames or volumes of image data values. Different frames or volumes may either share an origin, or have a different origin for each frame or volume. If there is only a single Origin XML element within this Dimension, then this Origin applies to all samples along this Dimension. Otherwise, there shall be numberOfSamples Origin XML elements, one for each sample along this Dimension. Sample index values for Dimensions whose idNumbers are less than this Dimension's idNumber, are all equal to 1.

>>>index	R	A	Index of the sample to which this Origin,. If this is a single Origin that applies to all samples along this Dimension, then index shall either be left out or given a value of "0" (zero). Otherwise, the value shall be the appropriate number between 1 and nubmerOfSamles.
>>>xCoord	R	A	The X position of this Origin in the coordinate system of the Abstract Multi-Dimensional Image Model.
>>>yCoord	R	A	The Y position of this Origin in the coordinate system of the Abstract Multi-Dimensional Image Model.
>>>zCoord	R	A	The Z position of this Origin in the coordinate system of the Abstract Multi-Dimensional Image Model.
>>DirectionCosines	O	0-n	Specifies the direction in the coordinate system of the Abstract Multi-Dimensional Image Model of the Dimension whose idNumber is given in concernedSpatialDimension. The idNumber of the concernedSpatialDimension shall be less than the idNumber of this Dimension. If there is only a single DirectionCosines XML element within this Dimension XML element with a particular concernedSpatialDimension, then this Direction Cosine applies to all samples along this Dimension. Otherwise, there shall be numberOfSamples DirectionCosines XML elements with this particular concernedSpatialDimension, one for each sample along this Dimension.
>>>concernedSpatialDimension	R	A	The idNumber of the particular Dimension for which this DirectionCosines XML element applies. The value of concernedSpatialDimension shall be less than the idNumber of this Dimension.
>>>index	C	A	Index of this direction specification, with numbering starting from 1. If this is a single-valued DirectionCosines that applies to all samples along this Dimension then index shall either be left out or given a value of "0" (zero). Otherwise, the value of index refers to the DirectionCosines of a particular sample value along this Dimension.

>>>cosAlongX	R	A	The direction cosine along the X axis of the coordinate system of the Abstract Multi-Dimensional Image Model for this concernedSpatialDimension.
>>>cosAlongY	R	A	The direction cosine along the Y axis of the coordinate system of the Abstract Multi-Dimensional Image Model for this concernedSpatialDimension.
>>>cosAlongZ	R	A	The direction cosine along the Z axis of the coordinate system of the Abstract Multi-Dimensional Image Model for this concernedSpatialDimension.
>PixelData	R	1	Structure that defines where the pixel data is located, organized along dimensional lines.
>>Include 'Dimensional Data Macro' Table A.2.5-2			
>PixelMapOfValidData	O	0-1	A pixel map that identifies which pixels either belong in or out of the Data Set. The dimensions of the pixel map match the dimensions of the image data, i.e., there is a one-to-one correspondence between samples in the image data and samples in the pixel map. The pointers to the pixel map data are included one of the Dimension XML elements.
>>datatype	R	A	Describes how samples in the pixel map are encoded. Enumerated values are: BIT1 UNSIGNED_INT8 For BIT1, the bit ordering starts from the least significant bit going to the most significant bit within an UNSIGNED_INT8 (i.e. 8 bit) byte. The bits are zero-padded to make a full 8-bit byte at the end of the most rapidly changing dimension (i.e. the Dimension whose idNumber is 1).
>>inValue	C	A	The value within the pixel map that indicates that this sample shall be considered as part of the Data Set. All samples whose pixel map values do not match inValue shall not be considered as part of the Data Set. Required if outValue is not present. Shall not be present if outValue is present.
>>outValue	C	A	The value within the pixel map that indicates that this sample shall not be considered as part of the Data Set. All

			samples whose pixel map values do not match outValue shall be considered as part of the Data Set. Required if inValue is not present. Shall not be present if inValue is present.
>>Include 'Dimensional Data Macro' Table A.2.5-2			

1170

Table A.2.5-2 Dimensional Data Macro

DimensionalData	R	1	A nested tree structure that organizes the data for each dimension. The top level of the tree structure should refer to the Dimension with the highest idNumber.
>dimensionID	R	A	The idNumber of the Dimension in this AbstractImageDataSet to which this DimensionalData refers.
>DataAt	O	1-n	References to where the image data is located. Only one Dimension XML Element within this AbstractImageDataSet shall have UUIDs for bulk pixel data (i.e. all bulk data references are at the same dimensional level). Note: If the source of the data, as part of the model preparation, creates a single file for pixel data from multiple smaller native objects, then in order to provide the descriptorUUID XML Attributes the source may need to create multiple bulkDataUUIDs referring to different offsets within that single pixel data file.
>>indexWithinDimension	R	A	The ordinal position (e.g. index number) of this sample point in the array of data at this level. Numbering starts from 1.
>>descriptorUUID	C	A	A UUID that refers to the ObjectDescriptor from which this data is drawn, formatted in the hexadecimal representation defined by ITU-T Recommendation X.667,. Required at the level of the nested tree structure where the source added the data from the descriptorUUID into the Abstract Multi-Dimensional Image Model.
>>bulkDataUUID	C	A	The identifier that the recipient of the data may use in a getData() call to gain access to the bulk pixel data formatted as a UUID using the hexadecimal representation defined in ITU-T Recommendation

		<p>X.667,.</p> <p>Required if the Dimensional Data Macro is not present at this level of the nested tree structure. Shall not be present otherwise.</p>
<p>>>Conditionally include the Dimensional Data Macro' Table A.2.5-2</p>		<p>Only one of bulkDataUUID or Dimensional Data shall be included at each level. If Dimensional Data is included, it shall be the next lower level of the nested tree structure, that is the Dimension with an idNumber one less than the Dimension referred to by the enclosing DimensionalData.</p>

A.2.6 Schema

The Relax NG Compact schema for the Abstract Multi-Dimensional Image Model follows:

```

1175 default namespace = "http://dicom.nema.org/PS3.19/models/AbstractImage"
1176 start = AbstractImageDataSet
1177 AbstractImageDataSet =
1178
1179     element AbstractImageDataSet {
1180         element Component{
1181             attribute idNumber { xsd:positiveInteger },
1182             attribute datatype { ComponentDatatype },
1183             attribute minValue { xsd:double }?,
1184             attribute maxValue { xsd:double }?,
1185             element Semantics { CodedTerm },
1186             element Unit { CodedTerm },
1187             element RealWordMapping {
1188                 attribute rescaleSlope { xsd:double },
1189                 attribute rescaleIntercept { xsd:double },
1190                 element Unit { CodedTerm },
1191                 element Semantics { CodedTerm }
1192             }*
1193         }+,
1194         element Dimension {
1195             attribute idNumber { xsd:positiveInteger },
1196             attribute numberOfSamples { xsd:positiveInteger },
1197             element Semantics { CodedTerm },
1198             (element Regular {
1199                 attribute width { xsd:double },
1200                 attribute spacing { xsd:double },
1201                 element Unit { CodedTerm },
1202                 element AxisDirection { CodedTerm }?,
1203                 element AxisOrientation { CodedTerm }?
1204             }
1205             | element Irregular {
1206                 element origin { xsd:double },
1207                 element SampleLocation {
1208                     attribute index { xsd:positiveInteger },
1209                     attribute width { xsd:double },

```

```

1210         attribute distanceToOrigin { xsd:double }
           },
           element Unit { CodedTerm },
           element AxisDirection { CodedTerm }?,
           element AxisOrientation { CodedTerm }?
1215     }
     | element Qualitative {
         element Sample {
           attribute index { xsd:positiveInteger },
           element Semantics { CodedTerm }
1220       }+
     }),
     element Origin {
       attribute index { xsd:positiveInteger }?,
       attribute xCoord { xsd:double },
1225       attribute yCoord { xsd:double },
       attribute zCoord { xsd:double }
     }*,
     element DirectionCosines {
       attribute concernedSpatialDimension { xsd:positiveInteger },
1230       attribute index { xsd:positiveInteger }?,
       attribute cosAlongX { xsd:double },
       attribute cosAlongY { xsd:double },
       attribute cosAlongZ { xsd:double }
     }*
1235 }+,
     element PixelData { DimensionalData },
     element PixelMapOfValidData {
       attribute datatype { PixelMapDatatype },
       (
1240         attribute inValue { xsd:positiveInteger }
         | attribute outValue { xsd:positiveInteger }
       ),
       DimensionalData
     }?
1245 }

ComponentDatatype =
  "SIGNED_INT8"
  | "SIGNED_INT16"
1250  | "SIGNED_INT32"
  | "UNSIGNED_CHAR8"
  | "UNSIGNED_INT16"
  | "UNSIGNED_INT32"
1255  | "FLOAT32"
  | "FLOAT64"

PixelMapDatatype =
  "BIT1"
  | "UNSIGNED_INT8"
1260

DimensionalData =
  element DimensionalData {
    attribute dimensionID { xsd:positiveInteger },
    element DataAt
1265  {
    attribute sampleNumber { xsd:positiveInteger },
    attribute descriptorUUID { xsd:string }?,
    ( DimensionalData | BulkDataPointer )
  }+
1270 }

```

```

BulkDataPointer =
    attribute UUID { xsd:string }

1275 CodedTerm =
    element CodeValue { xsd:string },
    element CodingSchemeDesignator { xsd:string },
    element CodingSchemeVersion { xsd:string }?,
    element CodeMeaning { xsd:string }?,
1280 (
    element ContextIdentifier { xsd:string },
    element MappingResource { xsd:string },
    element ContextGroupVersion { xsd:string }
    )?,
1285 (
    element ContextGroupExtensionFlag { xsd:string },
    element ContextGroupLocalVersion { xsd:string }?,
    element ContextGroupExtensionCreatorUID { xsd:string }?
    )?
1290

