



UDDI Specifications TC

Technical Note

Using WSDL in a UDDI Registry, Version 2.0

Document Identifier:

uddi-spec-tc-tn-wsdl-v2

This Version:

<http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-tc-tn-wsdl-v200-20030627.htm>

Latest Version:

<http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-tc-tn-wsdl-v2.htm>

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Abstract:

This document is an OASIS UDDI Technical Note that defines a new approach to using WSDL in a UDDI Registry.

Status:

This document is updated periodically on no particular schedule.

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158

1 Introduction

159 The Universal Description, Discovery & Integration (UDDI) specification provides a platform-
160 independent way of describing and discovering Web services and Web service providers. The
161 UDDI data structures provide a framework for the description of basic service information, and
162 an extensible mechanism to specify detailed service access information using any standard
163 description language. Many such languages exist in specific industry domains and at different
164 levels of the protocol stack. The Web Services Description Language (WSDL) is a general
165 purpose XML language for describing the interface, protocol bindings, and the deployment
166 details of network services. WSDL complements the UDDI standard by providing a uniform
167 way of describing the abstract interface and protocol bindings of arbitrary network services.
168 The purpose of this document is to clarify the relationship between the two and to describe a
169 recommended approach to mapping WSDL descriptions to the UDDI data structures.
170 Consistent and thorough WSDL mappings are critical to the utility of UDDI.

1.1 Goals and Requirements

172 The primary goals of this mapping are:

- 173 1. To enable the automatic registration of WSDL definitions in UDDI
- 174 2. To enable precise and flexible UDDI queries based on specific WSDL artifacts and
175 metadata
- 176 3. To maintain compatibility with the mapping described in the *Using WSDL in a UDDI*
177 *Registry, Version 1.08* [1] Best Practice document
- 178 4. To provide a consistent mapping for UDDI Version 2 and UDDI Version 3
- 179 5. To support any logical and physical structure of WSDL description

180 This mapping prescribes a consistent methodology to map WSDL 1.1 artifacts to UDDI
181 structures. It describes an approach that represents reusable, abstract Web service artifacts,
182 (WSDL portTypes and WSDL bindings) and Web service implementations (WSDL services
183 and ports). Tools can use this mapping to generate UDDI registrations automatically from
184 WSDL descriptions.

185 This mapping captures sufficient information from the WSDL documents to allow precise
186 queries for Web services information without further recourse to the source WSDL
187 documents, and to allow the appropriate WSDL documents to be retrieved once a match has
188 been found. Given that the source WSDL documents can be distributed among the publishers
189 using a UDDI registry, a UDDI registry provides a convenient central point where such
190 queries can be executed.

191 This mapping enables the following types of queries for both design-time and run-time
192 discovery:

- 193 • Given the namespace and/or local name of a wsdl:portType, find the tModel that
194 represents that portType.
- 195 • Given the namespace and/or local name of a wsdl:binding, find the tModel that
196 represents that binding.
- 197 • Given a tModel representing a portType, find all tModels representing bindings for
198 that portType.
- 199 • Given a tModel representing a portType, find all bindingTemplates that represent
200 implementations of that portType.
- 201 • Given a tModel representing a binding, find all bindingTemplates that represent
202 implementations of that binding.
- 203 • Given the namespace and/or local name of a wsdl:service, find the businessService
204 that represents that service.

205 Some aspects of the mapping allow information to be retrieved directly without further queries
206 being necessary. For example, given the tModel representing a binding, it is possible to

207 retrieve the key of the tModel representing the portType referred to by the binding. Other
208 aspects of the mapping may require multiple queries to be issued to the UDDI registry.
209 Although the UDDI V3 data model is slightly different from the UDDI data model, this mapping
210 ensures that the same information is captured in both versions.

211 **1.2 Relationship to Version 1 Best Practice**

212 This document builds on *Using WSDL in a UDDI Registry, Version 1.08*, providing an
213 expanded modeling practice that encompasses the flexibility of WSDL. The primary difference
214 between this mapping and the one described in the existing Best Practice is that this mapping
215 provides a methodology to represent individual Web services artifacts.

216 As a Technical Note, this document does not replace the Version 1 Best Practice. If the
217 additional flexibility is not required, the existing Best Practice can still be used, particularly
218 when the UDDI artifacts are published manually.

219 It is anticipated that implementations of the approach described in this Technical Note will be
220 developed, and that once experience with those implementations is obtained this Technical
221 Note will become a Best Practice.

222 A final goal is to be compatible with the existing Best Practice in that a tModel representing a
223 WSDL binding published using the approach described in this document should be usable by
224 a client that uses the Version 1 Best Practice approach.

225 **1.3 Terminology**

226 The key words *must*, *must not*, *required*, *shall*, *shall not*, *should*, *should not*, *recommended*,
227 *may*, and *optional* in this document are to be interpreted as described in **[RFC2119]**.

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2 Mapping Two Data Models: WSDL & UDDI

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A brief discussion of the two respective data models, WSDL and UDDI, follows. For a complete explanation of these specifications, see [2], [3], and [4].

230

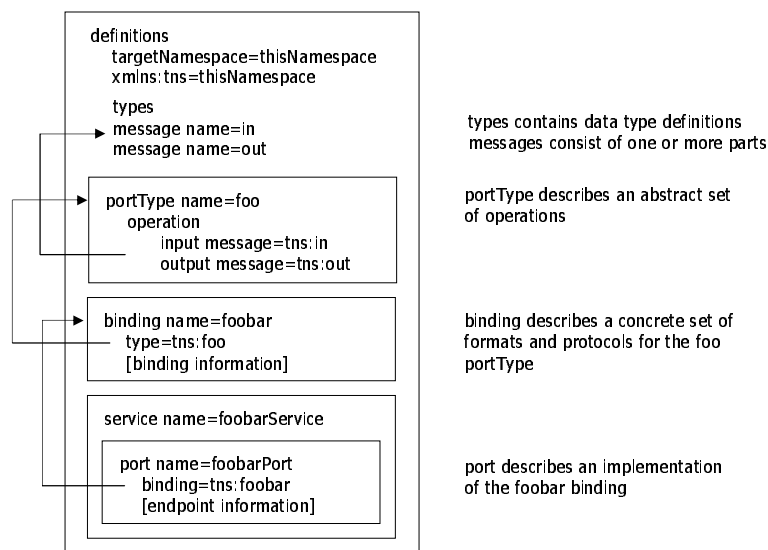
231

2.1 WSDL Data Model

232

A review of WSDL in the context of the goals and requirements will help guide a new mapping practice in UDDI.

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2.1.1 portType

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The central construct in WSDL is the portType. A portType is an abstract collection of operations that may be supported by one or more Web services. A WSDL portType defines these operations in terms of message definitions, which usually rely on the XML Schema language to describe the representation of each message. A single WSDL document may contain multiple portType entities. Each portType is uniquely identified by the combination of its local name and the target namespace of the definitions element that contains the portType.

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WSDL portTypes may be implemented by more than one Web service. Web services that purport to support a given portType must adhere not only to the message formats that are part of the WSDL definition; they must also adhere to the semantic agreement that is implicitly part of the portType. This consistency allows applications to treat two Web services as substitutable if and only if they implement a common portType.

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2.1.2 binding

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WSDL portTypes are abstract Web service descriptions and do not specify information about the encoding and transport protocols used to transmit the messages. To specify encoding and transport protocol details in WSDL, one must define a second construct, known as a binding. A WSDL binding specifies a specific set of encoding and transport protocols that may be used to communicate with an implementation of a particular WSDL portType. A WSDL binding specifies its portType through a QName reference. The referenced portType may or may not be in the same target namespace as the binding itself. Again, a single WSDL document may contain multiple bindings. For example, a WSDL document may describe multiple protocol

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256 bindings for a single portType. Like a portType, a binding is uniquely identified by the
257 combination of its local name and the target namespace of the definitions element that
258 contains the binding.
259 As with portTypes, WSDL bindings are abstract definitions and do not represent a Web
260 service implementation. Multiple Web services may implement the same WSDL binding.

261 **2.1.3 service and port**

262 Finally, WSDL defines a Web service implementation as a service with a collection of named
263 ports. Each port implements a particular portType using the protocols defined by a named
264 binding. A service may expose multiple ports in order to make a single portType available
265 over multiple protocols. A service may also expose multiple ports in order to expose more
266 than one portType from a single logical entity. A WSDL port specifies the binding it
267 implements through a QName reference. The referenced binding may or may not be in the
268 same target namespace as the port itself. A single WSDL document may contain multiple
269 services. A service is uniquely identified by the combination of its local name and the target
270 namespace of the definitions element that contains the service. Likewise, a port is uniquely
271 identified by the combination of its local name and the target namespace of the definitions
272 element that contains the port.

273 **2.1.4 import**

274 The import directive in WSDL allows the separation of these different entities into multiple
275 files. As such, a WSDL document may be composed of a single portType, multiple portTypes,
276 a single binding that imports its portType definition, multiple bindings, a single service, or
277 multiple services, etc. The WSDL data model provides great flexibility in terms of composition
278 and reusability of WSDL entities.

279 Given this flexibility, the critical components of a WSDL document in terms of composition
280 and identity are the target namespace of the definitions element and the local names that
281 identify each portType, binding, service, and port within the target namespace.

282 **2.2 UDDI Data Model**

283 As an aid to understanding the sections ahead, we provide here a brief overview of two UDDI
284 data structures that are particularly relevant to the use of WSDL in the context of a UDDI
285 registry: the tModel and the businessService.

