Appendix D5

The REGNET – System
Version 1

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1 Appendix 1: Design Pattern

A design pattern describes a proven solution to a recurring design problem, placing particular emphasis on the context and forces surrounding the problem, and the consequences and impact of the solution.

There are many good reasons to use design patterns. Here are three:

- **They are proven.** You tap the experience, knowledge and insights of developers who have used these patterns successfully in their own work.
- **They are reusable.** When a problem recurs, you don't have to invent a new solution; you follow the pattern and adapt it as necessary.
- **They are expressive.** Design patterns provide a common vocabulary of solutions, which you can use to express larger solutions succinct

1.1 Java Server Pages Model 2 Architecture

This design pattern comes from J2EE blueprint. The Javasoft blueprint, "Developing Enterprise Applications with the Java 2 Platform, Enterprise Edition, describes the architectural tiers of a J2EE application and suggests good design practices that may be used.

This architecture uses the Model View Controller paradigm to separate the different areas of concern. The model is a series of Java beans. The view is the JSPs and the controller is the servlet. The JSPs contain no logic other than that required to get information from the java Java beans and serve it up in html. All the logic is contained in the servlet. The and the model information is encapsulated in the java beans. The servlet receives a request, retrieves data from the applicative tier, instantiates the java Java beans, hands them off to the JSPs and passes control to a JSP that provides the response.

2 Appendix 2 : The REGNET topic map generation.

These paragraphs pertain to the manual generation of topic maps using existing topic map authoring tools following the XTM 1.0 standard.

Theme schemes (see also Theme scheme MECH).

Following the main themes decided upon within REGNET a “theme scheme” can be elaborated by the respective content responsible for the themes. These theme schemes contain the sets of topics that will be treated in the first phase of the demonstration and are defined by a word processor or spreadsheet table. Graphical representations can also be used. These have the advantage that one can indicate already the interrelationships between the topics. Members of the editorial committee receive these theme schemes for checking.

Associations (see also Saints associations).

Associations form the most interesting part of the topic map paradigm. They represent knowledge that can be used in other contexts than the one they are created for. Every theme content responsible can create a spreadsheet containing the concerned topics and their specific relationships. Great care must be given to the exact “wording” and “direction” of the different associations. These spreadsheets are delivered to a member of the editorial committee. The editorial committee is responsible for carrying out all necessary coherence, consistence, semantic and linguistic checks and finally for generating the topic map in XTM format.

Generation (see also Excerpt from the Saints topic map).

Once validated the generation of the topic map is carried out via an existing topic map authoring tool. In the first phase of the project, this was the Empolis k42 WebAuthor.

Tests were carried out with the SAINTS topic map towards different topic map viewers in order to check the validity of the created topic maps. It concerned the following topic map viewers and/or engines: Empolis Topic Map Viewer, Ontopia Omnigator and Techquila TM4J.

Two JAVA-clients were developed in order to test the Empolis k42 engine and the TM4J engine. In both cases these tests were successful for reaching the different topics, associations, occurrences and scopes.

Language.

Addressing different languages for topic map elements is done by the use of the “scope” element for topic basenames and for occurrences. Two approaches are possible: all languages in the same topic map or one topic map for every language. In the latter case an intelligent switching system for topic maps during a session has be to be applied. Both approaches are valid. Practical testing will show the best solution.

Information resources (occurrences).

For the connection of occurrences to topics, two aspects deserve attention. First there is the specific REGNET approach of offering different levels of the same content and secondly, as in the previous point, also in different languages. In both cases the “scope” element will be used for differentiation between levels and languages. Again as in the previous point, this can be done in one topic map or in different topic maps.Merging topic maps at the right time or on request will be applied. Saints associations.

ENGLISH			DUTCH		
Topic	Association	Topic	Topic	Association	Topic
Anthony	is-a	Saint	Antonius	is-een	Heilige
Roche			Rochus		
Sebastian			Sebastianus		
Adrian			Adrianus		
Christopher			Christophorus		
Anne			Anna		
Maria			Maria		
Crispin			Crispinus		
Crispinian			Crispinianus		
James-the-Greater			Jacobus-de-Meerdere		
Angela			Angela		
Ursula			Ursula		
Anne	is-mother-of	Maria	Anna	is-moeder-van	Maria
Crispin	is-brother-of	Crispinian	Crispinus	is-broeder-van	Crispinianus
Angela	was-influenced-by	Ursula	Angela	werd-be×nvloed-door	Ursula
Angela	founded	Ursulines	Angela	stichtte	Ursulinen
Anthony	is-patron-saint-against	Plague	Antonius	is-beschermheilige-tegen	Pest
Roche			Rochus		
Sebastian			Sebastianus		
Adrian			Adrianus		
Christopher			Christophorus		
Christopher	is-patron-saint-of	Travellers	Christophorus	is-patroonheilige-van	Reizigers
James-the-Greater		Pilgrims	Jacobus-de-Meerdere		Pelgrims
Ursula		Ursulines	Ursula		Ursulinen
Crispin		Leather-workers	Cripinus		Leerbewerkers
Crispinian			Crispinianus		
Anne	is-symbol-of	Fertility	Anna	is-symbool-van	Vruchtbaarheid
Maria			Maria		
Plague	is-subject-for	Protection	Pest		Bescherming
Travelling			Reizen		

Excerpt from the Saints topic map.

```
<!--  topic types -->

      <topic id="saint">
            <baseName>
                  <scope><topicRef xlink:href="#en/></scope>
                  <baseNameString>saint</baseNameString>
            </baseName>
            <baseName>
                  <scope><topicRef xlink:href="#nl/></scope>
                  <baseNameString>heilige</baseNameString>
            </baseName>
      </topic>

      <topic id="city">
            <baseName>
                  <scope><topicRef xlink:href="#en/></scope>
                  <baseNameString>city</baseNameString>
            </baseName>
            <baseName>
                  <scope><topicRef xlink:href="#nl/></scope>
                  <baseNameString>stad</baseNameString>
            </baseName>
      </topic>

      <!--  association types -->

      <topic id="patronise">
            <baseName>
                  <baseNameString>patronise</baseNameString>
            </baseName>
            <baseName>
                  <scope>
                        <topicRef xlink:href="#patronising subject/>
                        <topicRef xlink:href="#en/>
                  </scope>
                  <baseNameString>patronises</baseNameString>
            </baseName>
            <baseName>
                  <scope>
                  <topicRef xlink:href="#patronising subject/>
                        <topicRef xlink:href="#nl/>
                  </scope>
                  <baseNameString>beschermt</baseNameString>
            </baseName>
            <baseName>
                  <scope>
                  <topicRef xlink:href="#patronised subject/>
                        <topicRef xlink:href="#en/>
                  </scope>
                  <baseNameString>patronised by</baseNameString>
            </baseName>
            <baseName>
                  <scope>
                        <topicRef xlink:href="#patronised subject/>
                        <topicRef xlink:href="#nl/>
                  </scope>
                  <baseNameString>beschermd door</baseNameString>
            </baseName>
      </topic>
```

3 Appendix 3: Components Deployment and Installation

3.1 Portal

3.1.1 Configuration

3.1.1.1 Prerequisites

To run the Regnet Portal Prototype is necessary to have the following tools:

Java Environment	Sun Java 1.3 runtime environment	
Web server	Jakarta Tomcat (v.3.2.2)	
Enterprise information portal	Jakarta Jetspeed (v. 1.3a2) (jetspeed.war)	
Libraries (.jar)	xalan.jar, crimson.jar ecs-1.4.1.jar	
XML Database	XIndice 1.0	

All these tools can be installed following their relative Installation Guidelines.

Another required tool is XIndice. This XML database is used by the Ontology component in order to store the user profiles.

After having installed Xindice is necessary to create a new database in the following way:

```
xindiceadmin ac -c /UserProfiles -n Name
```

and then could be necessary to add into the classpath the following jar files:

```
xmldb.jar

xerces-1.4.3.jar
```

3.1.2 Portal Zip file

The Regnet Portal Prototype is contained in a zip file named portal.zip

3.1.3 Installation procedure

After having installed all the tools specified into the Prerequisites paragraph, to install the Regnet Portal Prototype (Web and Wap) is sufficient to follow these steps:

3.1.3.1 Server Side

1. Unzip the Jakarta Tomcat zip file;
2. Copy the Jetspeed WAR file into the Tomcat webapps directory:

   ([tomcat_root]\webapps\jetspeed.war)
3. start Tomcat and browse http://localhost:8080/jetspeed. If it works you can shutdown Tomcat and skip to the step 4
4. Create the ‘regnet’ context into Tomcat. This can be done adding the specified lines in server.xml file that you can find in [tomcat_root]/conf/

path where add it in server.xml file

```
<Server>
<ContextManager>
```

string to add:

```
  <Context path="/regnet"
           docBase="webapps/regnet"
           crossContext="false"
           debug="0"
           reloadable="true" >
  </Context>
```

5. add *xalan.jar, crimson.jar, ecs-1.4.1.jar* into [tomcat-root]/bin/
6. Unzip the portal.zip file in [tomcat-root]/webapps. (don't worry if replace files);
7. restart Tomcat and start XIndice.

3.1.3.2 Client Side WEB

1. Open a Web Browser
2. Point at http://localhost:8080/regnet .

3.1.3.3 Client Side WAP

3. Open a Wap Browser
4. Point at http://localhost:8080/jetspeed .

3.1.4 New user registration

A new user can become a Regent registered user accessing to the RegNet Portal Home Page and then selecting the item "Create new account". A new form had been developed in order to allow gathering of user information. All the user information will be then stored into the Portal database and subsequently sent to the Ontology repository.

3.1.5 User Profile Management

The Regnet Portal Prototype made available also to non-registered users some information about the Regnet Project and the applications and tools offered by the Portal.

The entire registered user or the administrator can also access to the services already available such as the Search and Retrieval, NewsBoards and so on.

In this release the user profile management is entirely done by the Portal development tool (Jakarta Jetspeed).

3.1.6 How to made available by the Portal a new Application or a Tool

The Portal front-end for each application or tool integrated into the Portal is known as Portlet. From the end-user point-of-view, a portlet is a specialized content area that occupies a small 'window' in the portal page. In order to update a link to a component already linked into the Portal is necessary to *update the content of an existing portlet, while to create a new menu item is necessary to define a new Portlet.*

Let’s see more in details how each of these steps can be done.

3.1.6.1 How to update an existing Portlet

Regnet portlets are defined in property file (.props) in:

- [tomcat_home]/webapps/regnet/properties folder (for anonymous users)
- [tomcat_home]/webapps/regnet/properties/user folder (for registered users)
- [tomcat_home]/webapps/regnet/properties/admin (for the administrator)

The properties files are all structured like the following example:

3.1.6.2 EducationAndResearchPortlet.props

portletName=EducationAndResearch	Portlet name
WapTitle=Edu/Research	Title displayed in wap portlet
portletImage=edresources_image.gif	Image displayed in web portlet
portletImageWidth=112	Image Width
portletImageHeight=93	Image Height
backgroundColor=FD6464	Background color
numberOfItem=3	Number of item we want display
linkTitle0=Event Calendar	Item name
linkTitle1=Forum	
linkTitle2=Teaching Resources	
linkHref0=	Item link
linkHref1=	
linkHref2=	

3.1.6.3 How to create and add a new Portlet

1. create a new .props file like the previous example (images are in ../regnet/images/ folder).

2. add following strings in [tomcat_home]\webapps\jetspeed\WEB-INF\conf\regnet.xreg

```
        <portlet-entry name="  portletname  " hidden="false"
            type="instance" application="false">
           (<security  role="user"/>  (if  we  want  restrict  portlet  to
specified role))
            <meta-info>
                <title>  title  </title>
                <description>  description  </description>
            </meta-info>

    <classname>org.regnet.portal.portlet.RegnetPortletTemplate</classname>
            <parameter name="propertyFile"
                value="  propsportletfile.props" hidden="false"/>
            <media-type ref="html"/>
            <media-type ref="wml"/>
        </portlet-entry>
```

3. from web, customize adding the Portlet.