```

A.2.7 Examples
A.2.7.1 Simple 3D Volume

Example of 3D Gray Scale Volume

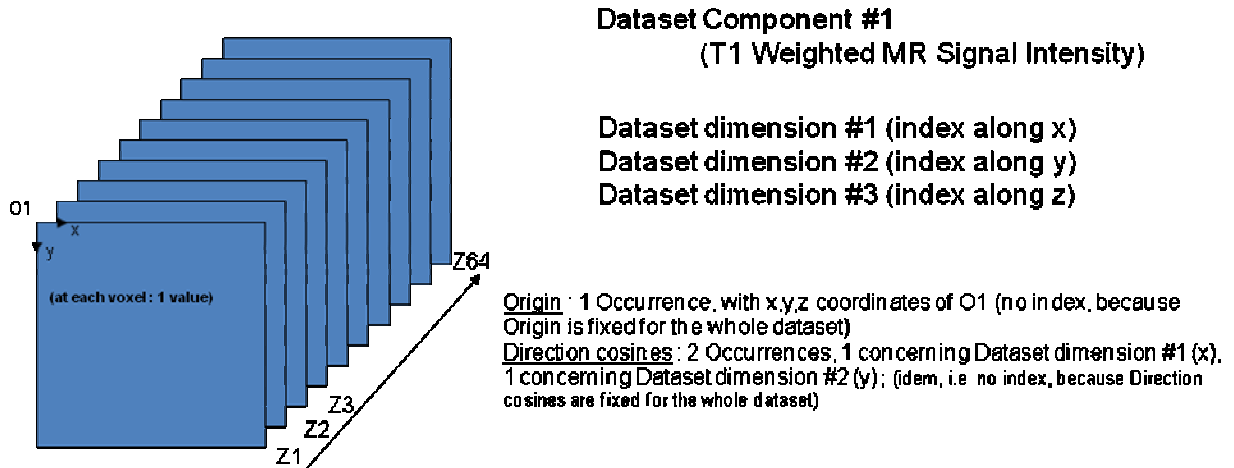


Figure A.2.7.1-1 Simple 3D Volume Example

1295 A.2.7.2

Simple 4D Volume

Example of 4D data

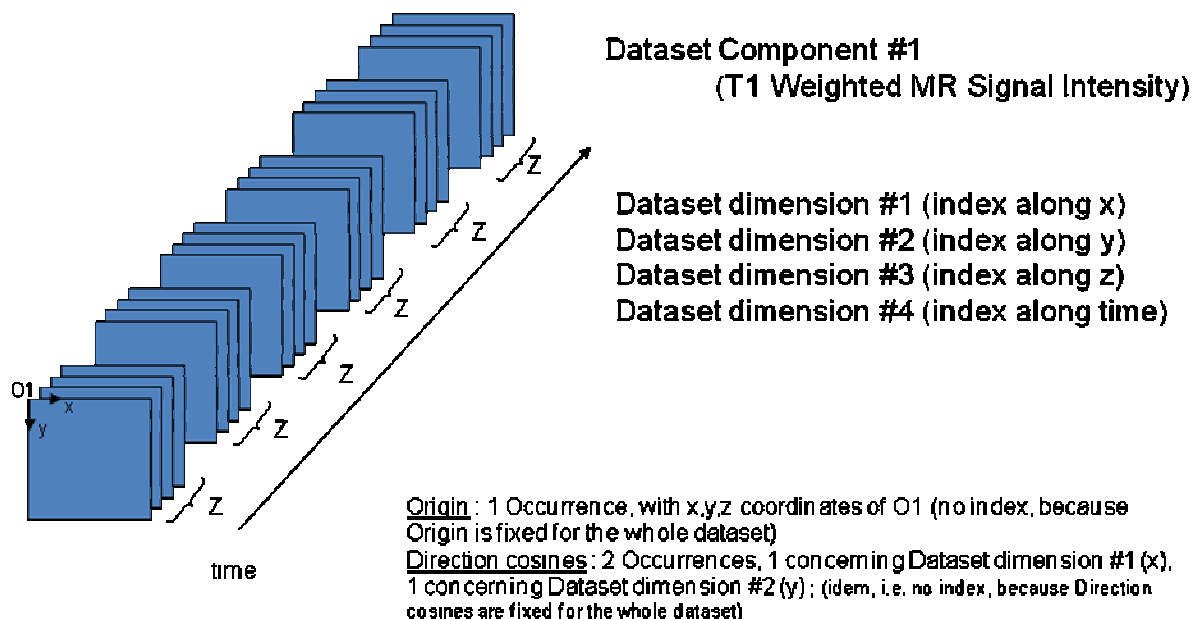
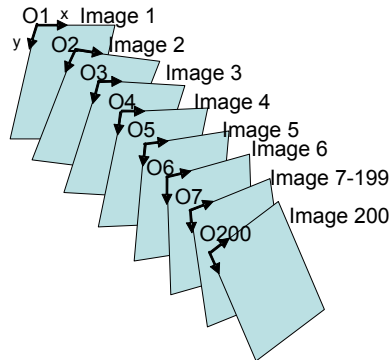


Figure A.2.7.2-1 Simple 4D Volume Example

A.2.7.3 2D Ultrasound

Example of a 2D series of ultrasound images (non-parallel)



Dataset component #1 (echo)

Dataset dimension #1 (index along x)

Dataset dimension #2 (index along y)

Dataset dimension #3 (index along t)

Origin: 200 Occurrences with x,y,z coordinates of O1,O2,..., O200, indexed by Dataset dimension #3 corresponding to t1, t2,..., t200)
Direction cosines: 400 Occurrences with 200 concerning Dataset dimension #1 (x) indexed by Dataset dimension #3 (idem t1, t2,..., t200) and 200 concerning Dataset dimension #2 (y) indexed by Dataset dimension #3 (idem t1, t2,..., t200)

1300

Figure A.2.7.3-1 2D Ultrasound Example

- In this particular case, we have three dimensions, numbered #1 for displacements along X, #2 for displacements along Y, and #3 to index the time series. If we have 200 images along time (i.e., the *numberOfSamples* XML Attribute is set to 200), we will then have 400 occurrences of the *DirectionCosines* XML Element within the *Dimension* XML Element whose *idNumber* XML Attribute is set to #3 (the dimension referring to time). The 200 first occurrences will have the XML Attribute *concernedSpatialDimension* with value #1 (to specify direction cosines along the X axis) and will be indexed by the XML Attribute *index* varying from 1 to 200 corresponding to the 200 images along time. The 200 following occurrences will have the XML Attribute *concernedSpatialDimension* with value #2 (to specify direction cosines along the Y axis), and will also be indexed by the XML Attribute *index* varying from 1 to 200.

1305

1310

- Similarly, in this example we will have 200 occurrences of the *Origin* XML Element within the *Dimension* XML Element that has the *idNumber* XML Attribute set to the value 3, and of course by the XML Attribute *index* varying from 1 to 200.

1315

A.2.7.4 3D MR Metabolite Map – Single Component

Example of 3D MR spectro data (using 1 single component)

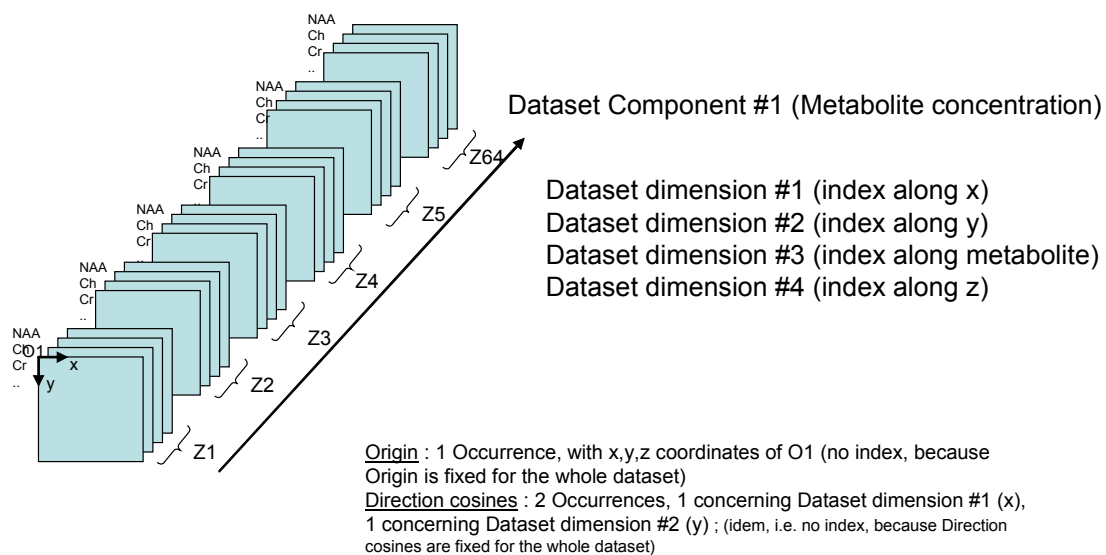
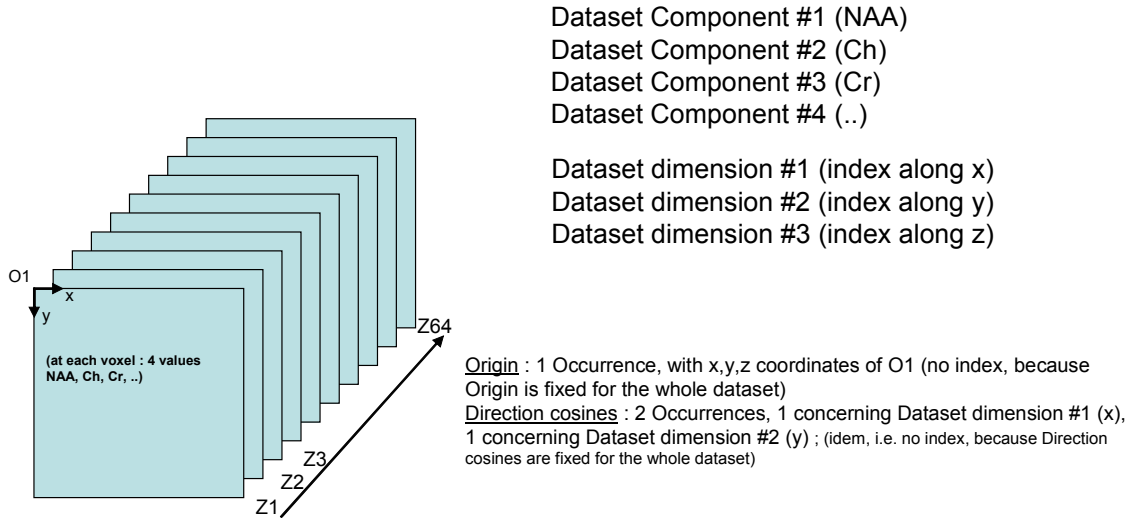


Figure A.2.7.4-1 Single Component 3D MR Metabolite Example

A.2.7.5 3D MR Metabolite Map – Multiple Component

Example of 3D MR spectro data (using 4 components)