286 **2.2.1 tModels**

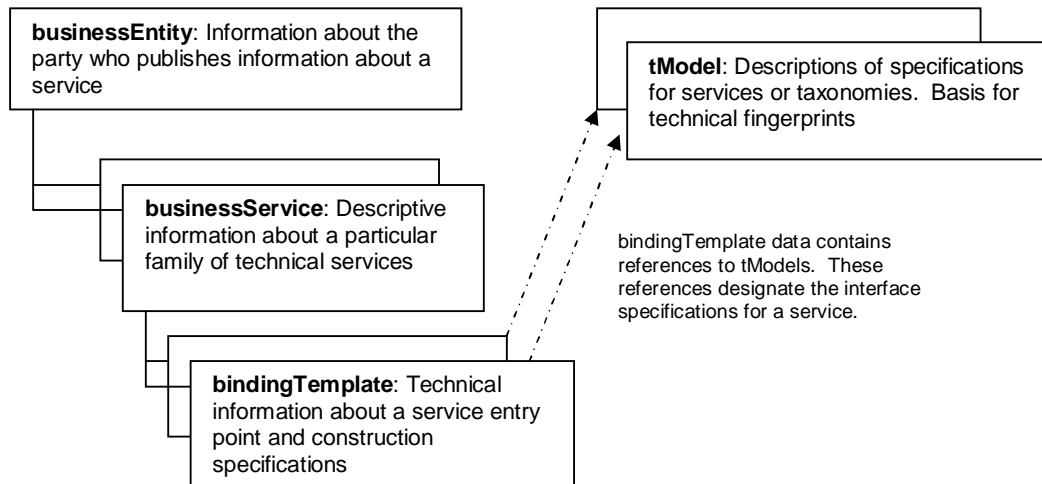
287 TModels are often referred to as service type definitions. TModels represent unique concepts
288 or constructs. They are used to describe compliance with a specification, a concept, or a
289 shared design. TModels have various uses in the UDDI registry. In the case of mapping
290 WSDL-described Web services, tModels have two uses. First, tModels are used to represent
291 technical specifications such as service types, bindings, and wire protocols. Second, tModels
292 are used to implement category systems that are used to categorize technical specifications
293 and services. This Technical Note defines a set of specification and category system tModels
294 that are used when mapping WSDL entities to UDDI entities. These tModels are defined in
295 Appendix B.

296 When a particular specification is registered in the UDDI registry as a tModel, it is assigned a
297 unique key, called a tModelKey. This key is used by other UDDI entities to reference the
298 tModel, for example to indicate compliance with the specification.

299 Each specification tModel contains an overviewURL, which provides the address of the
300 specification itself, for example, a WSDL document.

301 Additional metadata can be associated with a specification tModel using any number of
302 identifier and category systems. Identifiers are grouped in a construct called an identifierBag,
303 and categories are grouped in a construct called a categoryBag. These bags contain a set of
304 keyedReference elements. Each keyedReference specifies the tModelKey of the category
305 system tModel and a name/value pair that specifies the metadata. For example, a
306 keyedReference referencing the namespace category system can be used to specify a WSDL

307 namespace. The metadata values specified in keyedReference elements can be used as
308 selection criteria when searching UDDI.



309 2.2.2 businessService & bindingTemplate

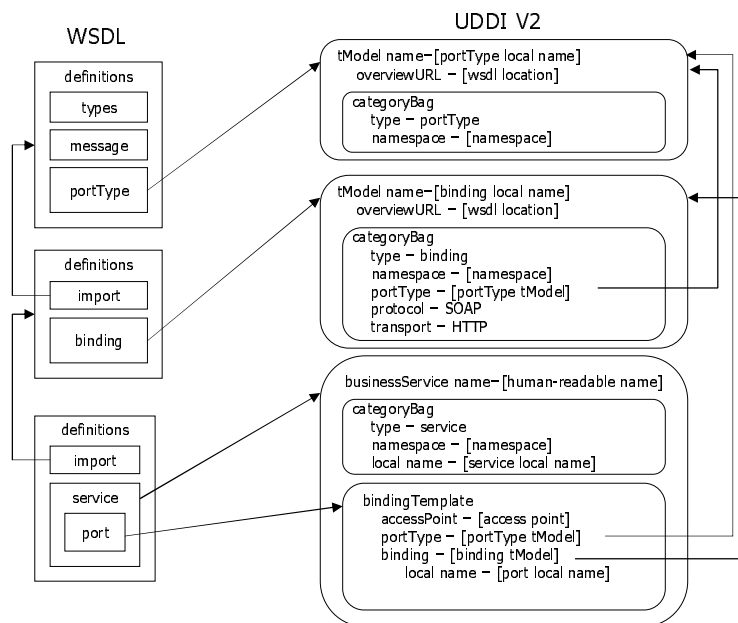
310 Services are represented in UDDI by the businessService data structure, and the details of
311 how and where the service is accessed are provided by one or more bindingTemplate
312 structures. The businessService might be thought of as a logical container of services. The
313 bindingTemplate structure contains the accessPoint of the service, as well as references to
314 the tModels it is said to implement.

315 2.3 Mapping WSDL and UDDI

316 WSDL is designed to support modular and reusable definitions, and each definition artifact
317 has certain relationships with other definition artifacts. As described in Section 1.1, the goals
318 of this technical note and the mapping it defines are to enable the automatic registration of
319 WSDL definitions in UDDI, to enable precise and flexible UDDI queries based on specific
320 WSDL artifacts and metadata, to maintain compatibility with the Version 1 Best Practice
321 methodology, and to provide a consistent mapping for both UDDI V2 and UDDI V3. The
322 mapping itself addresses the first goal. The second goal provides the rationale for the
323 methodology used in this mapping. In order to support queries based on specific WSDL
324 artifacts and metadata, this mapping must be able to represent the individual WSDL artifacts
325 and the relationships between artifacts. This goal also provides the rationale for the amount of
326 information that must be captured in UDDI. Additional information must also be included in
327 some cases to support the third goal. To address the fourth goal, the information captured in
328 the two mappings is as consistent as possible.

329 2.3.1 Mapping Overview

330 This mapping describes a methodology for mapping WSDL 1.1 definitions to the UDDI V2 and
331 UDDI V3 data models. The methodology maps each WSDL artifact to a separate UDDI entity,
332 accurately representing the “building block” design of WSDL descriptions. wsdl:portType and
333 wsdl:binding elements map to uddi:tModel entities, wsdl:service elements map to
334 uddi:businessService entities and wsdl:port elements map to uddi:bindingTemplate entities.
335 KeyedReferences provide a mechanism to express additional metadata and to represent a
336 relationship between two UDDI entities.



337

338 2.3.2 Comparison to Version 1 Mapping

339 One important thing to note about this mapping, especially as compared to the mapping
 340 described in the Version 1 Best Practice, is that this approach may map a single WSDL
 341 document to multiple tModels. For example, a single WSDL document that contains one
 342 portType definition and two binding definitions will map to three distinct tModels in UDDI. This
 343 approach differs from the Version 1 Best Practice, which would, by default, map the entire
 344 WSDL document to a single tModel. The Version 1 Best Practice does not allow for a
 345 portType to map to a distinct tModel. The rationale for this new mapping decision is to more
 346 effectively represent the modularity and reusability of WSDL artifacts in UDDI. A Web service
 347 implementation might implement only one of the bindings described in a WSDL document. By
 348 decomposing WSDL into multiple tModels, one can accurately model in UDDI exactly which
 349 portTypes and bindings a given Web service implementation supports, as opposed to being
 350 constrained to asserting that a Web service always supports the entirety of the WSDL
 351 document.

352 While there is an increased amount of data from a WSDL document modeled in UDDI, this
 353 new approach is in accord with the Version 1 Best Practice in that it does not attempt to use
 354 UDDI as a repository for *all* of the data in a WSDL document. Just as in the Version 1 Best
 355 Practice, one still must go outside of the UDDI registry to retrieve the portType and binding
 356 information necessary for software applications to work with that Web service.

357 2.3.3 New Canonical tModels

358 This mapping introduces a number of canonical tModels that are used to represent WSDL
 359 metadata and relationships. These tModels, including the WSDL Entity Type tModel, the XML
 360 Namespace tModel, the XML Local Name tModel, the WSDL portType Reference tModel, the
 361 SOAP Protocol tModel, the HTTP Protocol tModel, the Protocol Categorization tModel, the
 362 Transport Categorization tModel and the WSDL Address tModel, are described in Appendix
 363 B. These tModels MUST be registered in the UDDI registry to support this mapping. Both
 364 V1/V2 and V3 keys are given for these tModels.

365 2.3.4 General Conventions

366 In this mapping, each WSDL artifact is mapped to its corresponding UDDI entity. A set of
 367 keyedReference elements is added to each UDDI entity to capture additional metadata. In

368 order to support the requirements outlined in Section 1.1, the following metadata is captured
369 for each entity:

- 370 • The type of WSDL entity being defined (i.e., portType, binding, service, or port)
- 371 • The target namespace of the WSDL definitions file that defines the WSDL entity
- 372 • The local name of the WSDL entity being defined
- 373 • The location of the WSDL document that defines the WSDL entity is captured for
374 portType, binding and, optionally, service entities.

375 Any relationships and dependencies between entities must also be captured. For example, a
376 tModel that represents a binding provides a reference to the tModel that represents the
377 portType implemented by the binding.

378 To maintain compatibility with the Version 1 Best Practice mapping, certain UDDI entities are
379 also characterized as being of type “wsdlSpec”.

380 **2.3.5 Support for Multiple UDDI API Versions**

381 The mapping described is designed to appear the same whichever version of the UDDI API is
382 used to access it. There are differences that are mandated by the differences in the API
383 versions, and such differences are noted in the appropriate sections.

384 The V3 API also introduces some optional features that are not visible to the older APIs, and
385 some guidance is given as to the usage of these optional features.

386 **2.3.6 References to WSDL Components**

387 A UDDI entity normally references technical specifications using the overviewURL element.
388 As noted above, in this mapping a single WSDL document may map to multiple tModels, and
389 each tModel refers to a particular WSDL entity within the file. The particular WSDL entity is
390 uniquely identified by the combination of its local name and the target namespace of the
391 definitions element that contains the WSDL entity. This identity information SHOULD be
392 determined from the UDDI entity, using the particular mapping for the namespace name and
393 local name applicable to the particular UDDI entity type. Alternatively, the overviewURL value
394 MAY contain a fragment identifier that identifies the particular WSDL entity. If the optional
395 fragment identifier is used, then the value of the overviewURL SHOULD conform to the
396 syntax described in Appendix C.

397 **2.3.7 WSDL Extensibility Elements**

398 WSDL uses extensibility elements to describe technology-specific information within a WSDL
399 definition. Extensibility elements may be included under many of the WSDL elements. The
400 only extensibility elements that are relevant to this mapping are binding and port extensions,
401 specifically the extensibility elements that can be added to the wsdl:binding and wsdl:port
402 elements. The first of these is used to declare particular protocols and message formats; the
403 second is to provide address information.