3.2 Data Input

3.2.1 Requirements

To install the data input tool the following configuration is required:

Platform	• Microsoft Windows NT® 4.0 (SP 6a required) • Microsoft Windows® 2000 (SP 2 recommended) • Microsoft Windows XP Professional
Prototype	datageneration_prototype.zip
Database	TEXTML Server from IXIASOFT

3.2.2 Installation Procedure

Precondition: the TeXtML docbase is created

1. Unzip file in the concerning web directory
2. Open global.asa with an editor and change server name and docbase name
3. Open docbasename and change the docbasename
4. Open servername and change the servername
5. In the directory Code/Setup there are three XML files: rc.config.xml, security.xml, templates.xml. Enter rc.config.xml and security.xml via TeXtML console into the database: local documents folder →set documents (as Textml_document, not indexed)
6. Open the templates.xml and define document types and data fields
7. Enter templates.xml via TeXtML console into the database (see point 5.)
8. Open your browser and start the application
9. Enter the administration section by clicking the icon with the key (user: root, password: root)
10. Click RC Editor and define the settings of the application and save
11. Click Security Editor and define permissions, user groups, users, passwords

12. Create indexes via the TeXtML console (note: lookup fields refer to list indices, list indices with capital letters at the beginning will be also displayed as sort criteria)
13. Restart the application

3.2.2.1 RC Editor

VALUE section:

VALUE_ROOT_ELEMENT → regnet-document

VALUE_SHOW_DOCBASE_NAME → enter docbase name if you want it be displayed in the upper frame

VALUE_SHOW_USERINFO → activate if you want the user information to be displayed in the upper frame

VALUE_RECORD_CREATION → activate if you want, that information about the creation of a record will be stored (date and user)

VALUE_RECORD_LAST_CHANGE → activate if you want, that information about the last change will be stored

UNKNOWN section:

UNKNOWN_USE_TEMPLATES → activate if you want to use templates for a series of similar records (E.g. records of objects with the same creator, same creation place, same cataloguer, etc.)

UNKNOWN_DEFAULT_EMPTY_PER_ADD → specify the number of empty fields that will be added if a user clicks at the button for multiplying a data field

UNKNOWN_DOCUMENT_HAS_SECTIONS → activate if documents will have sections

IMAGE section:

IMAGE_LOGO → enter image name if you want a logo to be displayed in the upper frame

ERRORS section:

ERROR_SOURCE → change the docbasename

LABEL section:

LABEL_TITLE → enter a title of the application, that will be displayed in the upper frame

3.2.2.2 Security Editor

1. Open the security editor in the administration section.
2. select the category Permissions
3. define the permission types that will be available and save
4. select the category Groups
5. define the groups that will use the system, assign the permissions, possibly write a description of the group and save
6. select the category Users
7. define the username and their membership to the groups, assign passwords and save

3.2.2.3 Modify the templates

The simplest way to create a template definition is to open the existing templates.xml and to modify it:

1. define doctypes
2. define groups and fields within the doctype, the attribute header specifies the contents that will be displayed in the search result list
3. descriptons: define the properties of the data fields (size and kind of data entry field, creation of lookup fields, label)

3.3 Reference system

3.3.1 Requirements

To install the Reference System components the following configuration is required:

Platform	• Microsoft Windows NT® 4.0 (SP 6a required) • Microsoft Windows® 2000 (SP 2 recommended) • Microsoft Windows XP Professional
.NET Framework	• .NET Framework Redistributable • .NET Framework SDK available on http://www.microsoft.com/net/
Prototype	referencesystem_v01.zip
Database	TEXTML Server from IXIASOFT

3.3.2 Installation Procedure

1. Install the .NET Framework Redistributable or .NET Framework SDK.
2. Install the TEXTML Server from IXIASOFT.
3. unzip the `referencesystem_v01.zip` file → you should have 3 subdirectories now: datageneration, news and searchservice
4. create a virtual web directory for each of the 3 subdirectories (e.g. regnet\news for news, regnet\search for searchservice, regnet\data for datageneration)
5. edit the web.config file in each subdirectory:

   there is a `<appSettings>` part in each web.config file like the following

```
<appSettings>
  <add key="system" value="AIT01" />
  <add key="node" value="RS01" />
  <add key="version" value="0.8" />
  <add key="hosts" value="AIT205;AIT205" />
  <add key="docbases" value="rn_plakat_v01;rn_dmb_v01" />
  <add key="prefixes" value="PLA_;DMB_;VAR_" />
  <add key="recordIdSeparator" value="#" />
  <add key="componentSeparator" value="!" />
</appSettings>
```

parameters:

- `system`: enter system id (e.g. servicecenter id) [id's not fixed yet]
- `node`: enter node id (e.g RSxx for Reference System, DGxx Data Generation Service) [id's not fixed yet]
- `version`: leaf unchanged
- `hosts` and `docbases`: configuration for the access to the TEXTML Server. One (`host`, `docbase`) tupel defines one database.
- `prefixes`: only for the DataGeneration Web service. Correlates to `host`, `docbase` – defines a prefix for record names for one database. In the example above you have a database on the machine "AIT205", the docbase is "rn_plakat_v01" and records in this docbase will have the prefix "PLA_".
- `recordIdSeparator` and `componentSeparator`: defines separators for the `recordId`. A `recordId` identifies single records in the whole system. An example `recordId` with the configurationabove might look like:

  `AIT01!RS01#rn_plakat_v01#PLA_00001.XML`

6. browse http://localhost/[virtual_directory]/SearchService.asmx
   and http://localhost/[virtual_directory]/DataGenerationService.asmx
   (you should see an webservice description page)

3.4 Knowledge base

3.4.1 Preface

This package comprises of several classes, which provide general methods for file transfer between the various REGNET nodes, using the Java RMI protocol. Namely, classes can be installed in a pair of remote machines and used to exchange files.

These classes are made to be used by the project programmers. During the installation the straightforward procedure of installing a Java classes package is followed.

3.4.2 Prerequisites

The Java Development Kit *(JDK 1.3.1 or above).*

3.4.3 Installation

1. Unzip the compressed folder. Place all Java classes in a directory, in both machines that are going to be connected through RMI.

Both machines should have a directory (we will refer to that as the “RMI directory”, which contains the following files:

- FilePacket.class
- FileReceiver.class
- FileSender.class
- FileSendInitialize.class
- Policycl
- ReceiveFile.class
- RemoteFileSendInitialize.class
- RemoteFileSendInitialize_Skel.class
- RemoteFileSendInitialize_Stub.class
- RemoteReceiver.class
- RemoteReceiver_Skel.class
- RemoteReceiver_Stub.class
- StartFileSender.bat
- StartReceiveFile.bat
- startRemoteFileSendInitialize.bat
- startRemoteReceiver.bat

➢ In both machines the local CLASSPATH settings should be updated with the directories that contain the above files.

In order for the Machine I to receive a file from the Machine II via RMI

1. Machine II

1. Go to the RMI folder and type: start rmiregistry (the \bin directory of Java should be in the path).

2. Type: startRemoteFileSendInitialize

If the "sentinit" object is bound then everything is OK.

2. Machine I

1. Go to the RMI folder and type: start rmiregistry

2. Open notepad and edit startRemoteReceiver.bat

Replace c:\regnet with the directory you want the files you receive from Machine II to be stored.

3. Open notepad and edit startReceiveFile.bat

there are three parameteres after ReceiveFile:

the first is the IP of the local machine I

the second is the IP of the remote machine II

the third is the full pathaname of the file to get from machine II.

Replace accordingly

*4.*Type: startRemoteReceiver

5 In a new MS-DOS window type: startReceiveFile

The file should be downloaded.

In order for Machine I to send a file from to Machine II via RMI

1. Machine II

1. Go to the RMI folder and type: start rmiregistry (the \bin directory of Java should be in the path).

2. Open notepad and edit startRemoteReceiver.bat

Replace e:\upload with the directory you want the files you receive from Machine I to be stored.

*3.*Type: startRemoteReceiver

If the "receiver" object is bound then everything is OK

2. Machine I

1. Go to the RMI folder and type: start rmiregistry

2. Open notepad and edit startFileSender.bat

there are two parameteres after FileSender:

the first is the IP of the remote machine II

the second is the full pathaname of the file to send to machine II.

Replace accordingly

*3.*Type: startFileSender

The file should be uploaded to Machine II.

3.5 Interconnection between Portal and Ontology

3.5.1 Preface

This package comprises of a pair of classes (*org.regnet.portal* and *org.regnet.portalimpl*), which provide the essential methods for the low-level interconnection between the Portal and Ontology. Namely, these methods perform file transfer and synchronization with the REGNET Ontology Knowledge Base, Xindice. Specifically, they deal with REGNET User Profiles, created in Portal but stored and maintained in Ontology. *org.regnet.portal* is the general Java interface and *org.regnet.portalimpl* is the implementing class.

These classes are made to be used mostly by the project programmers. During the installation the straightforward procedure of installing a Java classes package is followed.

3.5.2 Requisites

1	***The Java Development Kit*** *(JDK 1.3.1 or above).*
2	***Xindice 1.0*** *(Pepper version) should be installed. Since Xindice requires some environmental variables in order to work (explained in the Xindice documentation) a check should be made to verify that it can run properly.*

3.5.3 Installation

1	***Place the directory structure*** *of* org\regnet\portal.class *and* org\regnet\portalimpl.class ***anywhere on the hard disk****.* *Be careful to retain this particular sequence of directories, ie a directory regnet should exist within org, and so on).*
2	***Add the directory*** *where \org is placed* ***to the system Java classpath****. So, if portal.class portalimpl.class are under c:\classes\org\regnet\ , then c:\classes should be in the classpath.*

Important information about using org.regnet.portal

A.

The programmer has to import a number of packages in order for the virtual machine to recognise the methods contained in this package. Below is a program code template where all of the *org.regnet.portal* methods are presented in comments. This template is useful for showing the packages that need to be imported, as well as the way the methods can be invoked and used.

```
import org.regnet.portal.*;

// needed for the connection with Xindice
import org.xmldb.api.base.*;
import org.xmldb.api.modules.*;
import org.xmldb.api.*;
import java.io.*;

public class InterconnectionExe {


// displays the file downloaded from Knowledge Base onscreen
public void DisplayFile(File filein) {

    if (filein != null) {
  try {
    RandomAccessFile file = new RandomAccessFile(filein, "r");
    long length = file.length();
    long filePointer = 0;
    while (filePointer < length) {
        String text = file.readLine();
        text = text.trim();
        System.out.println(text);
        filePointer = file.getFilePointer();
    }
}
catch (IOException e){
    String err = e.toString();
    System.out.println("Error opening file for writing\n");
    System.out.println(err);
}

    }

    }

public static void main(String args[]) throws Exception {

InterconnectionExe receive = new InterconnectionExe();
Portal myPortal = new Portalimpl();
myPortal. setLocalDirectory ("e:\\upload");
//File file = myPortal. setLocalDirectory ("e:\\upload");
//File UserProfile = myPortal. getUserProfile(args[0]);
//receive. DisplayFile(UserProfile);
//File UserProfile = new File (args[0]);
//System.out.println    (myPortal.    setUserProfile    (UserProfile,    UserProfile.
getName()));
//System.out.println (myPortal. setUserProfile (UserProfile, null)); // altrnative
//File Localdir = myPortal. getUserProfiles();
//String list[] = myPortal. getUserProfilesListbyId ();
//myPortal. synchronizationEqualtoOntology();
myPortal. synchronizationEqualtoPortal();
 }
}
```

B.

Note that the classes are currently set to connect to the Xindice database of the Ontology System set localy by CERT. If the programmer wishes to connect to another Xindice setup he/she should open *portalimpl.java* in an editor and edit the following settings (Java constants):

```
//The constants below should be changed according to the final Ontology settings
static final String ServerIP = "160.40.50.22"; // the Ontology IP
static final String xindicePort = "4080"; // the Xindice port
static final String UserProfilesCollection = "/db/UserProfiles"; // the User Profiles collection
static final String UserIdtag = "Name";
```

- **ServerIP** is the IP address where the Xindice server is running.
- **XindicePort** is the port number of the service. The default is 4080.
- **UserProfilesCollection** is the Xindice collection which contains the user profiles for REGNET.

- **UserIdtag** informs the program on which element of the User Profile XML format contains the user Id of the profile. This is necessary to be defined as a constant, since at the time this package was written, the official User Profiles XML format was not yet specified.

After altering any of the above constants, the programmer should compile *portalimpl.java*, in order for the new settings to take effect.

3.6 Topic Map Generator

Topic Map Generator is an authoring tool for XML Topic Maps (XTM), based on TM4J and implemented with the Java programming language. An online demonstration is available at *http://160.40.50.22:8800/servlet/org.regnet.ontology.XTMLoader*.