1320

Figure A.2.7.5-1 Multiple Component 3D MR Metabolite Map Example

Annex B Interface Definitions

B.1 APPLICATION INTERFACE – VERSION 20100825

B.1.1 WSDL Definition of the Interface

1325 The following is the content of ApplicationService-20100825.wsdl:

```

1325 <?xml version="1.0" encoding="utf-8"?>
1326 <wsdl:definitions name="ApplicationService-20100825"
1327     targetNamespace="http://dicom.nema.org/PS3.19/ApplicationService-20100825"
1328     xmlns:tns="http://dicom.nema.org/PS3.19/ApplicationService-20100825"
1330     xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
1331     xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
utility-1.0.xsd"
1332     xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
1333     xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
1334     xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
1335     xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"
1336     xmlns:wsap="http://schemas.xmlsoap.org/ws/2004/08/addressing/policy"
1337     xmlns:xsd="http://www.w3.org/2001/XMLSchema"
1338     xmlns:msc="http://schemas.microsoft.com/ws/2005/12/wsdl/contract"
1339     xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
1340     xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
1341     xmlns:wsa10="http://www.w3.org/2005/08/addressing"
1342     xmlns:wsx="http://schemas.xmlsoap.org/ws/2004/09/mex"
1343     xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
1344 <wsdl:types>
1345     <xsd:schema
targetNamespace="http://dicom.nema.org/PS3.19/Imports/ApplicationService-20100825">
1346         <xsd:import namespace="http://dicom.nema.org/PS3.19/ApplicationService-20100825"
1347             schemaLocation="./ApplicationService-20100825.xsd"/>
1348         <xsd:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"
1349             schemaLocation="./Types.xsd" />
1350         <xsd:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
1351             schemaLocation="./ArrayOfString.xsd" />
1352         <xsd:import namespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
1353             schemaLocation="./XPathNodeType.xsd" />
1354     </xsd:schema>
1355 </wsdl:types>
1356 <wsdl:message name="IApplicationService_GetState_InputMessage">
1357     <wsdl:part name="parameters" element="tns:GetState"/>
1358 </wsdl:message>
1359 <wsdl:message name="IApplicationService_GetState_OutputMessage">
1360     <wsdl:part name="parameters" element="tns:GetStateResponse"/>
1361 </wsdl:message>
1362 <wsdl:message name="IApplicationService_SetState_InputMessage">
1363     <wsdl:part name="parameters" element="tns:SetState"/>
1364 </wsdl:message>
1365 <wsdl:message name="IApplicationService_SetState_OutputMessage">
1366     <wsdl:part name="parameters" element="tns:SetStateResponse"/>
1367 </wsdl:message>
1368 <wsdl:message name="IApplicationService_BringToFront_InputMessage">
1369     <wsdl:part name="parameters" element="tns:BringToFront"/>
1370 </wsdl:message>
1371 <wsdl:message name="IApplicationService_BringToFront_OutputMessage">
1372     <wsdl:part name="parameters" element="tns:BringToFrontResponse"/>
1373 </wsdl:message>

```

```

    <wsdl:message name="IApplicationService_NotifyDataAvailable_InputMessage">
      <wsdl:part name="parameters" element="tns:NotifyDataAvailable"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_NotifyDataAvailable_OutputMessage">
1380   <wsdl:part name="parameters" element="tns:NotifyDataAvailableResponse"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_GetData_InputMessage">
      <wsdl:part name="parameters" element="tns:GetData"/>
    </wsdl:message>
1385   <wsdl:message name="IApplicationService_GetData_OutputMessage">
      <wsdl:part name="parameters" element="tns:GetDataResponse"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_ReleaseData_InputMessage">
      <wsdl:part name="parameters" element="tns:ReleaseData"/>
1390   </wsdl:message>
    <wsdl:message name="IApplicationService_ReleaseData_OutputMessage">
      <wsdl:part name="parameters" element="tns:ReleaseDataResponse"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_GetAsModels_InputMessage">
1395   <wsdl:part name="parameters" element="tns:GetAsModels"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_GetAsModels_OutputMessage">
      <wsdl:part name="parameters" element="tns:GetAsModelsResponse"/>
    </wsdl:message>
1400   <wsdl:message name="IApplicationService_ReleaseModels_InputMessage">
      <wsdl:part name="parameters" element="tns:ReleaseModels"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_ReleaseModels_OutputMessage">
      <wsdl:part name="parameters" element="tns:ReleaseModelsResponse"/>
1405   </wsdl:message>
    <wsdl:message name="IApplicationService_QueryModel_InputMessage">
      <wsdl:part name="parameters" element="tns:QueryModel"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_QueryModel_OutputMessage">
1410   <wsdl:part name="parameters" element="tns:QueryModelResponse"/>
    </wsdl:message>
    <wsdl:message name="IApplicationService_QueryInfoSet_InputMessage">
      <wsdl:part name="parameters" element="tns:QueryInfoSet"/>
    </wsdl:message>
1415   <wsdl:message name="IApplicationService_QueryInfoSet_OutputMessage">
      <wsdl:part name="parameters" element="tns:QueryInfoSetResponse"/>
    </wsdl:message>
    <wsdl:portType name="IApplicationService-20100825">
      <wsdl:operation name="GetState">
1420   <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetState"
      message="tns:IApplicationService_GetState_InputMessage"/>
      <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetStateResponse"
1425   message="tns:IApplicationService_GetState_OutputMessage"/>
      </wsdl:operation>
      <wsdl:operation name="SetState">
      <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/SetState"
1430   message="tns:IApplicationService_SetState_InputMessage"/>
      <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/SetStateResponse"
      message="tns:IApplicationService_SetState_OutputMessage"/>
      </wsdl:operation>
1435   <wsdl:operation name="BringToFront">

```

```

    <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/BringToFront"
    message="tns:IApplicationService_BringToFront_InputMessage"/>
    <wsdl:output
1440 wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/BringToFrontResponse"
    message="tns:IApplicationService_BringToFront_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="NotifyDataAvailable">
1445 <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/NotifyDataAvailable"
    message="tns:IApplicationService_NotifyDataAvailable_InputMessage"/>
    <wsdl:output

1450 wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/NotifyDataAvailableRespon
se"
    message="tns:IApplicationService_NotifyDataAvailable_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetData">
1455 <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetData"
    message="tns:IApplicationService_GetData_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetDataResponse"
1460 <wsdl:operation name="ReleaseData">
    <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseData"
1465 <wsdl:output

wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseDataResponse"
    message="tns:IApplicationService_ReleaseData_OutputMessage"/>
1470 </wsdl:operation>
    <wsdl:operation name="GetAsModels">
    <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetAsModels"
    message="tns:IApplicationService_GetAsModels_InputMessage"/>
1475 <wsdl:output

wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/GetAsModelsResponse"
    message="tns:IApplicationService_GetAsModels_OutputMessage"/>
    </wsdl:operation>
1480 <wsdl:operation name="ReleaseModels">
    <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseModels"
    message="tns:IApplicationService_ReleaseModels_InputMessage"/>
    <wsdl:output

1485 wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseModelsResponse"
    message="tns:IApplicationService_ReleaseModels_OutputMessage"/>
    </wsdl:operation>
    <wsdl:operation name="QueryModel">
1490 <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/QueryModel"
    message="tns:IApplicationService_QueryModel_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/QueryModelResponse"
1495 <wsdl:output
    </wsdl:operation>

```

```

    <wsdl:operation name="QueryInfoSet">
      <wsdl:input
1500 wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/QueryInfoSet"
        message="tns:IApplicationService_QueryInfoSet_InputMessage"/>
      <wsdl:output

wsaw:Action="http://dicom.nema.org/PS3.19/IApplicationService/QueryInfoSetResponse"
1505   message="tns:IApplicationService_QueryInfoSet_OutputMessage"/>
    </wsdl:operation>
  </wsdl:portType>
  <wsdl:binding name="ApplicationService-20100825Binding"
type="tns:IApplicationService-20100825">
    <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
1510    <wsdl:operation name="GetState">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/GetState"
        style="document"/>
      <wsdl:input>
1515        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
1520    </wsdl:operation>
    <wsdl:operation name="SetState">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/SetState"
        style="document"/>
1525        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
1530        </wsdl:output>
      </wsdl:operation>
    <wsdl:operation name="BringToFront">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/BringToFront"
1535        style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
1540          <soap:body use="literal"/>
        </wsdl:output>
      </wsdl:operation>
    <wsdl:operation name="NotifyDataAvailable">
      <soap:operation
1545 soapAction="http://dicom.nema.org/PS3.19/IApplicationService/NotifyDataAvailable"
        style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
1550        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
      </wsdl:operation>
1555    <wsdl:operation name="GetData">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/GetData"

```



```

        style="document"/>
1560   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
1565 </wsdl:operation>
    <wsdl:operation name="ReleaseData">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseData"
        style="document"/>
1570   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
1575 </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="GetAsModels">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/GetAsModels"
1580   style="document"/>
        <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
1585   <soap:body use="literal"/>
    </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="ReleaseModels">
        <soap:operation
1590 soapAction="http://dicom.nema.org/PS3.19/IApplicationService/ReleaseModels"
        style="document"/>
        <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
1595 <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="QueryModel">
1600 <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/QueryModel"
        style="document"/>
        <wsdl:input>
        <soap:body use="literal"/>
1605 </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    </wsdl:operation>
1610 <wsdl:operation name="QueryInfoSet">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IApplicationService/QueryInfoSet"
        style="document"/>
1615 <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>

```

```
        </wsdl:output>
1620    </wsdl:operation>
        </wsdl:binding>
        <wsdl:service name="ApplicationService-20100825">
            <wsdl:port name="ApplicationServiceBinding" binding="tns:ApplicationService-
1625 20100825Binding">
                <soap:address location="http://localhost/Service"/>
            </wsdl:port>
        </wsdl:service>
    </wsdl:definitions>
```

1630 **B.1.2 Definition of Data Structures Used**

B.1.2.1 Primary Definitions

The following is the content of ApplicationService-20100825.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://dicom.nema.org/PS3.19/ApplicationService-20100825"
1635 elementFormDefault="qualified"
        targetNamespace="http://dicom.nema.org/PS3.19/ApplicationService-20100825"
        xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
    <xs:import namespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"/>
1640 <xs:element name="GetState">
        <xs:complexType>
            <xs:sequence/>
        </xs:complexType>
    </xs:element>
1645 <xs:element name="GetStateResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="GetStateResult" type="tns:State"/>
            </xs:sequence>
1650 </xs:complexType>
    </xs:element>
    <xs:simpleType name="State">
        <xs:restriction base="xs:string">
            <xs:enumeration value="IDLE"/>
1655 <xs:enumeration value="INPROGRESS"/>
            <xs:enumeration value="SUSPENDED"/>
            <xs:enumeration value="COMPLETED"/>
            <xs:enumeration value="CANCELED"/>
            <xs:enumeration value="EXIT"/>
1660 </xs:restriction>
        </xs:simpleType>
    <xs:element name="State" nillable="true" type="tns:State"/>
    <xs:element name="SetState">
        <xs:complexType>
1665 <xs:sequence>
            <xs:element minOccurs="0" name="state" type="tns:State"/>
        </xs:sequence>
    </xs:complexType>
    </xs:element>
1670 <xs:element name="SetStateResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="SetStateResult" type="xs:boolean"/>
            </xs:sequence>
1675 </xs:complexType>
```