404 Information from these extensibility elements is mapped to the tModel for a wsdl:binding and
405 the bindingTemplate for a wsdl:port. The mappings defined in this document include details
406 on the SOAP 1.1 and HTTP GET/POST bindings defined in the WSDL 1.1 W3C Note. The
407 mappings also describe how other bindings should be incorporated into the UDDI mapping.

408 **2.3.8 Support for WSDL Implementation Documents**

409 In the context of this Technical Note, a WSDL Implementation Document is a WSDL
410 document that contains at least one wsdl:service element and its associated wsdl:port
411 elements. There are two options for how this implementation information is described in
412 UDDI:

- 413 1. The information in the UDDI model is the authoritative information and there is no
414 reference to a WSDL Implementation Document.

415 2. A reference to an external WSDL Implementation Document can be stored in UDDI
 416 and the remaining information in UDDI is used to describe the appropriate element in
 417 the external WSDL resource.

418 The mapping described in the body of this document corresponds to the first option
 419 above, and that is assumed to be the default mapping. The second option is described in
 420 Appendix A.

421 **2.4 Mapping WSDL 1.1 in UDDI V2**

422 This section describes a detailed mapping of WSDL 1.1 artifacts to the UDDI V2 data model.

423 **2.4.1 wsdl:portType → uddi:tModel**

424 A wsdl:portType MUST be modeled as a uddi:tModel.

425 The minimum information that must be captured about a portType is its entity type, its local
 426 name, its namespace, and the location of the WSDL document that defines the portType.
 427 Capturing the entity type enables users to search for tModels that represent portType
 428 artifacts. Capturing the local name, namespace, and WSDL location enables users to locate
 429 the definition of the specified portType artifact.

430 The wsdl:portType information is captured as follows:

431 The uddi:name element of the tModel MUST be the value of the name attribute of the
 432 wsdl:portType.

433 The tModel MUST contain a categoryBag, and the categoryBag MUST contain at least the
 434 following keyedReference elements:

- 435 1. A keyedReference with a tModelKey of the WSDL Entity Type category system and a
 436 keyValue of "portType".
- 437 2. A keyedReference with a tModelKey of the XML Namespace category system and a
 438 keyValue of the target namespace of the wsdl:definitions element that contains the
 439 wsdl:portType.¹

440 The tModel MUST contain an overviewDoc with an overviewURL containing the location of
 441 the WSDL document that describes the wsdl:portType.

442 **2.4.1.1 Summary of Mapping of wsdl:portType**

| WSDL | UDDI |
|---------------------------|----------------------------------|
| portType | tModel (categorized as portType) |
| Namespace of portType | keyedReference in categoryBag |
| Local name of portType | tModel name |
| Location of WSDL document | overviewURL |

443

444 **2.4.2 wsdl:binding → uddi:tModel**

445 A wsdl:binding MUST be modeled as a uddi:tModel.

446 The minimum information that must be captured about a binding is its entity type, its local
 447 name, its namespace, the location of the WSDL document that defines the binding, the
 448 portType that it implements, its protocol, and, optionally, the transport information. Capturing

¹ WSDL 1.1 does not require the usage of a targetNamespace, but applying the mapping defined in this Technical Note to a WSDL definitions element that does not have a targetNamespace is not recommended. In the event that a WSDL definitions element without a targetNamespace is mapped to UDDI, it will not have an XML Namespace keyedReference, and queries for these tModels based solely on the tModel name could return multiple results because no namespace can be specified.

449 the entity type enables users to search for tModels that represent binding artifacts. Capturing
450 the local name, namespace, and WSDL location enables users to locate the definition of the
451 specified binding artifact. The link to the portType enables users to search for bindings that
452 implement a particular portType.

453 A wsdl:binding corresponds to a WSDL service interface definition as defined by the mapping
454 in the Version 1 Best Practice. To maintain compatibility with the previous mapping, the
455 binding must also be characterized as type "wsdlSpec".

456 The wsdl:binding information is captured as follows:

457 The uddi:name element of the tModel MUST be the value of the name attribute of the
458 wsdl:binding.

459 The tModel MUST contain a categoryBag, and the categoryBag MUST contain at least the
460 following keyedReference elements:

- 461 1. A keyedReference with a tModelKey of the WSDL Entity Type category system and a
462 keyValue of "binding".
- 463 2. A keyedReference with a tModelKey of the XML Namespace category system and a
464 keyValue of the target namespace of the wsdl:definitions element that contains the
465 wsdl:binding.
- 466 3. A keyedReference with a tModelKey of the WSDL portType Reference category
467 system and a keyValue of the tModelKey that models the wsdl:portType to which the
468 wsdl:binding relates.
- 469 4. A keyedReference with a tModelKey of the UDDI Types category system and a
470 keyValue of "wsdlSpec" for backward compatibility².
- 471 5. One or two keyedReferences as required to capture the protocol and optionally the
472 transport information – refer to the next section.

473 The tModel MUST contain an overviewDoc with an overviewURL containing the location of
474 the WSDL document that describes the wsdl:binding.

475 **2.4.2.1 wsdl:binding Extensions**

476 Information about the protocol and transport, if applicable, specified in an extension to the
477 wsdl:binding is used to categorize the binding tModel as described in the following sections.
478 This information is specified using two of the category systems defined in this Technical Note:

- 479 1. Protocol Categorization
- 480 2. Transport Categorization

481 The valid values for the Protocol Categorization category system are tModelKeys of tModels
482 that are categorized as protocol tModels. Similarly, the valid values for the Transport
483 Categorization category system are tModelKeys of tModels that are categorized as transport
484 tModels.

485 The reason for having these two categorization schemes that take tModel keys as values is to
486 allow other standard or proprietary protocols and transports to be defined and used in the
487 same way as the standard SOAP and HTTP protocols and transport.

488 **2.4.2.1.1 soap:binding**

489 If the wsdl:binding contains a soap:binding extensibility element from the
490 <http://schemas.xmlsoap.org/wsdl/soap/> namespace then the categoryBag MUST include a
491 keyedReference with a tModelKey of the Protocol Categorization category system and a
492 keyValue of the tModelKey of the SOAP Protocol tModel.

493 If the value of the transport attribute of the soap:binding element is
494 <http://schemas.xmlsoap.org/soap/http> then the categoryBag MUST include a keyedReference

² By categorizing a wsdl:binding tModel according to the Version 1 UDDI/WSDL Best Practice, backward compatibility is maintained. However, wsdl:portType tModels should not be categorized with this designation, as the wsdl:portType tModel will not contain sufficient information to compose a complete WSDL binding.

495 with a tModelKey of the Transport Categorization category system and a keyValue of the
 496 tModelKey of the HTTP Transport tModel.
 497 If the value of the transport attribute is anything else, then the bindingTemplate MUST include
 498 an additional keyedReference with a tModelKey of the Transport Categorization category
 499 system and a keyValue of the tModelKey of an appropriate transport tModel.

500 **2.4.2.1.2 http:binding**

501 If the wsdl:binding contains an http:binding extensibility element from the
 502 http://schemas.xmlsoap.org/wsdl/http/ namespace then the categoryBag MUST include a
 503 keyedReference with a tModelKey of the Protocol Categorization category system and a
 504 keyValue of the tModelKey of the HTTP Protocol tModel.

505 Note that this is a different tModel from the HTTP Transport tModel, and in this case there is
 506 no separate transport tModel, and therefore no keyedReference in the categoryBag from the
 507 Transport Categorization category system.

508 **2.4.2.1.3 Other wsdl:binding Extensions**

509 Other wsdl:binding extensibility elements are handled in a similar fashion. It is assumed that
 510 vendors who provide other bindings will provide the appropriate protocol and transport
 511 tModels.

512 **2.4.2.2 Summary of Mapping of wsdl:binding**

| WSDL | UDDI |
|--|--|
| binding | tModel (categorized as binding and wsdlSpec) |
| Namespace of binding | keyedReference in categoryBag |
| Local name of binding | tModel name |
| Location of WSDL document | overviewURL |
| portType binding relates to | keyedReference in categoryBag |
| Protocol from binding extension | keyedReference in categoryBag |
| Transport from binding extension (if there is one) | keyedReference in categoryBag |

513

514 **2.4.3 wsdl:service → uddi:businessService**

515 A wsdl:service MUST be modeled as a uddi:businessService. An existing businessService
 516 MAY be used or a new businessService MAY be created³. Only one wsdl:service can be
 517 modeled by an individual uddi:businessService.

518 The minimum information that must be captured about a service is its entity type, its local
 519 name, its namespace, and the list of ports that it supports. Capturing the entity type enables
 520 users to search for services that are described by a WSDL definition. The list of ports
 521 provides access to the technical information required to consume the service.

522 The wsdl:service information is captured as follows:

³ WSDL permits any arbitrary group of ports to be collected into a single service, therefore a wsdl:service may not directly correspond to a uddi:businessService. As a best practice for this mapping, a wsdl:service SHOULD contain a collection of associated ports that relate to a single logical business service, for example, a collection of ports that implement alternate bindings for a particular portType. A wsdl:service SHOULD NOT contain multiple ports that do not relate to a single logical business service.

523 If a new businessService is created, the uddi:name elements of this businessService
 524 SHOULD be human readable names, although if no human readable names are specified,
 525 exactly one uddi:name MUST be added, containing the value of the name attribute of the
 526 wsdl:service⁴.

527 The businessService MUST contain a categoryBag, and the categoryBag MUST contain at
 528 least the following keyedReference elements:

- 529 1. A keyedReference with a tModelKey of the WSDL Entity Type category system and a
 530 keyValue of "service".
- 531 2. A keyedReference with a tModelKey of the XML Namespace category system and a
 532 keyValue of the target namespace of the wsdl:definitions element that contains the
 533 wsdl:service.
- 534 3. A keyedReference with a tModelKey of the XML Local Name category system and a
 535 keyValue that is the value of the name attribute of the wsdl:service.

536 The bindingTemplates element of the businessService MUST include bindingTemplate
 537 elements that model the ports of the service, as described in the following sections.

538 **2.4.3.1 Summary of Mapping**

| WSDL | UDDI |
|-----------------------|--|
| Service | businessService (categorized as service) |
| Namespace of Service | keyedReference in categoryBag |
| Local Name of Service | keyedReference in categoryBag; optionally also the name of the service |

539 **2.4.4 wsdl:port → uddi:bindingTemplate**

540 A wsdl:port MUST be modeled as a uddi:bindingTemplate.

541 The minimum information that must be captured about a port is the binding that it implements,
 542 the portType that it implements, and its local name⁵.

