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AIT Vocabulary Service - Examples

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AIT Vocabulary Service - TGN-Examples_V01

Table of Contents

1   Introduction

In this document you can find some examples of the AIT vocabulary services. The examples are exactly described so the services structure is reconstructed by examples.

2   Examples

AIT recommend to open the AIT vocabulary service with Firefox to see it in the best way. Get to the service via http://demo.ait.co.at/thesaurus/index.php?file=xml/loginRequest.xml

Figure 1 - AIT vocabulary service

On the left side the xml is displayed and on the right side are the results of the sample. The first lines (Prolog) in the xml hasn't got a function in the sample, but it is necessary for the service. For the example is only the element important.

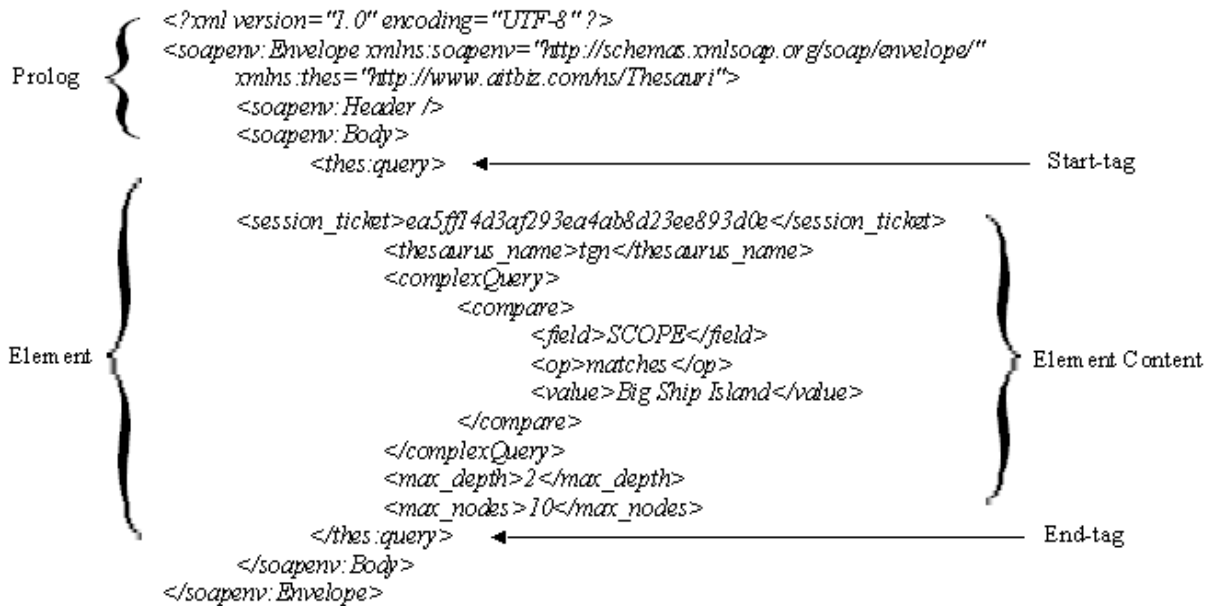Following you can see the structure from a xml :

```
        ⎧   <?xml version="1.0" encoding="UTF-8"?>
        │   <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
Prolog  ⎨              xmlns:thes="http://www.aitbiz.com/ns/Thesauri">
        │       <soapenv:Header />
        ⎩       <soapenv:Body>
                     <thes:query>                                          ◄────── Start-tag

        ⎧       <session_ticket>ea5ff14d3af293ea4ab8d23ee893d0e</session_ticket>
        │               <thesaurus_name>tgn</thesaurus_name>
        │               <complexQuery>
        │                   <compare>
Element ⎨                       <field>SCOPE</field>                              Element Content
        │                       <op>matches</op>
        │                       <value>Big Ship Island</value>
        │                   </compare>
        │               </complexQuery>
        │               <max_depth>2</max_depth>
        │               <max_nodes>10</max_nodes>
        ⎩          </thes:query>                                          ◄────── End-tag
                </soapenv:Body>
            </soapenv:Envelope>
```

Figure 2 - Structur

2.1 Sample 1: " xml/complexQuery_rivers_in_germany.xml"

Returns all Rivers of Germany (max. 10 nodes).

Query: The field "placetype" must be (=equals) the value "river" and by "origin" the field "TRM" must be "Deutschland".