```

</xs:element>
<xs:element name="BringToFront">
  <xs:complexType>
    <xs:sequence>
1680   <xs:element minOccurs="0" name="location" nillable="true"
type="tns:Rectangle"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
1685 <xs:complexType name="Rectangle">
  <xs:sequence>
    <xs:element minOccurs="0" name="Height" type="xs:int"/>
    <xs:element minOccurs="0" name="Width" type="xs:int"/>
    <xs:element minOccurs="0" name="RefPointX" type="xs:int"/>
1690   <xs:element minOccurs="0" name="RefPointY" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="Rectangle" nillable="true" type="tns:Rectangle"/>
<xs:element name="BringToFrontResponse">
1695 <xs:complexType>
  <xs:sequence>
    <xs:element minOccurs="0" name="BringToFrontResult" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
1700 </xs:element>
<xs:element name="NotifyDataAvailable">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="data" nillable="true"
1705 type="tns:AvailableData"/>
      <xs:element minOccurs="0" name="lastData" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
1710 <xs:complexType name="AvailableData">
  <xs:sequence>
    <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
      type="tns:ArrayOfObjectDescriptor"/>
    <xs:element minOccurs="0" name="Patients" nillable="true"
1715 type="tns:ArrayOfPatient"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="AvailableData" nillable="true" type="tns:AvailableData"/>
<xs:complexType name="ArrayOfObjectDescriptor">
1720 <xs:sequence>
  <xs:element minOccurs="0" maxOccurs="unbounded" name="ObjectDescriptor"
nillable="true"
    type="tns:ObjectDescriptor"/>
  </xs:sequence>
1725 </xs:complexType>
<xs:element name="ArrayOfObjectDescriptor" nillable="true"
type="tns:ArrayOfObjectDescriptor"/>
<xs:complexType name="ObjectDescriptor">
  <xs:sequence>
1730   <xs:element minOccurs="0" name="ClassUID" nillable="true" type="tns:UID"/>
    <xs:element minOccurs="0" name="MimeType" nillable="true" type="tns:MimeType"/>
    <xs:element minOccurs="0" name="Modality" nillable="true" type="tns:Modality"/>
    <xs:element minOccurs="0" name="TransferSyntaxUID" nillable="true"
type="tns:UID"/>
1735   <xs:element minOccurs="0" name="DescriptorUuid" nillable="true" type="tns:UUID"/>
  </xs:sequence>

```

```

</xs:complexType>
<xs:element name="ObjectDescriptor" nillable="true" type="tns:ObjectDescriptor"/>
<xs:complexType name="UID">
1740   <xs:sequence>
       <xs:element minOccurs="0" name="Uid" nillable="true" type="xs:string"/>
     </xs:sequence>
  </xs:complexType>
<xs:element name="UID" nillable="true" type="tns:UID"/>
1745 <xs:complexType name="MimeType">
       <xs:sequence>
       <xs:element minOccurs="0" name="Type" nillable="true" type="xs:string"/>
     </xs:sequence>
  </xs:complexType>
1750 <xs:element name="MimeType" nillable="true" type="tns:MimeType"/>
<xs:complexType name="Modality">
       <xs:sequence>
       <xs:element minOccurs="0" name="Modality" nillable="true" type="xs:string"/>
     </xs:sequence>
1755 </xs:complexType>
<xs:element name="Modality" nillable="true" type="tns:Modality"/>
<xs:complexType name="UUID">
       <xs:sequence>
       <xs:element minOccurs="0" name="Uid" nillable="true" type="xs:string"/>
1760 </xs:sequence>
     </xs:complexType>
<xs:element name="UUID" nillable="true" type="tns:UUID"/>
<xs:complexType name="ArrayOfPatient">
       <xs:sequence>
1765 <xs:element minOccurs="0" maxOccurs="unbounded" name="Patient" nillable="true"
       type="tns:Patient"/>
     </xs:sequence>
  </xs:complexType>
<xs:element name="ArrayOfPatient" nillable="true" type="tns:ArrayOfPatient"/>
1770 <xs:complexType name="Patient">
       <xs:sequence>
       <xs:element minOccurs="0" name="AssigningAuthority" nillable="true"
type="xs:string"/>
1775 <xs:element minOccurs="0" name="DateOfBirth" type="xs:dateTime"/>
<xs:element minOccurs="0" name="ID" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
<xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
       type="tns:ArrayOfObjectDescriptor"/>
<xs:element minOccurs="0" name="Sex" nillable="true" type="xs:string"/>
1780 <xs:element minOccurs="0" name="Studies" nillable="true"
type="tns:ArrayOfStudy"/>
     </xs:sequence>
  </xs:complexType>
<xs:element name="Patient" nillable="true" type="tns:Patient"/>
1785 <xs:complexType name="ArrayOfStudy">
       <xs:sequence>
       <xs:element minOccurs="0" maxOccurs="unbounded" name="Study" nillable="true"
type="tns:Study"
1790 </xs:sequence>
     </xs:complexType>
<xs:element name="ArrayOfStudy" nillable="true" type="tns:ArrayOfStudy"/>
<xs:complexType name="Study">
       <xs:sequence>
1795 <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
       type="tns:ArrayOfObjectDescriptor"/>

```

```

        <xs:element minOccurs="0" name="Series" nillable="true"
type="tns:ArrayOfSeries"/>
        <xs:element minOccurs="0" name="StudyUID" nillable="true" type="tns:UID"/>
1800    </xs:sequence>
    </xs:complexType>
    <xs:element name="Study" nillable="true" type="tns:Study"/>
    <xs:complexType name="ArrayOfSeries">
        <xs:sequence>
1805    <xs:element minOccurs="0" maxOccurs="unbounded" name="Series" nillable="true"
            type="tns:Series"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfSeries" nillable="true" type="tns:ArrayOfSeries"/>
1810 <xs:complexType name="Series">
    <xs:sequence>
        <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
            type="tns:ArrayOfObjectDescriptor"/>
        <xs:element minOccurs="0" name="SeriesUID" nillable="true" type="tns:UID"/>
1815 </xs:sequence>
    </xs:complexType>
    <xs:element name="Series" nillable="true" type="tns:Series"/>
    <xs:element name="NotifyDataAvailableResponse">
        <xs:complexType>
1820    <xs:sequence>
            <xs:element minOccurs="0" name="NotifyDataAvailableResult" type="xs:boolean"/>
        </xs:sequence>
    </xs:complexType>
    </xs:element>
1825 <xs:element name="GetData">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="objects" nillable="true"
type="tns:ArrayOfUUIID"/>
1830    <xs:element minOccurs="0" name="acceptableTransferSyntaxes" nillable="true"
            type="tns:ArrayOfUID"/>
            <xs:element minOccurs="0" name="includeBulkData" type="xs:boolean"/>
        </xs:sequence>
    </xs:complexType>
1835 </xs:element>
    <xs:complexType name="ArrayOfUUIID">
        <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="UUIID" nillable="true"
type="tns:UUIID"/>
1840 </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfUUIID" nillable="true" type="tns:ArrayOfUUIID"/>
    <xs:complexType name="ArrayOfUID">
        <xs:sequence>
1845    <xs:element minOccurs="0" maxOccurs="unbounded" name="UID" nillable="true"
type="tns:UID"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfUID" nillable="true" type="tns:ArrayOfUID"/>
1850 <xs:element name="GetDataResponse">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="GetDataResult" nillable="true"
type="tns:ArrayOfObjectLocator"/>
1855 </xs:sequence>
    </xs:complexType>
    </xs:element>

```

```

    <xs:complexType name="ArrayOfObjectLocator">
      <xs:sequence>
1860    <xs:element minOccurs="0" maxOccurs="unbounded" name="ObjectLocator"
nillable="true"
      type="tns:ObjectLocator"/>
      </xs:sequence>
    </xs:complexType>
1865 <xs:element name="ArrayOfObjectLocator" nillable="true"
type="tns:ArrayOfObjectLocator"/>
    <xs:complexType name="ObjectLocator">
      <xs:sequence>
1870    <xs:element minOccurs="0" name="Length" type="xs:long"/>
    <xs:element minOccurs="0" name="Offset" type="xs:long"/>
    <xs:element minOccurs="0" name="TransferSyntax" nillable="true" type="tns:UID"/>
    <xs:element minOccurs="0" name="URI" nillable="true" type="xs:anyURI"/>
    <xs:element minOccurs="0" name="Locator" nillable="true" type="tns:UUID"/>
    <xs:element minOccurs="0" name="Source" nillable="true" type="tns:UUID"/>
1875    </xs:sequence>
    </xs:complexType>
    <xs:element name="ObjectLocator" nillable="true" type="tns:ObjectLocator"/>
    <xs:element name="ReleaseData">
      <xs:complexType>
1880    <xs:sequence>
    <xs:element minOccurs="0" name="objects" nillable="true"
type="tns:ArrayOfUUID"/>
      </xs:sequence>
    </xs:complexType>
1885 </xs:element>
    <xs:element name="ReleaseDataResponse">
      <xs:complexType>
        <xs:sequence/>
      </xs:complexType>
1890 </xs:element>
    <xs:element name="GetAsModels">
      <xs:complexType>
        <xs:sequence>
1895 <xs:element minOccurs="0" name="objects" nillable="true"
type="tns:ArrayOfUUID"/>
        <xs:element minOccurs="0" name="classUID" nillable="true" type="tns:UID"/>
        <xs:element minOccurs="0" name="supportedInfoSetTypes" nillable="true"
          type="tns:ArrayOfMimeType"/>
        </xs:sequence>
1900 </xs:complexType>
    </xs:element>
    <xs:complexType name="ArrayOfMimeType">
      <xs:sequence>
1905 <xs:element minOccurs="0" maxOccurs="unbounded" name="MimeType" nillable="true"
type="tns:MimeType"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfMimeType" nillable="true" type="tns:ArrayOfMimeType"/>
    <xs:element name="GetAsModelsResponse">
1910 <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="GetAsModelsResult" nillable="true"
          type="tns:ModelSetDescriptor"/>
        </xs:sequence>
1915 </xs:complexType>
    </xs:element>
    <xs:complexType name="ModelSetDescriptor">
      <xs:sequence>

```