543 By capturing the binding, users can search for services that implement a specific binding. By
 544 capturing the portType, users can search for services that implement a particular portType
 545 without necessarily knowing the specific binding implemented by the service.

546 The wsdl:port information is captured as follows:

547 The bindingTemplate tModelInstanceDetails element MUST contain at least the following
 548 tModelInstanceInfo elements:

- 549 1. A tModelInstanceInfo with a tModelKey of the tModel that models the wsdl:binding
 550 that this port implements. The instanceParms of this tModelInstanceInfo MUST
 551 contain the wsdl:port local name.
- 552 2. A tModelInstanceInfo with a tModelKey of the tModel that models the wsdl:portType.

553 **2.4.4.1 Summary of Mapping**

| WSDL | UDDI |
|-----------|-----------------------------------|
| port | bindingTemplate |
| Namespace | Captured in keyedReference of the |

⁴ Users searching for a wsdl:service MUST NOT assume that the businessService name is the same as the wsdl:service local name. Because an existing businessService could be used, the wsdl:service local name MUST be specified as a keyedReference in the categoryBag.

⁵ The namespace is captured in the businessService element.

| | |
|------------------------------|--|
| | containing businessService |
| Local Name of port | instanceParms of the tModelInstanceInfo relating to the tModel for the binding |
| Binding implemented by port | tModelInstanceInfo with tModelKey of the tModel corresponding to the binding |
| portType implemented by port | tModelInstanceInfo with tModelKey of the tModel corresponding to the portType |

554

555 **2.4.5 wsdl:port Address Extensions → uddi:bindingTemplate**

556 The uddi:bindingTemplate MUST contain address information for the Web service. This
557 information comes from the wsdl:port address extensibility element.

558 **2.4.5.1 soap:address → uddi:accessPoint**

559 A soap:address MUST be modeled as a uddi:accessPoint in the uddi:bindingTemplate that
560 models the wsdl:port that contains the soap:address.

561 The soap:address information is captured as follows:

- 562 • The accessPoint value MUST be the value of the location attribute of the
563 soap:address element.
- 564 • The URLType attribute of the accessPoint MUST correspond to the transport
565 specified by the soap:binding, or “other” if no correspondence exists. In the case of
566 the HTTP transport, for example, the URLType attribute MUST be “http”.

567 If “other” is used then a tModelInstanceInfo element referencing the appropriate vendor-
568 defined transport tModel MUST be added to the bindingTemplate.

569 **2.4.5.2 http:address → uddi:accessPoint**

570 An http:address MUST be modeled as a uddi:accessPoint in the uddi:bindingTemplate that
571 models the wsdl:port that contains the http:address.

572 The http:address information is captured as follows:

- 573 • The accessPoint value MUST be the value of the location attribute of the http:address
574 element.
- 575 • The URLType attribute of the accessPoint MUST be “http” or “https” as appropriate.

576 **2.4.5.3 Other wsdl:port Address Extensions**

577 Any other address extensibility element MUST be modeled as a uddi:accessPoint in the
578 uddi:bindingTemplate that models the wsdl:port that contains the address extensibility
579 element.

580 The address information is captured as follows:

- 581 • The accessPoint value MUST be the value of the location attribute of the address
582 extensibility element. If the value of the location attribute cannot be mapped to the
583 accessPoint value then the WSDL Implementation Document approach must be
584 used. See Appendix A for further information.
- 585 • The URLType attribute of the accessPoint MUST correspond to the transport protocol
586 associated with the URL, or “other” if none of the defined values of the attribute are
587 appropriate.

588 **2.5 Differences in mapping WSDL 1.1 in UDDI V3**

589 This section describes the differences in the UDDI V3 view of the model that are a
590 consequence of mandatory items in the UDDI V3 Specification and some optional extensions
591 that can only be used with UDDI V3.

592 **2.5.1 Mandatory Differences**

593 The mandatory differences are:

- 594 1. Entities will have V3 keys rather than V2 keys.
- 595 2. An accessPoint has a useType attribute rather than a URLType attribute.

596 **2.5.2 Optional Extensions**

597 The optional extensions are:

- 598 1. Entities can have publisher-assigned keys.
- 599 2. A bindingTemplate can have a categoryBag. If a categoryBag is used, it MUST
600 contain at least the following keyedReferences:
 - 601 a. A keyedReference with a tModelKey of the WSDL Entity Type category
602 system and a keyValue of "port".
 - 603 b. A keyedReference with a tModelKey of the XML Namespace category
604 system and a keyValue of the target namespace of the wsdl:definitions
605 element that contains the wsdl:port.
 - 606 c. A keyedReference with a tModelKey of the XML Local Name category
607 system and a keyValue of the local name of the wsdl:port.
- 608 3. An overviewURL can have an optional useType attribute, and a standard value of
609 "wsdlInterface" has been defined to indicate "an abstract interface document". This
610 mapping assumes that "wsdlInterface" can be used with tModels that represent both
611 portTypes and bindings.

612 **2.5.3 Comparison to wsdlDeployment in UDDI V3 Specification**

613 The UDDI V3 specification includes support for wsdlDeployment, which appears as both a
614 value for the useType attribute of an accessPoint and as a categorization of a
615 bindingTemplate. Use of wsdlDeployment is not compatible with this Technical Note as it
616 assumes that no modeling of the WSDL is performed, nothing is known about the WSDL
617 other than its URL.

618

3 A Complete Example

619

Consider the following WSDL sample based on the WSDL document presented in the WSDL 1.1 specification.⁶ This example shows how this one WSDL document is decomposed into two tModels (one for the portType and one for the binding) and one businessService with one bindingTemplate. It then shows the kinds of UDDI API queries that can be used for the purpose of discovery.

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3.1 WSDL Sample

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```
<?xml version="1.0" encoding="utf-8"?>
<definitions
  name="StockQuote"
  targetNamespace="http://example.com/stockquote/"
  xmlns:tns="http://example.com/stockquote/"
  xmlns:xsd="http://example.com/stockquote/schema/"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns="http://schemas.xmlsoap.org/wsdl/">

  <types>
    <schema
      targetNamespace="http://example.com/stockquote/schema/"
      xmlns="http://www.w3.org/2001/XMLSchema">
      <element name="TradePriceRequest">
        <complexType>
          <all>
            <all>
              <element name="tickerSymbol" type="string"/>
            </all>
          </all>
        </complexType>
      </element>
      <element name="TradePrice">
        <complexType>
          <all>
            <all>
              <element name="price" type="float"/>
            </all>
          </complexType>
        </element>
      </schema>
    </types>

    <message name="GetLastTradePriceInput">
      <part name="body" element="xsd:TradePriceRequest"/>
    </message>
    <message name="GetLastTradePriceOutput">
      <part name="body" element="xsd:TradePrice"/>
    </message>

    <portType name="StockQuotePortType">
      <operation name="GetLastTradePrice">
        <input message="tns:GetLastTradePriceInput"/>
        <output message="tns:GetLastTradePriceOutput"/>
      </operation>
    </portType>

    <binding name="StockQuoteSoapBinding" type="tns:StockQuotePortType">
      <soap:binding style="document"
        transport="http://schemas.xmlsoap.org/soap/http"/>
      <operation name="GetLastTradePrice">
        <soap:operation
          soapAction="http://example.com/GetLastTradePrice"/>
        <input><soap:body use="literal"/></input>
        <output><soap:body use="literal"/></output>
      </operation>
    </binding>
  </definitions>
```

⁶ The WSDL sample in the WSDL 1.1 spec has an error (the port references the wrong binding QName). This WSDL sample has been corrected.

```

680     <service name="StockQuoteService">
681       <port name="StockQuotePort" binding="tns:StockQuoteSoapBinding">
682         <soap:address location="http://location/sample"/>
683       </port>
684     </service>
685 </definitions>

```

686 Note that this WSDL document has one portType, one binding, one service, and one port. As
687 such, this sample represents the simplest WSDL document. Also note that the location of this
688 WSDL is at <http://location/sample.wsdl>.

689 3.2 UDDI V2 Model

690 3.2.1 UDDI portType tModel

691 The WSDL portType entity maps to a tModel. The tModel name is the same as the WSDL
692 portType local name. The tModel contains a categoryBag that specifies the WSDL
693 namespace, and it indicates that the tModel is of type "portType". The overviewDoc provides
694 a pointer to the WSDL document.

```

695 <tModel tModelKey="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" >
696 <name>
697   StockQuotePortType
698 </name>
699 <overviewDoc>
700   <overviewURL>
701     http://location/sample.wsdl
702   </overviewURL>
703 </overviewDoc>
704 <categoryBag>
705   <keyedReference>
706     tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
707     keyName="portType namespace"
708     keyValue="http://example.com/stockquote/" />
709   <keyedReference>
710     tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
711     keyName="WSDL type"
712     keyValue="portType" />
713 </categoryBag>
714 </tModel>

```

715 3.2.2 UDDI binding tModel

716 The WSDL binding entity maps to a tModel. The tModel name is the same as the WSDL
717 binding local name. The tModel contains a categoryBag that specifies the WSDL namespace,
718 it indicates that the tModel is of type "binding", it supplies a pointer to the portType tModel,
719 and it indicates what protocols are supported by the binding. The wsdlSpec keyedReference
720 ensures that users can find the tModel using the conventions defined in the Version 1 Best
721 Practice. The overviewDoc provides a pointer to the WSDL document.

```

722 <tModel tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">
723 <name>
724   StockQuoteSoapBinding
725 </name>
726 <overviewDoc>
727   <overviewURL>
728     http://location/sample.wsdl
729   </overviewURL>
730 </overviewDoc>
731 <categoryBag>
732   <keyedReference>
733     tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
734     keyName="binding namespace"
735     keyValue="http://example.com/stockquote/" />
736   <keyedReference>
737     tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
738     keyName="WSDL type"
739     keyValue="binding" />
740   <keyedReference>
741     tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"

```

```

742         keyName="portType reference"
743         keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />
744     <keyedReference
745         tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865"
746         keyName="SOAP protocol"
747         keyValue="uuid:aa254698-93de-3870-8df3-a5c075d64a0e" />
748     <keyedReference
749         tModelKey="uuid:e5c43936-86e4-37bf-8196-1d04b35c0099"
750         keyName="HTTP transport"
751         keyValue="uuid:68DE9E80-AD09-469D-8A37-088422BFBC36" />
752     <keyedReference
753         tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
754         keyName="uddi-org:types"
755         keyValue="wsdlSpec" />
756 </categoryBag>
757 </tModel>

```

758 3.2.3 UDDI businessService and bindingTemplate

759 The WSDL service entity maps to a businessService, and the WSDL port entity maps to a
760 bindingTemplate. The businessService name should be a human-readable name. The
761 businessService contains a categoryBag that indicates that this service represents a WSDL
762 service, and it specifies the WSDL namespace and WSDL service local name. The
763 bindingTemplate specifies the endpoint of the service, and it contains a set of
764 tModelInstanceDetails. The first tModelInstanceInfo indicates that the service implements the
765 StockQuoteSoapBinding and provides the WSDL port local name. The second
766 tModelInstanceInfo indicates that the service implements the StockQuotePortType.