ThesaurusClient

```
<?xml version="1.0" encoding="UTF-8" ?>
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org
/soap/envelope/"
xmlns:thes="http://www.aitbiz.com/ns/Thesauri">
    <soapenv:Header/>
    <soapenv:Body>
        <thes:query>

<session_ticket>cd3135f19a8ce157fd44288c23096052<
        <thesaurus_name>tgn</thesaurus_name>
        <complexQuery>
            <compare>
                <field>PLACETYPE</field>
                <op>equals</op>
                <value>river</value>
            </compare>
        </complexQuery>
        <origin>
            <compare>
                <field>TRM</field>
                <op>equals</op>
                <value>Deutschland</value>
            </compare>
        </origin>
        <max_nodes>10</max_nodes>
```
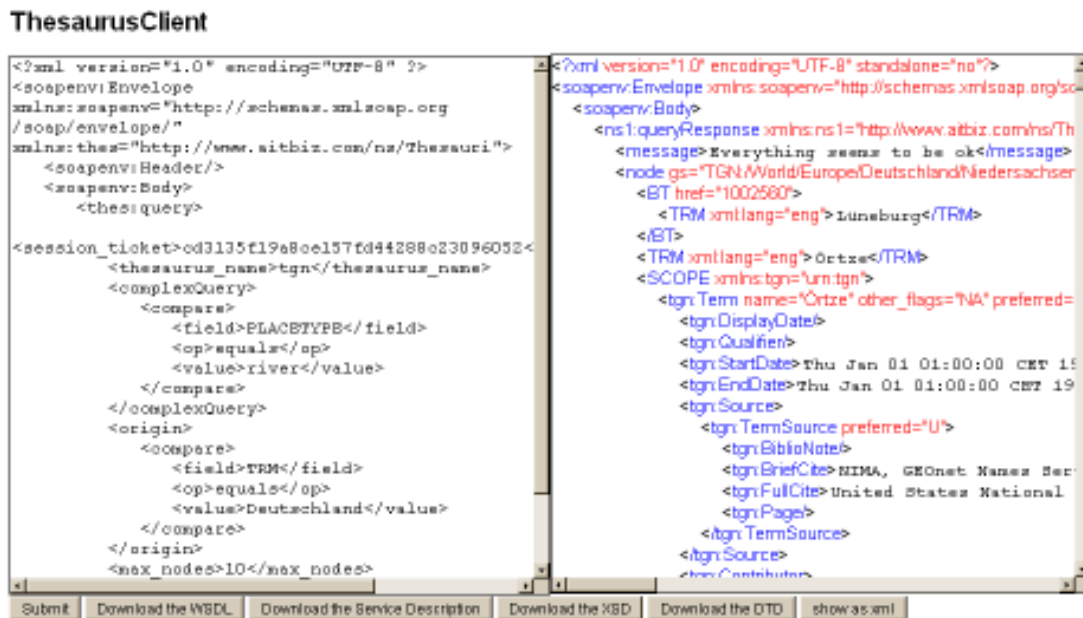
```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/so
    <soapenv:Body>
        <ns1:queryResponse xmlns:ns1="http://www.aitbiz.com/ns/Th
            <message>Everything seems to be ok</message>
            <node gs="TGN/World/Europe/Deutschland/Niedersachser
                <BT href="1002560">
                    <TRM xml:lang="eng">Luneburg</TRM>
                </BT>
                <TRM xml:lang="eng">Örtze</TRM>
                <SCOPE xmlns:tgn="urn:tgn">
                    <tgn:Term name="Örtze" other_flags="NA" preferred=
                        <tgn:DisplayDate/>
                        <tgn:Qualifier/>
                        <tgn:StartDate>Thu Jan 01 01:00:00 CET 19
                        <tgn:EndDate>Thu Jan 01 01:00:00 CET 19
                        <tgn:Source>
                            <tgn:TermSource preferred="U">
                                <tgn:BiblioNote/>
                                <tgn:BriefCite>NIMA, GEOnet Names Ser
                                <tgn:FullCite>United States National
                                <tgn:Page/>
                            </tgn:TermSource>
                        </tgn:Source>
```

| Submit | Download the WSDL | Download the Service Description | Download the XSD | Download the DTD | show as xml |

Figure 3 - Sample 1: "xml/complexQuery_rivers_in_germany.xml"

The element from sample 1:

  <thes:query>

    <session_ticket>cd3135f19a8ce157fd44288c23096052</session_ticket>

    <thesaurus_name>tgn</thesaurus_name>

```
<complexQuery>
  <compare>
    <field>PLACETYPE</field>
    <op>equals</op>
    <value>river</value>
  </compare>
</complexQuery>
<origin>
  <compare>
    <field>TRM</field>
    <op>equals</op>
    <value>Deutschland</value>
  </compare>
</origin>
<max_nodes>10</max_nodes>
</thes:query>
```

"Thes" in the start- or end-tag stands for "Thesaurus". In the <!Element query> can be other elements. The bold one are used in this sample. Some parameters are marked with *, ? or +. These markers are the short repeat information. None to infinite repeatations is equivalent to *, optional parameters are marked with an ? for zero or one repetations. If at least one repeatation is needed, then the + will be used:

- **session_ticket:**   It is created to authenticate the user for a specific session.

- **thesaurus_name:** The name of the thesaurus, which is taken for the query.

- query_lang: The language of the query. Only terms in this language match. Default: any

- result_lang?:   The languages of the result nodes. Other languages will be stripped from the result. Default: any

- Followed by one of

  - o   simpleQuery: Simple query expression

  - o   **complexQuery:**   Complex (boolean) query expression

- **origin?:**   Specify the ancestor nodes of result nodes. This means only nodes will be included in the result when they have an ancestor that is matches "origin". Default: The thesaurus root.

- max_depth?:   For each node that maches add up to this many levels of children to the result. Default: 0

- **max_nodes?:**   For each node that maches add up to this many levels of children to the result. Default: 10

This sample have a <complexQuery> and an *<origin>*, they consist of one of the following elements. The bold one is used in this sample.

- **compare**

- and

- or

- not

<compare>consists of a

- **field**

- **op**   Operator

- **value**

All elements are used in this example.

<field> is a string with one of the following values (The bold one is used in this sample.)