```

1920     <xs:element minOccurs="0" name="FailedSourceObjects" nillable="true"
type="tns:ArrayOfUUID"/>
     <xs:element minOccurs="0" name="InfosetType" nillable="true"
type="tns:MimeType"/>
     <xs:element minOccurs="0" name="Models" nillable="true" type="tns:ArrayOfUUID"/>
1925 </xs:sequence>
</xs:complexType>
<xs:element name="ModelSetDescriptor" nillable="true" type="tns:ModelSetDescriptor"/>
<xs:element name="ReleaseModels">
  <xs:complexType>
    <xs:sequence>
1930     <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
1935 <xs:element name="ReleaseModelsResponse">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
1940 <xs:element name="QueryModel">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
1945     <xs:element minOccurs="0" name="xPaths" nillable="true"
xmlns:q1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
type="q1:ArrayOfstring"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
1950 <xs:element name="QueryModelResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="QueryModelResult" nillable="true"
1955     type="tns:ArrayOfQueryResult"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:complexType name="ArrayOfQueryResult">
1960   <xs:sequence>
     <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryResult"
nillable="true"
     type="tns:QueryResult"/>
   </xs:sequence>
</xs:complexType>
1965 <xs:element name="ArrayOfQueryResult" nillable="true" type="tns:ArrayOfQueryResult"/>
<xs:complexType name="QueryResult">
  <xs:sequence>
    <xs:element minOccurs="0" name="Model" nillable="true" type="tns:UUID"/>
1970     <xs:element minOccurs="0" name="Result" nillable="true"
type="tns:ArrayOfXPathNode"/>
     <xs:element minOccurs="0" name="XPath" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
1975 <xs:element name="QueryResult" nillable="true" type="tns:QueryResult"/>
<xs:complexType name="ArrayOfXPathNode">
  <xs:sequence>
     <xs:element minOccurs="0" maxOccurs="unbounded" name="XPathNode" nillable="true"
type="tns:XPathNode"/>
  </xs:sequence>

```

```

1980     </xs:sequence>
        </xs:complexType>
        <xs:element name="ArrayOfXPathNode" nillable="true" type="tns:ArrayOfXPathNode"/>
        <xs:complexType name="XPathNode">
          <xs:sequence>
1985     <xs:element minOccurs="0" name="NodeType"
          xmlns:q2="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
type="q2:XPathNodeType"/>
          <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
        </xs:sequence>
1990 </xs:complexType>
        <xs:element name="XPathNode" nillable="true" type="tns:XPathNode"/>
        <xs:element name="QueryInfoSet">
          <xs:complexType>
            <xs:sequence>
1995     <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
            <xs:element minOccurs="0" name="xPaths" nillable="true"
          xmlns:q3="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
type="q3:ArrayOfstring"/>
2000 </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="QueryInfoSetResponse">
        <xs:complexType>
          <xs:sequence>
2005     <xs:element minOccurs="0" name="QueryInfoSetResult" nillable="true"
type="tns:ArrayOfQueryResultInfoSet"/>
          </xs:sequence>
        </xs:complexType>
2010 </xs:element>
        <xs:complexType name="ArrayOfQueryResultInfoSet">
          <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryResultInfoSet"
nillable="true"
2015     type="tns:QueryResultInfoSet"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="ArrayOfQueryResultInfoSet" nillable="true"
type="tns:ArrayOfQueryResultInfoSet"/>
2020 <xs:complexType name="QueryResultInfoSet">
          <xs:sequence>
            <xs:element minOccurs="0" name="Model" nillable="true" type="tns:UUID"/>
            <xs:element minOccurs="0" name="Result" nillable="true"
type="tns:ArrayOfXPathNodeInfoSet"/>
2025     <xs:element minOccurs="0" name="XPath" nillable="true" type="xs:string"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="QueryResultInfoSet" nillable="true" type="tns:QueryResultInfoSet"/>
        <xs:complexType name="ArrayOfXPathNodeInfoSet">
2030 <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="XPathNodeInfoSet"
nillable="true"
          type="tns:XPathNodeInfoSet"/>
        </xs:sequence>
2035 </xs:complexType>
        <xs:element name="ArrayOfXPathNodeInfoSet" nillable="true"
type="tns:ArrayOfXPathNodeInfoSet"/>
        <xs:complexType name="XPathNodeInfoSet">
          <xs:sequence>

```



```

2040     <xs:element minOccurs="0" name="InfoSetValue" nillable="true"
type="xs:base64Binary"/>
     <xs:element minOccurs="0" name="NodeType"
xmlns:q4="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
type="q4:XPathNodeType"
2045     />
     </xs:sequence>
     </xs:complexType>
     <xs:element name="XPathNodeInfoSet" nillable="true" type="tns:XPathNodeInfoSet"/>
</xs:schema>

```

2050

B.1.2.2 Referenced Definitions

The following is the content of XPathNodeType.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
2055 elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="XPathNodeType">
    <xs:restriction base="xs:string">
2060     <xs:enumeration value="Root" />
     <xs:enumeration value="Element" />
     <xs:enumeration value="Attribute" />
     <xs:enumeration value="Namespace" />
     <xs:enumeration value="Text" />
2065     <xs:enumeration value="SignificantWhitespace" />
     <xs:enumeration value="Whitespace" />
     <xs:enumeration value="ProcessingInstruction" />
     <xs:enumeration value="Comment" />
     <xs:enumeration value="All" />
2070   </xs:restriction>
  </xs:simpleType>
  <xs:element name="XPathNodeType" nillable="true" type="tns:XPathNodeType" />
</xs:schema>

```

2075 The following is the content of Types.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
2080 xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="anyType" nillable="true" type="xs:anyType" />
  <xs:element name="anyURI" nillable="true" type="xs:anyURI" />
  <xs:element name="base64Binary" nillable="true" type="xs:base64Binary" />
  <xs:element name="boolean" nillable="true" type="xs:boolean" />
2085 <xs:element name="byte" nillable="true" type="xs:byte" />
  <xs:element name="dateTime" nillable="true" type="xs:dateTime" />
  <xs:element name="decimal" nillable="true" type="xs:decimal" />
  <xs:element name="double" nillable="true" type="xs:double" />
  <xs:element name="float" nillable="true" type="xs:float" />
2090 <xs:element name="int" nillable="true" type="xs:int" />
  <xs:element name="long" nillable="true" type="xs:long" />
  <xs:element name="QName" nillable="true" type="xs:QName" />
  <xs:element name="short" nillable="true" type="xs:short" />
  <xs:element name="string" nillable="true" type="xs:string" />
2095 <xs:element name="unsignedByte" nillable="true" type="xs:unsignedByte" />

```

```

2100 <xs:element name="unsignedInt" nillable="true" type="xs:unsignedInt" />
<xs:element name="unsignedLong" nillable="true" type="xs:unsignedLong" />
<xs:element name="unsignedShort" nillable="true" type="xs:unsignedShort" />
<xs:element name="char" nillable="true" type="tns:char" />
2100 <xs:simpleType name="char">
  <xs:restriction base="xs:int" />
</xs:simpleType>
<xs:element name="duration" nillable="true" type="tns:duration" />
2105 <xs:simpleType name="duration">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?" />
    <xs:minInclusive value="-P10675199DT2H48M5.4775808S" />
    <xs:maxInclusive value="P10675199DT2H48M5.4775807S" />
  </xs:restriction>
2110 </xs:simpleType>
<xs:element name="guid" nillable="true" type="tns:guid" />
<xs:simpleType name="guid">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-
2115 fA-F]{12}" />
  </xs:restriction>
</xs:simpleType>
<xs:attribute name="FactoryType" type="xs:QName" />
<xs:attribute name="Id" type="xs:ID" />
2120 <xs:attribute name="Ref" type="xs:IDREF" />
</xs:schema>

```

The following is the content of ArrayOfString.xsd

```

2125 <?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  elementFormDefault="qualified"
  targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfstring">
2130   <xs:sequence>
     <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
  type="xs:string" />
   </xs:sequence>
  </xs:complexType>
2135 <xs:element name="ArrayOfstring" nillable="true" type="tns:ArrayOfstring" />
</xs:schema>

```

B.2 HOST INTERFACE – VERSION 20100825

B.2.1 WSDL Definition of the Interface

2140 The following is the content of HostService-20100825.wsdl:

```

2145 <?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions name="HostService-20100825"
  targetNamespace="http://dicom.nema.org/PS3.19/HostService-20100825"
  xmlns:tns="http://dicom.nema.org/PS3.19/HostService-20100825"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
  utility-1.0.xsd"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
2150  xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
  xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"

```

```

xmlns:wsap="http://schemas.xmlsoap.org/ws/2004/08/addressing/policy"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:msc="http://schemas.microsoft.com/ws/2005/12/wsd/contract"
2155 xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsd"
xmlns:soap12="http://schemas.xmlsoap.org/wsd/soap12/"
xmlns:wsa10="http://www.w3.org/2005/08/addressing"
xmlns:wsx="http://schemas.xmlsoap.org/ws/2004/09/mex"
xmlns:wSDL="http://schemas.xmlsoap.org/wsd/"
2160 <wSDL:types>
  <xsd:schema targetNamespace="http://dicom.nema.org/PS3.19/Imports/HostService-
20100825">
    <xsd:import namespace="http://dicom.nema.org/PS3.19/HostService-20100825"
      schemaLocation="./HostService-20100825.xsd"/>
2165 <xsd:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"
      schemaLocation="./Types.xsd" />
    <xsd:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
      schemaLocation="./ArrayOfString.xsd" />
    <xsd:import namespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
2170      schemaLocation="./XPathNodeType.xsd"/>
  </xsd:schema>
</wSDL:types>
<wSDL:message name="IHostService_GenerateUID_InputMessage">
  <wSDL:part name="parameters" element="tns:GenerateUID"/>
2175 </wSDL:message>
<wSDL:message name="IHostService_GenerateUID_OutputMessage">
  <wSDL:part name="parameters" element="tns:GenerateUIDResponse"/>
</wSDL:message>
<wSDL:message name="IHostService_GetAvailableScreen_InputMessage">
2180 <wSDL:part name="parameters" element="tns:GetAvailableScreen"/>
</wSDL:message>
<wSDL:message name="IHostService_GetAvailableScreen_OutputMessage">
  <wSDL:part name="parameters" element="tns:GetAvailableScreenResponse"/>
</wSDL:message>
2185 <wSDL:message name="IHostService_GetOutputLocation_InputMessage">
  <wSDL:part name="parameters" element="tns:GetOutputLocation"/>
</wSDL:message>
<wSDL:message name="IHostService_GetOutputLocation_OutputMessage">
  <wSDL:part name="parameters" element="tns:GetOutputLocationResponse"/>
2190 </wSDL:message>
<wSDL:message name="IHostService_NotifyStateChanged_InputMessage">
  <wSDL:part name="parameters" element="tns:NotifyStateChanged"/>
</wSDL:message>
<wSDL:message name="IHostService_NotifyStateChanged_OutputMessage">
2195 <wSDL:part name="parameters" element="tns:NotifyStateChangedResponse"/>
</wSDL:message>
<wSDL:message name="IHostService_NotifyStatus_InputMessage">
  <wSDL:part name="parameters" element="tns:NotifyStatus"/>
</wSDL:message>
2200 <wSDL:message name="IHostService_NotifyStatus_OutputMessage">
  <wSDL:part name="parameters" element="tns:NotifyStatusResponse"/>
</wSDL:message>
<wSDL:message name="IHostService_NotifyDataAvailable_InputMessage">
  <wSDL:part name="parameters" element="tns:NotifyDataAvailable"/>
2205 </wSDL:message>
<wSDL:message name="IHostService_NotifyDataAvailable_OutputMessage">
  <wSDL:part name="parameters" element="tns:NotifyDataAvailableResponse"/>
</wSDL:message>
<wSDL:message name="IHostService_GetData_InputMessage">
2210 <wSDL:part name="parameters" element="tns:GetData"/>
</wSDL:message>
<wSDL:message name="IHostService_GetData_OutputMessage">

```