```

767 <businessService
768     serviceKey="102b114a-52e0-4af4-a292-02700da543d4"
769     businessKey="1e65ea29-4e0f-4807-8098-d352d7b10368">
770 <name>Stock Quote Service</name>
771 <bindingTemplates>
772     <bindingTemplate
773         bindingKey="f793c521-0daf-434c-8700-0e32da232e74"
774         serviceKey="102b114a-52e0-4af4-a292-02700da543d4">
775         <accessPoint URLType="http">
776             http://location/sample
777         </accessPoint>
778         <tModelInstanceDetails>
779             <tModelInstanceInfo
780                 tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">
781                 <description xml:lang="en">
782                     The wsdl:binding that this wsdl:port implements.
783                     The instanceParms specifies the port local name.
784                 </description>
785                 <instanceDetails>
786                     <instanceParms>StockQuotePort</instanceParms>
787                 </instanceDetails>
788             </tModelInstanceInfo>
789             <tModelInstanceInfo
790                 tModelKey="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3">
791                 <description xml:lang="en">
792                     The wsdl:portType that this wsdl:port implements.
793                 </description>
794             </tModelInstanceInfo>
795         </tModelInstanceDetails>
796     </bindingTemplate>
797 </bindingTemplates>
798 <categoryBag>
799     <keyedReference
800         tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
801         keyName="WSDL type"
802         keyValue="service" />
803     <keyedReference
804         tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
805         keyName="service namespace"
806         keyValue="http://example.com/stockquote/" />
807     <keyedReference
808         tModelKey="uuid:2ec65201-9109-3919-9bec-c9dbefcaccf6"
809         keyName="service local name"
810         keyValue="StockQuoteService" />
811 </categoryBag>

```

812

```
</businessService>
```

813 3.3 Sample V2 Queries

814 This section shows how to perform various UDDI V2 queries given the model of the example.

815 3.3.1 Find tModel for portType name

816 Find the portType tModel for StockQuotePortType in the namespace
817 <http://example.com/stockquote/>.

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```
<find_tModel generic="2.0" xmlns="urn:uddi-org:api_v2">  
  <name>StockQuotePortType</name>  
  <categoryBag>  
    <keyedReference  
      tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"  
      keyName="WSDL type"  
      keyValue="portType" />  
    <keyedReference  
      tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"  
      keyName="portType namespace"  
      keyValue="http://example.com/stockquote/" />  
  </categoryBag>  
</find_tModel>
```

831 This should return the tModelKey `uuid:e8cf1163-8234-4b35-865f-94a7322e40c3`.

832 3.3.2 Find bindings for portType

833 Find all bindings for StockQuotePortType.

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```
<find_tModel generic="2.0" xmlns="urn:uddi-org:api_v2">  
  <categoryBag>  
    <keyedReference  
      tModelKey=" uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"  
      keyName="WSDL type"  
      keyValue="binding" />  
    <keyedReference  
      tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"  
      keyName="portType reference"  
      keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />  
  </categoryBag>  
</find_tModel>
```

846 This should return the tModelKey `uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda`.

847 3.3.3 Find Implementations of portType

848 Find all implementations of StockQuotePortType.

849 Because the serviceKey attribute is required in the find_binding call in the UDDI V2 API, it is
850 not possible to find all implementations of a portType with a single call. A find_service call
851 must be made first to get the keys of all services that contain a bindingTemplate that
852 references the portType, then either the details of each such service must be retrieved with a
853 get_serviceDetail call and the appropriate bindingTemplate looked for among the
854 bindingTemplates of the service, or a find_binding call must be made for each service, with
855 the serviceKey attribute set accordingly. The following example shows the use of a
856 find_binding call.

857 This first call gets the list of services that have a bindingTemplate that references the
858 portType.

859
860
861
862
863

```
<find_service generic="2.0" xmlns="urn:uddi-org:api_v2">  
  <tModelBag>  
    <tModelKey>uuid:e8cf1163-8234-4b35-865f-94a7322e40c3</tModelKey>  
  </tModelBag>  
</find_binding>
```

864 This should return the serviceKey `102b114a-52e0-4af4-a292-02700da543d4`.

865 Now the second call is made to find the appropriate bindings of this particular service.

```

866 <find_binding serviceKey="102b114a-52e0-4af4-a292-02700da543d4" generic="2.0"
867 xmlns="urn:uddi-org:api_v2">
868   <tModelBag>
869     <tModelKey>uuid:e8cf1163-8234-4b35-865f-94a7322e40c3</tModelKey>
870   </tModelBag>
871 </find_binding>

```

872 This should return the bindingKey f793c521-0daf-434c-8700-0e32da232e74.

873 3.3.4 Find implementations of binding

874 Find all implementations of StockQuoteSoapBinding.

875 This is very similar to the previous example, except that the tModelBag contains the key of
876 the binding tModel rather than the portType tModel.

877 3.3.5 Find SOAP Implementations of portType

878 Find all implementations of StockQuotePortType that support SOAP.

879 At least three queries are needed. The first query returns all the binding tModels that
880 reference the portType tModel and that are categorized with SOAP.

```

881 <find_tModel generic="2.0" xmlns="urn:uddi-org:api_v2">
882   <categoryBag>
883     <keyedReference
884       tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
885       keyName="WSDL type"
886       keyValue="binding" />
887     <keyedReference
888       tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865"
889       keyName="SOAP protocol"
890       keyValue="uuid:aa254698-93de-3870-8df3-a5c075d64a0e" />
891     <keyedReference
892       tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"
893       keyName="portType reference"
894       keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />
895   </categoryBag>
896 </find_tModel>

```

897 What happens next depends on whether or not other criteria are also required in the overall
898 query.

899 3.3.5.1 No Other Criteria

900 In this case, at least two other queries are required, as in the example above of finding
901 implementations of a single binding. The first of these is a find_service call which must
902 include the "orAllKeys" findQualifier⁷ and a tModelBag must be supplied which contains all the
903 binding tModel keys returned by the first query. This will return the list of services that have a
904 bindingTemplate that references at least one of the binding tModels.

905 Finally, for each such service, either get_serviceDetail or find_binding must be called.

906 3.3.5.2 Other Criteria

907 In this case also, at least two other queries are required, depending on the number of binding
908 tModels and services found. For each binding tModel a find_service query is required and the
909 default of "andAllKeys" must be used as the other criteria will also be applied to this query.
910 This will return the list of services that have a bindingTemplate that references the particular
911 binding tModel and which also satisfies the other criteria.

912 Finally, for each such service, either get_serviceDetail or find_binding must be called, and
913 again the other criteria must be applied.

⁷ The V2 Specification is ambiguous as to whether orAllKeys applies in this case.

914 3.3.6 Find SOAP/HTTP Implementations of portType

915 This is similar to the previous case except that the first query must also include a category for
916 the HTTP transport in addition to the SOAP protocol.

917 3.3.7 Find the portType of a binding

918 The portType of a binding is contained in the categoryBag of the binding tModel. No query is
919 required once the tModel of the binding has been obtained. The keyValue of the
920 keyedReference with tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e" contains
921 the portType tModelKey.

922 3.3.8 Find the businessService for a WSDL service

923 Find the businessService for StockQuoteService in the namespace
924 http://example.com/stockquote/.

```
925 <find_service generic="2.0" xmlns="urn:uddi-org:api_v2">  
926   <categoryBag>  
927     <keyedReference  
928       tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"  
929       keyName="WSDL type"  
930       keyValue="service" />  
931     <keyedReference  
932       tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"  
933       keyName="service namespace"  
934       keyValue="http://example.com/stockquote/" />  
935     <keyedReference  
936       tModelKey="uuid:2ec65201-9109-3919-9bec-c9dbefcaccf6"  
937       keyName="service local name"  
938       keyValue="StockQuoteService" />  
939   </categoryBag>  
940 </find_binding>
```

941 This should return the serviceKey 102b114a-52e0-4af4-a292-02700da543d4.

942 3.4 Sample V3 Queries

943 This section contains some of the sample queries from the previous section rewritten to use
944 new features of the UDDI V3 API. The other queries are not significantly different. The entity
945 keys shown assume that the V2 model was migrated to V3 by a root registry.

946 3.4.1 Find Implementations of portType

947 As serviceKey is optional for find_binding in the UDDI V3 API, it is possible to implement this
948 with a single query:

```
949 <find_binding xmlns="urn:uddi-org:api_v3">  
950   <tModelBag>  
951     <tModelKey>uddi:e8cf1163-8234-4b35-865f-94a7322e40c3</tModelKey>  
952   </tModelBag>  
953 </find_binding>
```

954 This should return the bindingKey uddi:f793c521-0daf-434c-8700-0e32da232e74.

955 3.4.2 Find SOAP Implementations of portType

956 3.4.2.1 No Other Criteria

957 As serviceKey is optional for find_binding in the UDDI V3 API, and it is possible to embed a
958 find_tModel call, it is possible to implement this with a single query:

```
959 <find_binding xmlns="urn:uddi-org:api_v3">  
960   <findQualifiers>  
961     <findQualifier>  
962       uddi:uddi.org:findQualifier:orAllKeys  
963     </findQualifier>  
964   </findQualifiers>
```


965
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```
<find_tModel xmlns="urn:uddi-org:api_v3">
  <categoryBag>
    <keyedReference
      tModelKey="uddi:uddi.org:wSDL:types"
      keyName="WSDL type"
      keyValue="binding"/>
    <keyedReference
      tModelKey="uddi:uddi.org:wSDL:categorization:protocol"
      keyName="SOAP protocol"
      keyValue="uddi:uddi.org:protocol:soap"/>
    <keyedReference
      tModelKey="uddi:uddi.org:wSDL:portTypeReference"
      keyName="portType reference"
      keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3"/>
  </categoryBag>
</find_tModel>
</find_binding>
```

