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Anexos

DTD de Validação WMS 1.1.1

```
<!ELEMENT WMT_MS_Capabilities (Service, Capability) >
<!ATTLIST WMT_MS_Capabilities
version CDATA #FIXED "1.1.1"
updateSequence CDATA #IMPLIED>
<!-- Elements used in multiple places. -->
<!-- The Name is typically for machine-to-machine communication. -->
<!ELEMENT Name (#PCDATA) >
<!-- The Title is for informative display to a human. -->
<!ELEMENT Title (#PCDATA) >
<!-- The abstract is a longer narrative description of an object. -->
<!ELEMENT Abstract (#PCDATA) >
<!-- An OnlineResource is typically an HTTP URL. The URL is placed in
the xlink:href attribute. The xmlns:xlink attribute is a required XML namespace
declaration. -->
<!ELEMENT OnlineResource EMPTY>
<!ATTLIST OnlineResource
xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink"
xlink:type CDATA #FIXED "simple"
xlink:href CDATA #REQUIRED >
<!-- A container for listing an available format's MIME type. -->
<!ELEMENT Format (#PCDATA) >
<!-- General service metadata. -->
<!ELEMENT Service (Name, Title, Abstract?, KeywordList?,
OnlineResource, ContactInformation?, Fees?, AccessConstraints?) >
<!-- List of keywords or keyword phrases to help catalog searching. -->
<!ELEMENT KeywordList (Keyword*) >
<!-- A single keyword or phrase. -->
```

```
<!ELEMENT Keyword (#PCDATA) >

<!-- Information about a contact person for the service. -->
<!ELEMENT          ContactInformation          (ContactPersonPrimary?,
ContactPosition?, ContactAddress?, ContactVoiceTelephone?,
ContactFacsimileTelephone?,
ContactElectronicMailAddress?) >

<!--The primary contact person.-->
<!ELEMENT ContactPersonPrimary (ContactPerson, ContactOrganization)
>

<!--The person to contact.-->
<!ELEMENT ContactPerson (#PCDATA) >

<!--The organization supplying the service.-->
<!ELEMENT ContactOrganization (#PCDATA) >

<!--The position title for the contact person.-->
<!ELEMENT ContactPosition (#PCDATA) >

<!--The address for the contact supplying the service.-->
<!ELEMENT          ContactAddress          (AddressType,        Address,        City,
StateOrProvince, PostCode, Country) >

<!--The type of address.-->
<!ELEMENT AddressType (#PCDATA) >

<!--The street address.-->
<!ELEMENT Address (#PCDATA) >

<!--The address city.-->
<!ELEMENT City (#PCDATA) >

<!--The state or province.-->
<!ELEMENT StateOrProvince (#PCDATA) >

<!--The zip or postal code.-->
<!ELEMENT PostCode (#PCDATA) >

<!--The address country.-->
<!ELEMENT Country (#PCDATA) >

<!--Contact telephone number.-->
<!ELEMENT ContactVoiceTelephone (#PCDATA) >

<!--The contact fax number.-->
<!ELEMENT ContactFacsimileTelephone (#PCDATA) >
```