```

    <wsdl:part name="parameters" element="tns:GetDataResponse"/>
  </wsdl:message>
2215 <wsdl:message name="IHostService_ReleaseData_InputMessage">
    <wsdl:part name="parameters" element="tns:ReleaseData"/>
  </wsdl:message>
    <wsdl:message name="IHostService_ReleaseData_OutputMessage">
2220 <wsdl:part name="parameters" element="tns:ReleaseDataResponse"/>
  </wsdl:message>
    <wsdl:message name="IHostService_GetAsModels_InputMessage">
    <wsdl:part name="parameters" element="tns:GetAsModels"/>
  </wsdl:message>
    <wsdl:message name="IHostService_GetAsModels_OutputMessage">
2225 <wsdl:part name="parameters" element="tns:GetAsModelsResponse"/>
  </wsdl:message>
    <wsdl:message name="IHostService_ReleaseModels_InputMessage">
    <wsdl:part name="parameters" element="tns:ReleaseModels"/>
  </wsdl:message>
2230 <wsdl:message name="IHostService_ReleaseModels_OutputMessage">
    <wsdl:part name="parameters" element="tns:ReleaseModelsResponse"/>
  </wsdl:message>
    <wsdl:message name="IHostService_QueryModel_InputMessage">
    <wsdl:part name="parameters" element="tns:QueryModel"/>
2235 </wsdl:message>
    <wsdl:message name="IHostService_QueryModel_OutputMessage">
    <wsdl:part name="parameters" element="tns:QueryModelResponse"/>
  </wsdl:message>
    <wsdl:message name="IHostService_QueryInfoSet_InputMessage">
2240 <wsdl:part name="parameters" element="tns:QueryInfoSet"/>
  </wsdl:message>
    <wsdl:message name="IHostService_QueryInfoSet_OutputMessage">
    <wsdl:part name="parameters" element="tns:QueryInfoSetResponse"/>
  </wsdl:message>
2245 <wsdl:portType name="IHostService-20100825">
    <wsdl:operation name="GenerateUID">
      <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GenerateUID"
        message="tns:IHostService_GenerateUID_InputMessage"/>
      <wsdl:output
2250 wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GenerateUIDResponse"
        message="tns:IHostService_GenerateUID_OutputMessage"/>
      </wsdl:operation>
      <wsdl:operation name="GetAvailableScreen">
        <wsdl:input
2255 wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetAvailableScreen"
          message="tns:IHostService_GetAvailableScreen_InputMessage"/>
        <wsdl:output

wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetAvailableScreenResponse"
2260 message="tns:IHostService_GetAvailableScreen_OutputMessage"/>
      </wsdl:operation>
      <wsdl:operation name="GetOutputLocation">
        <wsdl:input
2265 wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetOutputLocation"
          message="tns:IHostService_GetOutputLocation_InputMessage"/>
        <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetOutputLocationResponse"
        message="tns:IHostService_GetOutputLocation_OutputMessage"/>
      </wsdl:operation>
2270 <wsdl:operation name="NotifyStateChanged">
        <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyStateChanged"
        message="tns:IHostService_NotifyStateChanged_InputMessage"/>

```

```

2275     <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyStateChangedResponse"
    message="tns:IHostService_NotifyStateChanged_OutputMessage"/>
  </wsdl:operation>
  <wsdl:operation name="NotifyStatus">
2280    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyStatus"
    message="tns:IHostService_NotifyStatus_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyStatusResponse"
    message="tns:IHostService_NotifyStatus_OutputMessage"/>
2285  </wsdl:operation>
  <wsdl:operation name="NotifyDataAvailable">
    <wsdl:input
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyDataAvailable"
    message="tns:IHostService_NotifyDataAvailable_InputMessage"/>
2290    <wsdl:output

wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/NotifyDataAvailableResponse"
    message="tns:IHostService_NotifyDataAvailable_OutputMessage"/>
  </wsdl:operation>
2295  <wsdl:operation name="GetData">
    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetData"
    message="tns:IHostService_GetData_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetDataResponse"
2300    message="tns:IHostService_GetData_OutputMessage"/>
  </wsdl:operation>
  <wsdl:operation name="ReleaseData">
    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/ReleaseData"
    message="tns:IHostService_ReleaseData_InputMessage"/>
2305    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/ReleaseDataResponse"
    message="tns:IHostService_ReleaseData_OutputMessage"/>
  </wsdl:operation>
  <wsdl:operation name="GetAsModels">
2310    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetAsModels"
    message="tns:IHostService_GetAsModels_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/GetAsModelsResponse"
    message="tns:IHostService_GetAsModels_OutputMessage"/>
2315  </wsdl:operation>
  <wsdl:operation name="ReleaseModels">
    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/ReleaseModels"
    message="tns:IHostService_ReleaseModels_InputMessage"/>
    <wsdl:output
2320 wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/ReleaseModelsResponse"
    message="tns:IHostService_ReleaseModels_OutputMessage"/>
  </wsdl:operation>
  <wsdl:operation name="QueryModel">
    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/QueryModel"
2325    message="tns:IHostService_QueryModel_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/QueryModelResponse"
    message="tns:IHostService_QueryModel_OutputMessage"/>
  </wsdl:operation>
2330  <wsdl:operation name="QueryInfoSet">
    <wsdl:input wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/QueryInfoSet"
    message="tns:IHostService_QueryInfoSet_InputMessage"/>
    <wsdl:output
wsaw:Action="http://dicom.nema.org/PS3.19/IHostService/QueryInfoSetResponse"

```

```
2335     message="tns:IHostService_QueryInfoSet_OutputMessage"/>
      </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="HostService-YYYYNNDDBinding" type="tns:IHostService-20100825">
      <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
2340     <wsdl:operation name="GenerateUID">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/GenerateUID"
      style="document"/>
      <wsdl:input>
2345     <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
      <soap:body use="literal"/>
      </wsdl:output>
2350    </wsdl:operation>
    <wsdl:operation name="GetAvailableScreen">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/GetAvailableScreen"
      style="document"/>
2355     <wsdl:input>
      <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
      <soap:body use="literal"/>
2360     </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="GetOutputLocation">
      <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/GetOutputLocation"
      style="document"/>
2365     <wsdl:input>
      <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
2370     <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="NotifyStateChanged">
      <soap:operation
2375 soapAction="http://dicom.nema.org/PS3.19/IHostService/NotifyStateChanged"
      style="document"/>
      <wsdl:input>
      <soap:body use="literal"/>
      </wsdl:input>
2380     <wsdl:output>
      <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="NotifyStatus">
2385     <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/NotifyStatus"
      style="document"/>
      <wsdl:input>
      <soap:body use="literal"/>
2390     </wsdl:input>
      <wsdl:output>
      <soap:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>
2395     <wsdl:operation name="NotifyDataAvailable">
```

```

    <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/NotifyDataAvailable"
    style="document"/>
2400   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
2405 </wsdl:operation>
    <wsdl:operation name="GetData">
        <soap:operation soapAction="http://dicom.nema.org/PS3.19/IHostService/GetData"
            style="document"/>
2410   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
2415 </wsdl:operation>
    <wsdl:operation name="ReleaseData">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/ReleaseData"
            style="document"/>
2420   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
2425 </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="GetAsModels">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/GetAsModels"
            style="document"/>
2430   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output>
        <soap:body use="literal"/>
2435 </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="ReleaseModels">
        <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/ReleaseModels"
            style="document"/>
2440   <wsdl:input>
        <soap:body use="literal"/>
    </wsdl:input>
2445   <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="QueryModel">
2450   <soap:operation soapAction="http://dicom.nema.org/PS3.19/IHostService/QueryModel"
            style="document"/>
        <wsdl:input>
            <soap:body use="literal"/>
        </wsdl:input>
2455   <wsdl:output>
        <soap:body use="literal"/>
    </wsdl:output>

```

```

        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="QueryInfoSet">
2460     <soap:operation
soapAction="http://dicom.nema.org/PS3.19/IHostService/QueryInfoSet"
        style="document"/>
        <wsdl:input>
            <soap:body use="literal"/>
2465     </wsdl:input>
        <wsdl:output>
            <soap:body use="literal"/>
        </wsdl:output>
    </wsdl:operation>
2470 </wsdl:binding>
    <wsdl:service name="HostService-20100825">
        <wsdl:port name="HostServiceBinding" binding="tns:HostService-YYYYNNDDDBinding">
            <soap:address location="http://localhost/Service"/>
        </wsdl:port>
2475 </wsdl:service>
</wsdl:definitions>

```

B.2.2 Definition of Data Structures Used

B.2.2.1 Primary Definitions

2480 The following is the the contents of HostService-20100825.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://dicom.nema.org/PS3.19/HostService-20100825"
elementFormDefault="qualified"
    targetNamespace="http://dicom.nema.org/PS3.19/HostService-20100825"
2485 xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
    <xs:import namespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"/>
    <xs:element name="GenerateUID">
        <xs:complexType>
2490     <xs:sequence/>
        </xs:complexType>
    </xs:element>
    <xs:element name="GenerateUIDResponse">
        <xs:complexType>
2495     <xs:sequence>
        <xs:element minOccurs="0" name="GenerateUIDResult" nillable="true"
type="tns:UID"/>
        </xs:sequence>
        </xs:complexType>
2500 </xs:element>
    <xs:complexType name="UID">
        <xs:sequence>
        <xs:element minOccurs="0" name="Uid" nillable="true" type="xs:string"/>
        </xs:sequence>
2505 </xs:complexType>
    <xs:element name="UID" nillable="true" type="tns:UID"/>
    <xs:element name="GetAvailableScreen">
        <xs:complexType>
        <xs:sequence>
2510     <xs:element minOccurs="0" name="preferredScreen" nillable="true"
type="tns:Rectangle"/>
        </xs:sequence>
        </xs:complexType>
    </xs:element>

