

G-lambda

GNS-WSI version 3

(Grid Network Service – Web Services
Interface, version 3)

Appendices

DRAFT

PRELIMINARY INFORMATION

The G-lambda project <http://www.g-lambda.net/>

Dec. 11 2008

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Appendix A. ReservationFactory WSDL

```
<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions name="ReservationFactoryService"
    targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservationfactory"
    xmlns:tns="http://schemas.glambda.net/gnswsi3/2008/12/reservationfactory"
    xmlns:types="http://schemas.glambda.net/gnswsi3/2008/12/reservationfactory/types"
    xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
    xmlns:wsa="http://www.w3.org/2005/08/addressing"
    xmlns:wsbf="http://docs.oasis-open.org/wsrf/bf-2"
    xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
    xmlns:wSDLpp="http://www.globus.org/namespaces/2004/10/WSDLPreprocessor"
    xmlns:wsrp="http://docs.oasis-open.org/wsrf/rp-2"
    xmlns:wsrpw="http://docs.oasis-open.org/wsrf/rpw-2"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">

    <wsdl:import
        location="../wsrf/faults/bfw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsrf/rpw-2"/>

<!--=====
                                     T Y P E S
=====-->
<wsdl:types>
    <xsd:schema targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservationfactory/types"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema">

        <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
            schemaLocation="rdl.xsd"/>

        <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
            schemaLocation="ndl.xsd"/>

        <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/cdl"
            schemaLocation="cdl.xsd"/>

        <xsd:element name="createRequest">
            <xsd:annotation>
```

```

        <xsd:documentation>Request for creating a resource</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:DistinguishedName"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="createResponse">
    <xsd:annotation>
        <xsd:documentation>Response against a createRequest</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationEPR"/>
        </xsd:sequence>
    </xsd:complexType>

</xsd:element>

<xsd:element name="getAvailableResourcesRequest">
    <xsd:annotation>
        <xsd:documentation>Request for discovering available resources</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:DistinguishedName"/>
            <xsd:element ref="rdl:AvailableResourceQuery" maxOccurs="unbounded"
minOccurs="1"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="getAvailableResourcesResponse">
    <xsd:annotation>
        <xsd:documentation>Response against a getAvailableRequest</xsd:documentation>
    </xsd:annotation>

```

```

        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="rdl:AvailableResourceQueryResult" maxOccurs="unbounded"
minOccurs="0"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

    <xsd:element name="checkResourceAvailabilityRequest">
        <xsd:annotation>
            <xsd:documentation>Request for checking resource availability</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:DistinguishedName"/>
                <xsd:element ref="rdl:ReservationResources" maxOccurs="unbounded" minOccurs="1"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

    <xsd:element name="checkResourceAvailabilityResponse">
        <xsd:annotation>
            <xsd:documentation>Response against a
checkResourceAvailabilityRequest</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element ref="rdl:ResourceStatus" maxOccurs="unbounded" minOccurs="1"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

</xsd:schema>
</wsdl:types>

```

```
<!--=====
```

M E S S A G E S

```
----->
<wsdl:message name="createInputMessage">
  <wsdl:part element="types:createRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="createOutputMessage">
  <wsdl:part element="types:createResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="getAvailableResourcesInputMessage">
  <wsdl:part element="types:getAvailableResourcesRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="getAvailableResourcesOutputMessage">
  <wsdl:part element="types:getAvailableResourcesResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="checkResourceAvailabilityInputMessage">
  <wsdl:part element="types:checkResourceAvailabilityRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="checkResourceAvailabilityOutputMessage">
  <wsdl:part element="types:checkResourceAvailabilityResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="reservationFactoryFaultMessage">
  <wsdl:part element="rdl:ReservationFactoryFault" name="fault"/>
</wsdl:message>

```

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

P O R T T Y P E

```
----->
```

```
<wsdl:portType name="ReservationFactoryPortType">

  <wsdl:operation name="create">
    <wsdl:input message="tns:createInputMessage"/>
    <wsdl:output message="tns:createOutputMessage"/>
  </wsdl:operation>

```

```
<wsdl:fault message="tns:reservationFactoryFaultMessage" name="reservationFactoryFault"/>
<xsd:annotation>
  <xsd:documentation></xsd:documentation>
</xsd:annotation>
</wsdl:operation>

<wsdl:operation name="getAvailableResources">
  <wsdl:input message="tns:getAvailableResourcesInputMessage"/>
  <wsdl:output message="tns:getAvailableResourcesOutputMessage"/>
  <wsdl:fault message="tns:reservationFactoryFaultMessage" name="reservationFactoryFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>

<wsdl:operation name="checkResourceAvailability">
  <wsdl:input message="tns:checkResourceAvailabilityInputMessage"/>
  <wsdl:output message="tns:checkResourceAvailabilityOutputMessage"/>
  <wsdl:fault message="tns:reservationFactoryFaultMessage" name="reservationFactoryFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>

</wsdl:portType>
</wsdl:definitions>
```

Appendix B. Reservation WSDL

```
<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions name="ReservationService"
    targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservation"
    xmlns:tns="http://schemas.glambda.net/gnswsi3/2008/12/reservation"
    xmlns:types="http://schemas.glambda.net/gnswsi3/2008/12/reservation/types"
    xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
    xmlns:wsa="http://www.w3.org/2005/08/addressing"
    xmlns:wsbf="http://docs.oasis-open.org/wsrf/bf-2"
    xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
    xmlns:wSDLpp="http://www.globus.org/namespaces/2004/10/WSDLPreprocessor"
    xmlns:wsrp="http://docs.oasis-open.org/wsrf/rp-2"
    xmlns:wsrpw="http://docs.oasis-open.org/wsrf/rpw-2"
    xmlns:wsl="http://docs.oasis-open.org/wsrf/rl-2"
    xmlns:wslw="http://docs.oasis-open.org/wsrf/rlw-2"
    xmlns:wntw="http://docs.oasis-open.org/wsn/bw-2"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">

    <wsdl:import
        location="../wsrf/properties/rpw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsrf/rpw-2"/>

    <wsdl:import
        location="../wsrf/lifetime/rlw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsrf/rlw-2"/>

    <wsdl:import
        location="../wsrf/notification/bw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsn/bw-2"/>

    <!--=====
                                     T Y P E S
    =====-->

    <wsdl:types>
        <xsd:schema targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservation/types"
            xmlns:xsd="http://www.w3.org/2001/XMLSchema">
```

```

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
schemaLocation="rdl.xsd"/>
    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
schemaLocation="ndl.xsd"/>
    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/cdl"
schemaLocation="cdl.xsd"/>

<xsd:element name="ReservationResourceProperties">
    <xsd:annotation>
        <xsd:documentation>Properties of reserved resource</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element ref="rdl:DistinguishedName" minOccurs="0" maxOccurs="1"/>
            <xsd:element ref="rdl:ResourceInformation" maxOccurs="unbounded" minOccurs="0"/>
            <xsd:element ref="rdl:ReservationCommandHistory" maxOccurs="unbounded"
minOccurs="0"/>
            <xsd:element ref="rdl:ErrorInfo" maxOccurs="1" minOccurs="0"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name="reserveRequest">
    <xsd:annotation>
        <xsd:documentation>Request for reserving a resource</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ResourceRequirements"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name="reserveResponse">
    <xsd:annotation>
        <xsd:documentation>Response against a reserveRequest</xsd:documentation>