<!--The e-mail address for the contact.-->

<!ELEMENT ContactElectronicMailAddress (#PCDATA) >

<!-- Elements indicating what fees or access constraints are imposed. -->

<!ELEMENT Fees (#PCDATA)>

<!ELEMENT AccessConstraints (#PCDATA)>

<!-- A Capability lists available request types, how exceptions

may be reported, and whether any vendor-specific capabilities are defined. It

also includes an optional list of map *layers* available from this server. -->

<!ELEMENT Capability

(Request, Exception, VendorSpecificCapabilities?,

UserDefinedSymbolization?, *Layer*?) >

<!-- Available WMS Operations are listed in a Request element. -->

<!ELEMENT Request (GetCapabilities, GetMap, GetFeatureInfo?,

Describe*Layer*?, GetLegendGraphic?, GetStyles?, PutStyles?) >

<!-- For each operation offered by the server, list the available output

formats and the online resource. -->

<!ELEMENT GetCapabilities (Format+, DCPType+)>

<!ELEMENT GetMap (Format+, DCPType+)>

<!ELEMENT GetFeatureInfo (Format+, DCPType+)>

<!-- The following optional operations only apply to SLD-enabled WMS -->

<!ELEMENT Describe*Layer* (Format+, DCPType+)>

<!ELEMENT GetLegendGraphic (Format+, DCPType+)>

<!ELEMENT GetStyles (Format+, DCPType+)>

<!ELEMENT PutStyles (Format+, DCPType+)>

<!-- Available Distributed Computing Platforms (DCPs) are

listed here. At present, only HTTP is defined. -->

<!ELEMENT DCPType (HTTP) >

<!-- Available HTTP request methods. One or both may be supported. -->

<!ELEMENT HTTP (Get | Post)+ >

<!-- URL prefix for each HTTP request method. -->

<!ELEMENT Get (OnlineResource) >

<!ELEMENT Post (OnlineResource) >

<!-- An Exception element indicates which error-reporting formats are

supported. -->

<!ELEMENT Exception (Format+)>

<!-- Optional user-defined symbolization (used only by SLD-enabled WMSes). -->

<!ELEMENT UserDefinedSymbolization EMPTY >

<!ATTLIST UserDefinedSymbolization

SupportSLD (0 | 1) "0"

User*Layer* (0 | 1) "0"

UserStyle (0 | 1) "0"

RemoteWFS (0 | 1) "0" >

<!-- Nested list of zero or more map *Layers* offered by this server. -->

<!ELEMENT *Layer* (Name?, Title, Abstract?, KeywordList?, SRS*,

LatLonBoundingBox?, BoundingBox*, Dimension*, Extent*,

Attribution?, AuthorityURL*, Identifier*, MetadataURL*, DataURL*,

FeatureListURL*, Style*, ScaleHint?, *Layer*) >

<!-- Optional attributes-->

<!ATTLIST *Layer* queryable (0 | 1) "0"

cascaded CDATA #IMPLIED

opaque (0 | 1) "0"

noSubsets (0 | 1) "0"

fixedWidth CDATA #IMPLIED

fixedHeight CDATA #IMPLIED >

<!-- Identifier for a single Spatial Reference Systems (SRS). -->

<!ELEMENT SRS (#PCDATA) >

<!-- The LatLonBoundingBox attributes indicate the edges of the enclosing

rectangle in latitude/longitude decimal degrees (as in SRS EPSG:4326

[WGS1984lat/lon]). -->

<!ELEMENT LatLonBoundingBox EMPTY>

<!ATTLIST LatLonBoundingBox

minx CDATA #REQUIRED

miny CDATA #REQUIRED

maxx CDATA #REQUIRED

maxy CDATA #REQUIRED>

<!-- The BoundingBox attributes indicate the edges of the bounding box

in units of the specified spatial reference system. -->

```
<!ELEMENT BoundingBox EMPTY>
<!ATTLIST BoundingBox
SRS CDATA #REQUIRED
minx CDATA #REQUIRED
miny CDATA #REQUIRED
maxx CDATA #REQUIRED
maxy CDATA #REQUIRED
resx CDATA #IMPLIED
resy CDATA #IMPLIED>
<!-- The Dimension element declares the _existence_ of a dimension. -->
<!ELEMENT Dimension EMPTY >
<!ATTLIST Dimension
name CDATA #REQUIRED
units CDATA #REQUIRED
unitSymbol CDATA #IMPLIED>
<!-- The Extent element indicates what _values_ along a dimension are
valid. -->
<!ELEMENT Extent (#PCDATA) >
<!ATTLIST Extent
name CDATA #REQUIRED
default CDATA #IMPLIED>
<!-- Attribution indicates the provider of a Layer or collection of Layers.
The provider's URL, descriptive title string, and/or logo image URL may be
supplied. Client applications may choose to display one or more of these
items. A format element indicates the MIME type of the logo image located
at LogoURL. The logo image's width and height assist client applications in
laying out space to display the logo. -->
<!ELEMENT Attribution ( Title?, OnlineResource?, LogoURL? )>
<!ELEMENT LogoURL (Format, OnlineResource) >
<!ATTLIST LogoURL
width NMTOKEN #REQUIRED
height NMTOKEN #REQUIRED>
```