- **TRM**

- **Scope**

- TRM[@preferred]

- TRM[not(@preferred)]

<op> can be one of the following strings (The bold one is used in this sample.)

- matches   Used to match the word index. In the result the word must be there, but it must not be allone there (compare "equals").

- **equals**

- less_than

- less_or_equal

- greater_than

- greater_or_equal

The result from the query (2 Hits):

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <ns1:queryResponse xmlns:ns1="http://www.aitbiz.com/ns/Thesauri">
```

```xml
        <message>Everything seems to be ok</message>
        <node gs="TGN:/World/Europe/Deutschland/Niedersachsen/Lüneburg/Örtze"
id="TGN:1120787" schema="TGN">
          <BT href="1002560">
            <TRM xml:lang="eng">Lüneburg</TRM>
          </BT>
          <TRM xml:lang="eng">Örtze</TRM>
          <SCOPE xmlns:tgn="urn:tgn">
            <tgn:Term name="Örtze" other_flags="NA" preferred="P"
vernacular="V">
              <tgn:DisplayDate/>
              <tgn:Qualifier/>
              <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
              <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
              <tgn:Source>
                <tgn:TermSource preferred="U">
                  <tgn:BiblioNote/>
                  <tgn:BriefCite>NIMA, GEOnet Names Server (1996-
1998)</tgn:BriefCite>
                  <tgn:FullCite>United States National Imagery and Mapping
Agency. GEOnet Names Server [online database]. Edited by the U.S. Board on
Geographic Names. Washington: National Imagery and Mapping Agency,
1996.</tgn:FullCite>
                  <tgn:Page/>
                </tgn:TermSource>
              </tgn:Source>
              <tgn:Contributor>
                <tgn:BriefName>VP</tgn:BriefName>
                <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
              </tgn:Contributor>
            </tgn:Term>
            <tgn:PlaceType historic="C" preferred="P">
              <tgn:RoleDescription>river</tgn:RoleDescription>
              <tgn:DisplayDate/>
            </tgn:PlaceType>
            <tgn:Source>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>NIMA, GEOnet Names Server (1996-
1998)</tgn:BriefCite>
                <tgn:FullCite>United States National Imagery and Mapping
Agency. GEOnet Names Server [online database]. Edited by the U.S. Board on
Geographic Names. Washington: National Imagery and Mapping Agency,
1996.</tgn:FullCite>
                <tgn:Page/>
              </tgn:SubjectSource>
            </tgn:Source>
            <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
            </tgn:Contributor>
            <tgn:Coordinates>
              <tgn:Elevation>0.0</tgn:Elevation>
              <tgn:Latitue decimal="52.6667">52° 40' W</tgn:Latitue>
              <tgn:Longitude decimal="9.95">9° 57' W</tgn:Longitude>
              <tgn:LatitueLeast decimal="0.0">0° 0' W</tgn:LatitueLeast>
              <tgn:LatitueMost decimal="0.0">0° 0' W</tgn:LatitueMost>
              <tgn:LongitudeLeast decimal="0.0">0° 0' W</tgn:LongitudeLeast>
              <tgn:LongitudeMost decimal="0.0">0° 0' W</tgn:LongitudeMost>
            </tgn:Coordinates>
          </SCOPE>
```

```
        </node>
        <node gs="TGN:/World/Europe/Deutschland/North Rhine-
Westphalia/Arnsberg/Öse" id="TGN:1120788" schema="TGN">
          <BT href="1003090">
            <TRM xml:lang="eng">Arnsberg</TRM>
          </BT>
          <TRM xml:lang="eng">Öse</TRM>
          <SCOPE xmlns:tgn="urn:tgn">
            <tgn:Term name="Öse" other_flags="NA" preferred="P"
vernacular="V">
              <tgn:DisplayDate/>
              <tgn:Qualifier/>
              <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
              <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
              <tgn:Source>
                <tgn:TermSource preferred="U">
                  <tgn:BiblioNote/>
                  <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
                  <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                  <tgn:Page>146</tgn:Page>
                </tgn:TermSource>
                <tgn:TermSource preferred="U">
                  <tgn:BiblioNote/>
                  <tgn:BriefCite>NIMA, GEOnet Names Server (1996-
1998)</tgn:BriefCite>
                  <tgn:FullCite>United States National Imagery and Mapping
Agency. GEOnet Names Server [online database]. Edited by the U.S. Board on
Geographic Names. Washington: National Imagery and Mapping Agency,
1996.</tgn:FullCite>
                  <tgn:Page/>
                </tgn:TermSource>
              </tgn:Source>
              <tgn:Contributor>
                <tgn:BriefName>VP</tgn:BriefName>
                <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
              </tgn:Contributor>
            </tgn:Term>
            <tgn:PlaceType historic="C" preferred="P">
              <tgn:RoleDescription>river</tgn:RoleDescription>
              <tgn:DisplayDate/>
            </tgn:PlaceType>
            <tgn:Source>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
                <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                <tgn:Page>146</tgn:Page>
              </tgn:SubjectSource>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>NIMA, GEOnet Names Server (1996-
1998)</tgn:BriefCite>
                <tgn:FullCite>United States National Imagery and Mapping
Agency. GEOnet Names Server [online database]. Edited by the U.S. Board on
Geographic Names. Washington: National Imagery and Mapping Agency,
1996.</tgn:FullCite>
                <tgn:Page/>
```