```

```
</xsd:annotation>
<xsd:complexType>
  <xsd:sequence>
    <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
```

```
<xsd:element name="modifyRequest">
  <xsd:annotation>
    <xsd:documentation>Request for modifying specified reservation
resources</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ResourceRequirements"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name="modifyResponse">
  <xsd:annotation>
    <xsd:documentation>Response against a modifyRequest</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name="modifyAllRequest">
  <xsd:annotation>
    <xsd:documentation>Request for modifying all reservation resources</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
```

```

        <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:Timeframe"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="modifyAllResponse">
    <xsd:annotation>
        <xsd:documentation>Response against a modifyAllRequest</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

<xsd:element name="releaseRequest">
    <xsd:annotation>
        <xsd:documentation>Request for releasing specified reservation
resources</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element minOccurs="1" maxOccurs="unbounded" ref="rdl:ReservationID"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="releaseResponse">
    <xsd:annotation>
        <xsd:documentation>Response against a releaseRequest</xsd:documentation>
    </xsd:annotation>
    <xsd:complexType>
        <xsd:sequence>
            <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>

```

```
<xsd:element name="releaseAllRequest">
  <xsd:annotation>
    <xsd:documentation>Request for releasing all reservation resources</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType/>
</xsd:element>
```

```
<xsd:element name="releaseAllResponse">
  <xsd:annotation>
    <xsd:documentation>Response against a releaseAllRequest</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name="getReservationStatusRequest">
  <xsd:annotation>
    <xsd:documentation>Request to check a specified ReservationResource
property</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" minOccurs="0" ref="rdl:ReservationID"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
```

```
<xsd:element name="getReservationStatusResponse">
  <xsd:annotation>
    <xsd:documentation>Response against a getReservationStatusRequest</xsd:documentation>
  </xsd:annotation>
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" minOccurs="1"

```

```

ref="rdl:ReservationStatusHolder"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>

<!-- Notification Message -->
<xsd:element name="StatusChangeNotificationMessage"
type="types:StatusChangeNotificationMessageType">
    <xsd:annotation>
        <xsd:documentation>Current reservation status for a reservation
request</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:complexType name="StatusChangeNotificationMessageType">
    <xsd:annotation>
        <xsd:documentation>Notification to inform of the status change of a specified
ReservationResource against the corresponding client</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="status" ref="rdl:ReservationStatus" minOccurs="1" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="StatusChangeNotificationMessageWrapperType">
    <xsd:annotation>
        <xsd:documentation>Notification to inform of the status change of a specified
ReservationResource against the corresponding client via a wrapper middleware</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element ref="types:StatusChangeNotificationMessage"/>
    </xsd:sequence>
</xsd:complexType>
</xsd:schema>
</wsdl:types>

```

```

<!--=====

```

M E S S A G E S

```
----->
<wsdl:message name="reserveInputMessage">
  <wsdl:part element="types:reserveRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="reserveOutputMessage">
  <wsdl:part element="types:reserveResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="modifyInputMessage">
  <wsdl:part element="types:modifyRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="modifyOutputMessage">
  <wsdl:part element="types:modifyResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="modifyAllInputMessage">
  <wsdl:part element="types:modifyAllRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="modifyAllOutputMessage">
  <wsdl:part element="types:modifyAllResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="releaseInputMessage">
  <wsdl:part element="types:releaseRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="releaseOutputMessage">
  <wsdl:part element="types:releaseResponse" name="parameters"/>
</wsdl:message>

<wsdl:message name="releaseAllInputMessage">
  <wsdl:part element="types:releaseAllRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="releaseAllOutputMessage">
  <wsdl:part element="types:releaseAllResponse" name="parameters"/>
</wsdl:message>
```

```
<wsdl:message name="getReservationStatusInputMessage">
  <wsdl:part element="types:getReservationStatusRequest" name="parameters"/>
</wsdl:message>
<wsdl:message name="getReservationStatusOutputMessage">
  <wsdl:part element="types:getReservationStatusResponse" name="parameters"/>
</wsdl:message>
```

```
<wsdl:message name="reservationFaultMessage">
  <wsdl:part element="rdl:ReservationFault" name="fault"/>
</wsdl:message>
```

```
<!--=====
                                                    P O R T T Y P E
=====-->
```

```
<wsdl:portType name="ReservationPortType"
  wsdlpp:extends="wsrpw:GetResourceProperty
                                     wsrpw:GetMultipleResourceProperties
                                     wsrlw:ScheduledResourceTermination
                                     wsrlw:ImmediateResourceTermination
                                     wsntw:NotificationProducer
                                     wsntw:SubscriptionManager"
  wsrpw:ResourceProperties="types:ReservationResourceProperties">
```

```
<wsdl:operation name="reserve">
  <wsdl:input message="tns:reserveInputMessage"/>
  <wsdl:output message="tns:reserveOutputMessage"/>
  <wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>
```

```
<wsdl:operation name="modify">
  <wsdl:input message="tns:modifyInputMessage"/>
  <wsdl:output message="tns:modifyOutputMessage"/>
```

```
<wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
<xsd:annotation>
  <xsd:documentation></xsd:documentation>
</xsd:annotation>
</wsdl:operation>

<wsdl:operation name="modifyAll">
  <wsdl:input message="tns:modifyAllInputMessage"/>
  <wsdl:output message="tns:modifyAllOutputMessage"/>
  <wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>

<wsdl:operation name="release">
  <wsdl:input message="tns:releaseInputMessage"/>
  <wsdl:output message="tns:releaseOutputMessage"/>
  <wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>

<wsdl:operation name="releaseAll">
  <wsdl:input message="tns:releaseAllInputMessage"/>
  <wsdl:output message="tns:releaseAllOutputMessage"/>
  <wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
  <xsd:annotation>
    <xsd:documentation></xsd:documentation>
  </xsd:annotation>
</wsdl:operation>

<wsdl:operation name="getReservationStatus">
  <wsdl:input message="tns:getReservationStatusInputMessage"/>
  <wsdl:output message="tns:getReservationStatusOutputMessage"/>
```

```
<wsdl:fault message="tns:reservationFaultMessage" name="reservationFault"/>
<xsd:annotation>
  <xsd:documentation></xsd:documentation>
</xsd:annotation>
</wsdl:operation>

</wsdl:portType>
</wsdl:definitions>
```