<!-- A Map Server may use zero or more MetadataURL elements to offer detailed, standardized metadata about the data underneath a particular *layer*. The type

attribute indicates the standard to which the metadata complies. Two types

are defined at present: 'TC211' = ISO TC211 19115; 'FGDC' = FGDC

CSDGM. The format element indicates how the metadata is structured. -->

<!ELEMENT MetadataURL (Format, OnlineResource) >

<!ATTLIST MetadataURL

type (TC211 | FGDC) #REQUIRED>

<!-- A Map Server may use zero or more Identifier elements to list ID numbers or labels defined by a particular Authority. For example, the Global

Change Master Directory (gcmd.gsfc.nasa.gov) defines a DIF_ID label for every

dataset. The authority name and explanatory URL are defined in a separate

AuthorityURL element, which may be defined once and inherited by

subsidiary *layers*. Identifiers themselves are not inherited. -->

<!ELEMENT AuthorityURL (OnlineResource) >

<!ATTLIST AuthorityURL

name NMTOKEN #REQUIRED >

<!ELEMENT Identifier (#PCDATA) >

<!ATTLIST Identifier

authority CDATA #REQUIRED >

<!-- A Map Server may use DataURL to offer more information about the data underneath a particular *layer*. While the semantics are not well-defined, as

long as the results of an HTTP GET request against the DataURL are

properly MIME-typed, Viewer Clients and Cascading Map Servers can make use

of this. -->

<!ELEMENT DataURL (Format, OnlineResource) >

<!-- A Map Server may use FeatureListURL to point to a list of the features

represented in a *Layer*. -->

<!ELEMENT FeatureListURL (Format, OnlineResource) >

<!-- A Style element lists the name by which a style is requested and a

human-readable title for pick lists, optionally (and ideally) provides a

human-readable description, and optionally gives a style URL. -->

<!ELEMENT Style (Name, Title, Abstract?,

LegendURL*, StyleSheetURL?, StyleURL?) >

<!-- A Map Server may use zero or more LegendURL elements to provide an image(s) of a legend relevant to each Style of a *Layer*. The Format element indicates the MIME type of the legend. Width and height attributes are provided to assist client applications in laying out space to display the legend. -->

<!ELEMENT LegendURL (Format, OnlineResource) >

<!ATTLIST LegendURL

width NMTOKEN #REQUIRED

height NMTOKEN #REQUIRED>

<!-- StyleSheeetURL provides symbology information foreach Style of a *Layer*. -->

<!ELEMENT StyleSheetURL (Format, OnlineResource) >

<!-- A Map Server may use StyleURL to offer more information about the data or symbology underlying a particular Style. While the semantics are not well-defined, as long as the results of an HTTP GET request against the StyleURL are properly MIME-typed, Viewer Clients and Cascading Map Servers can make use of this. A possible use could be to allow a Map Server to provide legend information. -->

<!ELEMENT StyleURL (Format, OnlineResource) >

<!-- Minimum and maximum scale hints for which it is appropriate to display this *layer*. -->

