



WSRP – UDDI Technical Note

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WSRP Publish Find Bind SC

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Status

This technical note is an interim draft. This document is updated periodically on no particular schedule.

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1 Preface

This document proposes a standard methodology for publishing and finding WSRP Producer and Portlet services in a UDDI registry. It is not the purpose of this document to educate on WSRP [1], WSDL [4] or UDDI [5, 6]. The reader of this document should have a good understanding of the WSRP specification, the WSDL specification and the UDDI specifications and data structures.

2 Terminology

The key words MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL in this document are to be interpreted as described in [RFC2119].

3 Conventions

Throughout the document XML code fragments are employed to define the data structures used. The following text formatting conventions are used to aide readability:

- **Key value Placeholders**

Data structures may contain values which reference UDDI key values such as tModel keys, service keys and business keys. These keys uniquely identify the data structures within the UDDI repository. For convenience and better readability, these key values are replaced by meaningful textual variables to represent such keys.

For all canonical tModels defined by this TN, V3 keys are fixed while V2 keys need to be generated. Thus, placeholders are used to represent those keys.

In the following example the placeholder “\${TMODELKEY_WSRP_SERVICE_TYPE}” refers to a tModel key identifying the WSRP Service Type tModel:

```
<tModel tModelKey="${TMODELKEY_WSRP_SERVICE_TYPE}"/>
```

- **Constants**

Constant values are printed in the Courier New font always, regardless of whether they are defined by this document or a referenced document. In addition, constant values defined by this document are printed using **bold face**. The following example shows the tModel name defined by this technical note for the WSRP Service Type tModel:

```
<tModel tModelKey="{TMODELKEY_WSRP_SERVICE_TYPE}" >
  <name>
    urn:oasis:names:tc:wsrp:tmodel:wsrp_service_type
  </name>
```

- **Example Values**

These values are represented in *italic* font. In the following, an access point example value is shown:

```
<accessPoint useType="http">
  http://vendor.com/producer/ServiceDescription
</accessPoint>
```

4 General Concepts

4.1 WSRP Actors

The WSRP specification describes two major actors relevant to this technical note. WSRP Producers are presentation-oriented Web Services that host Portlets which are able to render markup fragments and process user interaction requests. Consumers use these Web Services to aggregate and present the generated markup to End-Users and manage the user's interaction with the Portlet markup.

4.1.1 Producers

Producers are modeled as Web Service containers hosting and managing Portlets. Producers provide Web Service PortTypes (interfaces) that allow Consumers to interact with the Producer and with Portlets hosted by that particular Producer (see Section 4.2).

4.1.2 Portlets

Portlets are hosted by Producer Web Services and generate markup and process user interactions with that markup. In general, a Portlet includes both code and a particular configuration of any settings or properties the Portlet exposes. Portlets are addressed by a Portlet Handle scoped by the Producer environment.

4.2 WSRP PortTypes and Bindings

The WSRP interfaces are factored into multiple PortTypes. Each PortType provides a certain functionality subset of the full WSRP protocol. Some PortTypes are optional. Each PortType is defined in the WSRP Interfaces WSDL file (see http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp_v1_interfaces.wsdl for v1 PortType definitions).

The following PortTypes are defined by the WSRP v1 specification:

1. **Service Description PortType**

This PortType provides a means for the Consumer to discover capabilities of the Producer and its Portlets. This metadata MAY be context sensitive, for example, applying to a particular consumer registration. The Service Description PortType is mandatory.

2. **Markup PortType**

WSRP compliant services MUST implement and expose this PortType which deals with the generation of markup and the user interaction with this markup.

3. **Registration PortType**

Producer MAY choose to support in-band registration of Consumers and then must implement this PortType.

4. **Portlet Management PortType**

In addition to “Producer Offered Portlets” available through the service description, the Producer MAY expose this interface to allow Consumer to clone and customize Portlets. Such Portlets are referred to as “Consumer Customized Portlets”.

For each of the above PortTypes, WSRP Producers define one or more Bindings. Producers must provide at least the default SOAP over HTTP/HTTPS bindings for the mandatory PortTypes. See http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp_v1_bindings.wsdl for the definitions of WSRP bindings.

4.3 WSRP WSDLs

The WSRP Web Service description is factored into three parts. Firstly, the Types XSD document defines the types used by the WSRP protocol. Secondly, the Interface WSDL document defines the PortTypes and their operations. It imports the Types XSD. Thirdly, the Bindings WSDL defines the bindings for the portTypes. It imports the Interfaces WSDL and provides the standard SOAP HTTP(S) bindings.

Both the Bindings and the PortTypes adhere to the following naming schema:

```
SPEC_VERSION_FACTOR_WSDLTYPE[_TYPESPECIFIC]
```

Where

```
SPEC           = "WSRP"
VERSION        = "v1"
FACTOR         = "ServiceDescription" | "Markup" |
                 "Registration" | "PortletManagement"
WSDLTYPE       = "Binding" | "PortType"
TYPESPECIFIC   = "SOAP" | [...]
```

Note that, additional standard Bindings may be added in future which define SOAP attachments mechanisms such as SwA/MIME, DIME or proposals currently being formulated in the W3C XML Protocol Working Group. Such additional Bindings will probably add new TYPESPECIFIC binding names.

Each Producer service has to provide its own *Service Implementation WSDL* which contains a Service definition containing Ports for the various Bindings. This WSDL MUST import the WSRP *Binding WSDL*. The WSRP Bindings and Interfaces WSDLs are published on the OASIS web site (http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsrp).

4.4 Publishing Web Services to UDDI

In the domain of UDDI specifications, two documents can be identified which describe how WSDLs and their contents can be published to UDDI registries.

The best practices document "Using WSDL in a UDDI Registry, Version 1.08" [3] clarifies the relationship between WSDL and UDDI and describes how WSDL can be used to help create UDDI business service descriptions.

The technical note "Using WSDL in a UDDI Registry, Version 2.0" [2] describes a more sophisticated mapping of WSDL elements and UDDI data structures. This enables more specific and flexible UDDI queries based on WSDL artifacts and metadata.

Both UDDI technical notes mandate the UDDI registry as the authoritative source for WSDL artifacts as all Web Services end points are to be retrieved from UDDI artifacts.

1 **4.5 UDDI Version Considerations**

2 We base our recommendation on version 2 of the UDDI specifications; however the
3 basic model is independent of UDDI API version and applies to V2 and V3 UDDI.
4 The main difference in V3 is that UDDI entities will have V3 keys, the accessPoint
5 has a useType attribute rather than an URLType attribute and entities can have
6 publisher-assigned keys.

5 Publishing WSRP Services to UDDI

The WSRP Publish Find Bind Abstract Model [10] provides guidelines for publishing WSRP Producers and Portlets as services in registries. This technical note adheres to the guidelines and maps the abstract model to UDDI specific schemes and data structures.

Compared to many Web Services scenarios, WSRP services prove more complex. Firstly, the WSRP Producer can be considered as a Web Service on its own, exposing multiple Bindings and PortTypes. One can view the WSRP Producer as the actual Web Service described through the WSRP WSDLs.

Secondly, Portlets can also be understood to be services. In contrast to Producers, Portlets are not full services in a Web Service sense. They do not explicitly expose PortTypes, bindings or access points. Rather, a Portlet is exposed by its Producer. The Consumer interacts indirectly with Portlets through the Producer's infrastructure. The WSRP Portlet is addressed by a Portlet Handle defined in the Producer's scope.

In addition to the WSDL interface specification, WSRP services carry metadata which describes both the Producer and its Portlets. Prior to using a Producer or its Portlets this metadata has to be obtained.

The WSRP PFB abstract model mandates that the Producer's Service WSDL is the authoritative source to obtain information about the service's actual end-points. Also replication of meta-data should be minimized to a practical extent to protect systems against update inconsistencies.

The publishing scheme used in this document follows this guidance; however it does not rule out the application of the WSDL in UDDI technical notes ([2], [3]). For Producers – which actually can be considered to be straight-forward Web Services – we provide a means to simply publish the Service WSDL document as the authoritative source as well as the metadata required for WSRP use. Services which require the additional capabilities provided by the UDDI technical notes can refer to these.