Appendix C. ReservationCommand WSDL

```
<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions name="ReservationCommandService"
    targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservationcommand"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
    xmlns:tns="http://schemas.glambda.net/gnswsi3/2008/12/reservationcommand"
    xmlns:types="http://schemas.glambda.net/gnswsi3/2008/12/reservationcommand/types"
    xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
    xmlns:wsa="http://www.w3.org/2005/08/addressing"
    xmlns:wsdpp="http://www.globus.org/namespaces/2004/10/WSDLPreprocessor"
    xmlns:wsrp="http://docs.oasis-open.org/wsrp/rp-2"
    xmlns:wsrpw="http://docs.oasis-open.org/wsrp/rpw-2"
    xmlns:wsr1="http://docs.oasis-open.org/wsrp/rl-2"
    xmlns:wsr1w="http://docs.oasis-open.org/wsrp/rlw-2"
    xmlns:wsntw="http://docs.oasis-open.org/wsn/bw-2">

    <wsdl:import
        location="./wsrf/properties/rpw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsrp/rpw-2"/>

    <wsdl:import
        location="./wsrf/lifetime/rlw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsrp/rlw-2"/>

    <wsdl:import
        location="./wsrf/notification/bw-2.wsdl"
        namespace="http://docs.oasis-open.org/wsn/bw-2"/>

<!--=====
                                     T Y P E S
=====-->

<wsdl:types>
    <xsd:schema

        targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/reservationcommand/types"
        xmlns="http://schemas.glambda.net/gnswsi3/2008/12/reservationcommand/types"
```

```

xmlns:xsd="http://www.w3.org/2001/XMLSchema">

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
schemaLocation="rdl.xsd"/>

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
schemaLocation="ndl.xsd"/>

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/cdl"
schemaLocation="cdl.xsd"/>

    <xsd:element name="ReservationCommandResourceProperties">
        <xsd:annotation>
            <xsd:documentation>A set of properties related to a
ReservationCommandResource.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType>
            <xsd:sequence>
                <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:CommandStatus"/>
                <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:ResourceInformation"/>
                <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:ErrorInfo"/>
                <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationResourceKey"/>
            </xsd:sequence>
        </xsd:complexType>
    </xsd:element>

    <xsd:element name="commitRequest">
        <xsd:annotation>
            <xsd:documentation>A request to commit the operation
(reserve/modify/release).</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType/>
    </xsd:element>

    <xsd:element name="commitResponse">
        <xsd:annotation>
            <xsd:documentation>A response against a commitRequest.</xsd:documentation>
        </xsd:annotation>
        <xsd:complexType/>

```

</xsd:element>

<xsd:element name="abortRequest">

<xsd:annotation>

<xsd:documentation>A request to abort the operation
(reserve/modify/release).</xsd:documentation>

</xsd:annotation>

<xsd:complexType/>

</xsd:element>

<xsd:element name="abortResponse">

<xsd:annotation>

<xsd:documentation>A response against an abortRequest.</xsd:documentation>

</xsd:annotation>

<xsd:complexType/>

</xsd:element>

<xsd:element name="getCommandStatusRequest">

<xsd:annotation>

<xsd:documentation>A request to obtain the status of the
ReservationCommandResource.</xsd:documentation>

</xsd:annotation>

<xsd:complexType/>

</xsd:element>

<xsd:element name="getCommandStatusResponse">

<xsd:annotation>

<xsd:documentation>A response against a
getCommandStatusRequest.</xsd:documentation>

</xsd:annotation>

<xsd:complexType>

<xsd:sequence>

<xsd:element maxOccurs="1" minOccurs="1" ref="rdl:CommandStatus"/>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<!-- Notification Message -->

```

        <xsd:element name="CommandStatusChangeNotificationMessage"
type="types:CommandStatusChangeNotificationMessageType">
            <xsd:annotation>
                <xsd:documentation>A message to notify clients of changing the status of the
ReservationCommandResource.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
        <xsd:complexType name="CommandStatusChangeNotificationMessageType">
            <xsd:annotation>
                <xsd:documentation>A message to notify clients of changing the status of the
ReservationCommandResource.</xsd:documentation>
            </xsd:annotation>
            <xsd:sequence>
                <xsd:element name="status" ref="rdl:CommandStatus" minOccurs="1" maxOccurs="1"/>
            </xsd:sequence>
        </xsd:complexType>
        <xsd:complexType name="CommandStatusChangeNotificationMessageWrapperType">
            <xsd:annotation>
                <xsd:documentation>A wrapper for a notification operation.</xsd:documentation>
            </xsd:annotation>
            <xsd:sequence>
                <xsd:element ref="types:CommandStatusChangeNotificationMessage"/>
            </xsd:sequence>
        </xsd:complexType>

    </xsd:schema>
</wsdl:types>

```

```

<!--=====

```

M E S S A G E S

```

=====-->

```

```

<wsdl:message name="commitInputMessage">
    <wsdl:part element="types:commitRequest" name="request"/>
</wsdl:message>
<wsdl:message name="commitOutputMessage">

```

```

        <wsdl:part element="types:commitResponse" name="response"/>
</wsdl:message>

<wsdl:message name="abortInputMessage">
    <wsdl:part element="types:abortRequest" name="request"/>
</wsdl:message>
<wsdl:message name="abortOutputMessage">
    <wsdl:part element="types:abortResponse" name="response"/>
</wsdl:message>

<wsdl:message name="getCommandStatusInputMessage">
    <wsdl:part element="types:getCommandStatusRequest" name="request"/>
</wsdl:message>
<wsdl:message name="getCommandStatusOutputMessage">
    <wsdl:part element="types:getCommandStatusResponse" name="response"/>
</wsdl:message>

<wsdl:message name="reservationCommandFaultMessage">
    <wsdl:part element="rdl:ReservationCommandFault" name="reservationCommandFault"/>
</wsdl:message>

<!--=====
                                                                 P O R T T Y P E
=====-->
<wsdl:portType name="ReservationCommandPortType"
                wsdlpp:extends="wsrpw:GetResourceProperty
                                wsrpw:GetMultipleResourceProperties
                                wsrw:ScheduledResourceTermination
                                wsrw:ImmediateResourceTermination
                                wsntw:NotificationProducer
                                wsntw:SubscriptionManager"
                wsrp:ResourceProperties="types:ReservationCommandResourceProperties">

    <wsdl:operation name="commit">
        <wsdl:input message="tns:commitInputMessage"/>