<!ELEMENT ScaleHint EMPTY>

<!ATTLIST ScaleHint

min CDATA #REQUIRED

max CDATA #REQUIRED>

DTD de Exceções WMS 1.1.1

```
<!ELEMENT ServiceExceptionReport (ServiceException*)>
<!ATTLIST ServiceExceptionReport version CDATA #FIXED "1.1.1">
<!ELEMENT ServiceException (#PCDATA)>
<!ATTLIST ServiceException code CDATA #IMPLIED>
```

Exemplo de Resposta do WMS

```
<?xml version='1.0' encoding="ISO-8859-1" standalone="no" ?>
<!-- The DTD (Document Type Definition) given here must correspond to
the version number     declared in the WMT_MS_Capabilities element below. -->
<!DOCTYPE    WMT_MS_Capabilities    SYSTEM    "http://di.tecgraf.puc-
rio.br:8090/marcWMS/wms_dtd_1_1_1.dtd"
[
<!-- Vendor-specific elements are defined here if needed. -->
<!-- If not needed, you can omit these [] and everything inside. -->
<!ELEMENT VendorSpecificCapabilities EMPTY>
]> <!-- end of DOCTYPE declaration -->

<WMT_MS_Capabilities updateSequence="1.1.0" version="1.1.1">
 <Service>
  <Name>OGC:WMS</Name>
  <Title>OGC WMS versão 1.1.1 - Marconi de Arruda Pereira</Title>
  <Abstract>Implementacao do OGC WMS instrumento da dissertacao de
Marconi de Arruda Pereira - Puc/RJ - 2004</Abstract>
   <KeywordList>
    <Keyword>WMS</Keyword>
    <Keyword>OGC</Keyword>
    <Keyword>TerraLib</Keyword>
    <Keyword>PUC-Rio</Keyword>
    <Keyword>TecGraf</Keyword>
   </KeywordList>
   <OnlineResource xlink:href="http://di.tecgraf.puc-
rio.br:8090/marcWMS/wms" xlink:type="simple"
xmlns:xlink="http://www.w3.org/1999/xlink"/>
    <Fees>none</Fees>
    <AccessConstraints>none</AccessConstraints>
 </Service>
 <Capability>
```

```xml
<Request>
 <GetCapabilities>
  <Format>application/vnd.ogc.wms_xml</Format>
  <DCPType>
   <HTTP>
    <Get>
     <OnlineResource xlink:href="http://di.tecgraf.puc-rio.br:8090/marcWMS/wms" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
    </Get>
    <Post>
     <OnlineResource xlink:href="http://di.tecgraf.puc-rio.br:8090/marcWMS/wms" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
    </Post>
   </HTTP>
  </DCPType>
 </GetCapabilities>
 <GetMap>
  <Format>image/jpeg</Format>
  <DCPType>
   <HTTP>
    <Get>
     <OnlineResource xlink:href="http://di.tecgraf.puc-rio.br:8090/marcWMS/wms" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
    </Get>
    <Post>
     <OnlineResource xlink:href="http://di.tecgraf.puc-rio.br:8090/marcWMS/wms" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
    </Post>
   </HTTP>
  </DCPType>
```

```
      </GetMap>
     <GetFeatureInfo>
      <Format>text/plain</Format>
      <DCPType>
       <HTTP>
        <Get>
         <OnlineResource                    xlink:href="http://di.tecgraf.puc-
rio.br:8090/marcWMS/wms"                          xlink:type="simple"
xmlns:xlink="http://www.w3.org/1999/xlink"/>
        </Get>
        <Post>
         <OnlineResource                    xlink:href="http://di.tecgraf.puc-
rio.br:8090/marcWMS/wms"                          xlink:type="simple"
xmlns:xlink="http://www.w3.org/1999/xlink"/>
        </Post>
       </HTTP>
      </DCPType>
     </GetFeatureInfo>
    </Request>
    <Exception>
     <Format>application/vnd.ogc.se_blank</Format>
    </Exception>
    <Layer cascaded="0" noSubsets="0" opaque="0" queryable="0">
     <Title>Guarulhos</Title>
     <Layer cascaded="0" opaque="1" queryable="1">
      <Title>Instalações do Aeroporto</Title>
      <Name>20</Name>
      <BoundingBox SRS="EPSG:6405" maxx="-46.436722"
     maxy="-23.402046" minx="-46.495781" miny="-23.463450"/>
     </Layer>
     <Layer cascaded="0" opaque="1" queryable="1">
      <Title>Área Patrimonial</Title>

      <Name>19</Name>
```

```
    <BoundingBox SRS="EPSG:6405" maxx="-46.436929"
maxy="-23.411789" minx="-46.495352" miny="-23.458284"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Curva de Ruído 1- Ano 2000</Title>