The goals for this tech note are:

1. Enable the automatic publishing of WSRP Producers and Portlets to UDDI registries using tooling support.
2. Enable manual publishing of WSRP Producers and optionally Portlets to UDDI registries.
3. Keep the approach simple so as to set a low bar for entry for publish / find / bind.
4. Provide a means to publish the Producer Service WSDL document as the authoritative source.
5. Avoid replication of meta-data which is obtainable via the Service Description PortType/binding unless it is useful for query use cases identified by the WSRP PFB Abstract Model.
6. Enable WSRP Service consumers to query UDDI registries for WSRP services according to the use cases identified by the WSRP PFB Abstract Model.
7. Provide a common model for both UDDI Version 2 and Version 3.
8. Allow the model to be extensible to and upwards compatible with the WSDL in UDDI technical notes.

5.1 Overview

A businessEntity structure represents all known information about a business or entity that publishes descriptive information about the entity as well as the services that it offers. The businessEntity is the top level data structure.

UDDI allows services to be published in the context of a business entity, as businessServices. In this model WSRP services, i.e. Producers and Portlets, are published as businessServices.

Since Portlets are not services that stand on their own, a reference is required to the hosting producer in order to allow service consumers to obtain all necessary data to access and address a Portlet.

In this model we do not rule out that Portlet services may be published under a different businessEntity then the hosting Producer.

In Figure 1: Publishing WSRP Services, two different businessEntities are shown representing two companies. Producer 1 is published as a businessService managed by Business A while Producer 2 is published in the domain of Business B. In this example the Producer 1 Service hosts 3 Portlets (1A-1C) while Producer 2 provides 1 Portlet (2A). Portlets 1A and 1B are logically published in the domain of Business A which is expected to be the usual case.

In contrast, Portlet 1C is published under Business B but is served by Producer 1. This model facilitates covering the "Portlet Service Provider" scenario, where a Producer is run by a service provider company, while another business is making use of the hosted Portlet services.

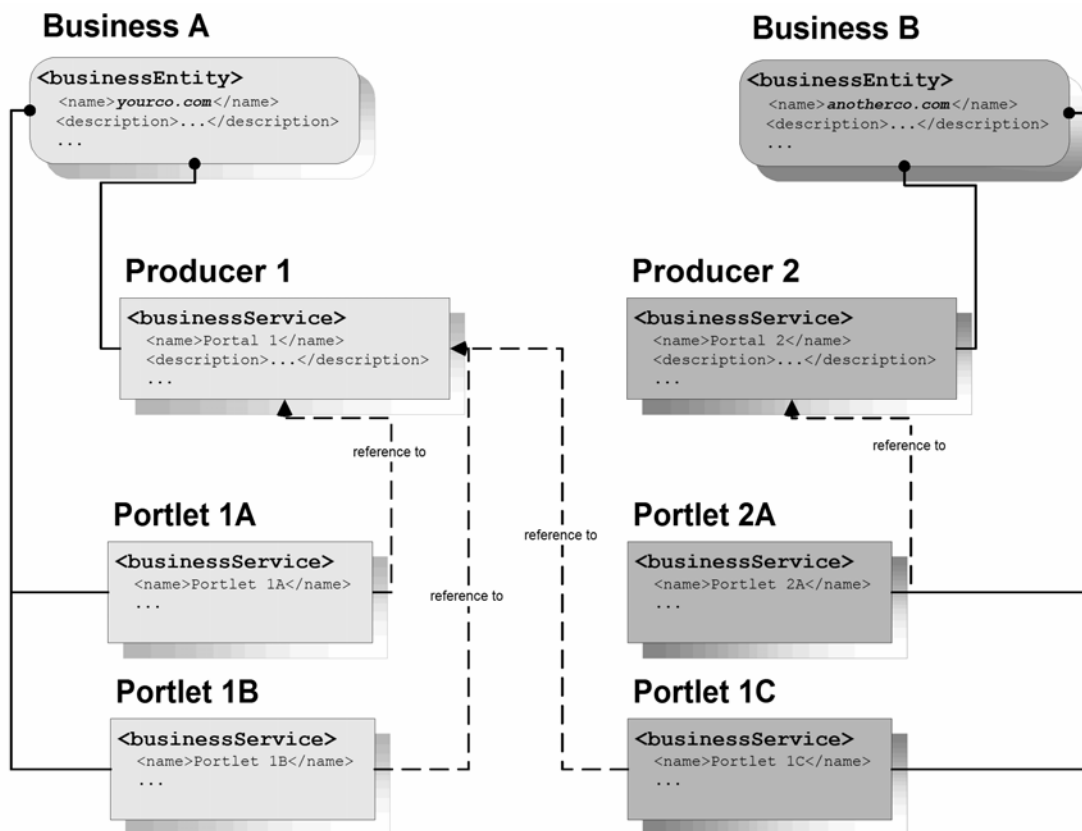


Figure 1: Publishing WSRP Services

5.2 Publishing Producers

In essence, WSRP Producers are Web Services. They expose PortTypes and Bindings a Consumer can interact with. These PortTypes and their Bindings are described in the WSRP WSDLs. Thus publishing a Producer basically corresponds to the publishing of the service WSDL along with some metadata.

Generally, to publish a Producer the following steps need to be taken:

1. Publish the WSRP v1 Bindings WSDL as a tModel. This tModel represents the technical fingerprint of the WSRP protocol.
2. Publish a “WSRP Service Type” tModel. This tModel allows categorizing businessServices as WSRP Producers to allow for easy searching within the registry independent of technical details like protocol versions or bindings supported.
3. Publish a businessService which may be categorized as WSRP “Producer”.
4. Publish the address of the Service Implementation WSDL as the authoritative source containing the actual service endpoints of the WSRP Producer service.

Note: Canonical tModels are published by the registry provider a priori. All canonical tModels defined by this technical note are already published into the UDDI Business Registry by the WSRP TC and do not need to be republished there.

However these tModels need to be published into local (“private”) registries by the registry provider and the resulting tModelKeys made known to the users of the registry.

Figure 2: Publishing Producers below shows the UDDI data structures used to publish WSRP Producers into a registry. Please note that, the figure shows only the relevant elements in the structures to visualize the scheme used. Also the businessEntity structure level is omitted here.

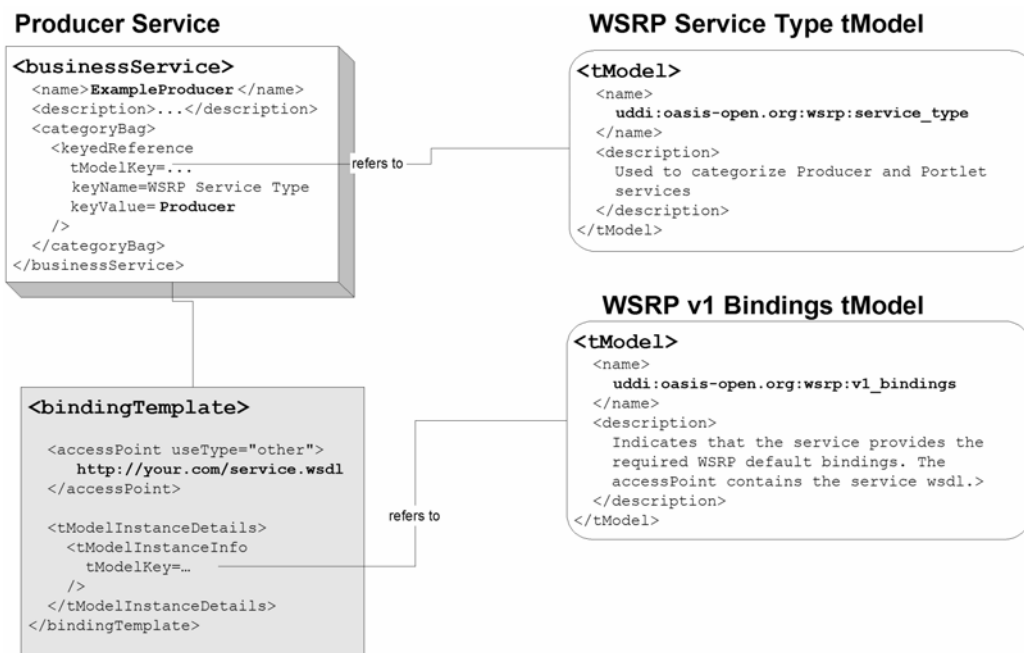


Figure 2: Publishing Producers

Basically, Producers are published as businessServices below the businessEntity structure level (not shown here). The businessService structure uses a bindingTemplate to provide the required WSDL information. The access point element of the Producer bindingTemplate points to the URL of the Service Implementation WSDL providing the actual service endpoints (as WSDL is the authoritative source).