982 This should return the bindingKey uddi:f793c521-0daf-434c-8700-0e32da232e74.
983

984 **4 References**

985 **4.1 Normative**

- 986 **[RFC2119]** S. Bradner, *Key words for use in RFCs to Indicate Requirement*
987 *Levels*, IETF RFC 2119, March 1997. Available at
988 <http://www.ietf.org/rfc/rfc2119.txt>.
- 989 **[1]** Using WSDL in a UDDI Registry 1.08. Available at [http://www.oasis-](http://www.oasis-open.org/committees/uddi-spec/doc/bp/uddi-spec-tc-bp-using-wsdl-v108-20021110.pdf)
990 [open.org/committees/uddi-spec/doc/bp/uddi-spec-tc-bp-using-wsdl-](http://www.oasis-open.org/committees/uddi-spec/doc/bp/uddi-spec-tc-bp-using-wsdl-v108-20021110.pdf)
991 [v108-20021110.pdf](http://www.oasis-open.org/committees/uddi-spec/doc/bp/uddi-spec-tc-bp-using-wsdl-v108-20021110.pdf)
- 992 **[2]** Web Services Description Language (WSDL) 1.1, March 15, 2000.
993 Available at <http://www.w3.org/TR/wsdl>
- 994 **[3]** UDDI Version 2.03 Data Structure Reference, July 7, 2002. Available
995 at <http://uddi.org/pubs/DataStructure-V2.03-Published-20020719.pdf>.
- 996 **[4]** UDDI Version 3.0 Published Specification, 19 July 2002. Available at
997 <http://www.uddi.org/pubs/uddi-v3.00-published-20020719.pdf>.
- 998 **[5]** XPointer xpointer() Scheme, W3C Working Draft, 10 July 2002.
999 Available at <http://www.w3.org/TR/2002/WD-xptr-xpointer-20020710/>
1000

1001 **A External WSDL Implementation Documents**

1002 There are multiple reasons why it may be desirable to support an external WSDL
1003 Implementation Document, among which are the following:

- 1004 1. There are extensibility elements defined for the wsdl:service.
- 1005 2. There is a wsdl:documentation element for a wsdl:port.
- 1006 3. The address of a port may not be representable as a uddi:accessPoint value.
- 1007 4. The authoritative source of the address is desired to be the WSDL document rather
1008 than UDDI.

1009 The approach described here assumes that if any one of these reasons leads to the use of an
1010 external WSDL Deployment Document then the entire mapping described in this section is
1011 used.

1012 There are two additional necessary pieces of information that must be captured to use
1013 external WSDL Implementation Documents:

- 1014 1. The URL of the WSDL Implementation Document.
- 1015 2. An indication that the port address must be obtained from the WSDL Implementation
1016 Document.

1017 **A.1 Capturing The URL**

1018 If an external WSDL Implementation Document is being used then the URL of this document
1019 must be used as the accessPoint value of each and every port of each and every service.

1020 **A.2 Obtaining the Port Address from WSDL**

1021 If a WSDL Implementation Document is being used then the bindingTemplate MUST contain
1022 sufficient information to identify the port address in the WSDL Implementation Document.
1023 The mapping described here MUST be used instead of the mapping defined in section 2.4.5.

1024 In all cases where a WSDL Implementation Document is used, the URLType attribute of the
1025 accessPoint corresponding to each port MUST be "other", and the value of the accessPoint
1026 MUST be the URL of the WSDL Implementation Document.

1027 The bindingTemplate MUST contain a tModelInstanceInfo element with a tModelKey of the
1028 WSDL Address tModel. This tModelInstanceInfo element, in combination with the protocol
1029 and transport information from the binding tModel, provides the necessary information to
1030 locate and interpret the endpoint address.

1031 **A.3 Querying Services that use a WSDL Implementation 1032 Document**

1033 It is possible to query the services that have a WSDL Implementation Document by querying
1034 specifying the tModelKey of the WSDL Address tModel.

1035 B Canonical tModels

1036 This Technical Note introduces a number of canonical tModels that are used to represent
1037 WSDL metadata and relationships. These tModels are defined here.

1038 B.1 WSDL Entity Type tModel

1039 B.1.1 Design Goals

1040 This mapping uses a number of UDDI entities to represent the various entities within a WSDL
1041 document. A mechanism is required to indicate what type of WSDL entity is being described
1042 by each UDDI entity. The WSDL Entity Type tModel provides a typing system for this
1043 purpose. This category system is used to indicate that a UDDI entity represents a particular
1044 type of WSDL entity.

1045 B.1.2 Definition

1046 **Name:** uddi.org:wSDL:types
1047 **Description:** WSDL Type Category System
1048 **V3 format key:** uddi:uddi.org:wSDL:types
1049 **V1,V2 format key:** uuid:6e090afa-33e5-36eb-81b7-1ca18373f457
1050 **Categorization:** categorization
1051 **Checked:** no

1052 B.1.2.1 V2 tModel Structure

```
1053 <tModel tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457">  
1054   <name>uddi.org:wSDL:types</name>  
1055   <overviewDoc>  
1056     <overviewURL>  
1057       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-  
1058       tc-tn-wSDL-v2.htm#wSDLTypes  
1059     </overviewURL>  
1060   </overviewDoc>  
1061   <categoryBag>  
1062     <keyedReference  
1063       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1064       keyValue="unchecked" />  
1065     <keyedReference  
1066       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1067       keyValue="categorization" />  
1068   </categoryBag>  
1069 </tModel>
```

1070 B.1.3 Valid Values

1071 While this is an unchecked category system, there are only four values that should be used
1072 with this category system:

1073

| keyValue | Description | UDDI Entity |
|----------|---|-------------|
| portType | Represents a UDDI entity categorized as a wSDL:portType | tModel |
| binding | Represents a UDDI entity categorized as a wSDL:binding | tModel |

| | | |
|---------|--|---------------------------|
| service | Represents a UDDI entity categorized as a wsdl:service | businessService |
| port | Represents a UDDI entity categorized as a wsdl:port | bindingTemplate (v3 only) |

1074 B.1.4 Example of Use

1075 A V2 tModel representing a portType would have a categoryBag representing its type:

```
1076 <categoryBag>
1077   <keyedReference
1078     tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
1079     keyName="WSDL Entity type"
1080     keyValue="portType" />
1081 ...
1082 </categoryBag>
```

1083 B.2 XML Namespace tModel

1084 B.2.1 Design Goals

1085 A namespace provides necessary qualifying information about a technical concept or model.
 1086 The XML Namespace tModel provides a mechanism to associate a namespace with a UDDI
 1087 entity. This category system describes a UDDI entity by specifying the target namespace of
 1088 the description file (i.e., a WSDL document or XML Schema file) that describes the entity.
 1089 *More than one tModel might be categorized with the same namespace* – in fact, this mapping
 1090 would be quite common, as many WSDL documents use a common target namespace for
 1091 wsdl:portType, wsdl:binding, and wsdl:service elements.

1092 B.2.2 Definition

1093 **Name:** uddi.org:xml:namespace
 1094 **Description:** A category system used to indicate namespaces
 1095 **V3 format key:** uddi:uddi.org:xml:namespace
 1096 **V1, V2 format key:** uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824
 1097 **Categorization:** categorization
 1098 **Checked:** no

1099 B.2.2.1 V2 tModel Structure

```
1100 <tModel tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824">
1101   <name>uddi.org:xml:namespace</name>
1102   <overviewDoc>
1103     <overviewURL>
1104       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-
1105       tc-tn-wsdl-v2.htm#xmlNamespace
1106     </overviewURL>
1107   </overviewDoc>
1108   <categoryBag>
1109     <keyedReference
1110       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1111       keyValue="unchecked" />
1112     <keyedReference
1113       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1114       keyValue="categorization" />
1115   </categoryBag>
1116 </tModel>
```

1117 B.2.3 Valid Values

1118 The values used in this category system are namespaces of type "anyURI". The content of
1119 keyValue in a keyedReference that refers to this tModel is the target namespace of the WSDL
1120 document that describes the WSDL entity described by the UDDI entity.

1121 B.2.4 Example of Use

1122 A namespace keyedReference would be as follows:

```
1123 <categoryBag>  
1124   <keyedReference  
1125     tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"  
1126     keyName="namespace"  
1127     keyValue="urn:foo"/>  
1128   ...  
1129 </categoryBag>
```

1130 B.3 XML Local Name tModel

1131 B.3.1 Design Goals

1132 Each WSDL entity is identified by its name attribute, and this identification information needs
1133 to be captured in the mapped UDDI entities. In the case of wsdl:portType and wsdl:binding,
1134 the name attribute is mapped to the uddi:tModel name element. However, it isn't always
1135 appropriate to map the wsdl:service name attribute to the name element of the
1136 businessService, and, in the case of wsdl:port, the bindingTemplate entity does not have a
1137 name element. The XML Local Name tModel provides a mechanism to indicate the name
1138 attribute for the uddi:businessService.

1139 B.3.2 Definition

1140 **Name:** uddi.org:xml:localName
1141 **Description:** A category system used to indicate XML local names
1142 **V3 format key:** uddi:uddi.org:xml:localName
1143 **V1,V2 format key:** uuid:2ec65201-9109-3919-9bec-c9dbefcaccf6
1144 **Categorization:** categorization
1145 **Checked:** no

1146 B.3.2.1 V2 tModel Structure

```
1147 <tModel tModelKey="uuid:2ec65201-9109-3919-9bec-c9dbefcaccf6">  
1148   <name>uddi.org:xml:localName</name>  
1149   <overviewDoc>  
1150     <overviewURL>  
1151       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-  
1152       tc-tn-wsdl-v2.htm#xmlLocalName  
1153     </overviewURL>  
1154   </overviewDoc>  
1155   <categoryBag>  
1156     <keyedReference  
1157       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1158       keyValue="unchecked"/>  
1159     <keyedReference  
1160       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1161       keyValue="categorization"/>  
1162   </categoryBag>  
1163 </tModel>
```

1164 B.3.3 Valid Values

1165 The values used in this category system are XML local names. The content of keyValue in a
1166 keyedReference that refers to this tModel is equal to the name attribute of the WSDL entity
1167 described by the UDDI entity.