```
          </tgn:SubjectSource>
        </tgn:Source>
        <tgn:Contributor>
          <tgn:BriefName>VP</tgn:BriefName>
          <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
        </tgn:Contributor>
        <tgn:Coordinates>
          <tgn:Elevation>0.0</tgn:Elevation>
          <tgn:Latitue decimal="51.65">51° 39' W</tgn:Latitue>
          <tgn:Longitude decimal="9.15">9° 9' W</tgn:Longitude>
          <tgn:LatitueLeast decimal="0.0">0° 0' W</tgn:LatitueLeast>
          <tgn:LatitueMost decimal="0.0">0° 0' W</tgn:LatitueMost>
          <tgn:LongitudeLeast decimal="0.0">0° 0' W</tgn:LongitudeLeast>
          <tgn:LongitudeMost decimal="0.0">0° 0' W</tgn:LongitudeMost>
        </tgn:Coordinates>
      </SCOPE>
    </node>
  </ns1:queryResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

Figure 4 - Sample1 - Result

<ns1:queryResponse> consists of

- **message**

- result_id

- **node*:**   The resulting node list.

<node>:   A **node** is an abstract basic unit used to build linked data structures such as trees, linked lists, and computer-based representations of graphs.

I.e. <node gs="TGN:/World/Europe/Deutschland/Niedersachsen/Lüneburg/Örtze" id="TGN:1120787" schema="TGN">

It consists of a

- **TRM+**   There has to be exactly one the in the generic language of the thesaurus and optionally translations into other languages. Each TRM should have a xml:lang attribute. If it is missing the generic will be used

- term

- **BT***   Broader Term

- NT*   Narrow Term

- RT*   Related Term

- UF*   A list of used for terms

- **SCOPE***   This element can contain any element in any namespace

The following attributes apply to this element

- @id

- schema?

- gs?

<BT> is the connection between two thesaurus nodes. Each link must provide an @href attribute to the other ThesaurusNode/@id attribute.

Related terms may have a @role attribute to classify the relation.

Each realtion may cache the TRM and SCOPE of the target node. If it is cached the node can be found by a query to this field.

Consists of a

- **TRM***   There has to be exactly one the in the generic language of the thesaurus and optionally translations into other languages. Each TRM should have a xml:lang attribute. If it is missing the generic will be used

- SCOPE*   Scope

The following attributes apply to this element

- @href

- @role?

TGN-categories

This are the paths (XPath) to the data fields (for development information).

"tgn" equals the namespace "urn:tgn"

ID of the whole entry (subject ID)
/node/@id

Preferred name
/node/SCOPE/tgn:Term[preferred="P"]/@name
in general also /node/TRM[1]

Term ID
/node/SCOPE/tgn:Term[preferred="P"]/@term_id

Synonyms (including foreign-language versions)
/node/SCOPE/tgn:Term[not(preferred="P")]/@name

Term ID synonyms
/node/SCOPE/tgn:Term[not(preferred="P")]/@id

Coordinates (decimal degrees)
/node/SCOPE/tgn:Coordinates/tgn:Latitude/@decimal
/node/SCOPE/tgn:Coordinates/tgn:Longitude/@decimal
/node/SCOPE/tgn:Coordinates/tgn:LatitudeLeast/@decimal
/node/SCOPE/tgn:Coordinates/tgn:LongitudeLeast/@decimal
/node/SCOPE/tgn:Coordinates/tgn:LatitudeMost/@decimal
/node/SCOPE/tgn:Coordinates/tgn:LongitudeMost/@decimal

Name type flag (N, A, B)
/node/SCOPE/tgn:Term/@other_flag

Vernacular flag (V, O, U)
/node/SCOPE/tgn:Term/@vernacular

Historical flag (C, H, B, U, NA)
/node/SCOPE/tgn:PlaceType/@historic

Language of names, Code of languages
/node/SCOPE/tgn:Language/@code

Hierarchical position (except for the *hierarchy-root*-element (top of TGN hierarchy) there is at least
one parentID for every subjectID)
/node/BT   *(broader terms)*
/node/NT   *(narrower terms)*
/node/@gs   *(generic structure as a path starting at the top term)*

start date/ end date
/node/SCOPE/tgn:Term/tgn:StartDate
/node/SCOPE/tgn:Term/tgn:EndDate

sort_order of the names (required if equal treated entries should be displayed)
the tgn:Term elements are shown in this order.

Placetype (physical or political, one of them is marked preferred)

/node/SCOPE/tgn:PlaceType/tgn:RoleDescription

alternatively

/node/SCOPE/tgn:PlaceType[@preferred="P"]/tgn:RoleDescription

/node/SCOPE/tgn:PlaceType[not(@preferred="P")]/tgn:RoleDescription

display_order number (sorting order for the placetype)

the tgn:PlaceType elements are shown in this order.

Related places

/node/SCOPE/tgn:Relation/@subject_id

alternatively

/node/RT/@href

Relationship type (3001: distinguished from; 3301: ally of, 3411: successor of, 3412: predecessor of)

/node/SCOPE/tgn:Relation/@code   *(Typnummer)*

/node/SCOPE/tgn:Relation/@relatedCode   *(Typnummer der entgegengesetzten Richtung)*

/node/SCOPE/tgn:Relation/@focusEntity   *(Typname)*

Historical flag of the relation (C, H, B, U, NA)

/node/SCOPE/tgn:Relation/@historic

Contributor

/node/SCOPE/tgn:Contributor   *(Subject contributor)*

/node/SCOPE/tgn:Term/tgn:Contributor   *(Term contributor)*

Sources (sourceID, brief citation, full citation)

/node/SCOPE/tgn:Source   *(Subject source)*

/node/SCOPE/tgn:Term/Source   *(Term source)*

2.2   Sample 2: " xml/Truncation.xml"

Find places with in the bounding box 15°20"O-15°30"O, 47°N-47°6"N.