The bindingTemplate refers to the WSRP v1 Bindings tModel. This tModel is indicating that the Producer implements at least the mandatory WSRP v1 PortTypes (it may implement other portTypes as well) and provides the mandatory WSRP v1 Bindings.

The Producer businessService structure optionally contains a categoryBag which references the WSRP Service Type tModel (see section 6.1). The keyValue of the keyed reference holds the string "Producer". This way the businessService is tagged as a WSRP Producer, independent of WSRP specification version.

5.2.1 Producer businessService

A WSRP Producer MUST be published using a UDDI businessService structure. Since there is no name or description of a Producer carried in its metadata, no further explicit mapping between WSRP and UDDI needs to take place.

```
<businessService
  serviceKey="{SERVICEKEY_THIS_PRODUCER}"
  businessKey="{BUSINESSKEY_THIS_SERVICE_BELONGS_TO}">

  <name xml:lang="en">YourCo Producer</name>

  <description xml:lang="en">
    This is the WSRP Producer hosted by YourCo. This Producer
    offers some cool WSRP demo Portlets.
  </description>

  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_SERVICE_TYPE}"
      keyName="WSRP Service Type"
      keyValue="Producer"
    />
  </categoryBag>

  <bindingTemplates>
    ...
  </bindingTemplates>

</businessService>
```

Fields:

- **serviceKey**: The key value identifying this businessService entity.
- **businessKey**: The key of the business entity that is the parent of this businessService.
- **name**: A human readable name of the Producer accompanied by a unique xml:lang value. At least one localized name element SHOULD be provided.

- **description:** A language locale qualified text describing the Producer. This field is optional.
- **categoryBag:** The field **SHOULD** contain a keyedReference referring to the WSRP Service Type tModel (see section 6.1). The key**Value** **MUST** hold the string “Producer”. The key**Name** **SHOULD** contain the string “WSRP Service Type”. The categoryBag **MAY** contain other keyedReferences.
- **bindingTemplates:** For WSRP version 1 Producers, this field **MUST** contain a bindingTemplate structure as defined in section 5.2.2. It **MAY** contain further bindingTemplates relevant to this Producer. The next section describes this structure in detail.

5.2.2 Producer WSDL address bindingTemplate

The Producer service’s bindingTemplate is used to provide the URL of the Service Implementation WSDL holding the actual access points of the Producer. It refers to the WSRP v1 Bindings tModel which indicates that the published businessService is a WSRP v1 Producer implementing the mandatory PortTypes and providing the mandatory Bindings.

```
<bindingTemplate
  bindingKey="{BINDINGKEY_OF_THIS_BINDINGTEMPLATE}"
  serviceKey="{SERVICEKEY_OF_THIS_PRODUCER}">

  <description xml:lang="en">
    Provides the Address of the Service Impl. WSDL
  </description>

  <accessPoint useType="other">
    http://yourco.com/producer/service.wsdl
  </accessPoint>

  <tModelInstanceDetails>
    <tModelInstanceInfo
      tModelKey="{TMODELKEY_WSRP_V1_BINDINGS}"
    />
  </tModelInstanceDetails>
</bindingTemplate>
```

Fields:

- **bindingKey:** Key value identifying this bindingTemplate.
- **serviceKey:** The key of the businessService that contains this bindingTemplate.
- **description:** A language locale qualified text describing the usage of this bindingTemplate. This field is optional.
- **accessPoint:** The bindingTemplate **MUST** contain this field. The accessPoint **MUST** hold the URL of the http(s) resource providing the authoritative Service Implementation WSDL of the Producer. The value of the useType attribute **MUST** be “other”. The wsdl:service **MUST** contain port definitions for the mandatory WSRP V1 PortTypes and Bindings.
- **tModelInstanceDetails:** This container **MUST** contain a tModelInstanceInfo structure referring to the WSRP_v1_Bindings tModel defined in section 6.2.

5.2.3 Producer's Metadata

Producer metadata is not directly published to UDDI. The metadata must be retrieved using the ServiceDescription PortType published by the Producer.

Currently there is no desire to duplicate this metadata by also publishing it to registries. However, in future, use-cases might come up which wish to search for Producers defining certain metadata values in UDDI and which would require publishing Producer metadata to UDDI.

Such considerations are deferred to later versions of this document.

5.3 Publishing Portlets

By publishing Producers there is already a means for Consumers to discover the Portlets a Producer offers outside UDDI, by using the Producer's Service Description PortType. However, to enhance the end-user experience and allow a direct search for Portlets in registries the publisher MAY additionally publish one or more Portlets. We recommend that all "Producer Offered Portlets" exposed in the Producer's service description are also published to the UDDI registry.

Portlets are different from Producer services. They don't expose interfaces, access points or bindings directly. A Consumer interacts with Portlets indirectly via the Producer, addressing them by their Portlet Handles. Therefore Portlets are not published as Web Services by re-exposing the Producer's access point and bindings. Instead Portlets are published as resources accompanied by their metadata and reference the Producer that manages them.

The following sections describe how the UDDI data structures are utilized to publish Portlets.

Basically the following steps need to be taken to publish a Portlet:

1. Publish the "WSRP Service Type" tModel. This tModel allows categorizing businessServices as WSRP "Portlets" to allow for easy searching within the registry.
2. Publish a "WSRP Producer Service Reference" tModel. This categorization tModel can be used as a means to model the relationship between Portlets and hosting Producers within the same registry.
3. Publish the "WSRP Portlet Handle tModel" to the registry. This tModel provides a means to publish the Portlet Handle into UDDI registries.
4. Publish a businessService representing the Portlet and providing its metadata.

Note: Canonical tModels are published by the registry provider a priori. All canonical tModels defined by this technical note are already published into the UDDI Business Registry by the WSRP TC and do not need to be republished there.

However these tModels need to be published into local ("private") registries by the registry provider and the resulting tModelKeys made known to the users of the registry.

Figure 3: Publishing Portlets below shows the UDDI data structures used to publish WSRP Portlets to a registry. Please note that the figure shows only the relevant elements in the structures to visualize the scheme used.

Basically, Portlets are published as businessServices below the businessEntity structure level (not shown here). The relevant metadata is published using

categorization schemes. Firstly, the businessService is tagged as a Portlet. Secondly, a reference to the hosting Producer is provided. Thirdly, the Portlet handle is published. By resolving the reference to the Producer to a UDDI service, the access points of the Producer can be obtained. Together with the Portlet handle all required information is then available to the Consumer to address a specific Portlet.