1168 B.3.4 Example of Use

1169 A local name keyedReference would be as follows:

```
1170 <categoryBag>  
1171   <keyedReference  
1172     tModelKey="uuid:2ec65201-9109-3919-9bec-c9dbefcaccf6"  
1173     keyName="Local service name"  
1174     keyValue="StockQuoteService" />  
1175   ...  
1176 </categoryBag>
```

1177 B.4 WSDL portType Reference tModel

1178 B.4.1 Design Goals

1179 WSDL entities exhibit many relationships. Specifically, a wsdl:port describes an
1180 implementation of a wsdl:binding, and a wsdl:binding describes a binding of a particular
1181 wsdl:portType. These same relationships must be expressed in the UDDI mapping. UDDI
1182 provides a built-in mechanism, via the tModelInstanceInfo structure, to associate a
1183 bindingTemplate with a tModel. But UDDI does not provide a built-in mechanism to describe a
1184 relationship between two tModels. The WSDL portType Reference category system provides
1185 a mechanism to indicate that a wsdl:binding tModel is a binding of a specific wsdl:portType
1186 tModel.

1187 B.4.2 Definition

1188 **Name:** uddi.org:wsdl:portTypeReference
1189 **Description:** A category system used to reference a wsdl:portType tModel
1190 **V3 format key:** uddi:uddi.org:wsdl:portTypeReference
1191 **V1,V2 format key:** uuid:082b0851-25d8-303c-b332-f24a6d53e38e
1192 **Categorization:** categorization
1193 **Checked:** yes

1194 B.4.2.1 V2 tModel Structure

```
1195 <tModel tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e">  
1196   <name>uddi.org:wsdl:portTypeReference</name>  
1197   <description xml:lang="en">  
1198     This tModel is a category system tModel that can be used to identify  
1199     a relationship to a portType tModel.  
1200   </description>  
1201   <overviewDoc>  
1202     <overviewURL>  
1203       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-  
1204       tc-tn-wsdl-v2.htm#portTypeReference  
1205     </overviewURL>  
1206   </overviewDoc>  
1207   <categoryBag>  
1208     <keyedReference  
1209       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1210       keyValue="categorization" />  
1211     <keyedReference  
1212       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1213       keyValue="checked" />  
1214   </categoryBag>  
1215 </tModel>
```

1216 B.4.3 Valid Values

1217 Valid values for this category system are tModelKeys. The content of the keyValue attribute in
1218 a keyedReference that refers to this tModel is the tModelKey of the wsdl:portType tModel
1219 being referenced.

1220 As the valid values are entity keys the V3 version of the tModel representing this category
1221 system must be categorized with the uddi:uddi.org:categorization:entityKeyValues category
1222 system, with a keyValue of tModelKey.

1223 B.4.4 Example of Use

1224 One would add the following keyedReference to signify that a wsdl:binding implements a
1225 specific portType:

```
1226 <categoryBag>  
1227   <keyedReference  
1228     tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"  
1229     keyName="wsdl:portType Reference"  
1230     keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />  
1231   ...  
1232 </categoryBag>
```

1233 Note that the keyValue is a tModelKey, which, if queried for using get_tModelDetail, would
1234 return the tModel that represents the portType.

1235 B.5 SOAP Protocol tModel

1236 B.5.1 Design Goals

1237 Web services can support a wide variety of protocols. Users looking for Web services may
1238 want to search for Web services that support a specific protocol. The SOAP Protocol tModel
1239 can be used to indicate that a Web service supports the SOAP 1.1 protocol. This tModel
1240 correlates to the http://schemas.xmlsoap.org/wsdl/soap/ namespace identified in the WSDL
1241 Specification.

1242 B.5.2 Definition

1243 **Name:** uddi.org:protocol:soap
1244 **Description:** A tModel that represents the SOAP 1.1 protocol
1245 **V3 format key:** uddi:uddi.org:protocol:soap
1246 **V1,V2 format key:** uuid:aa254698-93de-3870-8df3-a5c075d64a0e
1247 **Categorization:** protocol

1248 B.5.2.1 tModel Structure

```
1249 <tModel tModelKey="uuid:aa254698-93de-3870-8df3-a5c075d64a0e">  
1250   <name>uddi.org:protocol:soap</name>  
1251   <overviewDoc>  
1252     <overviewURL>  
1253       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-  
1254       tc-tn-wsdl-v2.htm#soap  
1255     </overviewURL>  
1256   </overviewDoc>  
1257   <categoryBag>  
1258     <keyedReference  
1259       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
1260       keyValue="protocol" />  
1261   </categoryBag>  
1262 </tModel>
```

1263 B.5.3 Example of Use

1264 The SOAP Protocol tModel is used to categorise a binding tModel that corresponds to a
1265 wsdl:binding that supports the SOAP 1.1 protocol.


```

1266 <tModel tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">
1267   <name>...</name>
1268   <categoryBag>
1269     <keyedReference
1270       tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
1271       keyName="binding namespace"
1272       keyValue="http://example.com/stockquote/" />
1273     <keyedReference
1274       tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
1275       keyName="WSDL type"
1276       keyValue="binding" />
1277     <keyedReference
1278       tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"
1279       keyName="portType reference"
1280       keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />
1281     <keyedReference
1282       tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865"
1283       keyName="SOAP protocol"
1284       keyValue="uuid:aa254698-93de-3870-8df3-a5c075d64a0e" />
1285     <keyedReference
1286       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1287       keyName="types"
1288       keyValue="wsdlSpec" />
1289   </categoryBag>
1290   <overviewDoc>
1291     <overviewURL>http://location/sample.wsdl</overviewURL>
1292   </overviewDoc>
1293 </tModel>

```

1294 B.6 HTTP Protocol tModel

1295 B.6.1 Design Goals

1296 Web services can support a wide variety of protocols. Users looking for Web services may
1297 want to search for Web services that support a specific protocol. The HTTP Protocol tModel
1298 can be used to indicate that a Web service supports the HTTP protocol. Note that this tModel
1299 is different from the HTTP Transport tModel. This tModel represents a protocol; for example, it
1300 represents the `http://schemas.xmlsoap.org/wsdl/http/` namespace in the WSDL specification.
1301 The HTTP Transport tModel represents a transport.

1302 B.6.2 Definition

1303 **Name:** uddi.org:protocol:http
1304 **Description:** A tModel that represents the HTTP protocol
1305 **V3 format key:** uddi:uddi.org:protocol:http
1306 **V1,V2 format key:** uuid:6e10b91b-babc-3442-b8fc-5a3c8fde0794
1307 **Categorization:** protocol

1308 B.6.2.1 V2 tModel Structure

```

1309 <tModel tModelKey="uuid:6e10b91b-babc-3442-b8fc-5a3c8fde0794">
1310   <name>uddi.org:protocol:http</name>
1311   <overviewDoc>
1312     <overviewURL>
1313       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-
1314       tc-tn-wsdl-v2.htm#http
1315     </overviewURL>
1316   </overviewDoc>
1317   <categoryBag>
1318     <keyedReference
1319       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1320       keyValue="protocol" />
1321   </categoryBag>
1322 </tModel>

```

1323

B.6.3 Example of Use

1324

The HTTP Protocol tModel is used to categorise a binding tModel that corresponds to a wsdl:binding that supports the HTTP protocol.

1325

1326

```
<tModel tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">
1327   <name>StockQuoteSoapBinding</name>
1328   <categoryBag>
1329     <keyedReference
1330       tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
1331       keyName="binding namespace"
1332       keyValue="http://example.com/stockquote/" />
1333     <keyedReference
1334       tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
1335       keyName="WSDL type"
1336       keyValue="binding" />
1337     <keyedReference
1338       tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"
1339       keyName="portType reference"
1340       keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />
1341     <keyedReference
1342       tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865"
1343       keyName="HTTP protocol"
1344       keyValue="uuid:6e10b91b-babc-3442-b8fc-5a3c8fde0794" />
1345     <keyedReference
1346       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1347       keyName="types"
1348       keyValue="wsdlSpec" />
1349   </categoryBag>
1350   <overviewDoc>
1351     <overviewURL>
1352       http://location/sample.wsdl
1353     </overviewURL>
1354   </overviewDoc>
1355 </tModel>
```

1356

B.7 Protocol Categorization

1357

B.7.1 Design Goals

1358

A Web service may communicate using a variety of protocols. A WSDL binding binds a portType to a specific protocol. A user may wish to search for bindings that implement a specific protocol. The Protocol Categorization tModel provides a mechanism to capture this protocol information in the UDDI binding tModel.

1359

1360

1361

1362

B.7.2 Definition

1363

Name: uddi-org:wsdl:categorization:protocol

1364

Description: Category system used to describe the protocol supported by a wsdl:binding.

1365

1366

V3 format key: uddi:uddi.org:wsdl:categorization:protocol

1367

V1,V2 format key: uuid:4dc74177-7806-34d9-aecd-33c57dc3a865

1368

Categorization: categorization

1369

Checked: yes

1370

B.7.2.1 V2 tModel Structure

1371

```
<tModel tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865">
1372   <name>uddi-org:wsdl:categorization:protocol</name>
1373   <overviewDoc>
1374     <overviewURL>
1375       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-
1376       tc-tn-wsdl-v2.htm#protocol
1377     </overviewURL>
1378   </overviewDoc>
1379   <categoryBag>
1380     <keyedReference keyName="types"
```

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```
keyValue="categorization"  
tModelKey="uuid:c1acf26d-9672-4404-9d70-  
39b756e62ab4"/>  
  <keyedReference keyName="types"  
    keyValue="checked"  
    tModelKey=" uuid:c1acf26d-9672-4404-9d70-  
39b756e62ab4"/>  
  </categoryBag>  
</tModel>
```

1390

B.7.3 Valid Values

1391
1392
1393
1394

Valid values for this category system are tModelKeys. The content of the keyValue attribute in a keyedReference that refers to this tModel is the tModelKey of the tModel that represents a protocol. The protocol tModel SHOULD be classified as "protocol" in the uddi-org:types categorization scheme.

1395
1396
1397

As the valid values are entity keys the V3 version of the tModel representing this category system must be categorized with the uddi:uddi.org:categorization:entityKeyValues category system, with a keyValue of tModelKey.

1398

B.7.4 Example of Use

1399

The Protocol category scheme is used to indicate the protocol that a binding supports.

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```
<tModel tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">  
  <name>StockQuoteSoapBinding</name>  
  <categoryBag>  
    <keyedReference  
      tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"  
      keyName="binding namespace"  
      keyValue="http://example.com/stockquote/" />  
    <keyedReference  
      tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"  
      keyName="WSDL type"  
      keyValue="binding" />  
    <keyedReference  
      tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"  
      keyName="portType reference"  
      keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />  
    <keyedReference  
      tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"  
      keyName="types"  
      keyValue="wsdlSpec" />  
    <keyedReference  
      tModelKey="uuid:4dc74177-7806-34d9-aecd-33c57dc3a865"  
      keyName="WSDL binding supports the SOAP protocol"  
      keyValue="uddi:aa254698-93de-3870-8df3-a5c075d64a0e" />  
  </categoryBag>  
  <overviewDoc>  
    <overviewURL>http://location/sample.wsdl</overviewURL>  
  </overviewDoc>  
</tModel>
```

1428

B.8 Transport Categorization

1429

B.8.1 Design Goals

1430
1431
1432
1433

A Web service may communicate using a variety of transports. A WSDL binding binds a portType to a specific transport protocol. A user may wish to search for bindings that implement a specific transport protocol. The Transport Categorization tModel provides a mechanism to capture this transport information in the UDDI binding tModel.