```

```
<wsdl:output message="tns:commitOutputMessage"/>
  <wsdl:fault message="tns:reservationCommandFaultMessage" name="reservationCommandFault"/>
</wsdl:operation>

<wsdl:operation name="abort">
  <wsdl:input message="tns:abortInputMessage"/>
  <wsdl:output message="tns:abortOutputMessage"/>
  <wsdl:fault message="tns:reservationCommandFaultMessage" name="reservationCommandFault"/>
</wsdl:operation>

<wsdl:operation name="getCommandStatus">
  <wsdl:input message="tns:getCommandStatusInputMessage"/>
  <wsdl:output message="tns:getCommandStatusOutputMessage"/>
  <wsdl:fault message="tns:reservationCommandFaultMessage" name="reservationCommandFault"/>
</wsdl:operation>

</wsdl:portType>
</wsdl:definitions>
```

Appendix D. Reservation-related Data Types

```
<?xml version="1.0" encoding="UTF-8" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
            targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
            xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
            xmlns:wsa="http://www.w3.org/2005/08/addressing"
            xmlns:wsbf="http://docs.oasis-open.org/wsrf/bf-2"
            attributeFormDefault="unqualified" elementFormDefault="qualified">

    <xsd:import namespace="http://www.w3.org/2005/08/addressing"
                schemaLocation="..ws/addressing/ws-addr.xsd"/>
    <xsd:import namespace="http://docs.oasis-open.org/wsrf/bf-2"
                schemaLocation="..wsrf/faults/bf-2.xsd"/>

    <!-- ===== -->
    <!-- ===== -->

    <xsd:element name="ReservationEPR" type="wsa:EndpointReferenceType">
        <xsd:annotation>
            <xsd:documentation>An end point reference for the ReservationResource</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ReservationCommandEPR" type="wsa:EndpointReferenceType">
        <xsd:annotation>
            <xsd:documentation>An end point reference for the
ReservationCommandResource</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ReservationFactoryFault" type="wsbf:BaseFaultType">
        <xsd:annotation>
            <xsd:documentation>Fault type of ReservationFactory service</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ReservationFault" type="wsbf:BaseFaultType">
        <xsd:annotation>
```

```

        <xsd:documentation>Fault type of Reservation service</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ReservationCommandFault" type="wsbf:BaseFaultType">
    <xsd:annotation>
        <xsd:documentation>Fault type of ReservationCommand service</xsd:documentation>
    </xsd:annotation>
</xsd:element>

<xsd:element name="ResourceInformation" type="rdl:ResourceInformation_Type">
    <xsd:annotation>
        <xsd:documentation>Category for resources, for example computing or network
resource</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ReservationResources" type="rdl:ReservationResources_Type">
    <xsd:annotation>
        <xsd:documentation>Reservation resources, each of which includes the reservation ID and the time
specification</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="AvailableResourceQuery" type="rdl:AvailableResourceQuery_Type">
    <xsd:annotation>
        <xsd:documentation>Query to discover available resources</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="AvailableResourceQueryResult" type="rdl:AvailableResourceQueryResult_Type">
    <xsd:annotation>
        <xsd:documentation>Result of getAvailableResourceQuery, which includes available reservation
resources</xsd:documentation>
    </xsd:annotation>
</xsd:element>
<xsd:element name="ResourceStatus" type="rdl:ResourceStatus_Type">
    <xsd:annotation>
        <xsd:documentation>Status of a specified resource. The order should be the same of
ReservationResources</xsd:documentation>

```

```

        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SLADocument" type="rdl:SLADocument_Type">
        <xsd:annotation>
            <xsd:documentation>Service Level Agreement (SLA) document</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ResourceRequirements" type="rdl:ResourceRequirements_Type">
        <xsd:annotation>
            <xsd:documentation>Information including resource requirements, time resources, and
DistinguishedName</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="CoallocationTimeframe" type="rdl:CoallocationTimeframe_Type">
        <xsd:annotation>
            <xsd:documentation>Coallocation time frame</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

    <xsd:element name="DistinguishedName" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation>A character string containing a user name who reserved this resource. When the
DistinguishedName is null, the operation is processed as an anonymous user</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ReservationStatus" type="rdl:ReservationStatus_Type">
        <xsd:annotation>
            <xsd:documentation>Current reservation status for a reservation request</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="ReservationStatusHolder" type="rdl:ReservationStatusHolder_Type">
        <xsd:annotation>
            <xsd:documentation>A holder of ReservationStatus and the ReservationID for the
getReservationStatus request</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

```

```
<xsd:element name="ReservationCommandHistory" type="rdl:ReservationCommandHistory_Type">
  <xsd:annotation>
    <xsd:documentation>History of user request information</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Timestamp" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Time stamp</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="OperationName" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>Name of an operation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="OperationArg" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>Argument of an operation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="FinalCommandStatus" type="rdl:CommandStatus_Type">
  <xsd:annotation>
    <xsd:documentation>Final CommandStatus</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="CommandStatus" type="rdl:CommandStatus_Type">
  <xsd:annotation>
    <xsd:documentation>Status of a command</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ErrorInfo" type="wsbf:BaseFaultType">
  <xsd:annotation>
    <xsd:documentation>Reason when ResourceStatus / CommandStatus becomes an
error</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="ReservationResourceKey" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>Key of a ReservationResource</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="TimeSpecification" type="rdl:TimeSpecification_Type">
  <xsd:annotation>
    <xsd:documentation>Time specification</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="CoallocationTimeSpecification" type="rdl:CoallocationTimeSpecification_Type">
  <xsd:annotation>
    <xsd:documentation>Time specification for co-allocation</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="Timeframe" type="rdl:Timeframe_Type">
  <xsd:annotation>
    <xsd:documentation>Time frame of a reservation</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="ExactTimeframe" type="rdl:ExactTimeframe_Type">
  <xsd:annotation>
    <xsd:documentation>Exact time frame type</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="RangeTimeframe" type="rdl:RangeTimeframe_Type">
  <xsd:annotation>
    <xsd:documentation>Ranged time frame type</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="CoallocationTimeframeID" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>Coallocation time frame ID</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="StartTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Start time of a reservation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="EndTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>End time of a reservation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="EarliestStartTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Earliest start time of a reservation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="LatestStartTime" type="xsd:dateTime">
  <xsd:annotation>
    <xsd:documentation>Latest start time of a reservation</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Duration" type="rdl:Duration_Type">
  <xsd:annotation>
    <xsd:documentation>Duration</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="DurationValue" type="xsd:long">
  <xsd:annotation>
    <xsd:documentation>A value of duration</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="TimeUnit" type="rdl:TimeUnit_Type">
  <xsd:annotation>
    <xsd:documentation>A unit of time</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="ReservationID" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>ReservationID is used to identify a set of requested or reserved resources which
is requested by a reserve operation. ReservationID is generated by the requestee of the reserve
operation.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="ResourceAttribute" type="rdl:ResourceAttribute_Type">
  <xsd:annotation>
    <xsd:documentation>The resource is related to zero or more attributes</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="SLAAttribute" type="rdl:SLAAttribute_Type">
  <xsd:annotation>
    <xsd:documentation>The SLADocument is related to zero or more attributes</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="Key" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>An attribute name</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<xsd:element name="Value" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>A value for the attribute</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```
<!-- EPR? -->
```

```
<!-- ===== -->
```

```
<xsd:complexType name="ResourceInformation_Type">
  <xsd:sequence>
```

```

        <xsd:element ref="rdl:ReservationResources" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType abstract="true" name="ReservationResources_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:ReservationID" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="rdl:ReservationStatus" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="rdl:TimeSpecification" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="rdl:ResourceAttribute" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="AvailableResourceQuery_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:ReservationResources" minOccurs="1" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="AvailableResourceQueryResult_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:ReservationResources" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="ResourceStatus_Type">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Available">
            <xsd:annotation>
                <xsd:documentation>Resource is available</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="NotAvailable">
            <xsd:annotation>
                <xsd:documentation>Resource is not available</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
    </xsd:restriction>