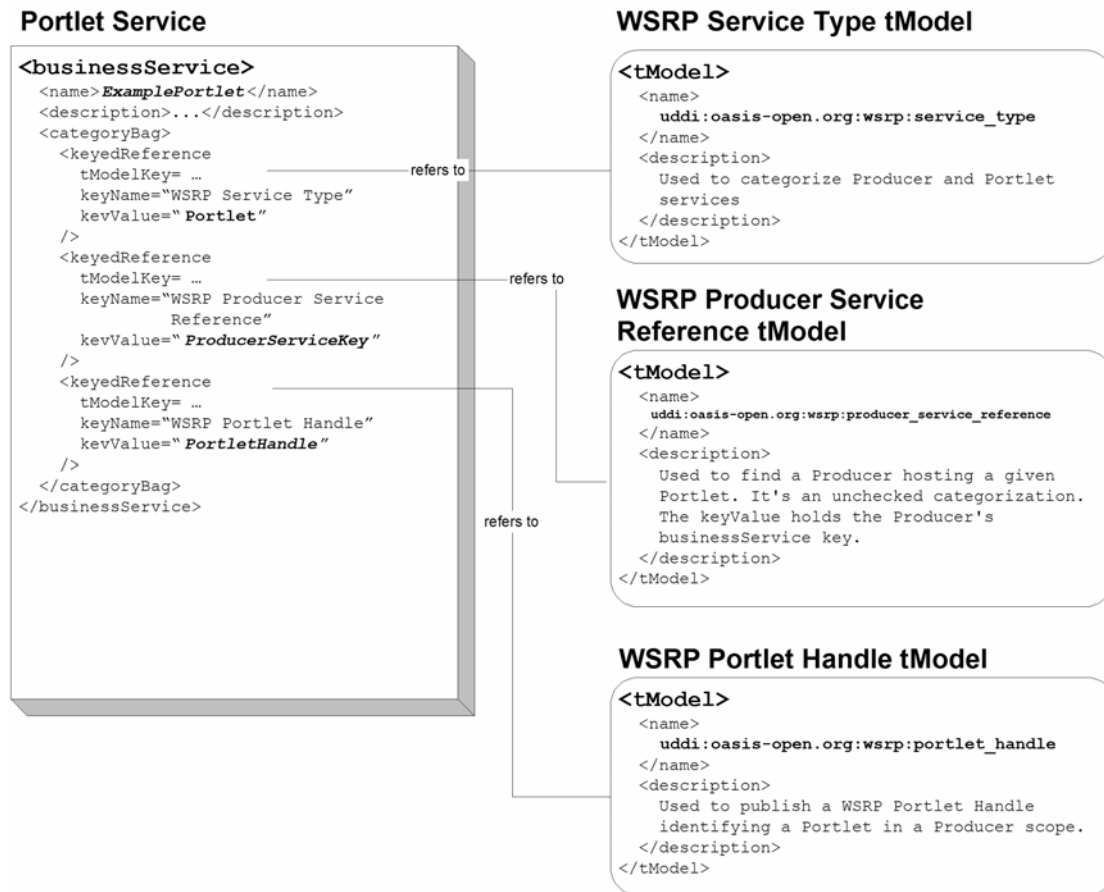


Figure 3: Publishing Portlets

The use of both the WSRP Service Type tModel and the Portlet Handle tModel could be viewed as providing redundant information. Consumers could search for Portlets either by querying the registry for services categorized as WSRP Portlets or for services making use of the Portlet Handle tModel. However, wildcard searches on keyValues are supported in UDDI V3 only, thus searching for Portlets requires the Service Type tModel in UDDI V2 registries (see section 7.3).

Also this technical note provides a means to represent the intra-registry reference from a Portlet service to a Producer service using the WSRP Producer Service Reference tModel. We don't rule out other kinds of references, e.g. to reference a service in another registry. However, publishers using such other types of references need to be aware that Consumers might not know how to deal with such reference types and this lack of knowledge will reduce interoperability. Therefore this technical note recommends the intra registry approach for best interoperability.

5.3.1 Portlet businessService

A WSRP Portlet service MUST be published using a UDDI businessService structure. In order to retrieve the Producer that is hosting the Portlet, a reference to the Producer

service must be set up. The tModel “WSRP Producer Service Reference” provides a means to establish this reference. This technical note does not rule out other means to reference a Producer including inter-registry references. However, for interoperability reasons it is strongly recommended that the intra-registry method described here is used.

Although the authoritative source of the Portlet metadata is the WSRP PortletDescription structure, which must be obtained through the Producer’s Service Description PortType, it is advantageous to map some of the fields from the WSRP PortletDescription structure to appropriate fields in the businessService structure for query/search based discovery.

```
<businessService
  serviceKey="{SERVICEKEY_OF_THIS_PORTLET}"
  businessKey="{BUSINESSKEY_THIS_SERVICE_BELONGS_TO}">

  <name xml:lang="en">StockQuote Portlet</name>

  <description xml:lang="en">
    This Portlet is the best Portlet available for displaying stock quotes.
  </description>

  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_SERVICE_TYPE}"
      keyName="WSRP Service Type"
      keyValue="Portlet"
    />
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_PRODUCER_SERVICE_REFERENCE}"
      keyName="WSRP Producer Service Reference"
      keyValue="{SERVICEKEY_PRODUCER}"
    />
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_PORTLET_HANDLE}"
      keyName="WSRP Portlet Handle"
      keyValue="ExamplePortlet-Handle"
    />
  </categoryBag>
</businessService>
```

Fields:

- **serviceKey**: The key value identifying this businessService entity.
- **businessKey**: The key of the business entity that contains this businessService.
- **name**: A human readable name of the Portlet accompanied by a non-duplicated xml:lang value. At least one name localized element **MUST** be provided. The name field with the correct localized language attribute **SHOULD** be mapped to the title field of the WSRP PortletDescription structure.
- **description**: A language qualified text describing the Portlet. This field is optional. The description element with the matching localized language attribute **SHOULD** be mapped to the description field of the WSRP PortletDescription structure.

- 1 • categoryBag: The categoryBag holds the following keyedReferences:
 - 2 1. Reference to the WSRP Service Type tModel (see section 6.1). The
3 keyValue MUST contain the string "Portlet". The keyName SHOULD
4 contain the string "WSRP Service Type". This keyedReference MUST
5 be contained in the categoryBag.
 - 6 2. Reference to the WSRP Producer Service Reference tModel. The
7 keyValue MUST contain the service key of the businessService entity
8 in the same UDDI registry representing the Producer providing this
9 Portlet. The keyName SHOULD contain the string "WSRP Producer
10 Service Reference". This keyedReference SHOULD be contained in
11 the categoryBag. See section 5.3 for a discussion of the usage of other
12 service references vs. interoperability.
 - 13 3. Reference to the WSRP Portlet Handle tModel. The keyValue MUST
14 contain the Portlet handle. The keyName SHOULD contain the string
15 "WSRP Portlet Handle". This keyedReference MUST be contained in
16 the categoryBag.
 - 17 4. Any other categorization scheme MAY be used additionally.

18 5.3.2 Portlet's Metadata

19 Besides the Portlet Handle, the Portlet title and textual description, all further Portlet
20 metadata is not directly published to UDDI. All remaining metadata must be retrieved
21 using the ServiceDescription or PortletManagement PortType exposed by the
22 Producer.

23 Currently there is no need foreseen to require publishing this metadata. However, in
24 future, use-cases might arise which require searching for Portlets defining certain
25 metadata values in UDDI and thus need additional mapping to UDDI.

26 This will be deferred to later versions of this document.

6 Canonical tModels

This technical note introduces various canonical tModels used to represent the relationships and meta-data. This section describes these tModels.

6.1 WSRP Service Type tModel

6.1.1 Purpose

The WSRP Service Type tModel is used to categorize a businessService as a WSRP Producer or Portlet. Using this tagging, WSRP Producers or Portlets can more easily be found in registries, regardless of more detailed technical fingerprints like version, supported bindings, etc.

6.1.2 Definition

| | |
|-----------------|--|
| Name: | uddi:oasis-open.org:wsrp:service_type |
| Description: | Tags business services as WSRP Producer or Portlet |
| UDDI V3 key: | uddi:oasis-open.org:wsrp:service_type |
| UDDI V1,V2 key: | uuid:58a98609-c265-3c28-9079-85ea8b2521ef |
| Categorization: | categorization |
| Checked: | yes |

6.1.2.1 UDDI V2 tModel Structure

```
<tModel tModelKey="${TMODELKEY_WSRP_SERVICE_TYPE}" >
  <name>
    uddi:oasis-open.org:wsrp:service_type
  </name>
  <overviewDoc>
    <overviewURL>
      http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-
      pfb-uddi-tn-1.0.pdf
    </overviewURL>
  </overviewDoc>
  <categoryBag>
    <keyedReference
      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
      keyValue="unchecked"
    />
    <keyedReference
      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
      keyValue="categorization"
    />
  </categoryBag>
</tModel>
```

Fields:

- tModelKey: The key value identifying the tModel.
- name: The tModel name. Note that the name specification MUST NOT use the language attribute.
- description: A language locale qualified description of this tModel.