The following matrix shows the software packages that must be installed for the proper use of the tool:

NAME	VERSION	URL
Java 2 SDK Standard edition	1.3.1	http://java.sun.com/j2se/1.3/
TM4J	0.6.0	http://tm4j.org/
Jakarta Tomcat	4.0.1	http://jakarta.apache.org/site/binindex.html
Xindice	1.0	http://xml.apache.org/xindice/
XTMLoader class	-	Regnet CVS server

After downloading the above packages the installer has to do the following:

1. Install Java 2 SDK and define the installation path at the installer’s CLASSPATH.
2. Define JAVA_HOME variable to point at the installation path (eg JAVA_HOME = D:\jdk1.3.1_01).
3. Unzip Jakarta-tomcat into a folder named Jakarta-tomcat-4.0.1.
4. Extract TM4J files into a folder named tm4j-0.6.0. Copy the jar files (located at folder lib) to jakarta-tomcat-4.0.1\common\lib.
5. Download from Regnet CVS server all files (including all sub-directories) from regnet\ontology\XTMLoader and copy them to \jakarta-tomcat-4.0.1\webapps\ROOT\WEB-INF\classes\org\regnet\ontology.
6. Unzip Xindice into a folder named xml-xindice-1.0.
7. Create a new Collection (eg \db\TopicMaps) where XTM files should be stored. This can be done by typing “xindiceadmin add_collection -c /db -n TopicMaps” in command prompt.
8. Change line 25 (static final String XindiceIP = "160.40.50.210:4080";) to point at the installer’s IP and recompile it by typing “javac XTMLoader.java” in command prompt.
9. Change line 26 (static final String CollectionPath = "/db/TopicMaps";) to point at the collection (see step 7).
10. Start Jakarta-Tomcat by typing “startup” at the Jakarta-Tomcat working directory, under folder “bin” (eg D:\jakarta-tomcat-4.0.1\bin>startup).
11. Start Xindice by typing “startup” at the local Xindice working directory (eg D:\xml-xindice-1.0rc2>startup).

If everything is properly installed then the installer can access the servlet by entering the following URL at the browser:

http://localhost:8080/servlet/org.regnet.ontology.XTMLoader

Please note that port 8080 is the default port for Jakarta-Tomcat server and if it has been defined otherwise then the URL must be changed accordingly.

For any further questions please contact itsam@iti.gr

3.7 TopicMap to VRML

3.7.1 Overview

TopicMapToVRML is a tool that allows the transformation of a Topic Map file (xtm) to VRML format (wrl). The use of VRML allows to create a 3D visual interface on the web that can display large amounts of data. The VRML output of topic maps is based on the ConeTrees methodology for displaying large datasets. The end-user is able to interact with the 3D model. This technology provides the user with unlimited viewpoints and is an efficient way to visualize Topic Maps.

3.7.2 Release Notes

The tool is entitled Topic Maps to VRML and the current version does not support all functionalities provided by the Topic Maps standard. The purpose was to develop a tool that will cover the REGNET needs rather developing a tool that will cover the whole concept of Topic Maps.

The current version of this tool is operates as follows:

- Load a Topic Map or XML file
- Then the file is parsed and if errors appear the tool will ignore the errors and generate a 2D tree
- The tool also displays statistics of the Topic Map file (number of topics, associations etc.)
- Then the topic map file can be generated in VRML and saved in the desired directory.
- Once the VRML file is generated then the result can be browsed using a VRML plug-in.

3.7.3 Installation Guidelines

- The TopicMapToVRML tool was developed using Microsoft's Visual Basic 6.

  Therefore it runs under Windows environment. The following table shows the components / files required to be installed before running the application. All these files can be downloaded from the following url: http://regnet.systema.gr/index.html

File	Description	Usage Status
Mscomctl.ocx	Visual Basic Control	Free
Mscomct2.ocx	Visual Basic Control	Free
Msvbvm60.dll	Visual Basic Control	Free
Msxml3.dll	XML Dynamic library	Free
Msxml3.exe	Microsoft XML parser	Free
blaxxunContact51.exe	VRML Viewer	Free

- After all the required files are installed then the TopicMapToVRML tool can be ran. To run it, just double click on the TopicMaps.exe file.

3.8 EBusiness

3.8.1 Eshop

Installation all the necessary components on the server:

1. You have to have the following packages:

   yaz-1.7.tar.gz

   Net-Z3950-SimpleServer-0.03.tar.gz

   apache_1.3.20.tar.gz

   php-4.0.6.tar.gz

   mod_ssl-2.8.4-1.3.20.tar.gz

   openssl-0.9.6b.tar.gz

2. Copy all these archives to /usr/local/

   ```
   $cp package_name /usr/local/package_name
   ```

3. Unpack these archives

   ```
   $tar –zxvf package_name
   ```

4. Entrance to the apache_1.3.20 source directory.

   ```
   $cd /usr/local/yaz-1.7
   ```

   configuring and installing yaz-1.7:

   ```
   $./configure \
   --enable-comp \
   --enable-threads \
   --enable-shared


   $make
   $make install
   ```

5. Entrance to the Net-Z3950-SimpleServer-0.03 source directory.

   ```
   $perl Makefile.PL
   $make
   $make test
   $make install
   ```

6. Entrance to the apache_1.3.20 source directory.

   ```
   $cd  /usr/local/apache_1.3.20
   ```

7. Configure apache server.

   ```
   $./configure
   ```

8. Entrance to the php-4.0.6 source directory.

   ```
   $cd  /usr/local/php-4.0.6
   ```

9. Configure php before making and installing.

   ```
   $./configure \
   --with-apache=/usr/local/apache_1.3.20 \
   ```

```
--with-yaz=/usr/local/yaz-1.7 \
--with-mysql \
--with-track-vars \
--with-magic-quotes \
--without-gd \
--enable-versioning \
--disable-debug \
--with-mod_charset \
--disable-pear
```

10. Making and installing PHP

```
$make
$make install
```

11. Entrance to the openssl-0.9.6b source directory.

```
$cd  /usr/local/openssl-0.9.6b
```

12. Configure Openssl before making and installing.

```
$./config
```

13. Making and installing Openssl.

```
$make
$make install
```

14. Entrance to the mod_ssl-2.8.4-1.3.20 source directory.

```
$cd  /usr/local/mod_ssl-2.8.4-1.3.20
```

15. Configure mod_ssl before making and installing.

```
$./configure \
--with-apache=/usr/local/apache_1.3.20 \
--with-ssl=/usr/local/openssl-0.9.6b \
--prefix=/usr/local/apache \
--with-shared=ssl
```

16. Entrance to the apache_1.3.20 source directory.

```
$cp package_name /usr/local/package_name
```

17. Reconfigure apache server before making.

```
$./configure \
--activate-module=src/modules.php4/libphp4.a \
--enable-shared=max \
--enable-module=most \
--disable-module=auth_dbm \
--without-confadjust
```

18. Making and installing apache server with PHP and SSL support.

```
$make
$make certficate (reply on asked questions. This is a local certificate for test).
```

```
$make install
```

19. Configuring apache server within the configuration file httpd.conf. The following lines should be inserted into this file. Some of them might be inserted as a default, during the installation process.

```
Listen 443
NameVirtualHost x.x.x.x:443

<VirtualHost x.x.x.x:443>
SSLEngine on
SSLCertificateFile/usr/local/apache/conf/ssl.crt/server.crt
SSLCertificateKeyFile/usr/local/apache/conf/ssl.key/server.key
SSLLog /usr/local/apache/logs/ssl_engine_log
SSLLogLevel warn
SSLOptions +StdEnvVars

......
</VirtualHost>
```

20. Generate key.

```
$openssl genrsa -des3 -out server.key 1024
$openssl rsa –in server.key –out server.key.unsecure
```

Generate request to the verification service

```
$openssl req -new -key server.key -out server.csr
```

21. Generate verification center's signature.

```
$openssl genrsa -des3 -out ca.key 1024
$openssl rsa –in ca.key –out ca.key.unsecure
$openssl req -new -x509 -days 365 -key ca.key -out ca.crt
```

22. Certificate's subscription

```
$cd /usr/local/mod_ssl-2.8.4-1.3.20/pkg.contrib
$cp sign.sh /usr/local/apache/conf/ssl.key
$./sign.sh server.csr
```

3.8.2 Product Catalogue Management (PCM)

3.8.2.1 Overview

Product Catalogue Management (PCM), is an information system which allows users (participants) to manage their catalogues. Their catalogues contain information about warehouses and items included in them.

3.8.2.2 Structure and content of the total system

Functionality

PCM involves the following logical framework for working with it. The first step for a new user of PCM is to register himself in the system. Then he/she has to apply to the leaders of the project with a request for the creation of a new catalogue. The creation of the new catalogue needs an installation of the software on the remote (users) server and that is why it should be done.

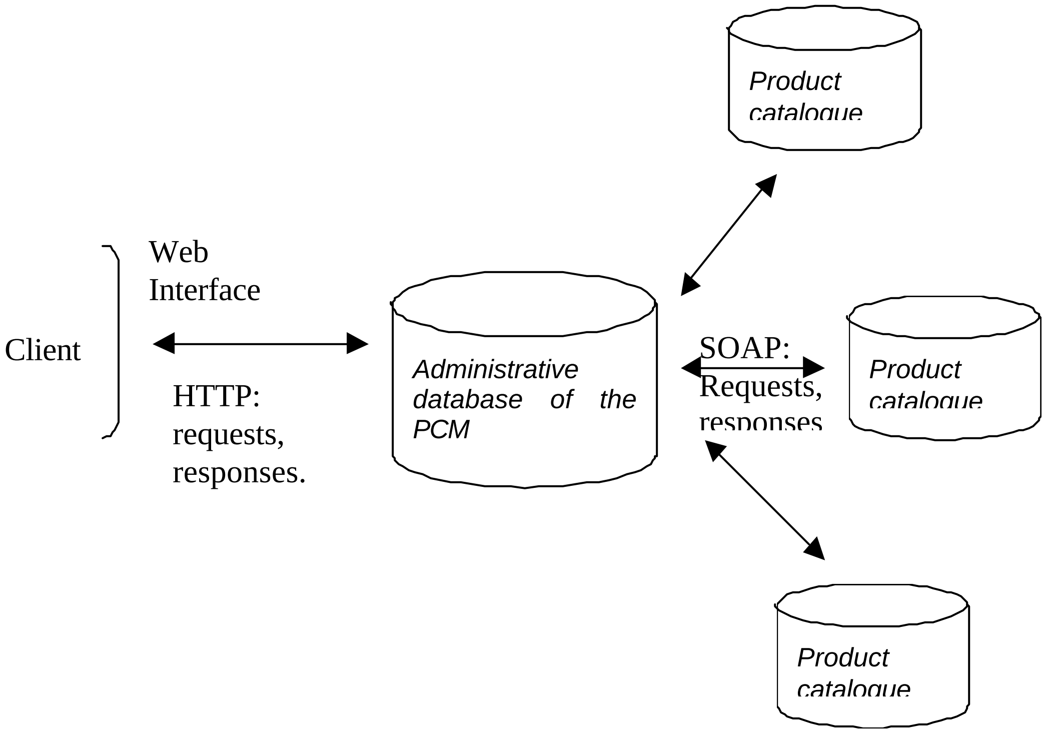
The new user should provide the information about the location (IP address) of the new catalogue and a URL (place of location in the document's tree on the user's web server).

After the installation of the new remote catalogue, the administrator of PCM will add a new catalogue to the database (table catalogue). From this moment this catalogue is accessible for the new user by his ID and password. He has the ability to insert new items to the catalogue, to edit the information of already existing items and to delete items from the catalogues. Moreover, he will have the ability to add information about the new warehouses to the PCM and to his own database.

Furthermore, the user has the ability to manage his own profile. Each user has one address and many data for contacts, that's why PCM provides the ability to create many contacts or delete each of them.

Technical features

The most important aspect of PCM is the use of the SOAP protocol in the interconnections between the central (administrative database) and the remote (distributed) catalogues. The series of interconnections between the parts of PCM are presented in the following diagram.


Client
Web Interface
HTTP: requests, responses.
Administrative database of the PCM
SOAP: Requests, responses
Product catalogue
Product catalogue
Product catalogue

Series of the interconnections between the parts of PCM.

The structure of the SOAP requests, responses is available by the references, provided on the each page of the PCM, which uses SOAP. To look on them it is necessary to click on the references:

Show SOAP request

Show SOAP response

3.8.2.3 Installation

Installation of the PCM is separated in two independent phases.

The first one is the installation of the server (administrative) part of the PCM.

For this step it is necessary the following software to be installed:

Apache 1.3

PHP 4.0

Apache web server should be configured to execute php scripts under the phtml extension of the files.

Then, place the following files to every place in the html documents tree of the Apache web server (it is preferable to create new folder, like PCM or something like that):

- index.phtml
- menu.phtml
- passes.phtml
- pass.phtml
- post.phtml
- profile.phtml
- regs.phtml
- scripts.js
- styles.css
- /images (folder with images)

Now, it is essential to create the administrative database (btob_serv). To do this, please do the command:

```
#mysql
>create database btob_serv;
>exit;
#mysql  btob_serv < bts.sql
```

After these commands the necessary tables will be created, and server's part of PCM is ready for usage.

The second one is the installation of the remote catalogue.

For this step it is necessary the following software be installed:

Apache 1.3….