```

```

        </xsd:enumeration>
    </xsd:restriction>
</xsd:simpleType>

<xsd:complexType abstract="true" name="SLADocument_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:Timestamp" minOccurs="1" maxOccurs="unbounded"/>
        <xsd:element ref="rdl:SLAAttribute" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ResourceRequirements_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:CoallocationTimeframe" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="rdl:ReservationResources" minOccurs="1" maxOccurs="unbounded"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="CoallocationTimeframe_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:CoallocationTimeframeID" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="rdl:Timeframe" minOccurs="1" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ReservationStatusHolder_Type">
    <xsd:sequence>
        <xsd:element ref="rdl:ReservationID" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="rdl:ReservationStatus" minOccurs="1" maxOccurs="1"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="ReservationStatus_Type">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Created">
            <xsd:annotation>

```

```

        <xsd:documentation>A registration request is accepted (ReservationResource is
create)</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Reserved">
    <xsd:annotation>
        <xsd:documentation>The requested resource is booked</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Activated">
    <xsd:annotation>
        <xsd:documentation>The resource is activated</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Released">
    <xsd:annotation>
        <xsd:documentation>The resource is released</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Error">
    <xsd:annotation>
        <xsd:documentation>Errors have occurred</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="CommandStatus_Type">
    <xsd:restriction base="xsd:string">
        <xsd:enumeration value="Initial">
            <xsd:annotation>
                <xsd:documentation>A reserve / modify / release command has been sent to an actual
resource manager</xsd:documentation>
            </xsd:annotation>
        </xsd:enumeration>
        <xsd:enumeration value="Prepared">

```

```

        <xsd:annotation>
            <xsd:documentation>The requested command has been prepared</xsd:documentation>
        </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Aborted">
        <xsd:annotation>
            <xsd:documentation>The requested resources are not available or the pre-command has
expired</xsd:documentation>
        </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Committed">
        <xsd:annotation>
            <xsd:documentation>The requested command has been completed</xsd:documentation>
        </xsd:annotation>
    </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="ReservationCommandHistory_Type">
    <xsd:sequence>
        <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:Timestamp"/>
        <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:ReservationCommandEPR"/>
        <xsd:element maxOccurs="1" minOccurs="1" ref="rdl:OperationName"/>
        <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:OperationArg"/>
        <xsd:element maxOccurs="1" minOccurs="0" ref="rdl:FinalCommandStatus"/>
    </xsd:sequence>
</xsd:complexType>

<xsd:complexType abstract="true" name="TimeSpecification_Type">
    <xsd:sequence/>
</xsd:complexType>

<xsd:complexType name="CoallocationTimeSpecification_Type">
    <xsd:complexContent>
        <xsd:extension base="rdl:TimeSpecification_Type">
            <xsd:sequence>

```

```

        <xsd:element ref="rdl:CoallocationTimeframeID" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>

<xsd:complexType abstract="true" name="Timeframe_Type">
    <xsd:complexContent>
        <xsd:extension base="rdl:TimeSpecification_Type">
            <xsd:sequence/>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

<xsd:complexType name="ExactTimeframe_Type">
    <xsd:complexContent>
        <xsd:extension base="rdl:Timeframe_Type">
            <xsd:sequence>
                <xsd:element ref="rdl:StartTime" minOccurs="1" maxOccurs="1"/>
                <xsd:element ref="rdl:EndTime" minOccurs="1" maxOccurs="1"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

<xsd:complexType name="RangeTimeframe_Type">
    <xsd:complexContent>
        <xsd:extension base="rdl:Timeframe_Type">
            <xsd:sequence>
                <xsd:element ref="rdl:Duration" minOccurs="1" maxOccurs="1"/>
                <xsd:element ref="rdl:EarliestStartTime" minOccurs="0" maxOccurs="1"/>
                <xsd:element ref="rdl:LatestStartTime" minOccurs="0" maxOccurs="1"/>
            </xsd:sequence>
        </xsd:extension>
    </xsd:complexContent>
</xsd:complexType>

```

```
<xsd:complexType name="Duration_Type">
  <xsd:sequence>
    <xsd:element ref="rdl:DurationValue" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="rdl:TimeUnit" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

```
<xsd:simpleType name="TimeUnit_Type">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="MILLISECOND">
      <xsd:annotation>
        <xsd:documentation>Millisecond</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="SECOND">
      <xsd:annotation>
        <xsd:documentation>Second</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="MINUTE">
      <xsd:annotation>
        <xsd:documentation>Minute</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="HOUR">
      <xsd:annotation>
        <xsd:documentation>Hour</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="DAY">
      <xsd:annotation>
        <xsd:documentation>Day</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="WEEK">
```

```
<xsd:annotation>
  <xsd:documentation>Week</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MONTH">
  <xsd:annotation>
    <xsd:documentation>Month</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="YEAR">
  <xsd:annotation>
    <xsd:documentation>Year</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="ResourceAttribute_Type">
  <xsd:sequence>
    <xsd:element ref="rdl:Key" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="rdl:Value" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="SLAAttribute_Type">
  <xsd:sequence>
    <xsd:element ref="rdl:Key" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="rdl:Value" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

</xsd:schema>
```

Appendix E. Network Resource-related Data Types

```
<?xml version="1.0" encoding="UTF-8" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
    xmlns:ndl="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
    xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
    attributeFormDefault="unqualified" elementFormDefault="qualified">