ThesaurusClient

```
<?xml version="1.0" encoding="UTF-8" ?>
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org
/soap/envelope/" xmlns:thes="http://www.aitbiz.com
/ns/Thesauri">
    <soapenv:Header/>
    <soapenv:Body>
        <thes:query>

<session_ticket>a5d9ab3683d2ed7943454f691d376556</
        <thesaurus_name>tgn</thesaurus_name>
        <simpleQuery>
            <more_fields>
                <field>TRM</field>
                <op>matches</op>
                <value>Steierm*</value>
            </more_fields>
        </simpleQuery>
        <max_depth>2</max_depth>
        <max_nodes>30</max_nodes>
        </thes:query>
    </soapenv:Body>
</soapenv:Envelope>
```

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/so
    <soapenv:Body>
        <ns1:queryResponse xmlns:ns1="http://www.aitbiz.com/ns/Th
            <message>Everything seems to be ok</message>
            <node gs="TGN/World/Europe/Osterreich/Steiermark/Kirch
                <BT href="7003028">
                    <TRM xml:lang="eng">Steiermark</TRM>
                </BT>
                <TRM xml:lang="eng">Kirchbach</TRM>
                <TRM xml:lang="eng">Kirchbach in Steiermark</
                <SCOPE xmlns:tgn="urn:tgn">
                    <tgn:Term name="Kirchbach in Steiermark" other_flag
                        <tgn:DisplayDate>
                        <tgn:Qualifier>
                        <tgn:StartDate>Thu Jan 01 01:00:00 CET 15
                        <tgn:EndDate>Thu Jan 01 01:00:00 CET 19
                        <tgn:Source>
                            <tgn:TermSource preferred="U">
                                <tgn:BiblioNote>
                                <tgn:BriefCite>Rand McNally Atlas (19
                                <tgn:FullCite>Rand McNally and Compan
                                <tgn:Page>I-87</tgn:Page>
                            </tgn:TermSource>
                        </tgn:Source>
```

| Submit | Download the WSDL | Download the Service Description | Download the XSD | Download the DTD | show as xml |

Figure 5 - Sample 2: " xml/Truncation.xml"

The element from sample 2:

```
<thes:query>
  <session_ticket>a5d9ab3683d2ed7943454f691d376556</session_ticket>
  <thesaurus_name>tgn</thesaurus_name>
  <simpleQuery>
    <more_fields>
      <field>TRM</field>
      <op>matches</op>
      <value>Steierm*</value>
    </more_fields>
  </simpleQuery>
  <max_depth>2</max_depth>
  <max_nodes>30</max_nodes>
</thes:query>
```

"Thes" in the start- or end-tag stands for "Thesaurus". In the <!Element query> can be other elements. The bold one are used in this sample. Some parameters are marked with *, ? or +. These markers are the short repeat information. None to infinite repeatations is equivalent to *, optional parameters are marked with an ? for zero or one repetations. If at least one repeatation is needed, then the + will be used:

- **session_ticket:**   It is created to authenticate the user for a specific session.

- **thesaurus_name:** The name of the thesaurus, which is taken for the query.

- query_lang: The language of the query. Only terms in this language match.
                Default: any

- **result_lang?:**   The languages of the result nodes. Other languages will be stripped from the result. Default: any

- Followed by one of

  - o **simpleQuery:**   Simple query expression

  - o complexQuery: Complex (boolean) query expression

- origin?:   Specify the ancestor nodes of result nodes. This means only nodes will be included in the result when they have an ancestor that is matches "origin". Default: The thesaurus root.

- **max_depth?:**   For each node that maches add up to this many levels of children to the result. Default: 0

- **max_nodes?:**   For each node that maches add up to this many levels of children to the result. Default: 10

<simpleQuery> consists of a

- fulltext

- term

- **more_fields***   RelationExpr

- combine_by_or   Boolean value. By default all terms must apply. With this options nodes where only some terms apply will be included in the result. Set this to true to connect the terms with an "or" statement

<more_fields> consists of a

- **field**

- **op**   Operator

- **value**

All elements are used in this example.

<field> is a string with one of the following values (The bold one is used in this sample.)

- **TRM**

- **Scope**

- TRM[@preferred]

- TRM[not(@preferred)]

<op> can be one of the following strings (The bold one is used in this sample.)

- matches   Used to match the word index. In the result the word must be there, but it must not be allone there (compare "equals").

- **equals**

- less_than

- less_or_equal

- greater_than

- greater_or_equal

The result from the query (3 Hits):

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <ns1:queryResponse xmlns:ns1="http://www.aitbiz.com/ns/Thesauri">
      <message>Everything seems to be ok</message>
      <node gs="TGN:/World/Europe/Österreich/Steiermark/Kirchbach"
id="TGN:1025720" schema="TGN">
        <BT href="7003028">
          <TRM xml:lang="eng">Steiermark</TRM>
        </BT>
        <TRM xml:lang="eng">Kirchbach</TRM>
        <TRM xml:lang="eng">Kirchbach in Steiermark</TRM>
        <SCOPE xmlns:tgn="urn:tgn">
          <tgn:Term name="Kirchbach in Steiermark" other_flags="NA"
preferred="V" vernacular="V">
            <tgn:DisplayDate/>
            <tgn:Qualifier/>
            <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
            <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
            <tgn:Source>
              <tgn:TermSource preferred="U">
                <tgn:BiblioNote/>
                <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
                <tgn:FullCite>Rand McNally and Company. The New
International Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
                <tgn:Page>I-87</tgn:Page>
              </tgn:TermSource>
            </tgn:Source>
            <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
            </tgn:Contributor>
          </tgn:Term>
          <tgn:Term name="Kirchbach" other_flags="NA" preferred="P"
vernacular="V">
            <tgn:DisplayDate/>
            <tgn:Qualifier/>
            <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
            <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
            <tgn:Source>
              <tgn:TermSource preferred="U">
                <tgn:BiblioNote/>
                <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
```

```xml
                    <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                    <tgn:Page>101</tgn:Page>
                  </tgn:TermSource>
              </tgn:Source>
              <tgn:Contributor>
                <tgn:BriefName>VP</tgn:BriefName>
                <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
              </tgn:Contributor>
          </tgn:Term>
          <tgn:PlaceType historic="C" preferred="P">
                <tgn:RoleDescription>inhabited place</tgn:RoleDescription>
                <tgn:DisplayDate/>
          </tgn:PlaceType>
          <tgn:Source>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
                <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                <tgn:Page>101</tgn:Page>
              </tgn:SubjectSource>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
                <tgn:FullCite>Rand McNally and Company. The New International
Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
                <tgn:Page>I-87</tgn:Page>
              </tgn:SubjectSource>
          </tgn:Source>
          <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
          </tgn:Contributor>
          <tgn:Coordinates>
              <tgn:Elevation>0.0</tgn:Elevation>
              <tgn:Latitue decimal="46.9333">46° 56' W</tgn:Latitue>
              <tgn:Longitude decimal="15.6333">15° 38' W</tgn:Longitude>
              <tgn:LatitueLeast decimal="0.0">0° 0' W</tgn:LatitueLeast>
              <tgn:LatitueMost decimal="0.0">0° 0' W</tgn:LatitueMost>
              <tgn:LongitudeLeast decimal="0.0">0° 0' W</tgn:LongitudeLeast>
              <tgn:LongitudeMost decimal="0.0">0° 0' W</tgn:LongitudeMost>
          </tgn:Coordinates>
        </SCOPE>
      </node>
      <node gs="TGN:/World/Europe/Österreich/Steiermark/Mautern"
id="TGN:1025840" schema="TGN">
        <BT href="7003028">
          <TRM xml:lang="eng">Steiermark</TRM>
        </BT>
        <TRM xml:lang="eng">Mautern</TRM>
        <TRM xml:lang="eng">Mautern in Steiermark</TRM>
        <SCOPE xmlns:tgn="urn:tgn">
          <tgn:Term name="Mautern" other_flags="NA" preferred="P"
vernacular="V">
              <tgn:DisplayDate/>
              <tgn:Qualifier/>
              <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