   <Name>18</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.440713"
maxy="-23.420638" minx="-46.492477" miny="-23.442839"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Curva de Ruído 2- Ano 2000</Title>
   <Name>17</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.410831"
maxy="-23.413058" minx="-46.546650" miny="-23.455045"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Plano de Proteção</Title>
   <Name>16</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.422517"
maxy="-23.404730" minx="-46.517442" miny="-23.450084"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Hidrografia</Title>
   <Name>15</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.359720"
maxy="-23.384363" minx="-46.578917" miny="-23.511138"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Pontos de Monitoramento</Title>
   <Name>14</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.422160"
maxy="-23.424556" minx="-46.507232" miny="-23.466432"/>
  </Layer>
```

```
<Layer cascaded="0" opaque="1" queryable="1">
 <Title>Equipamentos</Title>
 <Name>13</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.405833"
maxy="-23.400268" minx="-46.558896" miny="-23.489467"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Corpos de Água</Title>
 <Name>12</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.371265"
maxy="-23.394008" minx="-46.578593" miny="-23.510926"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Eixos de Logradouros</Title>
 <Name>11</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.359608"
maxy="-23.345274" minx="-46.570503" miny="-23.511268"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Quadras</Title>
 <Name>10</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.354446"
maxy="-23.330585" minx="-46.570671" miny="-23.511323"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Bairros</Title>
 <Name>9</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.334749"
maxy="-23.271274" minx="-46.578729" miny="-23.511436"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Densidade Demográfica</Title>

 <Name>8</Name>
```

```
   <BoundingBox SRS="EPSG:6405" maxx="-46.381081"
maxy="-23.362190" minx="-46.560912" miny="-23.507906"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Setores Censitários</Title>
   <Name>7</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.381081"
maxy="-23.362190" minx="-46.560912" miny="-23.507906"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Favelas</Title>
   <Name>6</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.361957"
maxy="-23.347199" minx="-46.572035" miny="-23.448562"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Uso do Solo</Title>
   <Name>5</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.334388"
maxy="-23.271759" minx="-46.578253" miny="-23.511040"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>Curvas de Nível</Title>
   <Name>4</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.371462"
maxy="-23.349414" minx="-46.577971" miny="-23.501629"/>
  </Layer>
  <Layer cascaded="0" opaque="1" queryable="1">
   <Title>PEZR-1em vigor</Title>
   <Name>3</Name>
   <BoundingBox SRS="EPSG:6405" maxx="-46.416280"
maxy="-23.414920" minx="-46.515754" miny="-23.447587"/>
  </Layer>
```

```
<Layer cascaded="0" opaque="1" queryable="1">
 <Title>PEZR-2em vigor</Title>
 <Name>2</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.352168"
maxy="-23.396259" minx="-46.552255" miny="-23.458326"/>
 </Layer>
 <Layer cascaded="0" opaque="1" queryable="1">
 <Title>Limite Municipal</Title>
 <Name>1</Name>
 <BoundingBox SRS="EPSG:6405" maxx="-46.334437"
maxy="-23.271196" minx="-46.578415" miny="-23.511286"/>
 </Layer>
 </Layer>
 </Capability>
</WMT_MS_Capabilities>
```