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl" schemaLocation="rdl.xsd"/>
    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/ianamaumib"
schemaLocation="IANAMauMIB.xsd"/>

    <!-- ===== -->

    <xsd:element name="NetworkResources" type="ndl:NetworkResources_Type">
        <xsd:annotation>
            <xsd:documentation>A set of network resource information.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="Path" type="ndl:Path_Type">
        <xsd:annotation>
            <xsd:documentation>A pair of logical network endpoints. When a path allocates over different
domains, a path may contain sub-paths.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="Route" type="ndl:Route_Type">
        <xsd:annotation>
            <xsd:documentation>A list of subsets of the path.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="SubPath" type="ndl:SubPath_Type">
        <xsd:annotation>
            <xsd:documentation>A pair of logical network endpoints. An NRM handling a sub-path may be
different domain from the domain of the NRM handling a path.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

```

```

</xsd:element>
<xsd:element name="Nrm" type="ndl:Nrm_Type">
  <xsd:annotation>
    <xsd:documentation>An NRM information handling a sub-path.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="NrmName" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>A name of NRM.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="NrmUrl" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>A URL of NRM.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="APoint" type="ndl:Endpoint_Type">
  <xsd:annotation>
    <xsd:documentation>An endpoint in a path. An APoint must be paired with a
ZPoint.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ZPoint" type="ndl:Endpoint_Type">
  <xsd:annotation>
    <xsd:documentation>An endpoint in a path. A ZPoint must be paired with an
APoint.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Endpoint" type="ndl:Endpoint_Type">
  <xsd:annotation>
    <xsd:documentation>A termination site of a path or sub-path. An endpoint may contain termination
points of connections.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="DomainName" type="xsd:string">

```

```

    <xsd:annotation>
      <xsd:documentation>A name of a domain, which is a network administrated by a telecommunication
carrier, internet service provider, organization, group, or some other type of authority.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="TerminationPoint" type="ndl:TerminationPoint_Type">
    <xsd:annotation>
      <xsd:documentation>A physical or logical termination point of a connection.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="TerminationPointName" type="xsd:string">
    <xsd:annotation>
      <xsd:documentation>A name of a termination point.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="Availability" type="xsd:float">
    <xsd:annotation>
      <xsd:documentation>The ratio of the total time that a path is capable of being used in a
year.</xsd:documentation>
      <xsd:appinfo>%</xsd:appinfo>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="Bandwidth" type="ndl:Bandwidth_Type">
    <xsd:annotation>
      <xsd:documentation>An abstracted element of a requesting and assigned
bandwidth.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="TransmissionDelay" type="xsd:int">
    <xsd:annotation>
      <xsd:documentation>The acceptable one-way time to transfer between an APoint and a ZPoint. This
parameter doesn't include a forwarding delay in switches or routers.</xsd:documentation>
      <xsd:appinfo>msec</xsd:appinfo>
    </xsd:annotation>
  </xsd:element>

```

```

<xsd:element name="MinimumBW" type="ndl:GeneralBW_Type">
  <xsd:annotation>
    <xsd:documentation>An acceptable minimum bandwidth requesting from an application, user or
other NRM to be guaranteed. The guaranteed bandwidth must not be assigned below the value of this parameter.
When a MaximumBW is given, NRM decides the assigned bandwidth between a MinimumBW and a
MaximumBW.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="MaximumBW" type="ndl:GeneralBW_Type">
  <xsd:annotation>
    <xsd:documentation>An acceptable maximum bandwidth requesting from an application, user or
other NRM to be guaranteed. In a commercial network, clients can pay within the value of this parameter. NRM
decides the assigned bandwidth between a MinimumBW and a MaximumBW. This parameter must be requested
with a MinimumBW.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PeakBW" type="ndl:GeneralBW_Type">
  <xsd:annotation>
    <xsd:documentation>A requesting bandwidth without guarantee. The value of this parameter should
be equal to or less than the rate of the physical network interface.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="GuaranteedBW" type="ndl:GeneralBW_Type">
  <xsd:annotation>
    <xsd:documentation>An assigned bandwidth with guarantee.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Rate" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>The number of bits that are transfered per unit of time.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="BWUnit" type="ndl:BWUnit_Type">
  <xsd:annotation>
    <xsd:documentation>A unit of data transfer rate.</xsd:documentation>

```

```
</xsd:annotation>
</xsd:element>

<xsd:element name="PathProperties" type="ndl:PathProperties_Type">
  <xsd:annotation>
    <xsd:documentation>A set of path information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="MediaType" type="ndl:MediaType_Type">
  <xsd:annotation>
    <xsd:documentation>A media type of a termination point.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="OtherMediaType" type="ndl:OtherMediaType_Type">
  <xsd:annotation>
    <xsd:documentation>The other media type.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="OtherMediaTypeName" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>A name of the other media type.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="SwitchingScheme" type="ndl:SwitchingScheme_Type">
  <xsd:annotation>
    <xsd:documentation>A switching/routing scheme in a path.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="EthernetParameters" type="ndl:EthernetParameters_Type">
  <xsd:annotation>
    <xsd:documentation>A set of Ethernet related information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="MPLSParameters" type="ndl:MPLSParameters_Type">
  <xsd:annotation>
    <xsd:documentation>A set of MPLS related information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

```

        </xsd:annotation>
</xsd:element>
<xsd:element name="IPParameters" type="nd:IPParameters_Type">
    <xsd:annotation>
        <xsd:documentation>A set of IP related information.</xsd:documentation>
    </xsd:annotation>
</xsd:element>

<xsd:element name="MTU" type="xsd:int">
    <xsd:annotation>
        <xsd:documentation>A requested/allowable MTU.</xsd:documentation>
        <xsd:appinfo>Byte</xsd:appinfo>
    </xsd:annotation>
</xsd:element>

<xsd:element name="VLANTagID" type="xsd:int">
    <xsd:annotation>
        <xsd:documentation>A parameter for configuring virtual LANs in the IEEE 802.1Q
header.</xsd:documentation>
    </xsd:annotation>
</xsd:element>

<xsd:element name="CoS" type="xsd:int">
    <xsd:annotation>
        <xsd:documentation>A parameter to differentiate traffic in the Ethernet frame
header.</xsd:documentation>
    </xsd:annotation>
</xsd:element>

<xsd:element name="LSPID" type="xsd:string">
    <xsd:annotation>
        <xsd:documentation>A parameter to create a label switched path (LSP) in MPLS
networking.</xsd:documentation>
    </xsd:annotation>
</xsd:element>

<xsd:element name="Exp" type="xsd:int">
    <xsd:annotation>
        <xsd:documentation>A parameter to differentiate traffic in the MPLS header.</xsd:documentation>
    </xsd:annotation>