PHP 4.0….

Apache web server should be configured to execute php scripts under the phtml extension of the files.

Then, place the following files to every place in the html documents tree of the Apache web server (it is preferable to create new folder, like Catalogue or something like that):

Echo.php

passes.phtml

File Echo.php is a file, which contain SOAP server and client for interconnections with PCM.

Now, it is essential to create database (btob_c). To do this, please do the command:

```
#mysql
>create database btob_c;
>exit;
#mysql  btob_c < btc.sql
```

3.9 Publisher

3.9.1 Requirements

- Java Plugin (required by SMIL Player Schmunzel)
- Java Media Framework (JMF) (required by SMIL Player Schmunzel)
- Tomcat Server 3.2.x

3.9.2 Installation of Java Plugin and JMF for SMIL Player Schmunzel

Software required

- Java Plugin
- Java Media Framework

Installation

- Installation of the Java Plugin (download the appropriate JRE for your OS from http://java.sun.com/j2se/1.4/download.html
- Installation of the JMF (download the appropriate Version from http://java.sun.com/products/java-media/jmf/2.1.1/download.html
- When schmunzel running as applet the root directory is the root directory of the web-browser.

Known Bugs:

- Schmunzel uses a resource manager to prevent multiple downloads of media-files inside presentations. The resource manager use the /tmp-directory of the operating system to cache the media-files. Schmunzel does not yet delete this files.
- When using schmunzel as applet over a longer period of time, there is the possibility of a OutOfMemoryError.

3.9.3 Instructions for the installation of the EPProtopye

- Copy the *epprototype.war* file into the *webapps* directory of the Tomcat Server.
- Start servlet with *[localhost]/epprototype/Search*

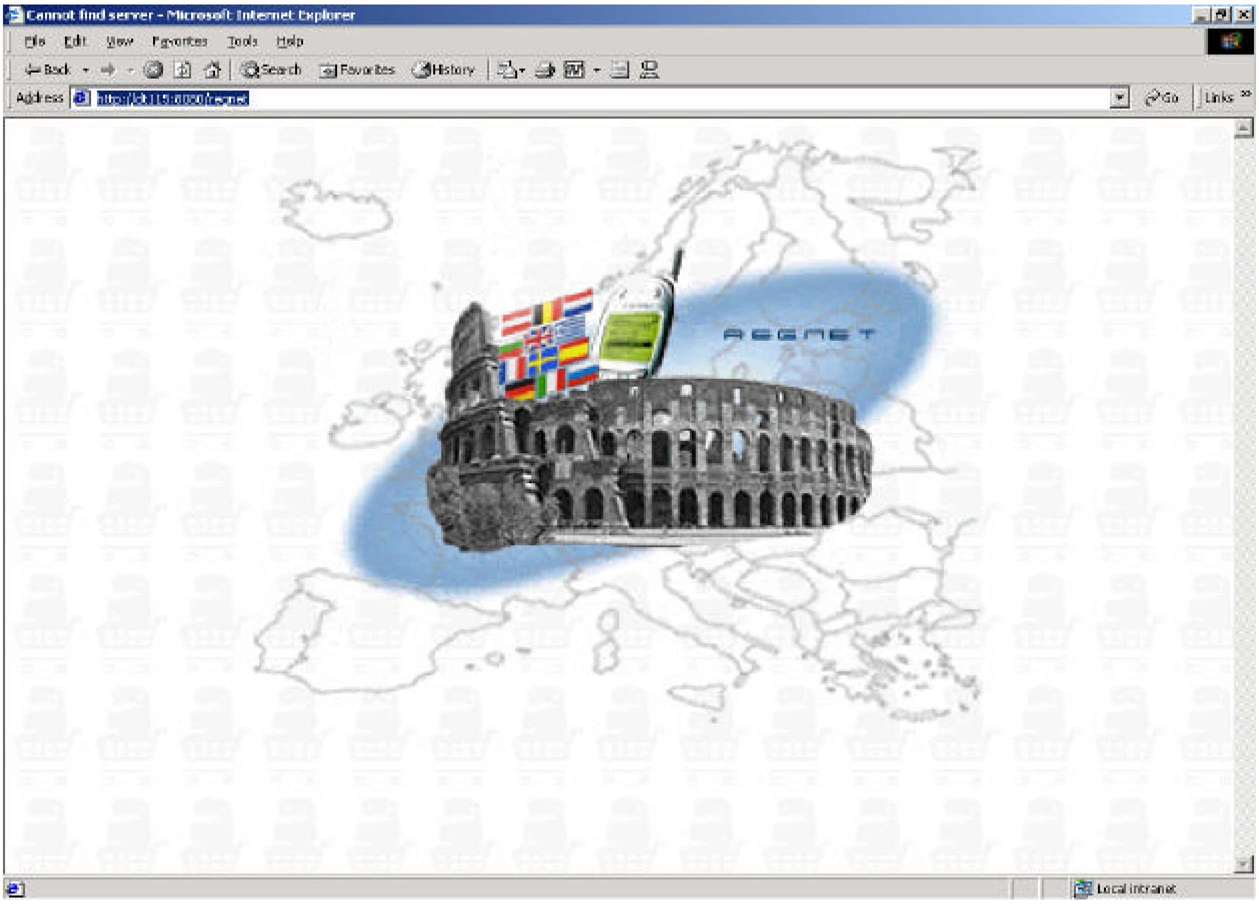
4 Appendix 4: User manuals

Users manual will be elaborated in detail in WP3. Information given here is to describe overall utilisation of the software.

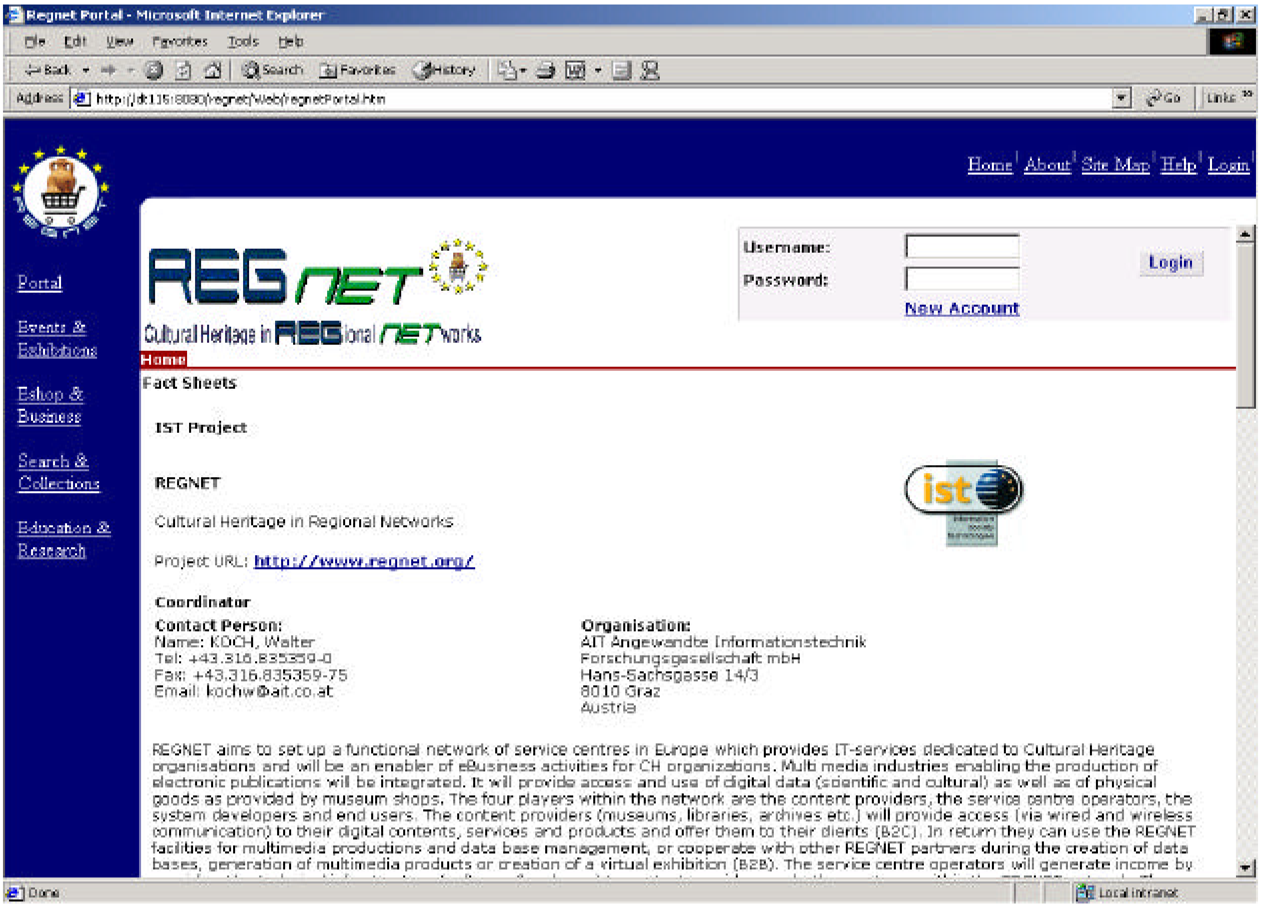
4.1 Portal

The following snap shots illustrates Portal usage.

4.1.1 Home page



4.1.2 First page



Regnet Portal - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://dt115:8080/regnet/Web/regnetPortal.htm
Go Links
Home About Site Map Help Login
Portal
Events & Exhibitions
Eshop & Business
Search & Collections
Education & Research
REGNET
Cultural Heritage in REGional NETworks
Login
New Account
Home
ist
Done
Local intranet

Username:
Password:

Fact Sheets

IST Project

REGNET

Cultural Heritage in Regional Networks

Project URL: http://www.regnet.org/

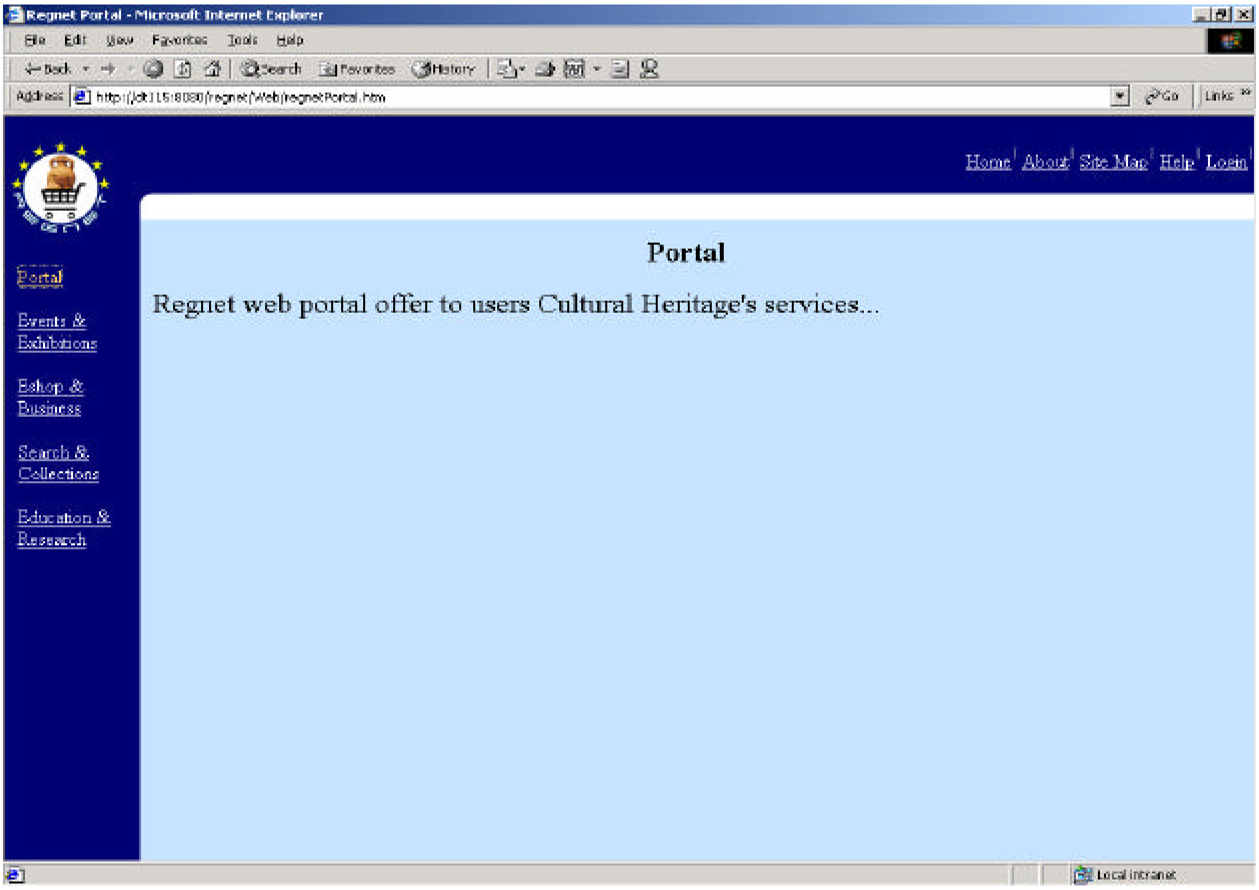
Coordinator

Contact Person:
Name: KOCH, Walter
Tel: +43.316.835359-0
Fax: +43.316.835359-75
Email: kochw@ait.co.at