- overviewURL: The URL MUST hold the location of this note on the OASIS web site (<http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-uddi-tn-1.0.pdf>).

6.1.3 Valid Values

The category system is unchecked. However, only two values are valid for use with this category system.

| Key Value | Description | UDDI Entity |
|-----------|---|-----------------|
| Producer | Tags the businessService as a WSRP Producer | businessService |
| Portlet | Tags the businessService as a WSRP Portlet | businessService |

6.2 WSRP v1 Bindings tModel

6.2.1 Purpose

This tModel is used to indicate conformance to the WSRP v1 specification. A bindingTemplate that refers to this tModel states that the Web Service is implementing at least the mandatory v1 WSRP PortTypes and provides the default SOAP Bindings for these PortTypes. In addition the bindingTemplates accessPoint points to the Service Implementation WSDL of the Producer.

6.2.2 Definition

Name: uddi:oasis-open.org:wsrp:v1_bindings
Description: Indicates WSRP v1 conformance
UDDI V3 key: uddi:oasis-open.org:wsrp:v1_bindings
UDDI V1,V2 key: uuid:83a39acf-5531-346d-ab89-3d2084319037
Categorization: none

6.2.2.1 UDDI V2 tModel Structure

```

<tModel tModelKey="{TMODELKEY_WSRP_V1_BINDINGS}">
  <name>
    uddi:oasis-open.org:wsrp:v1_bindings
  </name>

  <description xml:lang="en">
    The purpose of this tModel is to indicate that a service conforms to the WSRP v1 specification
    and that the accessPoint holds the URL of the authoritative Service Implementation WSDL.
  </description>

  <overviewDoc>
    <overviewURL>
      http://www.oasis-
      open.org/committees/wsrp/specifications/version1/wsrp_v1_bindings.wsdl
    </overviewURL>
  </overviewDoc>

  <categoryBag>
    <keyedReference
      tModelKey="uuid:C1ACF26D-9672-4404-9D70-39B756E62AB4"
      keyName="uddi-org:types"
      keyValue="specification"
    />
    <keyedReference
      tModelKey="uuid:C1ACF26D-9672-4404-9D70-39B756E62AB4"
      keyName="uddi-org:types"
      keyValue="xmlSpec"
    />
    <keyedReference
      tModelKey="uuid:C1ACF26D-9672-4404-9D70-39B756E62AB4"
      keyName="uddi-org:types"
      keyValue="soapSpec"
    />
    <keyedReference
      tModelKey="uuid:C1ACF26D-9672-4404-9D70-39B756E62AB4"
      keyName="uddi-org:types"
      keyValue="wsdlSpec"
    />
  </categoryBag>
</tModel>

```

Fields:

- tModelKey: The key value identifying the tModel.
- name: The tModel name. Note that the name specification MUST NOT use the language attribute.
- description: A language qualified description of this tModel.
- overviewURL: The URL MUST hold the location of the WSRP v1 Bindings WSDL.
- categoryBag: The categoryBag SHOULD contain keyedReferences to the uddi-org:types taxonomy tModel and categorize the tModel accordingly as shown above.

6.3 WSRP Producer Service Reference tModel

6.3.1 Purpose

The WSRP Producer Service Reference tModel provides the means to express the relationship of a Portlet businessService to a Producer businessService in the same UDDI registry. Using this categorization scheme one can find a Producer businessService entry representing the Producer hosting this particular Portlet. When taken together with the published Portlet handle, all necessary data is available to address the Portlet.

6.3.2 Definition

Name: uddi:oasis-open.org:wsrp:producer_service_reference
 Description: The means to represent a reference to the Producer service.
 UDDI V3 key: uddi:oasis-open.org:wsrp:producer_service_reference
 UDDI V1, V2 key: uuid:7cf20608-fd2d-3d84-b382-5432ac6fe6ef
 Categorization: categorization
 Checked: yes

6.3.2.1 UDDI V2 tModel Structure

```
<tModel tModelKey="{TMODELKEY_WSRP_PRODUCER_SERVICE_REFERENCE}">
  <name>
    uddi:oasis-open.org:wsrp:producer_service_reference
  </name>

  <description xml:lang="eng">
    This tModel is a taxonomy tModel used to identify a relationship to a Producer's
    businessService entity.
  </description>

  <overviewDoc>
    <overviewURL>
      http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-
      uddi-tn-1.0.pdf
    </overviewURL>
  </overviewDoc>

  <categoryBag>
    <keyedReference
      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
      keyValue="unchecked"
    />
    <keyedReference
      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
      keyValue="categorization"
    />
    <keyedReference
      tModelKey="{TMODELKEY_UDDI_ENTITY_KEY_VALUES}"
      keyName="entityKeyValues"
      keyValue="serviceKey"
    />
  </categoryBag>
</tModel>
```

Fields:

- **tModelKey**: The key value identifying the tModel.
- **name**: The tModel name. Note that the name specification **MUST NOT** use the language attribute.
- **description**: A language locale qualified description of this tModel.
- **overviewURL**: The URL **MUST** hold the location of this note on the OASIS web site (<http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-uddi-tn-1.0.pdf>).
- **categoryBag**: Note that the categoryBag contains a keyed reference to the UDDI Entity Key Values category system (see [6], section 11.1.9). This category system allows the registry to validate the keyValues used with this tModel to be valid serviceKeys in the registry.

6.3.3 Valid Values

The valid values for this categorization system are UDDI serviceKeys. The serviceKey **MUST** be the key of the businessService structure within the registry representing the Producer hosting that particular Portlet (see section 5.2.1).

6.4 WSRP Portlet Handle tModel

6.4.1 Purpose

The WSRP Portlet Handle tModel provides the means publish the Portlet handle into the registry. Together with the published producer service reference, all necessary data is available to address the Portlet.

6.4.2 Definition

| | |
|-----------------|--|
| Name: | uddi:oasis-open.org:wsrp:portlet_handle |
| Description: | The means to publish a WSRP Portlet handle |
| UDDI V3 key: | uddi:oasis-open.org:wsrp:portlet_handle |
| UDDI V1,V2 key: | uuid:ced0f0d1-0d35-345a-9a3a-13e8a0dcc47f |
| Categorization: | categorization |
| Checked: | no |

6.4.2.1 UDDI V2 tModel Structure

```
<tModel tModelKey="{TMODELKEY_WSRP_PORTLET_HANDLE}" >
  <name>
    uddi:oasis-open.org:wsrp:portlet_handle
  </name>

  <description xml:lang="eng"
    This tModel provides a means to publish a WSRP Portlet handle.
  </description>

  <overviewDoc>
    <overviewURL>
      http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-
      uddi-tn-1.0.pdf.
    </overviewURL>
  </overviewDoc>
```

```
1 <categoryBag>
2   <keyedReference
3     tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
4     keyValue="unchecked"
5   />
6   <keyedReference
7     tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
8     keyValue="categorization"
9   />
10 </categoryBag>
11
12 </tModel>
```

Fields:

- `tModelKey`: The key value identifying the tModel.
- `name`: The tModel name. Note that the name specification **MUST NOT** use the language attribute.
- `description`: A language locale qualified description of this tModel.
- `overviewURL`: The URL **MUST** hold the location of this note on the OASIS web site (<http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-uddi-tn-1.0.pdf>).

6.4.3 Valid Values

The valid values for this categorization system are the valid portlet handles. Please refer to the WSRP 1.0 specification [1], section 5.1.2 Handle Type for the definition of valid handles.

7 Sample Queries

This section describes how to perform UDDI Version 2 API queries based on this model.

7.1 Find WSRP Producers

There are two ways to find Producers within the registry. The first type of query allows finding Producers in a WSRP version agnostic way, the second allows to search for Producers explicitly supporting WSRP Version 1.

7.1.1 Find WSRP Producers Independent of the Version Supported

Search for businessServices categorized as WSRP Producer. Additionally the search can be limited to businessServices contained in a certain businessEntity or to businessService names matching a pattern.

```
<find_service generic="2.0"
  xmlns="urn:uddi-org:api_v2">
  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_SERVICE_TYPE}"
      keyName="WSRP Service Type"
      keyValue="Producer"
    />
  </categoryBag>
</find_service>
```

The query should return a list of businessServices categorized as WSRP Producers. From this list a particular businessService, i.e. its key, can be chosen and used for further queries (see 7.2).