```

```

</xsd:element>
<xsd:element name="PacketLossRate" type="xsd:float">
  <xsd:annotation>
    <xsd:documentation>The ratio of total lost IP packet outcomes to total transmitted IP packets in a
population of interest. The detailed definition is described at [Y.1540] as IPLR (IP Loss Rate).</xsd:documentation>
    <xsd:appinfo>%</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PacketErrorRate" type="xsd:float">
  <xsd:annotation>
    <xsd:documentation>The ratio of total errored IP packet outcomes to the total of successful IP packet
transfer outcomes plus errored IP packet outcomes in a population of interest. The detailed definition is described
at [Y.1540] as IPER (IP Error Rate).</xsd:documentation>
    <xsd:appinfo>%</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="AverageJitter" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>The average variation of the end-to-end delay from a packet to the next
packet.</xsd:documentation>
    <xsd:appinfo>msec</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="MaximumJitter" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>The maximum variation of the end-to-end delay from a packet to the next
packet.</xsd:documentation>
    <xsd:appinfo>msec</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Latency" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>The average one-way IP packet transfer time for a population of interest
between an APoint and a ZPoint with forwarding delays at switches and routers. The detailed definition is
described at [Y.1540] as IPTD (IP Transfer Delay).</xsd:documentation>
    <xsd:appinfo>msec</xsd:appinfo>

```

```

    </xsd:annotation>
</xsd:element>
<xsd:element name="LatencyVariation" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>The variation of a one-way latency within a stream of packets. The detailed
definition is described at [Y.1540] as IPDV (IP Delay Variation).</xsd:documentation>
    <xsd:appinfo>msec</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="PacketReordering" type="xsd:boolean">
  <xsd:annotation>
    <xsd:documentation>NRM provides the guarantee to transfer packets in order or
not.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ToS" type="xsd:int">
  <xsd:annotation>
    <xsd:documentation>A parameter reserved for the service type in the IPv4
header.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="NetworkResourceSLADocument" type="ndl:NetworkResourceSLADocument_Type">
  <xsd:annotation>
    <xsd:documentation>A set of information related to network service level agreement
(SLA).</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="SLAAvailability" type="xsd:float">
  <xsd:annotation>
    <xsd:documentation>The ratio of the total time that an NRM is capable of being used in a
year.</xsd:documentation>
    <xsd:appinfo>%</xsd:appinfo>
  </xsd:annotation>
</xsd:element>
<xsd:element name="ProvisioningDelay" type="rdl:Duration_Type">

```

```

    <xsd:annotation>
      <xsd:documentation>The maximum time to activate an assigned path.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
<xsd:element name="FailureReportDelay" type="rdl:Duration_Type">
  <xsd:annotation>
    <xsd:documentation>The maximum time to notify clients of failures.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="Redundancy" type="xsd:string">
  <xsd:annotation>
    <xsd:documentation>The configuration to ensure the path continues under the
failure(s).</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<!-- ===== -->

<xsd:complexType name="NetworkResources_Type">
  <xsd:complexContent>
    <xsd:extension base="rdl:ReservationResources_Type">
      <xsd:sequence>
        <xsd:element ref="ndl:Path" minOccurs="0" maxOccurs="1"/>
        <xsd:element ref="ndl:NetworkResourceSLADocument" minOccurs="0" maxOccurs="1"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

<xsd:complexType name="Path_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:APoint" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:ZPoint" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:Route" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:Bandwidth" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:PathProperties" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>

```

```
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Endpoint_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:DomainName" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:TerminationPoint" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="TerminationPoint_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:TerminationPointName" minOccurs="0"/>
    <xsd:element ref="ndl:MediaType" minOccurs="0" maxOccurs="1"/>
    <!-- IANA-MAU-MIB -->
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Route_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:SubPath" minOccurs="1" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="SubPath_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:APoint" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:ZPoint" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:Nrm" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Nrm_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:NrmName" minOccurs="1" maxOccurs="1"/>
    <xsd:element ref="ndl:NrmUrl" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
```

```

    </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="Bandwidth_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:MinimumBW" minOccurs="1" maxOccurs="1" />
    <xsd:element ref="ndl:MaximumBW" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="ndl:PeakBW" minOccurs="0" maxOccurs="1" />
    <xsd:element ref="ndl:GuaranteedBW" minOccurs="1" maxOccurs="1" />
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="GeneralBW_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:Rate" minOccurs="1" maxOccurs="1" />
    <xsd:element ref="ndl:BWUnit" minOccurs="1" maxOccurs="1" />
  </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="BWUnit_Type">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Pbps">
      <xsd:annotation>
        <xsd:documentation>A unit of data transfer rate equal to 1,000 Tbps.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Tbps">
      <xsd:annotation>
        <xsd:documentation>A unit of data transfer rate equal to 1,000 Gbps.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="Gbps">
      <xsd:annotation>
        <xsd:documentation>A unit of data transfer rate equal to 1,000 Mbps.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>

```

```

    <xsd:enumeration value="Mbps">
      <xsd:annotation>
        <xsd:documentation>A unit of data transfer rate equal to 1,000 kbps.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="kbps">
      <xsd:annotation>
        <xsd:documentation>A unit of data transfer rate equal to 1,000 bps.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="bps">
      <xsd:annotation>
        <xsd:documentation>Bit per second.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

```

```

<xsd:complexType name="PathProperties_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:Availability" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:TransmissionDelay" minOccurs="0" maxOccurs="1"/>
    <!-- msec -->
    <xsd:element ref="ndl:SwitchingScheme" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:EthernetParameters" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:MPLSParameters" minOccurs="0" maxOccurs="1"/>
    <xsd:element ref="ndl:IPParameters" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

```

```

<xsd:complexType abstract="true" name="MediaType_Type">
  <xsd:sequence/>
</xsd:complexType>

```

```

<xsd:complexType name="OtherMediaType_Type">
  <xsd:complexContent>

```

```
<xsd:extension base="ndl:MediaType_Type">
  <xsd:sequence>
    <xsd:element ref="ndl:OtherMediaTypeName" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
```

```
<xsd:simpleType name="SwitchingScheme_Type">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="LAMBDA">
      <xsd:annotation>
        <xsd:documentation>Lambda service path.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ETHERNET">
      <xsd:annotation>
        <xsd:documentation>L2 Ethernet service path.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="ATM">
      <xsd:annotation>
        <xsd:documentation>ATM service path.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="MPLS">
      <xsd:annotation>
        <xsd:documentation>MPLS service path.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="IP">
      <xsd:annotation>
        <xsd:documentation>L3 IP service path.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
```