Organisation:
AIT Angewandte Informationstechnik
Forschungsgesellschaft mbH
Hans-Sachsgasse 14/3
8010 Graz
Austria

REGNET aims to set up a functional network of service centres in Europe which provides IT-services dedicated to Cultural Heritage organisations and will be an enabler of eBusiness activities for CH organizations. Multi media industries enabling the production of electronic publications will be integrated. It will provide access and use of digital data (scientific and cultural) as well as of physical goods as provided by museum shops. The four players within the network are the content providers, the service centre operators, the system developers and end users. The content providers (museums, libraries, archives etc.) will provide access (via wired and wireless communication) to their digital contents, services and products and offer them to their clients (B2C). In return they can use the REGNET facilities for multimedia productions and data base management, or cooperate with other REGNET partners during the creation of data bases, generation of multimedia products or creation of a virtual exhibition (B2B). The service centre operators will generate income by

4.1.3 Selecting portal on the left menu

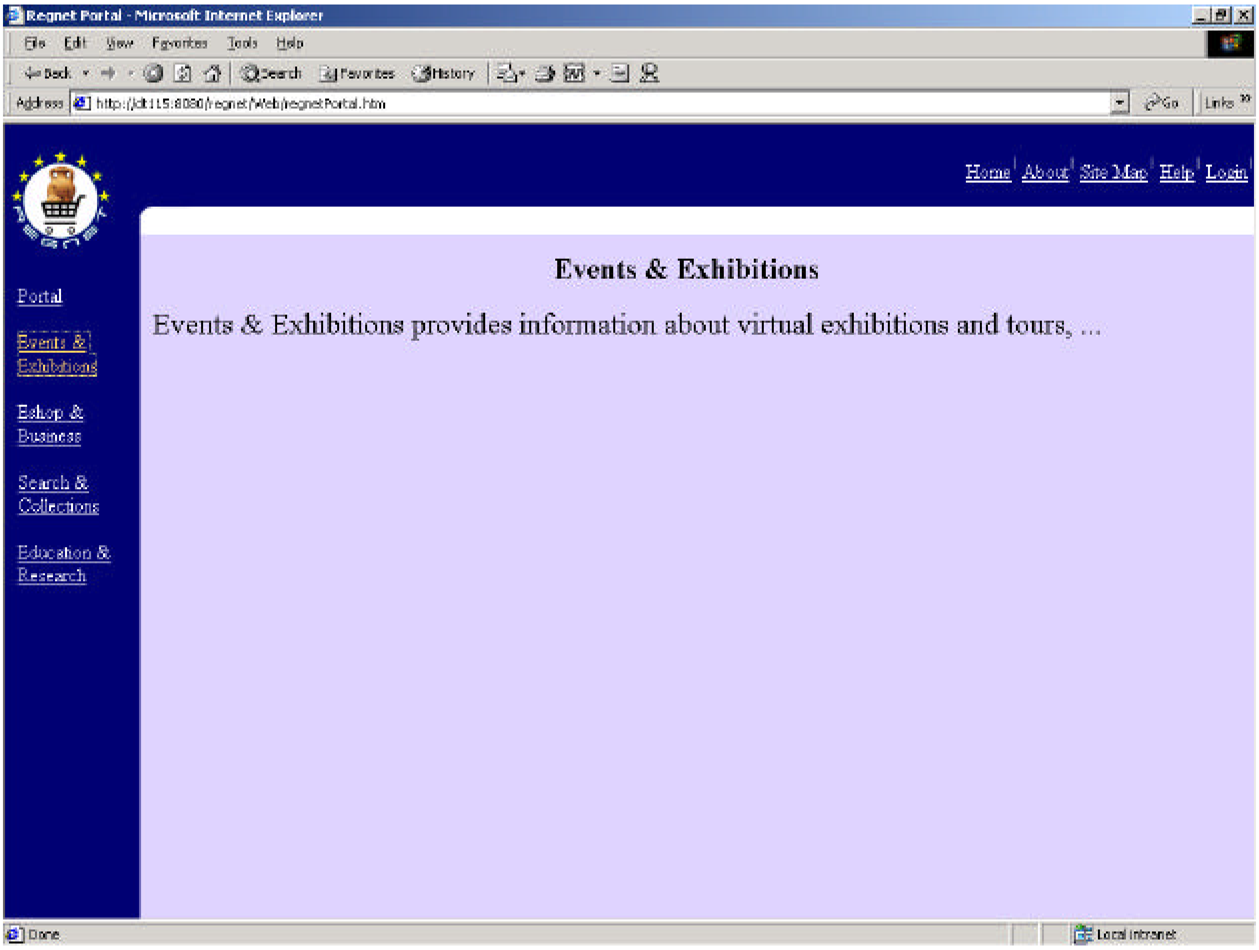


Regnet Portal - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://dt115:8080/regnet/Web/regnetPortal.htm
Go Links
Home About Site Map Help Login
Portal
Events & Exhibitions
Eshop & Business
Search & Collections
Education & Research
Local intranet

Portal

Regnet web portal offer to users Cultural Heritage's services...

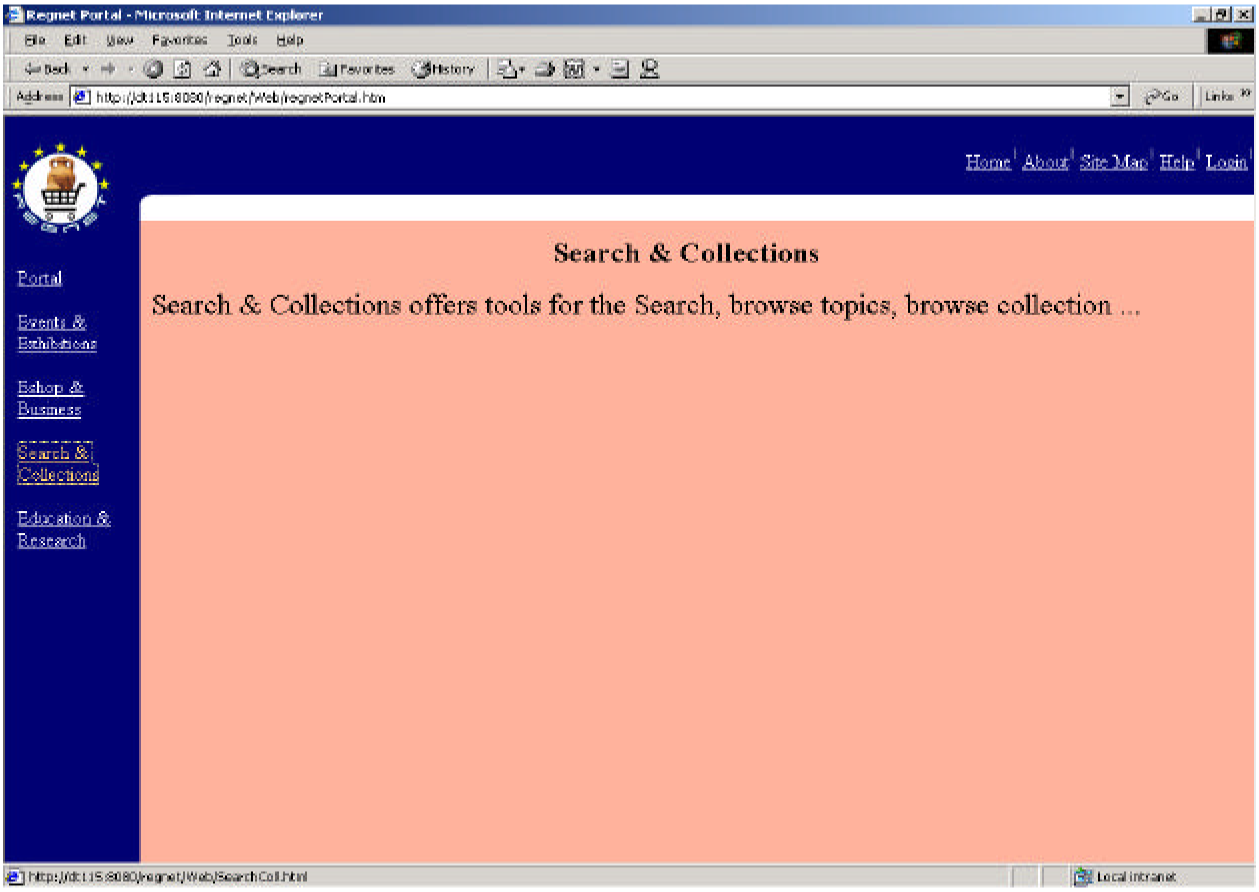
4.1.4 Selecting Events & Exhibitions on the left menu


Regnet Portal - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://dt115:8080/regnet/Web/regnetPortal.htm
Go Links
Home About Site Map Help Login
Portal
Events & Exhibitions
Eshop & Business
Search & Collections
Education & Research
Done
Local intranet

Events & Exhibitions

Events & Exhibitions provides information about virtual exhibitions and tours, ...

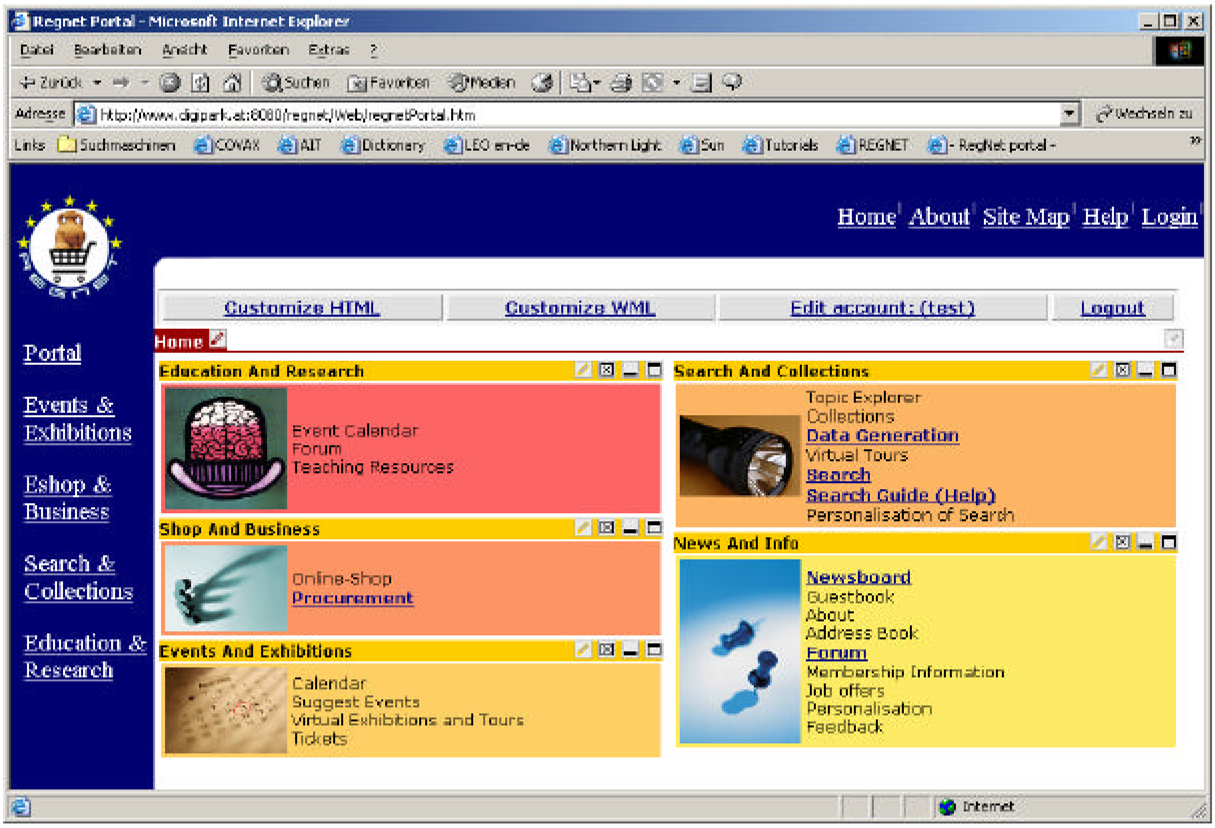
4.1.5 Selecting Search & Collections on the left menu