```



```

2515 <xs:complexType name="Rectangle">
      <xs:sequence>
        <xs:element minOccurs="0" name="Height" type="xs:int"/>
        <xs:element minOccurs="0" name="Width" type="xs:int"/>
        <xs:element minOccurs="0" name="RefPointX" type="xs:int"/>
2520 <xs:element minOccurs="0" name="RefPointY" type="xs:int"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="Rectangle" nillable="true" type="tns:Rectangle"/>
    <xs:element name="GetAvailableScreenResponse">
2525 <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="GetAvailableScreenResult" nillable="true"
          type="tns:Rectangle"/>
      </xs:sequence>
2530 </xs:complexType>
    </xs:element>
    <xs:element name="GetOutputLocation">
      <xs:complexType>
        <xs:sequence>
2535 <xs:element minOccurs="0" name="preferredProtocols" nillable="true"
          xmlns:ql="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
          type="ql:ArrayOfstring"/>
        </xs:sequence>
      </xs:complexType>
2540 </xs:element>
    <xs:element name="GetOutputLocationResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" name="GetOutputLocationResult" nillable="true"
2545 type="xs:anyURI"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="NotifyStateChanged">
2550 <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="state" type="tns:State"/>
      </xs:sequence>
    </xs:complexType>
2555 </xs:element>
    <xs:simpleType name="State">
      <xs:restriction base="xs:string">
        <xs:enumeration value="IDLE"/>
        <xs:enumeration value="INPROGRESS"/>
2560 <xs:enumeration value="SUSPENDED"/>
        <xs:enumeration value="COMPLETED"/>
        <xs:enumeration value="CANCELED"/>
        <xs:enumeration value="EXIT"/>
      </xs:restriction>
2565 </xs:simpleType>
    <xs:element name="State" nillable="true" type="tns:State"/>
    <xs:element name="NotifyStateChangedResponse">
      <xs:complexType>
        <xs:sequence/>
2570 </xs:complexType>
    </xs:element>
    <xs:element name="NotifyStatus">
      <xs:complexType>
        <xs:sequence>
2575 <xs:element minOccurs="0" name="status" nillable="true" type="tns:Status"/>

```

```

        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:complexType name="Status">
2580   <xs:sequence>
        <xs:element minOccurs="0" name="StatusType" type="tns:StatusType"/>
        <xs:element minOccurs="0" name="CodeValue" type="xs:int"/>
        <xs:element minOccurs="0" name="CodingSchemeDesignator" nillable="true"
type="xs:string"/>
2585   <xs:element minOccurs="0" name="CodeMeaning" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="ContextIdentifier" nillable="true"
type="xs:string"/>
        <xs:element minOccurs="0" name="MappingResource" nillable="true"
type="xs:string"/>
2590   <xs:element minOccurs="0" name="ContextGroupVersion" nillable="true"
type="xs:string"/>
        <xs:element minOccurs="0" name="ContextGroupExtensionFlag" nillable="true"
type="xs:string"/>
        <xs:element minOccurs="0" name="ContextGroupLocalVersion" nillable="true"
2595 type="xs:string"/>
        <xs:element minOccurs="0" name="ContextGroupExtensionCreatorUID" nillable="true"
type="xs:string"/>
    </xs:sequence>
</xs:complexType>
2600 <xs:element name="Status" nillable="true" type="tns:Status"/>
<xs:simpleType name="StatusType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="INFORMATION"/>
        <xs:enumeration value="WARNING"/>
2605   <xs:enumeration value="ERROR"/>
        <xs:enumeration value="FATALERROR"/>
    </xs:restriction>
</xs:simpleType>
<xs:element name="StatusType" nillable="true" type="tns:StatusType"/>
2610 <xs:element name="NotifyStatusResponse">
    <xs:complexType>
        <xs:sequence/>
    </xs:complexType>
</xs:element>
2615 <xs:element name="NotifyDataAvailable">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="data" nillable="true"
type="tns:AvailableData"/>
2620   <xs:element minOccurs="0" name="lastData" type="xs:boolean"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:complexType name="AvailableData">
2625   <xs:sequence>
        <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
type="tns:ArrayOfObjectDescriptor"/>
        <xs:element minOccurs="0" name="Patients" nillable="true"
type="tns:ArrayOfPatient"/>
2630   </xs:sequence>
    </xs:complexType>
    <xs:element name="AvailableData" nillable="true" type="tns:AvailableData"/>
    <xs:complexType name="ArrayOfObjectDescriptor">
        <xs:sequence>
2635   <xs:element minOccurs="0" maxOccurs="unbounded" name="ObjectDescriptor"
nillable="true"

```

```

        type="tns:ObjectDescriptor"/>
      </xs:sequence>
    </xs:complexType>
2640 <xs:element name="ArrayOfObjectDescriptor" nillable="true"
type="tns:ArrayOfObjectDescriptor"/>
  <xs:complexType name="ObjectDescriptor">
    <xs:sequence>
      <xs:element minOccurs="0" name="ClassUID" nillable="true" type="tns:UID"/>
2645 <xs:element minOccurs="0" name="MimeType" nillable="true" type="tns:MimeType"/>
      <xs:element minOccurs="0" name="Modality" nillable="true" type="tns:Modality"/>
      <xs:element minOccurs="0" name="TransferSyntaxUID" nillable="true"
type="tns:UID"/>
      <xs:element minOccurs="0" name="DescriptorUuid" nillable="true" type="tns:UUID"/>
2650 </xs:sequence>
    </xs:complexType>
    <xs:element name="ObjectDescriptor" nillable="true" type="tns:ObjectDescriptor"/>
    <xs:complexType name="MimeType">
      <xs:sequence>
2655 <xs:element minOccurs="0" name="Type" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="MimeType" nillable="true" type="tns:MimeType"/>
    <xs:complexType name="Modality">
2660 <xs:sequence>
      <xs:element minOccurs="0" name="Modality" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="Modality" nillable="true" type="tns:Modality"/>
2665 <xs:complexType name="UUID">
      <xs:sequence>
      <xs:element minOccurs="0" name="Uuid" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
2670 <xs:element name="UUID" nillable="true" type="tns:UUID"/>
    <xs:complexType name="ArrayOfPatient">
      <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="Patient" nillable="true"
type="tns:Patient"/>
2675 </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfPatient" nillable="true" type="tns:ArrayOfPatient"/>
    <xs:complexType name="Patient">
      <xs:sequence>
2680 <xs:element minOccurs="0" name="AssigningAuthority" nillable="true"
type="xs:string"/>
      <xs:element minOccurs="0" name="DateOfBirth" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="ID" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Name" nillable="true" type="xs:string"/>
2685 <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
type="tns:ArrayOfObjectDescriptor"/>
      <xs:element minOccurs="0" name="Sex" nillable="true" type="xs:string"/>
      <xs:element minOccurs="0" name="Studies" nillable="true"
type="tns:ArrayOfStudy"/>
2690 </xs:sequence>
    </xs:complexType>
    <xs:element name="Patient" nillable="true" type="tns:Patient"/>
    <xs:complexType name="ArrayOfStudy">
      <xs:sequence>
2695 <xs:element minOccurs="0" maxOccurs="unbounded" name="Study" nillable="true"
type="tns:Study"
      />

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```

    </xs:sequence>
  </xs:complexType>
2700 <xs:element name="ArrayOfStudy" nillable="true" type="tns:ArrayOfStudy"/>
    <xs:complexType name="Study">
      <xs:sequence>
        <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
2705         type="tns:ArrayOfObjectDescriptor"/>
        <xs:element minOccurs="0" name="Series" nillable="true"
type="tns:ArrayOfSeries"/>
        <xs:element minOccurs="0" name="StudyUID" nillable="true" type="tns:UID"/>
      </xs:sequence>
    </xs:complexType>
2710 <xs:element name="Study" nillable="true" type="tns:Study"/>
    <xs:complexType name="ArrayOfSeries">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="Series" nillable="true"
2715         type="tns:Series"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfSeries" nillable="true" type="tns:ArrayOfSeries"/>
    <xs:complexType name="Series">
      <xs:sequence>
2720     <xs:element minOccurs="0" name="ObjectDescriptors" nillable="true"
        type="tns:ArrayOfObjectDescriptor"/>
        <xs:element minOccurs="0" name="SeriesUID" nillable="true" type="tns:UID"/>
      </xs:sequence>
    </xs:complexType>
2725 <xs:element name="Series" nillable="true" type="tns:Series"/>
    <xs:element name="NotifyDataAvailableResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" name="NotifyDataAvailableResult" type="xs:boolean"/>
2730        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:element name="GetData">
      <xs:complexType>
2735     <xs:sequence>
        <xs:element minOccurs="0" name="objects" nillable="true"
type="tns:ArrayOfUUID"/>
        <xs:element minOccurs="0" name="acceptableTransferSyntaxes" nillable="true"
        type="tns:ArrayOfUID"/>
2740     <xs:element minOccurs="0" name="includeBulkData" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="ArrayOfUUID">
    <xs:sequence>
2745     <xs:element minOccurs="0" maxOccurs="unbounded" name="UUID" nillable="true"
type="tns:UUID"/>
    </xs:sequence>
  </xs:complexType>
2750 <xs:element name="ArrayOfUUID" nillable="true" type="tns:ArrayOfUUID"/>
    <xs:complexType name="ArrayOfUID">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="UID" nillable="true"
2755     type="tns:UID"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfUID" nillable="true" type="tns:ArrayOfUID"/>
    <xs:element name="GetDataResponse">