1434

B.8.2 Definition

1435
1436
1437

Name: uddi-org:wsdl:categorization:transport
Description: Category system used to describe the transport supported by a wsdl:binding.

1438 **V3 format key:** uddi:uddi.org:wSDL:categorization:transport
 1439 **V1,V2 format key:** uuid:e5c43936-86e4-37bf-8196-1d04b35c0099
 1440 **Categorization:** categorization
 1441 **Checked:** yes

1442 **B.8.2.1 V2 tModel Structure**

```

1443 <tModel tModelKey="uuid:e5c43936-86e4-37bf-8196-1d04b35c0099">
1444   <name>uddi-org:wSDL:categorization:transport</name>
1445   <overviewDoc>
1446     <overviewURL>
1447       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-
1448       tc-tn-wSDL-v2.htm#transport
1449     </overviewURL>
1450   </overviewDoc>
1451   <categoryBag>
1452     <keyedReference keyName="types"
1453       keyValue="categorization"
1454       tModelKey="uuid:c1acf26d-9672-4404-9d70-
1455       39b756e62ab4" />
1456     <keyedReference keyName="types"
1457       keyValue="checked"
1458       tModelKey="uuid:c1acf26d-9672-4404-9d70-
1459       39b756e62ab4" />
1460   </categoryBag>
1461 </tModel>
  
```

1462 **B.8.3 Valid Values**

1463 Valid values for this category system are tModelKeys. The content of the keyValue attribute in
 1464 a keyedReference that refers to this tModel is the tModelKey of the tModel that represents a
 1465 transport. The transport tModel SHOULD be classified as "transport" in the uddi-org:types
 1466 categorization scheme.

1467 As the valid values are entity keys the V3 version of the tModel representing this category
 1468 system must be categorized with the uddi:uddi.org:categorization:entityKeyValues category
 1469 system, with a keyValue of tModelKey

1470 **B.8.4 Example of Use**

1471 The Transport category system is used to indicate the transport that a binding supports.

```

1472 <tModel tModelKey="uuid:49662926-f4a5-4ba5-b8d0-32ab388dadda">
1473   <name>StockQuoteSoapBinding</name>
1474   <categoryBag>
1475     <keyedReference
1476       tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
1477       keyName="binding namespace"
1478       keyValue="http://example.com/stockquote/" />
1479     <keyedReference
1480       tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
1481       keyName="WSDL type"
1482       keyValue="binding" />
1483     <keyedReference
1484       tModelKey="uuid:082b0851-25d8-303c-b332-f24a6d53e38e"
1485       keyName="portType reference"
1486       keyValue="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" />
1487     <keyedReference
1488       tModelKey="uuid:c1acf26d-9672-4404-9d70-39b756e62ab4"
1489       keyName="types"
1490       keyValue="wSDLSpec" />
1491     <keyedReference
1492       tModelKey="uuid:hashed key"
1493       keyName="WSDL binding protocol"
1494       keyValue="uddi:aa254698-93de-3870-8df3-a5c075d64a0e" />
1495     <keyedReference
1496       tModelKey="uuid:e5c43936-86e4-37bf-8196-1d04b35c0099"
1497       keyName="WSDL transport protocol"
1498       keyValue="uuid:68DE9E80-AD09-469D-8A37-088422BFBC36" />
1499   </categoryBag>
  
```

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```
<overviewDoc>
  <overviewURL>http://location/sample.wsdl</overviewURL>
</overviewDoc>
</tModel>
```

1505 B.9 WSDL Address tModel

1506 B.9.1 Design Goals

1507 A service provider may not want to specify the address of a service port in the
1508 uddi:accessPoint element and instead require the user to retrieve a WSDL document to
1509 obtain the service address. UDDI V2 does not provide a built-in mechanism to indicate that
1510 the endpoint address should be obtained from a WSDL document. This document describes
1511 an approach to provide a mechanism using existing UDDI V2 features. This approach
1512 requires that the bindingTemplate indicate that the WSDL document must be retrieved to
1513 obtain the address information. The WSDL Address tModel provides such a mechanism. A
1514 V2 bindingTemplate includes a tModelInstanceInfo element that references this tModel to
1515 indicate that the address information must be retrieved from the WSDL document.

1516 B.9.2 Definition

1517 **Name:** uddi-org:wsdl:address
1518 **Description:** A tModel used to indicate the WSDL address option
1519 **V3 format key:** uddi:uddi:wsdl:address
1520 **V1,V2 format key:** uuid:ad61de98-4db8-31b2-a299-a2373dc97212
1521 **Categorization:** none

1522 B.9.2.1 V2 tModel Structure

```
1523 <tModel tModelKey="uuid:ad61de98-4db8-31b2-a299-a2373dc97212" >
1524   <name>uddi-org:wsdl:address</name>
1525   <description xml:lang="en">
1526     This tModel is used to specify the URL fact that the address must be obtained
1527     from the WSDL deployment file.
1528   </description>
1529   <overviewDoc>
1530     <overviewURL>
1531       http://www.oasis-open.org/committees/uddi-spec/doc/tn/uddi-spec-tc-
1532       tn-wsdl-v2.htm#Address
1533     </overviewURL>
1534   </overviewDoc>
1535 </tModel>
```

1536 B.9.3 Valid Values

1537 There are no valid values associated with this tModel, it is simply a marker.

1538 B.9.4 Example of Use

1539 If a service provider requires the user to retrieve the service endpoint from a WSDL document
1540 rather than from the UDDI bindingTemplate, the accessPoint element must have a value of
1541 "WSDL" and a URLType attribute value of "other":

```
1542 <bindingTemplate
1543   bindingKey="f793c521-0daf-434c-8700-0e32da232e74"
1544   serviceKey="102b114a-52e0-4af4-a292-02700da543d4">
1545   <accessPoint URLType="other">WSDL</accessPoint>
1546 <tModelInstanceDetails>
1547   <tModelInstanceInfo
1548     tModelKey="uuid:ad61de98-4db8-31b2-a299-a2373dc97212">
1549   <tModelInstanceInfo>
1550     ...
1551 </tModelInstanceDetails>
```

```
</bindingTemplate
```

1553

C Using XPointer in overviewURL

1554

C.1 XPointer Syntax

1555 In this mapping of WSDL to UDDI, a UDDI entity describes a particular element within a
1556 WSDL document. The particular WSDL element described SHOULD be determined by using
1557 the metadata contained within the entity's categoryBag, and either the UDDI entity's name or
1558 the instanceParms value specified in the tModelInstanceInfo that relates to the binding that a
1559 port implements. Alternatively, the overviewURL value MAY contain a fragment identifier that
1560 identifies the particular WSDL element.

1561 As the WSDL 1.1 schema does not allow for id attributes on WSDL elements, we cannot
1562 simply use a fragment identifier of the form #foo.

1563 If the optional fragment identifier is used, the syntax defined by XPointer [5] SHOULD be used
1564 for the fragment identifier. It should be noted that at the time of writing this Technical Note,
1565 XPointer is a set of Working Draft documents and is therefore subject to change.

1566

C.1.1 Example of Use

1567 Referring to the WSDL Sample in Section 3.1, the StockQuotePortType tModel may reference
1568 the wsdl:portType element directly from the overviewURL using XPointer syntax.

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```
<tModel tModelKey="uuid:e8cf1163-8234-4b35-865f-94a7322e40c3" >
  <name>
    StockQuotePortType
  </name>
  <categoryBag>
    <keyedReference
      tModelKey="uuid:d01987d1-ab2e-3013-9be2-2a66eb99d824"
      keyName="portType target namespace"
      keyValue="http://example.com/stockquote/"
    />
    <keyedReference
      tModelKey="uuid:6e090afa-33e5-36eb-81b7-1ca18373f457"
      keyName="WSDL Entity Type"
      keyValue="portType"
    />
  </categoryBag>
  <overviewDoc>
    <overviewURL>
      http://location/sample.wsdl#xmlns(wsdl=http://schemas.xmlsoap.org/wsdl/)
      xpointer(/wsdl:definitions/wsdl:portType[@name="StockQuotePortType"] ).
    </overviewURL>
  </overviewDoc>
</tModel>
```

1592

1593

D Acknowledgments

1594 The following individuals were members of the committee during the development of this
1595 technical note:

1596 Andrew Hately, IBM
1597 Sam Lee, Oracle
1598 Alok Srivastava, Oracle
1599 Claus von Riegen, SAP

1600

E Revision History

1601

| Rev | Date | By Whom | What |
|----------|--------------|--|--|
| 20021022 | 22 Oct 2002 | John Colgrave and Karsten Januszewski | First draft of V2.0 TN |
| 20021114 | 14 Nov 2002 | Tony Rogers and Anne Thomas Manes | Second draft of V2.0 TN for TC discussion |
| 20030319 | 19 Mar 2003 | John Colgrave, Anne Thomas Manes and Tony Rogers | Final draft of V2.0 TN for TC review |
| 20030627 | 27 June 2003 | John Colgrave | Version for TC vote |

1602

1603

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