Regnet Portal - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://dt115:8080/regnet/Web/regnetPortal.htm
Go Links
Home About Site Map Help Login
Portal
Events & Exhibitions
Eshop & Business
Search & Collections
Education & Research
http://dt115:8080/regnet/Web/SearchColl.html
Local intranet

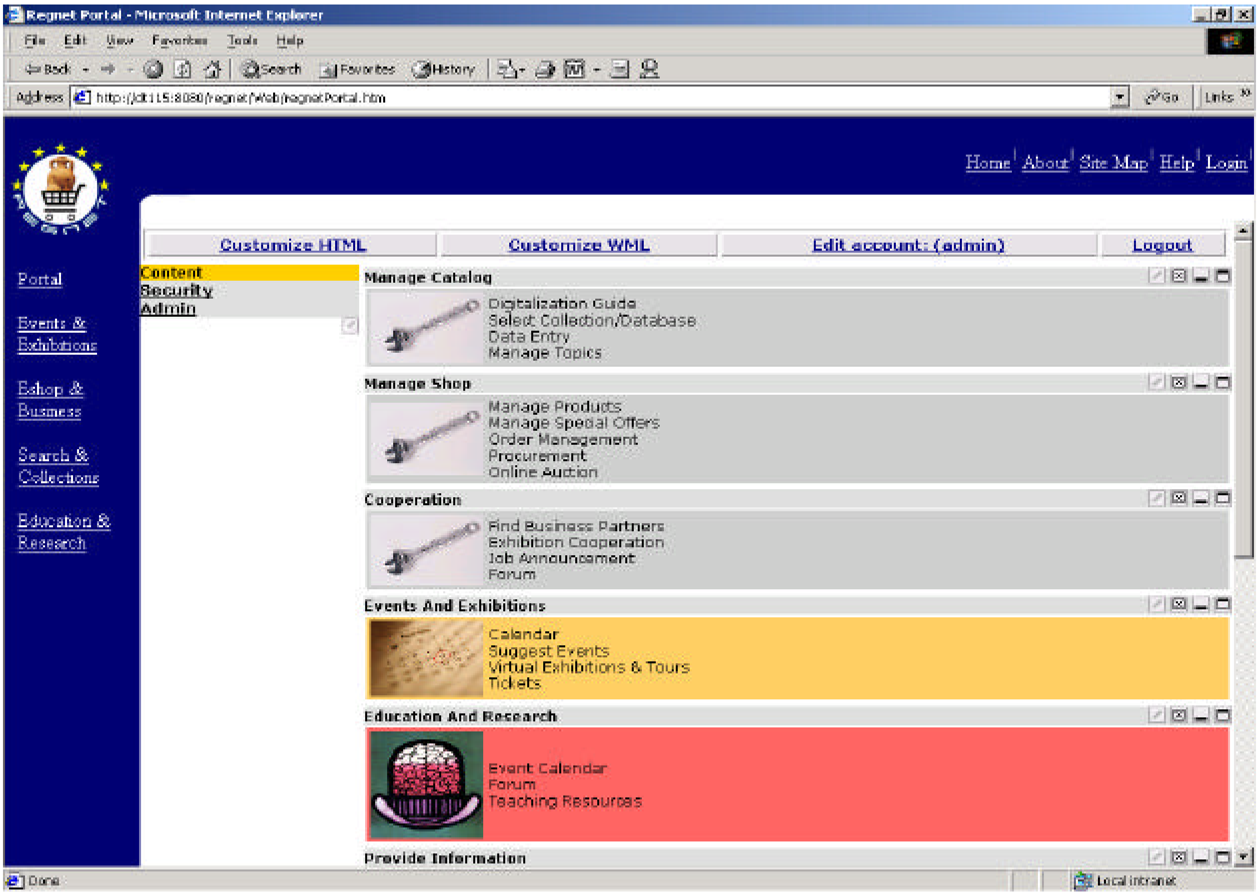
Search & Collections

Search & Collections offers tools for the Search, browse topics, browse collection ...

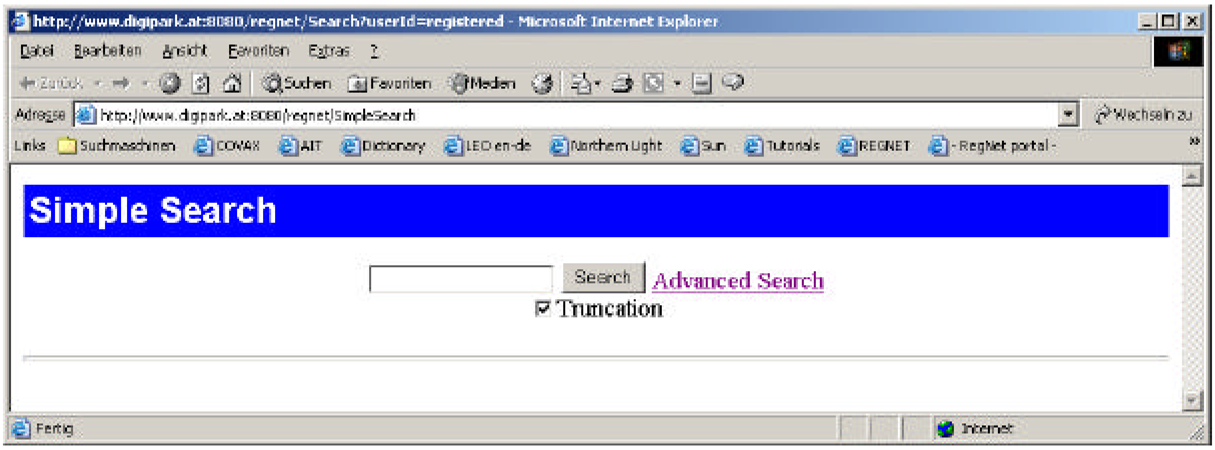
4.1.6 Simple User



4.1.7 Administrator



4.1.8 Simple Search



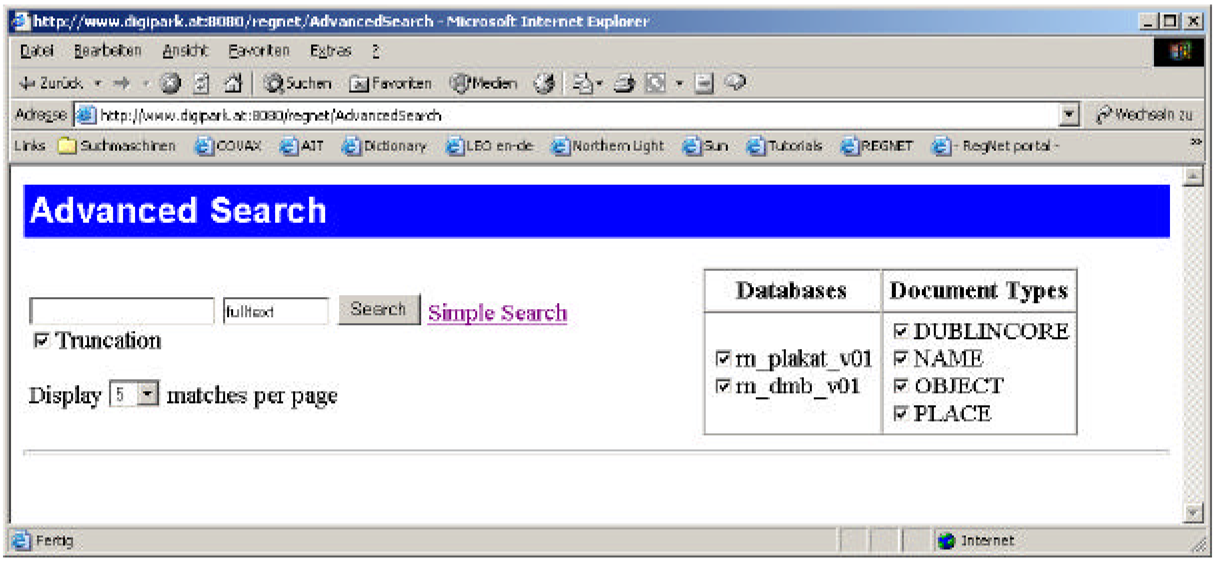
http://www.digipark.at:8080/regnet/Search?userId=registered - Microsoft Internet Explorer

Adresse: http://www.digipark.at:8080/regnet/SimpleSearch

Simple Search

☑ Truncation

4.1.9 Advanced Search



http://www.digipark.at:8080/regnet/AdvancedSearch - Microsoft Internet Explorer

Adresse: http://www.digipark.at:8080/regnet/AdvancedSearch

Advanced Search

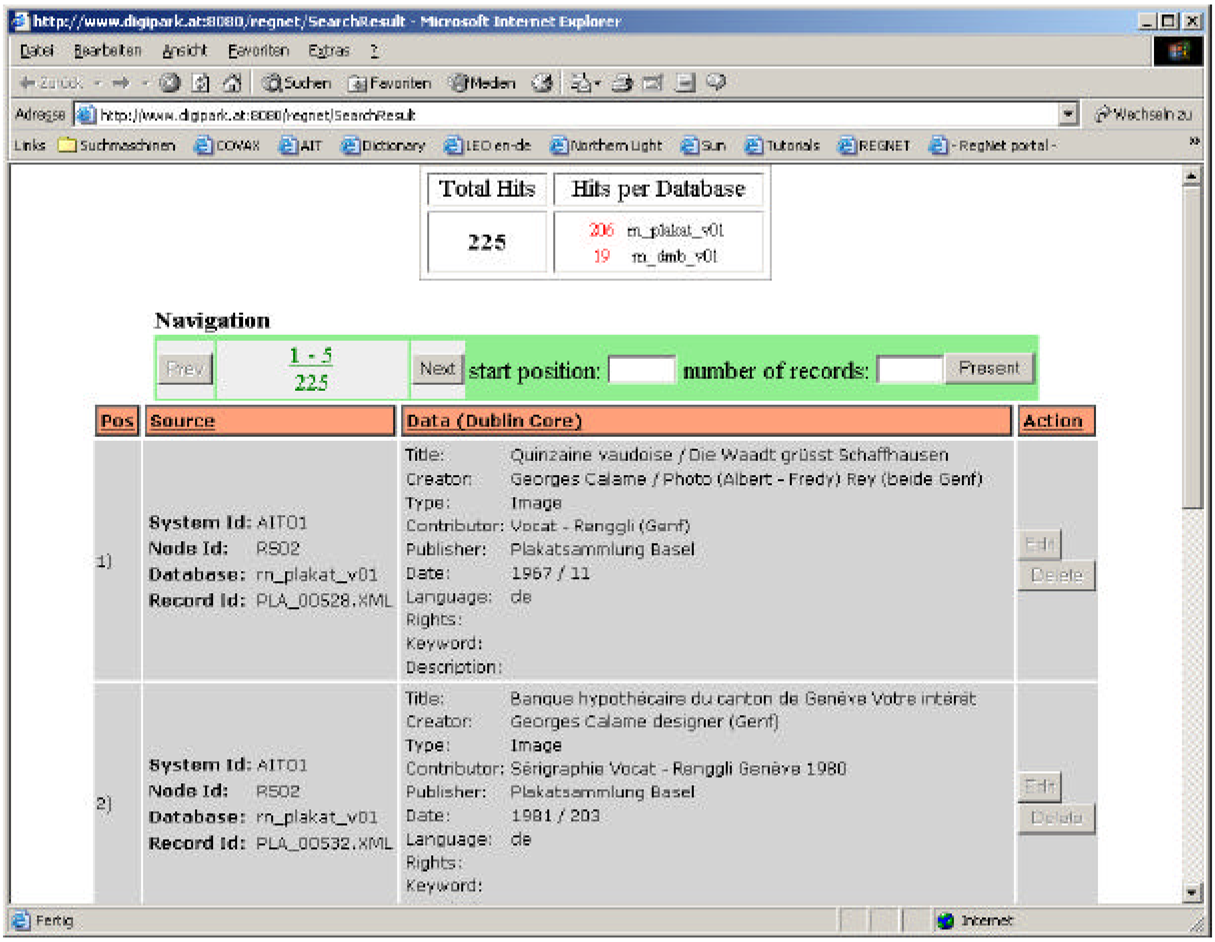
fulltext

☑ Truncation

Display 5 matches per page

Databases	Document Types
☑ rn_plakat_v01 ☑ rn_dmb_v01	☑ DUBLINCORE ☑ NAME ☑ OBJECT ☑ PLACE

4.1.10 Search Results


http://www.digipark.at:8080/regnet/SearchResult - Microsoft Internet Explorer
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Suchen Favoriten Medien
Adresse http://www.digipark.at:8080/regnet/SearchResult
Wechseln zu
Links Suchmaschinen COVAX AIT Dictionary LEO en-de Northern Light Sun Tutorials REGNET -RegNet portal-
Fertig
Internet

Total Hits	Hits per Database
225	206 rn_plakat_v01 19 rn_dmb_v01

Navigation

Prev | 1 - 5 225 | Next | start position: | number of records: | Present

Pos	Source	Data (Dublin Core)	Action
1)	**System Id:** AIT01 **Node Id:** RS02 **Database:** rn_plakat_v01 **Record Id:** PLA_00528.XML	Title: Quinzaine vaudoise / Die Waadt grüsst Schaffhausen Creator: Georges Calame / Photo (Albert - Fredy) Rey (beide Genf) Type: Image Contributor: Vocat - Renggli (Genf) Publisher: Plakatsammlung Basel Date: 1967 / 11 Language: de Rights: Keyword: Description:	Edit Delete
2)	**System Id:** AIT01 **Node Id:** RS02 **Database:** rn_plakat_v01 **Record Id:** PLA_00532.XML	Title: Banque hypothécaire du canton de Genève Votre intérêt Creator: Georges Calame designer (Genf) Type: Image Contributor: Sérigraphie Vocat - Renggli Genève 1980 Publisher: Plakatsammlung Basel Date: 1981 / 203 Language: de Rights: Keyword:	Edit Delete

4.2 Topic Map Generator user manual

4.2.1 Introduction

Topic Map Generator is an authoring tool for XML Topic Maps (XTM), based on TM4J and implemented with the Java programming language. An online demonstration is available at http://160.40.50.22:8800/servlet/org.regnet.ontology.XTMLoader.