7.1.2 Find WSRP Producers Supporting Version 1

Search for businessServices whose bindingTemplates refer to the WSRP v1 Bindings tModel. Additionally the search can be limited to businessServices contained in a certain businessEntity or to businessService names matching a pattern.

```
<find_service generic="2.0"
  xmlns="urn:uddi-org:api_v2">
  <tModelBag>
    <tModelKey>"{TMODELKEY_WSRP_V1_BINDINGS}"</tModelKey>
  </tModelBag>
</find_service>
```

The query should return a list of businessServices whose bindingTemplates indicate that the service implements the WSRP v1 bindings. From this list a particular businessService, i.e. its key, can be chosen and used for further queries (see 7.2).

We expect this to be the most frequently used way to publish and discover producers as it is the most light-weight and direct (i.e. as it provides the producer's service WSDL).

7.2 Get WSRP Producer Service WSDL URL

Search for bindingTemplates of a particular businessService referring to the WSRP v1 Bindings tModel.

```
<find_binding serviceKey="${SERVICEKEY_PRODUCER}"
generic="2.0"
xmlns="urn:uddi-org:api_v2">

  <tModelBag>
    <tModelKey>${TMODELKEY_WSRP_V1_BINDINGS}</tModelKey>
  </tModelBag>

</find_binding>
```

This query should return the binding details containing the WSDL URL.

7.3 Find WSRP Portlets

Searching for Portlets is similar to search for Producers. Basically it is a query for businessServices categorized as WSRP Portlets. Additionally the search can be limited to businessServices contained in a certain businessEntity or to businessService names matching a pattern.

```
<find_service generic="2.0"
xmlns="urn:uddi-org:api_v2">

  <categoryBag>
    <keyedReference
      tModelKey="${TMODELKEY_WSRP_SERVICE_TYPE}"
      keyName="WSRP Service Type"
      keyValue="Portlet"
    />
  </categoryBag>

</find_service>
```

The query should return a list of businessServices categorized as WSRP Portlets. From this list, a particular businessService, i.e. its key, can be chosen and used for further queries (see 7.5).

Note that, in principle, the Portlet Handle tModel and the Service Type tModel can be viewed as redundant information. Portlets could be found in the registry by searching either for a service referring to the Service Type tModel or for a service making use of the Portlet Handle tModel. The second method can be exploited in UDDI V3 queries only since this API allows wildcard searches of keyValues. The following is an example of such an UDDI V3 API query.

This is a search for businessServices using the WSRP Portlet Handle canonical tModel to provide the portlet handle. In order to find all businessServices, a wildcard search is used for the keyValue of the WSRP Portlet Handle categorization scheme.

```

1 <find_service xmlns="urn:uddi-org:api_v3">
2
3
4   <find_qualifiers>
5     <find_qualifier>
6       uddi:uddi.org:findqualifier:approximatematch
7     </find_qualifier>
8   </find_qualifiers>
9
10  <categoryBag>
11    <keyedReference
12      tModelKey="${TMODELKEY_WSRP_PORTLET_HANDLE}"
13      keyName="WSRP Portlet Handle"
14      keyValue="%"
15    />
16  </categoryBag>
17
18 </find_service>

```

The query should return a list of businessServices using the WSRP Portlet Handle tModel. From this list, a particular businessService, i.e. its key, can be chosen and used for further queries (see 7.5).

7.4 Find WSRP Portlets Hosted by a Particular Producer

It can be convenient to find all Portlets within the registry that are hosted by a particular Producer. This query is a search for businessServices having a Producer service reference in their category bag pointing to the hosting Producer service.

```

30 <find_service generic="2.0"
31   xmlns="urn:uddi-org:api_v2">
32
33   <categoryBag>
34     <keyedReference
35       tModelKey="${TMODELKEY_WSRP_PRODUCER_SERVICE_REFERENCE}"
36       keyName="WSRP Producer Service Reference"
37       keyValue="${SERVICEKEY_PRODUCER}"
38     />
39   </categoryBag>
40
41 </find_service>

```

This query should return a list of businessServices representing Portlets hosted by the specified Producer service. From this list, a particular businessService, i.e. its key, can be chosen and used for further queries (see section 7.6).

7.5 Find WSRP Portlets by Portlet Handle

This query is a search for businessServices having WSRP Portlet Handle tModel in their category bag with a matching Portlet handle key value. For example, an administrator may wish to check availability of a particular “Producer Offered Portlet”.

```
<find_service generic="2.0"
  xmlns="urn:uddi-org:api_v2">

  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_WSRP_PORTLET_HANDLE}"
      keyName="WSRP Portlet Handle"
      keyValue="SampleHandle"
    >
  </categoryBag>
</find_service>
```

This query should return a businessServices representing the Portlet with the matching Portlet handle. This businessService, i.e. its key, can be used for further queries (see section 7.6).

7.6 Get WSRP Portlet Access Information

Once a businessService representing a Portlet is found, the necessary data to address the Portlet – the Portlet handle and the hosting Producer service – can be obtained by retrieving the service details.

```
<get_serviceDetail generic="2.0"
  xmlns="urn:uddi-org:api_v2">

  <serviceKey>{SERVICEKEY_PORTLET}</serviceKey>
</get_serviceDetail>
```

This query should return the service detail of the service requested. To obtain the Producer reference and the Portlet handle the returned businessService structure and the contained categoryBag need to be examined (see 5.3.1).

8 Private UDDI Registries Considerations

Note that UDDI V2 registries generate V2 keys when tModels are published. In contrast to V3 UDDI registries V2 registries do not allow publisher-assigned keys. Therefore the V2 tModel keys defined in this technical note may differ in local (private) V2 registries.

Consumers and Producers using private UDDI V2 registries must be prepared to handle V2 keys accordingly, i.e. implementations must provide a mapping of the herein defined tModels to valid V2 keys in local registries.

A Additional tModels

The tModels described here represent the WSRP portTypes and bindings and are modeled according to the WSDL in UDDI 2.0 technical note [4]. They can be used if the expanded modeling of this tech note is desired for to providing additional flexibility and more detailed queries. For further details and usage of these tModels please refer to the UDDI technical note.

Note: The canonical tModels are published by the registry provider a priori. All canonical tModels defined by this technical note are already published into the UDDI Business Registry by the WSRP TC and do not need to be republished there.

However these additional tModels should to be published into local (“private”) registries by the registry provider and the resulting tModelKeys made known to the users of the registry.

A.1 WSRP v1 ServiceDescription PortType tModel

A.1.1 Purpose

The WSRP v1 ServiceDescription PortType tModel is used to indicate that a Web Service provides the WSRP Service Description Interface.

A.1.1 Definition

| | |
|-----------------|--|
| Name: | WSRP_v1_ServiceDescription_PortType |
| Description: | Representation of the ServiceDescription portType |
| UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_service_description_porttype |
| UDDI V1,V2 key: | uuid:3786a28b-8d02-35da-bca9-04d4921b70f2 |
| Categorization: | none |
| Checked: | no |

1 A.1.1.1 UDDI V2 tModel Structure

```
2 <tModel tModelKey="{TMODELKEY_SERVICEDESCRIPTION_PORTTYPE}" >
3   <name>
4     WSRP_v1_ServiceDescription_PortType
5   </name>
6
7   <categoryBag>
8     <keyedReference
9       tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
10      keyName="portType namespace"
11      keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:intf"
12    />
13    <keyedReference
14      tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
15      keyName="WSDL type"
16      keyValue="portType"
17    />
18  </categoryBag>
19
20  <overviewDoc>
21    <overviewURL>
22      http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Interfaces.wsdl
23    </overviewURL>
24  </overviewDoc>
25
26 </tModel>
```

A.2 WSRP v1 Markup PortType tModel

A.2.1 Purpose

The WSRP v1 Markup PortType tModel is used to indicate that a Web Service provides the WSRP Markup Interface.