              <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
```

```xml
            <tgn:Source>
              <tgn:TermSource preferred="U">
                <tgn:BiblioNote/>
                <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
                <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                <tgn:Page>124</tgn:Page>
              </tgn:TermSource>
            </tgn:Source>
            <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
            </tgn:Contributor>
          </tgn:Term>
          <tgn:Term name="Mautern in Steiermark" other_flags="NA"
preferred="V" vernacular="V">
            <tgn:DisplayDate/>
            <tgn:Qualifier/>
            <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
            <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
            <tgn:Source>
              <tgn:TermSource preferred="U">
                <tgn:BiblioNote/>
                <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
                <tgn:FullCite>Rand McNally and Company. The New
International Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
                <tgn:Page>I-108</tgn:Page>
              </tgn:TermSource>
            </tgn:Source>
            <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
            </tgn:Contributor>
          </tgn:Term>
          <tgn:PlaceType historic="C" preferred="P">
            <tgn:RoleDescription>inhabited place</tgn:RoleDescription>
            <tgn:DisplayDate/>
          </tgn:PlaceType>
          <tgn:Source>
            <tgn:SubjectSource>
              <tgn:BiblioNote/>
              <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
              <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
              <tgn:Page>124</tgn:Page>
            </tgn:SubjectSource>
            <tgn:SubjectSource>
              <tgn:BiblioNote/>
              <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
              <tgn:FullCite>Rand McNally and Company. The New International
Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
              <tgn:Page>I-108</tgn:Page>
            </tgn:SubjectSource>
          </tgn:Source>
          <tgn:Contributor>
            <tgn:BriefName>VP</tgn:BriefName>
            <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
```

```xml
        </tgn:Contributor>
        <tgn:Coordinates>
          <tgn:Elevation>0.0</tgn:Elevation>
          <tgn:Latitue decimal="47.4">47° 24' W</tgn:Latitue>
          <tgn:Longitude decimal="14.8333">14° 50' W</tgn:Longitude>
          <tgn:LatitueLeast decimal="0.0">0° 0' W</tgn:LatitueLeast>
          <tgn:LatitueMost decimal="0.0">0° 0' W</tgn:LatitueMost>
          <tgn:LongitudeLeast decimal="0.0">0° 0' W</tgn:LongitudeLeast>
          <tgn:LongitudeMost decimal="0.0">0° 0' W</tgn:LongitudeMost>
        </tgn:Coordinates>
      </SCOPE>
    </node>
    <node gs="TGN:/World/Europe/Österreich/Steiermark/Neumarkt"
id="TGN:1025885" schema="TGN">
      <BT href="7003028">
        <TRM xml:lang="eng">Steiermark</TRM>
      </BT>
      <TRM xml:lang="eng">Neumarkt</TRM>
      <TRM xml:lang="eng">Neumarkt in Steiermark</TRM>
      <SCOPE xmlns:tgn="urn:tgn">
        <tgn:Term name="Neumarkt" other_flags="NA" preferred="P"
vernacular="V">
          <tgn:DisplayDate/>
          <tgn:Qualifier/>
          <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
          <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
          <tgn:Source>
            <tgn:TermSource preferred="U">
              <tgn:BiblioNote/>
              <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
              <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
              <tgn:Page>138</tgn:Page>
            </tgn:TermSource>
          </tgn:Source>
          <tgn:Contributor>
            <tgn:BriefName>VP</tgn:BriefName>
            <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
          </tgn:Contributor>
        </tgn:Term>
        <tgn:Term name="Neumarkt in Steiermark" other_flags="NA"
preferred="V" vernacular="V">
          <tgn:DisplayDate/>
          <tgn:Qualifier/>
          <tgn:StartDate>Thu Jan 01 01:00:00 CET 1970</tgn:StartDate>
          <tgn:EndDate>Thu Jan 01 01:00:00 CET 1970</tgn:EndDate>
          <tgn:Source>
            <tgn:TermSource preferred="U">
              <tgn:BiblioNote/>
              <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
              <tgn:FullCite>Rand McNally and Company. The New
International Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
              <tgn:Page>I-121</tgn:Page>
            </tgn:TermSource>
          </tgn:Source>
          <tgn:Contributor>
            <tgn:BriefName>VP</tgn:BriefName>
            <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
          </tgn:Contributor>
```

```
            </tgn:Term>
            <tgn:PlaceType historic="C" preferred="P">
              <tgn:RoleDescription>inhabited place</tgn:RoleDescription>
              <tgn:DisplayDate/>
            </tgn:PlaceType>
            <tgn:Source>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>Times Atlas of the World
(1992)</tgn:BriefCite>
                <tgn:FullCite>Times Atlas of the World. 9th comprehensive
edition. New York: Times Books, 1992.</tgn:FullCite>
                <tgn:Page>138</tgn:Page>
              </tgn:SubjectSource>
              <tgn:SubjectSource>
                <tgn:BiblioNote/>
                <tgn:BriefCite>Rand McNally Atlas (1994)</tgn:BriefCite>
                <tgn:FullCite>Rand McNally and Company. The New International
Atlas. 25th Anniversary Edition. Chicago: Rand McNally,
1994.</tgn:FullCite>
                <tgn:Page>I-121</tgn:Page>
              </tgn:SubjectSource>
            </tgn:Source>
            <tgn:Contributor>
              <tgn:BriefName>VP</tgn:BriefName>
              <tgn:FullName>Getty Vocabulary Program</tgn:FullName>
            </tgn:Contributor>
            <tgn:Coordinates>
              <tgn:Elevation>0.0</tgn:Elevation>
              <tgn:Latitue decimal="47.0833">47° 5' W</tgn:Latitue>
              <tgn:Longitude decimal="14.4333">14° 26' W</tgn:Longitude>
              <tgn:LatitueLeast decimal="0.0">0° 0' W</tgn:LatitueLeast>
              <tgn:LatitueMost decimal="0.0">0° 0' W</tgn:LatitueMost>
              <tgn:LongitudeLeast decimal="0.0">0° 0' W</tgn:LongitudeLeast>
              <tgn:LongitudeMost decimal="0.0">0° 0' W</tgn:LongitudeMost>
            </tgn:Coordinates>
          </SCOPE>
        </node>
      </ns1:queryResponse>
    </soapenv:Body>
</soapenv:Envelope>
```