This tool actually helps the user to create new XTM files from scratch and consequently to avoid the painful writing “by hand”. Furthermore it allows the users to use already defined XTM files, expand them, or extract and store specific topics from them.

4.2.2 Functions and features

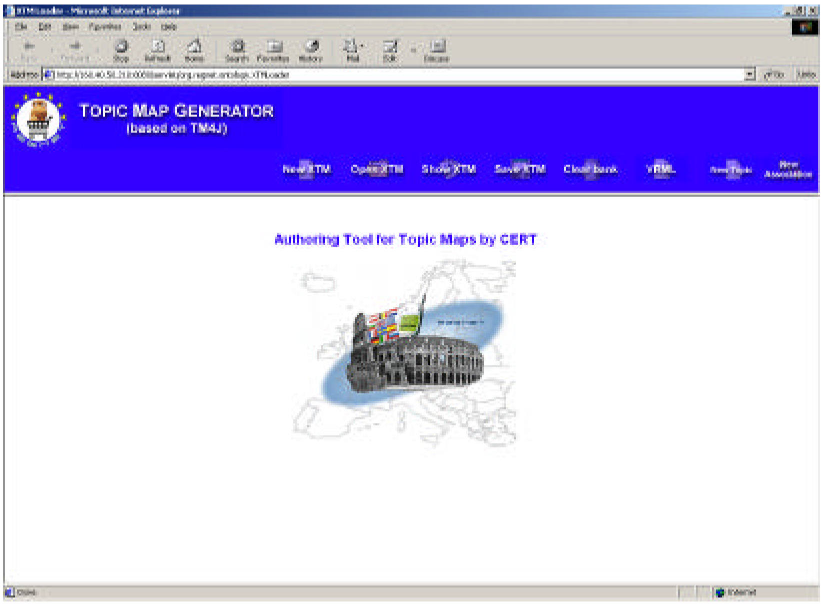


Figure 1: The main page

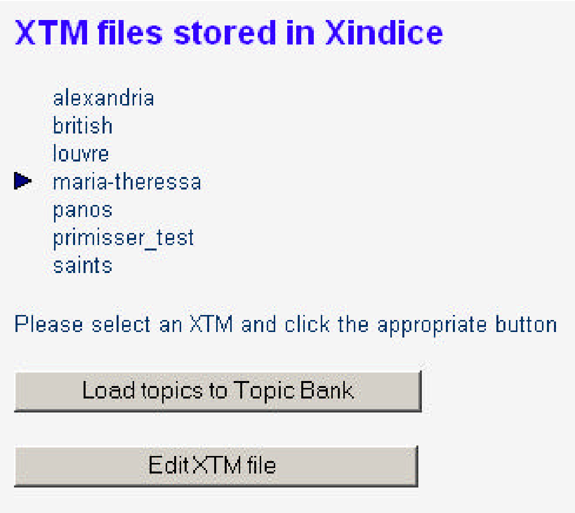
Figure 1 shows the entrance page of the Topic Map Generator Tool. The main functionalities of the tool are implemented using the buttons on top of the page, which are explained in detail in the following.

4.2.2.1 New XTM

When an Internet browser is opened and the address of the XTM Generator Tool is entered, a new session is automatically created on server, which is unique for every instance of the browser. If at anytime the user decides to delete what has been done already and start over again then "New XTM" button should be pressed. This causes the loss of the XTM created so far and should be used with caution. Of course when the user starts with a new session there is no meaning pressing it. Also, point out that the button has no effect on the Topic Bank (explained later). If everything is satisfactory then the message "*New Topic Map file created (empty)*" appears on screen.

4.2.2.2 Open XTM

Behind the interface there is a native XML database (Apache Xindice), which stores all the Topic Maps. When the "Open XTM" button is pressed, a list with the available XTM files appears, as shown in figure 2.



XTM files stored in Xindice

alexandria
british
louvre
▶ maria-theressa
panos
primisser_test
saints

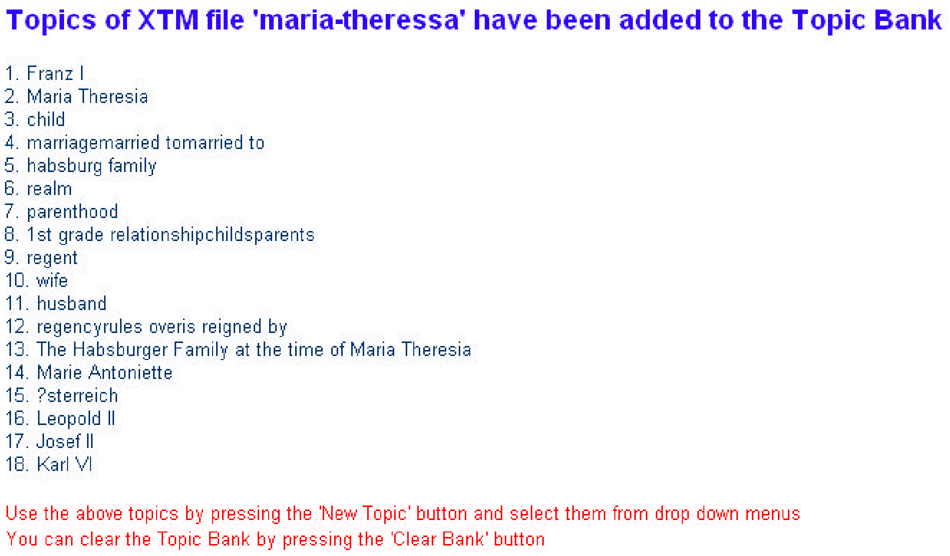
Please select an XTM and click the appropriate button

Figure 2: List with the available XTM files

If the user selects a file, then a blue triangle appears indicating the selected XTM file. In the following the user has two choices. Either he/she press the button labeled “Load topics to Topic Bank” or the button labeled “Edit XTM file.

- **Load Topics to Topic Bank**

An XTM file contains multiple topics that can be extracted separately and be used for the creation of new XTM files. The virtual memory where these topics are stored, it is named “Topic Bank”. This is assumed to be a temporary (lasting as long as a session) repository of topics. When a file is selected, as explained, and the button “Load Topics to Topic Bank” is pressed, then the topics contained in the file are shown on screen (see figure 3).



Topics of XTM file 'maria-theressa' have been added to the Topic Bank

1. Franz I
2. Maria Theresia
3. child
4. marriagemarried tomarried to
5. habsburg family
6. realm
7. parenthood
8. 1st grade relationshipchildsparents
9. regent
10. wife
11. husband
12. regencyrules overis reigned by
13. The Habsburger Family at the time of Maria Theresia
14. Marie Antoniette
15. ?sterreich
16. Leopold II
17. Josef II
18. Karl VI

Use the above topics by pressing the 'New Topic' button and select them from drop down menus
You can clear the Topic Bank by pressing the 'Clear Bank' button

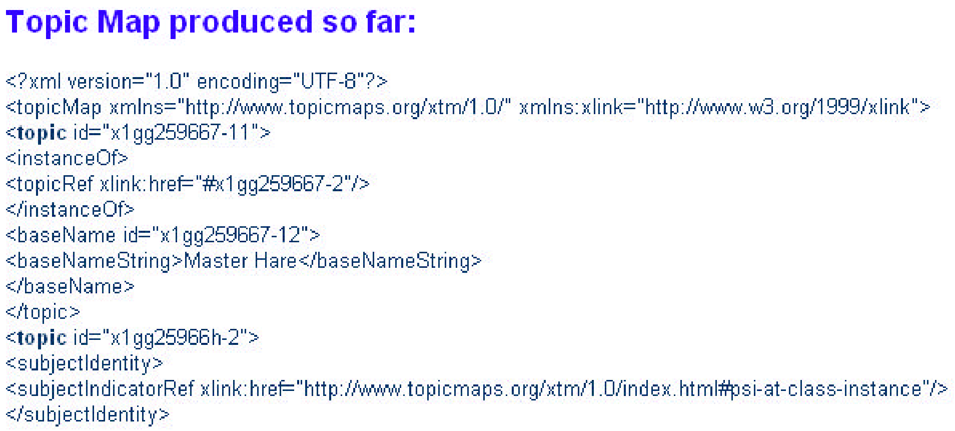
Figure 3: List with the available topics

- **Edit XTM file**

The purpose of this button is to open the selected XTM file and define it as the current XTM in the working process. It should be used with caution, if an XTM file has already been created, since when a file is being edited, the working file will be lost. Notice that the topics of the "Topic Bank" could still be used. If everything is satisfactory then a message appears informing the user that the current XTM file has been successfully changed.

4.2.2.3 Show XTM

This button can be used to view the XTM file that is currently edited. Eventually, the results of the user actions could be checked in real time (see figure 4).



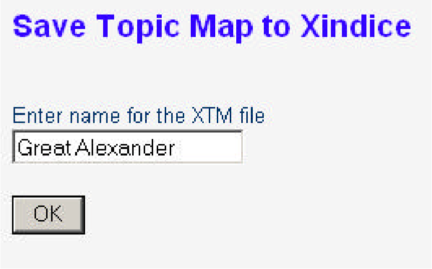
Topic Map produced so far:

```
<?xml version="1.0" encoding="UTF-8"?>
<topicMap xmlns="http://www.topicmaps.org/xtm/1.0/" xmlns:xlink="http://www.w3.org/1999/xlink">
<topic id="x1gg259667-11">
<instanceOf>
<topicRef xlink:href="#x1gg259667-2"/>
</instanceOf>
<baseName id="x1gg259667-12">
<baseNameString>Master Hare</baseNameString>
</baseName>
</topic>
<topic id="x1gg25966h-2">
<subjectIdentity>
<subjectIndicatorRef xlink:href="http://www.topicmaps.org/xtm/1.0/index.html#psi-at-class-instance"/>
</subjectIdentity>
```

Figure 4: The produced XTM file

4.2.2.4 Save XTM

As mentioned earlier, Topic Maps Generator tool is supported with Xindice native XML database. By pressing this button, the user could easily define a name for the working XTM in order to store it automatically in the knowledge base for further and future use. As shown in figure 5, the user should type a name inside the textbox and press OK.



Save Topic Map to Xindice

Enter name for the XTM file
Great Alexander

Figure 5: Definition of the XTM file name

In the following the XTM file and a message informing you that the file is successfully stored appears on screen. It is not recommended to leave the textbox blank because the name given automatically by the server has no human meaning for later use.