```

```

2760     <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" name="GetDataResult" nillable="true"
            type="tns:ArrayOfObjectLocator"/>
        </xs:sequence>
      </xs:complexType>
2765 </xs:element>
      <xs:complexType name="ArrayOfObjectLocator">
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="ObjectLocator"
nillable="true"
2770           type="tns:ObjectLocator"/>
        </xs:sequence>
      </xs:complexType>
      <xs:element name="ArrayOfObjectLocator" nillable="true"
type="tns:ArrayOfObjectLocator"/>
2775 <xs:complexType name="ObjectLocator">
        <xs:sequence>
          <xs:element minOccurs="0" name="Length" type="xs:long"/>
          <xs:element minOccurs="0" name="Offset" type="xs:long"/>
          <xs:element minOccurs="0" name="TransferSyntax" nillable="true" type="tns:UID"/>
2780 <xs:element minOccurs="0" name="URI" nillable="true" type="xs:anyURI"/>
          <xs:element minOccurs="0" name="Locator" nillable="true" type="tns:UUID"/>
          <xs:element minOccurs="0" name="Source" nillable="true" type="tns:UUID"/>
        </xs:sequence>
      </xs:complexType>
2785 <xs:element name="ObjectLocator" nillable="true" type="tns:ObjectLocator"/>
      <xs:element name="ReleaseData">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="0" name="objects" nillable="true"
2790 type="tns:ArrayOfUUID"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="ReleaseDataResponse">
2795 <xs:complexType>
        <xs:sequence/>
      </xs:complexType>
    </xs:element>
    <xs:element name="GetAsModels">
2800 <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="objects" nillable="true"
type="tns:ArrayOfUUID"/>
        <xs:element minOccurs="0" name="classUID" nillable="true" type="tns:UID"/>
2805 <xs:element minOccurs="0" name="supportedInfoSetTypes" nillable="true"
          type="tns:ArrayOfMimeType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
2810 <xs:complexType name="ArrayOfMimeType">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="MimeType" nillable="true"
          type="tns:MimeType"/>
        </xs:sequence>
2815 </xs:complexType>
      <xs:element name="ArrayOfMimeType" nillable="true" type="tns:ArrayOfMimeType"/>
      <xs:element name="GetAsModelsResponse">
        <xs:complexType>
          <xs:sequence>

```

```

2820     <xs:element minOccurs="0" name="GetAsModelsResult" nillable="true"
        type="tns:ModelSetDescriptor"/>
    </xs:sequence>
</xs:complexType>
</xs:element>
2825 <xs:complexType name="ModelSetDescriptor">
    <xs:sequence>
        <xs:element minOccurs="0" name="FailedSourceObjects" nillable="true"
type="tns:ArrayOfUUID"/>
        <xs:element minOccurs="0" name="InfosetType" nillable="true"
2830 type="tns:MimeType"/>
        <xs:element minOccurs="0" name="Models" nillable="true" type="tns:ArrayOfUUID"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="ModelSetDescriptor" nillable="true" type="tns:ModelSetDescriptor"/>
2835 <xs:element name="ReleaseModels">
    <xs:complexType>
        <xs:sequence>
            <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
2840 </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="ReleaseModelsResponse">
        <xs:complexType>
2845 <xs:sequence/>
        </xs:complexType>
    </xs:element>
    <xs:element name="QueryModel">
        <xs:complexType>
2850 <xs:sequence>
            <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
            <xs:element minOccurs="0" name="XPath" nillable="true"
                xmlns:q2="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
2855 type="q2:ArrayOfstring"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="QueryModelResponse">
2860 <xs:complexType>
    <xs:sequence>
        <xs:element minOccurs="0" name="QueryModelResult" nillable="true"
            type="tns:ArrayOfQueryResult"/>
    </xs:sequence>
2865 </xs:complexType>
</xs:element>
<xs:complexType name="ArrayOfQueryResult">
    <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryResult"
2870 nillable="true"
            type="tns:QueryResult"/>
    </xs:sequence>
</xs:complexType>
<xs:element name="ArrayOfQueryResult" nillable="true" type="tns:ArrayOfQueryResult"/>
2875 <xs:complexType name="QueryResult">
    <xs:sequence>
        <xs:element minOccurs="0" name="Model" nillable="true" type="tns:UUID"/>
        <xs:element minOccurs="0" name="Result" nillable="true"
type="tns:ArrayOfXPathNode"/>
2880 <xs:element minOccurs="0" name="XPath" nillable="true" type="xs:string"/>

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    </xs:sequence>
  </xs:complexType>
  <xs:element name="QueryResult" nillable="true" type="tns:QueryResult"/>
  <xs:complexType name="ArrayOfXPathNode">
2885   <xs:sequence>
     <xs:element minOccurs="0" maxOccurs="unbounded" name="XPathNode" nillable="true"
       type="tns:XPathNode"/>
   </xs:sequence>
 </xs:complexType>
2890 <xs:element name="ArrayOfXPathNode" nillable="true" type="tns:ArrayOfXPathNode"/>
  <xs:complexType name="XPathNode">
    <xs:sequence>
      <xs:element minOccurs="0" name="NodeType"
2895 type="q3:XPathNodeType"/>
        <xs:element minOccurs="0" name="Value" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="XPathNode" nillable="true" type="tns:XPathNode"/>
2900 <xs:element name="QueryInfoSet">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="models" nillable="true"
type="tns:ArrayOfUUID"/>
2905 <xs:element minOccurs="0" name="xPaths" nillable="true"
      xmlns:q4="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
      type="q4:ArrayOfstring"/>
    </xs:sequence>
  </xs:complexType>
2910 </xs:element>
  <xs:element name="QueryInfoSetResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="QueryInfoSetResult" nillable="true"
2915 type="tns:ArrayOfQueryResultInfoSet"/>
    </xs:sequence>
  </xs:complexType>
  </xs:element>
  <xs:complexType name="ArrayOfQueryResultInfoSet">
2920 <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="QueryResultInfoSet"
nillable="true"
      type="tns:QueryResultInfoSet"/>
  </xs:sequence>
2925 </xs:complexType>
  <xs:element name="ArrayOfQueryResultInfoSet" nillable="true"
type="tns:ArrayOfQueryResultInfoSet"/>
  <xs:complexType name="QueryResultInfoSet">
    <xs:sequence>
2930 <xs:element minOccurs="0" name="Model" nillable="true" type="tns:UUID"/>
      <xs:element minOccurs="0" name="Result" nillable="true"
type="tns:ArrayOfXPathNodeInfoSet"/>
      <xs:element minOccurs="0" name="XPath" nillable="true" type="xs:string"/>
    </xs:sequence>
2935 </xs:complexType>
  <xs:element name="QueryResultInfoSet" nillable="true" type="tns:QueryResultInfoSet"/>
  <xs:complexType name="ArrayOfXPathNodeInfoSet">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="XPathNodeInfoSet"
2940 nillable="true"
      type="tns:XPathNodeInfoSet"/>
    </xs:sequence>
  </xs:complexType>

```

```

    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfXPathNodeInfoSet" nillable="true"
2945 type="tns:ArrayOfXPathNodeInfoSet"/>
  <xs:complexType name="XPathNodeInfoSet">
    <xs:sequence>
      <xs:element minOccurs="0" name="InfoSetValue" nillable="true"
type="xs:base64Binary"/>
2950 <xs:element minOccurs="0" name="NodeType"
      xmlns:q5="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
type="q5:XPathNodeType"
      />
    </xs:sequence>
2955 </xs:complexType>
  <xs:element name="XPathNodeInfoSet" nillable="true" type="tns:XPathNodeInfoSet"/>
</xs:schema>

```

B.2.2.2 Referenced Definitions

2960 The following is the content of XPathNodeType.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
elementFormDefault="qualified"
targetNamespace="http://schemas.datacontract.org/2004/07/System.Xml.XPath"
2965 xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:simpleType name="XPathNodeType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Root" />
      <xs:enumeration value="Element" />
2970 <xs:enumeration value="Attribute" />
      <xs:enumeration value="Namespace" />
      <xs:enumeration value="Text" />
      <xs:enumeration value="SignificantWhitespace" />
      <xs:enumeration value="Whitespace" />
2975 <xs:enumeration value="ProcessingInstruction" />
      <xs:enumeration value="Comment" />
      <xs:enumeration value="All" />
    </xs:restriction>
  </xs:simpleType>
2980 <xs:element name="XPathNodeType" nillable="true" type="tns:XPathNodeType" />
</xs:schema>

```

The following is the content of Types.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
2985 <xs:schema xmlns:tns="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="anyType" nillable="true" type="xs:anyType" />
2990 <xs:element name="anyURI" nillable="true" type="xs:anyURI" />
  <xs:element name="base64Binary" nillable="true" type="xs:base64Binary" />
  <xs:element name="boolean" nillable="true" type="xs:boolean" />
  <xs:element name="byte" nillable="true" type="xs:byte" />
  <xs:element name="dateTime" nillable="true" type="xs:dateTime" />
2995 <xs:element name="decimal" nillable="true" type="xs:decimal" />
  <xs:element name="double" nillable="true" type="xs:double" />
  <xs:element name="float" nillable="true" type="xs:float" />
  <xs:element name="int" nillable="true" type="xs:int" />

```



```

3000 <xs:element name="long" nillable="true" type="xs:long" />
<xs:element name="QName" nillable="true" type="xs:QName" />
<xs:element name="short" nillable="true" type="xs:short" />
<xs:element name="string" nillable="true" type="xs:string" />
<xs:element name="unsignedByte" nillable="true" type="xs:unsignedByte" />
<xs:element name="unsignedInt" nillable="true" type="xs:unsignedInt" />
3005 <xs:element name="unsignedLong" nillable="true" type="xs:unsignedLong" />
<xs:element name="unsignedShort" nillable="true" type="xs:unsignedShort" />
<xs:element name="char" nillable="true" type="tns:char" />
<xs:simpleType name="char">
  <xs:restriction base="xs:int" />
3010 </xs:simpleType>
<xs:element name="duration" nillable="true" type="tns:duration" />
<xs:simpleType name="duration">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?" />
3015 <xs:minInclusive value="-P10675199DT2H48M5.4775808S" />
<xs:maxInclusive value="P10675199DT2H48M5.4775807S" />
</xs:restriction>
</xs:simpleType>
<xs:element name="guid" nillable="true" type="tns:guid" />
3020 <xs:simpleType name="guid">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-
fA-F]{12}" />
</xs:restriction>
3025 </xs:simpleType>
<xs:attribute name="FactoryType" type="xs:QName" />
<xs:attribute name="Id" type="xs:ID" />
<xs:attribute name="Ref" type="xs:IDREF" />
</xs:schema>
3030

```

The following is the content of ArrayOfString.xsd:

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:tns="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
elementFormDefault="qualified"
3035 targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfstring">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
3040 type="xs:string" />
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfstring" nillable="true" type="tns:ArrayOfstring" />
</xs:schema>
3045

```