A.2.2 Definition

| | |
|-----------------|---|
| Name: | WSRP_v1_Markup_PortType |
| Description: | Representation of the Markup portType |
| UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_markup_porttype |
| UDDI V1,V2 key: | uuid:161fb2dd-6a94-3756-9455-8cc24f5cefe0 |
| Categorization: | none |
| Checked: | no |

A.2.2.1 UDDI V2 tModel Structure

```

<tModel tModelKey="{TMODELKEY_MARKUP_PORTTYPE}" >
  <name>
    WSRP_v1_Markup_PortType
  </name>

  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
      keyName="portType namespace"
      keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:intf"
    />
    <keyedReference
      tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
      keyName="WSDL type"
      keyValue="portType"
    />
  </categoryBag>

  <overviewDoc>
    <overviewURL>
      http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Interfaces.wsdl
    </overviewURL>
  </overviewDoc>
</tModel>

```

1 **A.3 WSRP v1 Registration PortType tModel**

2 **A.3.1 Purpose**

3 The WSRP v1 Registration PortType tModel is used to indicate that a Web Service
4 provides the WSRP Registration Interface.

5 **A.3.2 Definition**

| | | |
|----|-----------------|---|
| 6 | Name: | WSRP_v1_Registration_PortType |
| 7 | Description: | Representation of the Registration portType |
| 8 | UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_registration_porttype |
| 9 | UDDI V1,V2 key: | uuid:e6076806-005c-3c8a-b295-d84033788639 |
| 10 | Categorization: | none |
| 11 | Checked: | no |

12 **A.3.2.1 UDDI V2 tModel Structure**

```

13 <tModel tModelKey="{TMODELKEY_REGISTRATION_PORTTYPE}" >
14   <name>
15     WSRP_v1_Registration_PortType
16   </name>
17
18   <categoryBag>
19     <keyedReference
20       tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
21       keyName="portType namespace"
22       keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:intf"
23     />
24     <keyedReference
25       tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
26       keyName="WSDL type"
27       keyValue="portType"
28     />
29   </categoryBag>
30
31   <overviewDoc>
32     <overviewURL>
33       http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Interfaces.wsdl
34     </overviewURL>
35   </overviewDoc>
36
37 </tModel>

```


A.4 WSRP v1 PortletManagement PortType tModel

A.4.1 Purpose

The WSRP v1 PortletManagement PortType tModel is used to indicate that a Web Service provides the WSRP Portlet Management Interface.

A.4.2 Definition

| | |
|------------------|---|
| Name: | WSRP_v1_PortletManagement_PortType |
| Description: | Representation of the PortletManagement portType |
| UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_portlet_management_porttype |
| UDDI V1, V2 key: | uuid:ecf92a86-dd5b-3e19-8dd4-f1efe669c692 |
| Categorization: | none |
| Checked: | no |

A.4.2.1 UDDI V2 tModel Structure

```

<tModel tModelKey="{TMODELKEY_PORTLETMANAGEMENT_PORTTYPE}" >
  <name>
    WSRP_v1_PortletManagement_PortType
  </name>

  <categoryBag>
    <keyedReference
      tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
      keyName="portType namespace"
      keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:intf"
    />
    <keyedReference
      tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
      keyName="WSDL type"
      keyValue="portType"
    />
  </categoryBag>

  <overviewDoc>
    <overviewURL>
      http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Interfaces.wsdl
    </overviewURL>
  </overviewDoc>
</tModel>

```

A.5 WSRP v1 ServiceDescription SOAP Binding tModel

A.5.1 Purpose

The WSRP v1 ServiceDescription SOAP Binding tModel is used to indicate that a Web Service provides the default SOAP over HTTP binding for the Service Description Interface.

A.5.2 Definition

1 Name: WSRP_v1_ServiceDescription_Binding_SOAP
 2 Description: Representation of the ServiceDescription SOAP binding
 3 UDDI V3 key: uddi:oasis-open.org:wsrp:v1_service_description_binding_soap
 4 UDDI V1,V2 key: uuid:973f9d97-8314-3069-a8bc-fd2f8f9d9741
 5 Categorization: none
 6 Checked: no

7 A.5.2.1 UDDI V2 tModel Structure

```

8 <tModel tModelKey="{TMODELKEY_SERVICEDESCRIPTION_BINDING}" >
9   <name>
10     WSRP_v1_ServiceDescription_Binding_SOAP
11   </name>
12
13   <categoryBag>
14     <keyedReference
15       tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
16       keyName="binding namespace"
17       keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:bind"
18     />
19     <keyedReference
20       tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
21       keyName="WSDL type"
22       keyValue="binding"
23     />
24     <keyedReference
25       tModelKey="{TMODELKEY_UDDI_WSDL_PORTTYPE_REFERENCE}"
26       keyName="portType reference"
27       keyValue="{TMODELKEY_SERVICEDESCRIPTION_PORTTYPE}"
28     />
29     <keyedReference
30       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
31       keyName="uddi-org:types"
32       keyValue="wsdlSpec"
33     />
34     <keyedReference
35       tModelKey="{TMODELKEY_UDDI_PROTOCOL_CATEGORIZATION}"
36       keyName="SOAP protocol"
37       keyValue="{TMODELKEY_UDDI_SOAP_PROTOCOL_TMODEL}"
38     />
39     <keyedReference
40       tModelKey="{TMODELKEY_UDDI_TRANSPORT_CATEGORIZATION}"
41       keyName="HTTP protocol"
42       keyValue="{TMODELKEY_UDDI_HTTP_PROTOCOL_TMODEL}"
43     />
44   </categoryBag>
45
46   <overviewDoc>
47     <overviewURL>
48       http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Binding.wsdl
49     </overviewURL>
50   </overviewDoc>
51
52 </tModel>
  
```

1 **A.6 WSRP v1 Markup SOAP Binding tModel**

2 **A.6.1 Purpose**

3 The WSRP v1 Markup SOAP Binding tModel is used to indicate that a Web Service
4 provides the default SOAP over HTTP binding for the Markup Interface.

5 **A.6.2 Definition**

| | |
|--------------------|---|
| 6 Name: | WSRP_v1_Markup_Binding_SOAP |
| 7 Description: | Representation of the Markup SOAP binding |
| 8 UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_markup_binding_soap |
| 9 UDDI V1,V2 key: | uuid:6a699c53-2b44-398b-9a1d-eca88585dd11 |
| 10 Categorization: | none |
| 11 Checked: | no |

1 A.6.2.1 UDDI V2 tModel Structure

```

2      <tModel tModelKey="{TMODELKEY_MARKUP_BINDING}" >
3      <name>
4          WSRP_v1_Markup_Binding_SOAP
5      </name>
6
7      <categoryBag>
8          <keyedReference
9              tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
10             keyName="binding namespace"
11             keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:bind"
12         />
13         <keyedReference
14             tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
15             keyName="WSDL type"
16             keyValue="binding"
17         />
18         <keyedReference
19             tModelKey="{TMODELKEY_UDDI_WSDL_PORTTYPE_REFERENCE}"
20             keyName="portType reference"
21             keyValue="{TMODELKEY_MARKUP_PORTTYPE}"
22         />
23         <keyedReference
24             tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
25             keyName="uddi-org:types"
26             keyValue="wsdlSpec"
27         />
28         <keyedReference
29             tModelKey="{TMODELKEY_UDDI_PROTOCOL_CATEGORIZATION}"
30             keyName="SOAP protocol"
31             keyValue="{TMODELKEY_UDDI_SOAP_PROTOCOL_TMODEL}"
32         />
33         <keyedReference
34             tModelKey="{TMODELKEY_UDDI_TRANSPORT_CATEGORIZATION}"
35             keyName="HTTP protocol"
36             keyValue="{TMODELKEY_UDDI_HTTP_PROTOCOL_TMODEL}"
37         />
38     </categoryBag>
39
40     <overviewDoc>
41         <overviewURL>
42             http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Binding.wsdl
43         </overviewURL>
44     </overviewDoc>
45
46 </tModel>

```

47 A.7 WSRP v1 Registration SOAP Binding tModel

48 A.7.1 Purpose

49 The WSRP v1 Registration SOAP Binding tModel is used to indicate that a Web
50 Service provides the default SOAP over HTTP binding for the Registration Interface.