</xsd:simpleType>

<xsd:complexType name="EthernetParameters_Type">

<xsd:sequence>

<xsd:element ref="ndl:MTU" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:VLANTagID" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:CoS" minOccurs="0" maxOccurs="1"/>

</xsd:sequence>

</xsd:complexType>

<xsd:complexType name="MPLSParameters_Type">

<xsd:sequence>

<xsd:element ref="ndl:LSPID" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:Exp" minOccurs="0" maxOccurs="1"/>

</xsd:sequence>

</xsd:complexType>

<xsd:complexType name="IPParameters_Type">

<xsd:sequence>

<xsd:element ref="ndl:PacketLossRate" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:PacketErrorRate" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:AverageJitter" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:MaximumJitter" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:Latency" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:LatencyVariation" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:PacketReordering" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:ToS" type="xsd:int" minOccurs="0" maxOccurs="1"/>

</xsd:sequence>

</xsd:complexType>

<xsd:complexType name="NetworkResourceSLADocument_Type">

<xsd:complexContent>

<xsd:extension base="rdl:SLADocument_Type">

<xsd:sequence>

<xsd:element ref="ndl:SLAAvailability" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="ndl:ProvisioningDelay" minOccurs="0" maxOccurs="1"/>

```
<xsd:element ref="ndl:FailureReportDelay" minOccurs="0" maxOccurs="1"/>
<xsd:element ref="ndl:Redundancy" minOccurs="0" maxOccurs="1"/>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:schema>
```

Appendix F. Compute Resource-related Data Types

```
<?xml version="1.0" encoding="UTF-8" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
            targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/cdl"
            xmlns:cdl="http://schemas.glambda.net/gnswsi3/2008/12/cdl"
            xmlns:jsdl="http://schemas.ggf.org/jsdl/2005/11/jsdl"
            xmlns:rdl="http://schemas.glambda.net/gnswsi3/2008/12/rdl"
            attributeFormDefault="unqualified" elementFormDefault="qualified">

    <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/rdl" schemaLocation="rdl.xsd"/>
    <xsd:import namespace="http://schemas.ggf.org/jsdl/2005/11/jsdl" schemaLocation="jsdl.xsd"/>

    <!-- ===== -->

    <xsd:element name="ComputeResources" type="cdl:ComputeResources_Type">
        <xsd:annotation>
            <xsd:documentation>Compute resources</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

    <xsd:element name="ComputeResourceSLADocument" type="cdl:ComputeResourceSLADocument_Type">
        <xsd:annotation>
            <xsd:documentation>SLA Document of compute resources</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

    <xsd:element name="Site" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation>A site name</xsd:documentation>
        </xsd:annotation>
    </xsd:element>

    <xsd:element name="Description" type="xsd:string">
        <xsd:annotation>
            <xsd:documentation>An SLA document description</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
```

<!-- ===== -->

<xsd:complexType name="ComputeResources_Type">

<xsd:complexContent>

<xsd:extension base="rdl:ReservationResources_Type">

<xsd:sequence>

<xsd:element ref="cdl:Site" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="jsdl:Resources" minOccurs="0" maxOccurs="1"/>

<xsd:element ref="cdl:ComputeResourceSLADocument" minOccurs="0" maxOccurs="1"/>

<!-- mpi etc. -->

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

<xsd:complexType name="ComputeResourceSLADocument_Type">

<xsd:complexContent>

<xsd:extension base="rdl:SLADocument_Type">

<xsd:sequence>

<xsd:element ref="cdl:Description" minOccurs="0" maxOccurs="1"/>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

</xsd:schema>

Appendix G. IANA Mau MIB Types

```
<?xml version="1.0" encoding="UTF-8" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.glambda.net/gnswsi3/2008/12/ianamaumib"
  xmlns:iana="http://schemas.glambda.net/gnswsi3/2008/12/ianamaumib"
  xmlns:ndl="http://schemas.glambda.net/gnswsi3/2008/12/ndl"
  attributeFormDefault="unqualified" elementFormDefault="qualified">

  <xsd:import namespace="http://schemas.glambda.net/gnswsi3/2008/12/ndl" schemaLocation="ndl.xsd"/>

  <!-- ===== -->

  <xsd:element name="IANAMauMIBType" type="iana:IANAMauMIBType_Type">
    <xsd:annotation>
      <xsd:documentation>A media type defined by IANA-MAU-MIB.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

  <xsd:element name="IANAMauMIBTypeName" type="iana:IANAMauMIBTypeName_Type">
    <xsd:annotation>
      <xsd:documentation>A name of the interface media defined as media attachment units
[IANA-MAU-MIB].</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

  <!-- ===== -->

  <xsd:complexType name="IANAMauMIBType_Type">
    <xsd:complexContent>
      <xsd:extension base="ndl:MediaType_Type">
        <xsd:sequence>
          <xsd:element ref="iana:IANAMauMIBTypeName" minOccurs="1" maxOccurs="1"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
```

</xsd:complexType>

<xsd:simpleType name="IANAMauMIBTypeName_Type">

<xsd:restriction base="xsd:string">

<xsd:enumeration value="bOther">

<xsd:annotation>

<xsd:documentation>other or unknown</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="bAUI">

<xsd:annotation>

<xsd:documentation>AUI</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="b10base5">

<xsd:annotation>

<xsd:documentation>10BASE-5</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="bFoirl">

<xsd:annotation>

<xsd:documentation>FOIRL</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="b10base2">

<xsd:annotation>

<xsd:documentation>10BASE-2</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="b10baseT">

<xsd:annotation>

<xsd:documentation>10BASE-T duplex mode unknown</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="b10baseFP">

<xsd:annotation>

```
        <xsd:documentation>10BASE-FP</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseFB">
    <xsd:annotation>
        <xsd:documentation>10BASE-FB</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseFL">
    <xsd:annotation>
        <xsd:documentation>10BASE-FL duplex mode unknown</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10broad36">
    <xsd:annotation>
        <xsd:documentation>10BROAD36</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseTHD">
    <xsd:annotation>
        <xsd:documentation>10BASE-T half duplex mode</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseTFD">
    <xsd:annotation>
        <xsd:documentation>10BASE-T full duplex mode</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseFLHD">
    <xsd:annotation>
        <xsd:documentation>10BASE-FL half duplex mode</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b10baseFLFD">
    <xsd:annotation>
        <xsd:documentation>10BASE-FL full duplex mode</xsd:documentation>
    </xsd:annotation>
</xsd:enumeration>
```

```
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b100baseT4">
  <xsd:annotation>
    <xsd:documentation>100BASE-T4</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b100baseTXHD">
  <xsd:annotation>
    <xsd:documentation>100BASE-TX half duplex mode</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="b100baseTXFD">
  <xsd:annotation>
    <xsd:documentation>100BASE-TX full duplex mode</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
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