Figure 6 - Sample 2 - Result

<ns1:queryResponse> consists of

- **message**

- result_id

- **node*:**   The resulting node list.

<node>:   A **node** is an abstract basic unit used to build linked data structures such as trees, linked lists, and computer-based representations of graphs.

It consists of a

- **TRM+**   There has to be exactly one the in the generic language of the thesaurus and optionally translations into other languages. Each TRM

should have a xml:lang attribute. If it is missing the generic will be used

- term
- **BT***   Broader Term
- NT*   Narrow Term
- RT*   Related Term
- UF*   A list of used for terms
- **SCOPE***   This element can contain any element in any namespace

The following attributes apply to this element

- @id
- schema?
- gs?

<BT> is the connection between two thesaurus nodes. Each link must provide an @href attribute to the other ThesaurusNode/@id attribute.

Related terms may have a @role attribute to classify the relation.

Each realtion may cache the TRM and SCOPE of the target node. If it is cached the node can be found by a query to this field.

Consists of a

- **TRM***   There has to be exactly one the in the generic language of the thesaurus and optionally translations into other languages. Each TRM should have a xml:lang attribute. If it is missing the generic will be used
- SCOPE*   Scope

The following attributes apply to this element

- @href
- @role?

TGN-categories

This are the paths (XPath) to the data fields (for development information).

"tgn" equals the namespace "urn:tgn"

ID of the whole entry (subject ID)

/node/@id

Preferred name

/node/SCOPE/tgn:Term[preferred="P"]/@name

in general also /node/TRM[1]

Term ID

/node/SCOPE/tgn:Term[preferred="P"]/@term_id

Synonyms (including foreign-language versions)

/node/SCOPE/tgn:Term[not(preferred="P")]/@name

Term ID synonyms

/node/SCOPE/tgn:Term[not(preferred="P")]/@id

Coordinates (decimal degrees)

/node/SCOPE/tgn:Coordinates/tgn:Latitude/@decimal

/node/SCOPE/tgn:Coordinates/tgn:Longitude/@decimal

/node/SCOPE/tgn:Coordinates/tgn:LatitudeLeast/@decimal

/node/SCOPE/tgn:Coordinates/tgn:LongitudeLeast/@decimal

/node/SCOPE/tgn:Coordinates/tgn:LatitudeMost/@decimal

/node/SCOPE/tgn:Coordinates/tgn:LongitudeMost/@decimal

Name type flag (N, A, B)

/node/SCOPE/tgn:Term/@other_flag

Vernacular flag (V, O, U)

/node/SCOPE/tgn:Term/@vernacular

Historical flag (C, H, B, U, NA)

/node/SCOPE/tgn:PlaceType/@historic

Language of names, Code of languages

/node/SCOPE/tgn:Language/@code

Hierarchical position (except for the *hierarchy-root*-element (top of TGN hierarchy) there is at least

one parentID for every subjectID)

/node/BT   *(broader terms)*

/node/NT   *(narrower terms)*

/node/@gs   *(generic structure as a path starting at the top term)*

start date/ end date

/node/SCOPE/tgn:Term/tgn:StartDate

/node/SCOPE/tgn:Term/tgn:EndDate

sort_order of the names (required if equal treated entries should be displayed)

the tgn:Term elements are shown in this order.

Placetype (physical or political, one of them is marked preferred)

/node/SCOPE/tgn:PlaceType/tgn:RoleDescription

alternatively

/node/SCOPE/tgn:PlaceType[@preferred="P"]/tgn:RoleDescription

/node/SCOPE/tgn:PlaceType[not(@preferred="P")]/tgn:RoleDescription

display_order number (sorting order for the placetype)

the tgn:PlaceType elements are shown in this order.

Related places

/node/SCOPE/tgn:Relation/@subject_id

alternatively

/node/RT/@href

Relationship type (3001: distinguished from; 3301: ally of, 3411: successor of, 3412: predecessor of)

/node/SCOPE/tgn:Relation/@code   *(Typnummer)*

/node/SCOPE/tgn:Relation/@relatedCode   *(Typnummer der entgegengesetzten Richtung)*

/node/SCOPE/tgn:Relation/@focusEntity   *(Typname)*

Historical flag of the relation (C, H, B, U, NA)

/node/SCOPE/tgn:Relation/@historic

Contributor

/node/SCOPE/tgn:Contributor   *(Subject contributor)*

/node/SCOPE/tgn:Term/tgn:Contributor   *(Term contributor)*

Sources (sourceID, brief citation, full citation)

/node/SCOPE/tgn:Source   *(Subject source)*

/node/SCOPE/tgn:Term/Source   *(Term source)*

2.3 Sample 3: "*xml/Operation_scanIndex_PLACETYPE.xml*"

IndexLookup for all PlaceTypes (max. 200 Hits).

Figure 7 - Sample 3: "xml/Operation_scanIndex_PLACETYPE.xml"

The element from sample 3:

```
<thes:scanIndex>
    <session_ticket>3128af554c1ebe7be0fa2571217a8209</session_ticket>
    <thesaurus_name>tgn</thesaurus_name>
    <field>PLACETYPE_list</field>
    <term>*</term>
    <max_terms>200</max_terms>
</thes:scanIndex>
```

Lookup terms from an index. This works with phrase indices only and will report all matching terms and their frequency in the thesaurus.

Input Message

Output Message

Input Message consists of a

- **session_ticket**

- **thesaurus_name**

- **term**

- **max_terms**   Number of returned terms

The result from the IndexLookup (2 Hits):

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <ns1:scanIndexResponse xmlns:ns1="http://www.aitbiz.com/ns/Thesauri">
      <message/>
      <result_id>0-1</result_id>
      <term>
        <text>abandoned complex</text>
        <frequency>11</frequency>
      </term>
      <term>
        <text>abandoned dwelling</text>
        <frequency>7</frequency>
      </term>
      <term>
        <text>abbey</text>
        <frequency>40</frequency>
      </term>
    </ns1:scanIndexResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 8 - Sample 3: Result

Lookup terms from an index. This works with phrase indices only and will report all matching terms and their frequency in the thesaurus.

Input Message

Output Message

Output Message consists of a

- **message**

- **result_id**   In the case when more hits exist than the maximum limit specified with the call this allow continuation. The result_id is either

    o   0 (Result complete)

    o   -1 (continuation not possible)

    o   >0 an identifier allowing the continuation.

- **term***   The resulting node list