51 A.7.2 Definition

52 Name: WSRP_v1_Registration_Binding_SOAP
53 Description: Representation of the Registration SOAP binding

1 UDDI V3 key: uddi:oasis-open.org:wsrp:v1_registration_binding_soap
 2 UDDI V1,V2 key: uuid:40e2d30f-03fe-3cc3-b126-6b662d2eacb4
 3 Categorization: none
 4 Checked: no

5 A.7.2.1 UDDI V2 tModel Structure

```

6 <tModel tModelKey="{TMODELKEY_REGISTRATION_BINDING}" >
7   <name>
8     WSRP_v1_Registration_Binding_SOAP
9   </name>
10
11   <categoryBag>
12     <keyedReference
13       tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
14       keyName="binding namespace"
15       keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:bind"
16     />
17     <keyedReference
18       tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
19       keyName="WSDL type"
20       keyValue="binding"
21     />
22     <keyedReference
23       tModelKey="{TMODELKEY_UDDI_WSDL_PORTTYPE_REFERENCE}"
24       keyName="portType reference"
25       keyValue="{TMODELKEY_REGISTRATION_PORTTYPE}"
26     />
27     <keyedReference
28       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
29       keyName="uddi-org:types"
30       keyValue="wsdlSpec"
31     />
32     <keyedReference
33       tModelKey="{TMODELKEY_UDDI_PROTOCOL_CATEGORIZATION}"
34       keyName="SOAP protocol"
35       keyValue="{TMODELKEY_UDDI_SOAP_PROTOCOL_TMODEL}"
36     />
37     <keyedReference
38       tModelKey="{TMODELKEY_UDDI_TRANSPORT_CATEGORIZATION}"
39       keyName="HTTP protocol"
40       keyValue="{TMODELKEY_UDDI_HTTP_PROTOCOL_TMODEL}"
41     />
42   </categoryBag>
43
44   <overviewDoc>
45     <overviewURL>
46       http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Binding.wsdl
47     </overviewURL>
48   </overviewDoc>
49
50 </tModel>
  
```

1 **A.8 WSRP v1 PortletManagement SOAP Binding**

2 **tModel**

3 **A.8.1 Purpose**

4 The WSRP v1 PortletManagement SOAP Binding tModel is used to indicate that a
5 Web Service provides the default SOAP over HTTP binding for the Portlet
6 Management Interface.

7 **A.8.2 Definition**

| | |
|--------------------|---|
| 8 Name: | WSRP_v1_PortletManagement_Binding_SOAP |
| 9 Description: | Representation of the PortletManagement SOAP binding |
| 10 UDDI V3 key: | uddi:oasis-open.org:wsrp:v1_portlet_management_binding_soap |
| 11 UDDI V1,V2 key: | uuid:98e4dccb-2eb4-3c9c-8fcb-0b176c09a037 |
| 12 Categorization: | none |
| 13 Checked: | no |

1 A.8.2.1 UDDI V2 tModel Structure

```
2 <tModel tModelKey="{TMODELKEY_PORTLETMANAGEMENT_BINDING}" >
3   <name>
4     WSRP_v1_PortletManagement_Binding_SOAP
5   </name>
6
7   <categoryBag>
8     <keyedReference
9       tModelKey="{TMODELKEY_UDDI_XML_NAMESPACE}"
10      keyName="binding namespace"
11      keyValue="urn:oasis:names:tc:wsrp:wsdl:v1:bind"
12    />
13    <keyedReference
14      tModelKey="{TMODELKEY_UDDI_WSDL_ENTITY_TYPE}"
15      keyName="WSDL type"
16      keyValue="binding"
17    />
18    <keyedReference
19      tModelKey="{TMODELKEY_UDDI_WSDL_PORTTYPE_REFERENCE}"
20      keyName="portType reference"
21      keyValue="{TMODELKEY_PORTLETMANAGEMENT_PORTTYPE}"
22    />
23    <keyedReference
24      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
25      keyName="uddi-org:types"
26      keyValue="wsdlSpec"
27    />
28    <keyedReference
29      tModelKey="{TMODELKEY_UDDI_PROTOCOL_CATEGORIZATION}"
30      keyName="SOAP protocol"
31      keyValue="{TMODELKEY_UDDI_SOAP_PROTOCOL_TMODEL}"
32    />
33    <keyedReference
34      tModelKey="{TMODELKEY_UDDI_TRANSPORT_CATEGORIZATION}"
35      keyName="HTTP protocol"
36      keyValue="{TMODELKEY_UDDI_HTTP_PROTOCOL_TMODEL}"
37    />
38  </categoryBag>
39
40  <overviewDoc>
41    <overviewURL>
42      http://www.oasis-open.org/committees/wsrp/v1/wsdl/WSRP_v1_Binding.wsdl
43    </overviewURL>
44  </overviewDoc>
45
46 </tModel>
```

B References

B.1 Normative

- [RFC2119] S. Bradner, *Key words for use in RFCs to Indicate Requirement Levels*, IETF RFC 2119, March 1997, available at:
<http://www.ietf.org/rfc/rfc2119.txt>.
- [1] WSRP specification, version 1.0. Available at:
<http://www.oasis-open.org/committees/download.php/3343/oasis-200304-wsrp-specification-1.0.pdf>
- [2] *Using WSDL in a UDDI registry, Version 2.0*, available at:
<http://www.oasis-open.org/committees/uddi-spec/doc/tm/uddi-spec-tc-tn-wsdl-v200-20031104.pdf>
- [3] *Using WSDL in a UDDI Registry 1.08*, available at:
<http://uddi.org/pubs/wsdlbestpractices.pdf>
- [4] *Web Services Description Language (WSDL) 1.1*, March 15, 2001, available at:
<http://www.w3.org/TR/wsdl>
- [5] *UDDI Version 2.03 Data Structure Reference*, July 7, 2002, available at:
<http://uddi.org/pubs/DataStructure-V2.03-Published-20020719.pdf>.
- [6] *UDDI Version 3.0 Published Specification*, 19 July 2002, available at:
<http://www.uddi.org/pubs/uddi-v3.00-published-20020719.pdf>.
- [7] *WSRP Version 1.0 types schema*, available at:
http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp_v1_types.xsd
- [8] *WSRP Version 1.0 portTypes definitions*, available at:
http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp_v1_interfaces.wsdl
- [9] *WSRP Version 1.0 bindings definitions*, available at:
http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp_v1_bindings.wsdl
- [10] *WSRP PFB Abstract Model, Version 1.0*, available at:
http://www.oasis-open.org/committees/wsrp/specifications/version1/wsrp-pfb-abstract-model-1_0.pdf

1 C Revision History

| Rev | Date | By Whom | What |
|----------|----------|-----------------------------|---|
| draft-01 | 09/12/03 | Richard Jacob | First draft |
| draft-02 | 09/18/03 | Richard Jacob | Added publishing of Portlets |
| draft-03 | 01/16/04 | Andre Kramer | Editorial suggestions, added Producer Service Reference Binding Template |
| draft-04 | 01/20/04 | Richard Jacob | added figures and descriptions for Producer and Portlet publishing |
| draft-05 | 02/12/04 | Andre Kramer, Richard Jacob | editorial changes, added line numbering |
| draft-06 | 06/08/04 | Richard Jacob | Changes reflecting last F2F discussions, rearrangement of sections |
| Draft-07 | 06/29/04 | Richard Jacob | Changed to optional Producer categorization, changed figures to current naming scheme, added UDDI version consideration, clarified relationship to WSDL in UDDI tech notes, added introductory figure, added sample queries |
| Draft-08 | 07/08/04 | Richard Jacob | Version for 1 st TC review; added appendix A additional tModels, clarified redundancy of keys used for portlet publishing, added reference to UDDI: entityKeyValues tModel, editorial changes |
| Draft-09 | 08/16/04 | Richard Jacob | Reflecting comments from review. Changed V3 keys, gen'd V2 keys |
| Draft-10 | 09/16/04 | Richard Jacob | Reflected comments received |

2

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