4.2.2.5 Clear Bank

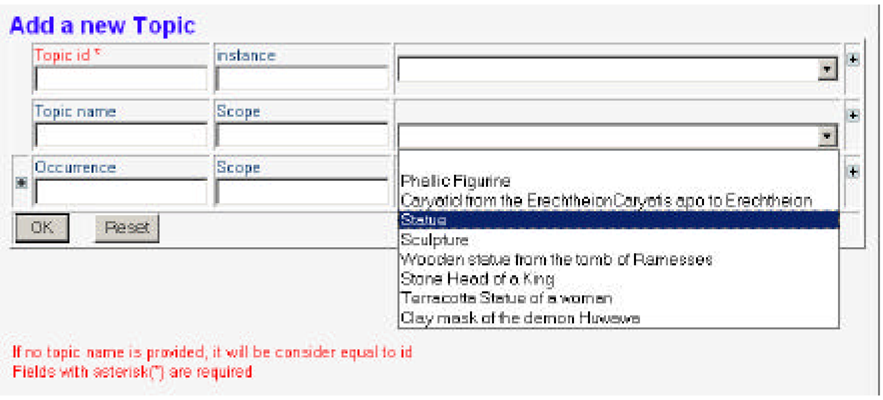
By selecting this button the user can clear the Topic Bank "temporary storage" from all loaded topics that have been previously uploaded. After this action, new topics could be loaded from multiple XTM files, as already explained. An explanatory message appears on screen informing the user that the “Topic Bank is cleared”.

4.2.2.6 VRML

This button is for future use. The purpose will be the presentation and viewing of an XTM file in a more friendly way than simple text. VRML presentation will be used to enhance Topic Map viewing.

4.2.2.7 New Topic

When the user selects this button the screen looks like figure 6.



Add a new Topic

Topic id *
instance
Topic name
Scope
Occurrence
Scope
OK
Reset
Phallic Figurine
Caryatid from the ErechtheionCaryatis apo to Erechtheion
Statue
Sculpture
Wooden statue from the tomb of Ramesses
Stone Head of a King
Terracotta Statue of a women
Clay mask of the demon Huwawa

If no topic name is provided, it will be consider equal to id
Fields with asterisk(*) are required

Figure 6: Screenshot of “Add new topic” form.

There is nothing wrong if the dropdown menus are empty. This is due to the fact that no topics have been loaded on the Topic Bank or because an XTM file has not been edited yet. The textboxes are self-explanatory but it should be mentioned that topic id is mandatory as stated with red font. The user could type the “Topic id” and its instance(s) or select an already defined “Topic id” from the dropdown menu. The plus signs on right add another instance and scope accordingly. Please also note that if the user types something without selecting it from the dropdown menus, it will be automatically added as a topic. In this way the created XTM file adheres to the XTM specifications.

In an XTM file there may be multiple occurrences in a topic. The tool can be used to create multiple occurrences. Specifically, the user should press on the plus sign on the left of “occurrence box”. New textboxes will appear and the user will be able to add new occurrences. If the textboxes are left blank nothing is added. The user can preview the XTM by pressing the “Show XTM” button, although after each action the XTM appears automatically.

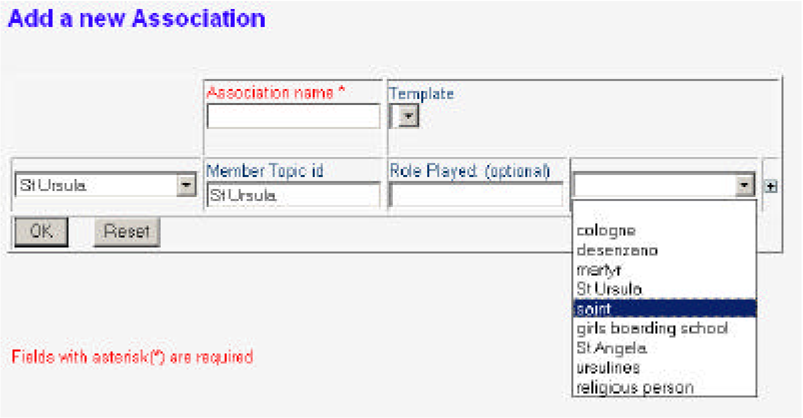
Two more buttons are used:

Button “OK” to confirm that everything typed fine and continues the creation of the XTM.

Button “Reset” which resets every field.

4.2.2.8 New Association

This button assists the definition of a new association. When the button “New Association” is pressed the screen looks like figure 7.



Add a new Association

Association name *:
Template:
St Ursula
Member Topic id: St Ursula
Role Played (optional):

Fields with asterisk(*) are required

Figure 7: Screenshot of “Add new association” form.

“New Association” has similar interface with “New Topic”. The user can type straight to textboxes or just select something from the dropdown menus and add multiple members and its roles by pressing the plus sign, exactly as done on “New Topic”. The only difference is the “template” dropdown menu. As seen in figure 7 this menu is empty although the other two are not. Do not confuse them. Template is a way to avoid defining repeatedly an association (e.g. “is father of”). This dropdown menu contains only the associations that have already been defined.

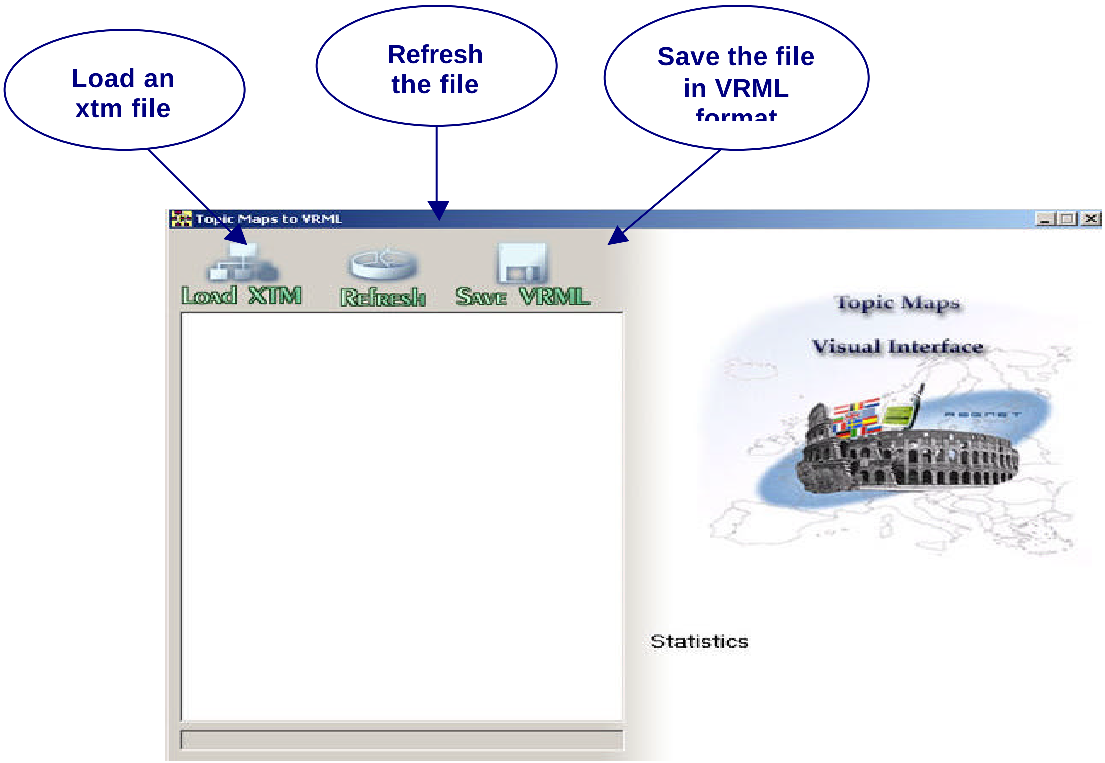
4.3 TopicMap to VRML

After running the program the user interface appears as shown in figure 1 appears.

There are three buttons on the interface: Load XTM, Refresh and Save VRML.

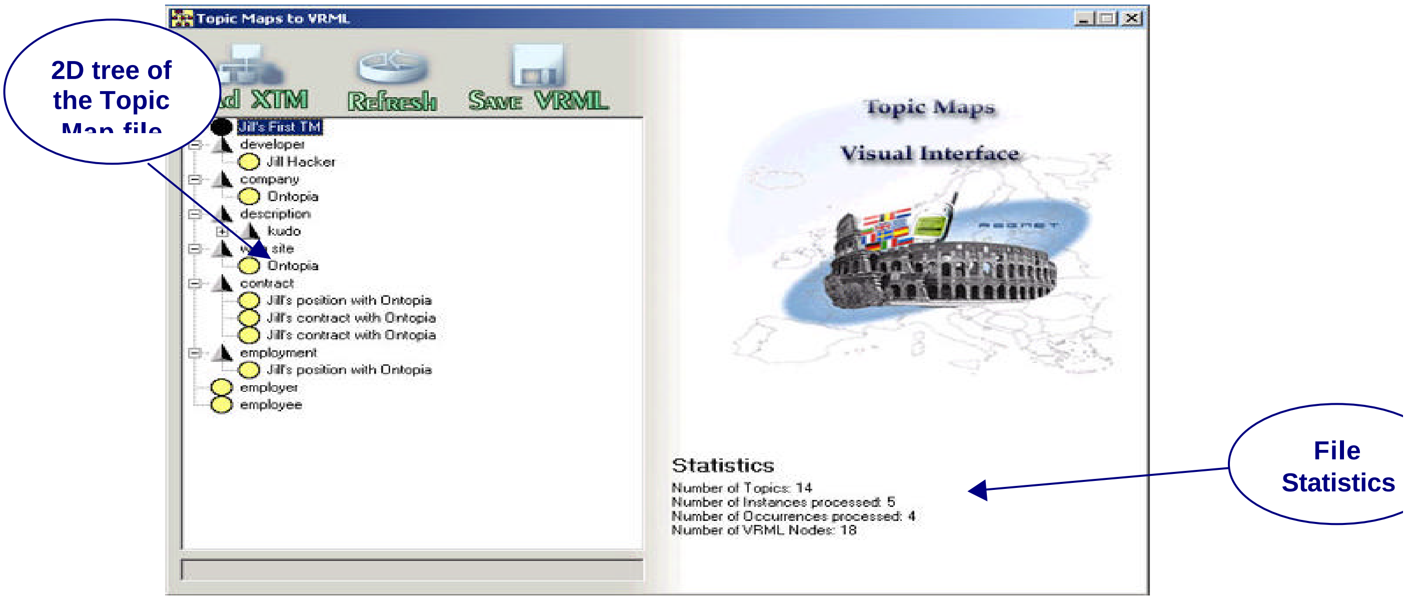
- The first button is entitled “Load XTM” and it allows to load a topic map file (xtm) to the application. When the file is loaded then all the topics, associations and occurrences of the topic map file are displayed in a 2D tree style as it can be seeing at figure 2. The applications also provide statistical information about the file (nodes, occurrences, associations, topics).
- The “Refresh” button can be used when attempting to load a new topic map file.
- Once the file is loaded the next step is to transform it in VRML format. This can be easily achieved by just clicking on the “Save VRML” button.
- A sample VRML output of a topic map file can be seeing at figure 3.

  In the 3D space all topics are represented by cone objects and all the other attributes by spheres. The 3D model uses a topic- by-topic navigation system which means that the topics are displayed on user request (mouse click).



Statistics

Figure 1: *Topic Maps To VRML Interface*



Statistics
Number of Topics: 14
Number of Instances processed: 5
Number of Occurrences processed: 4
Number of VRML Nodes: 18

Figure 2: *Topic Maps to VRML Interface after a topic map file has been loaded*

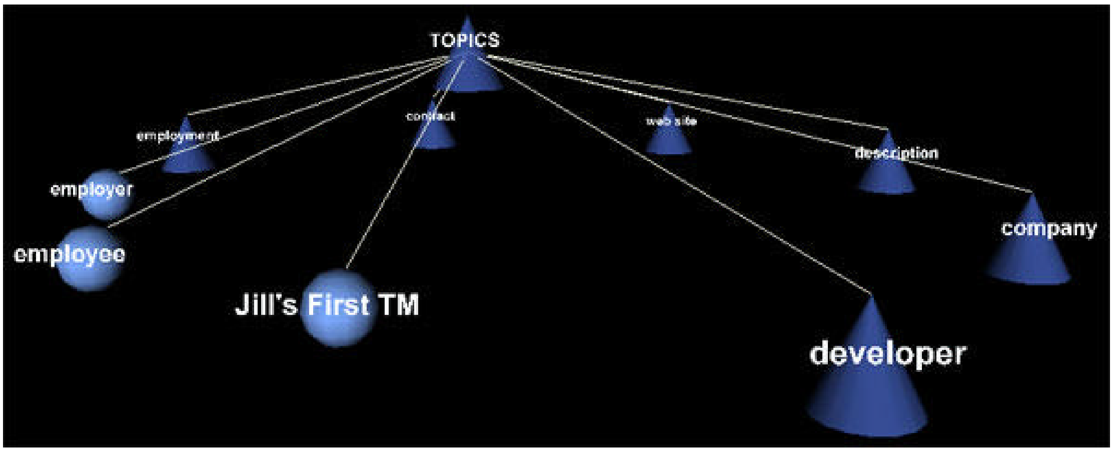


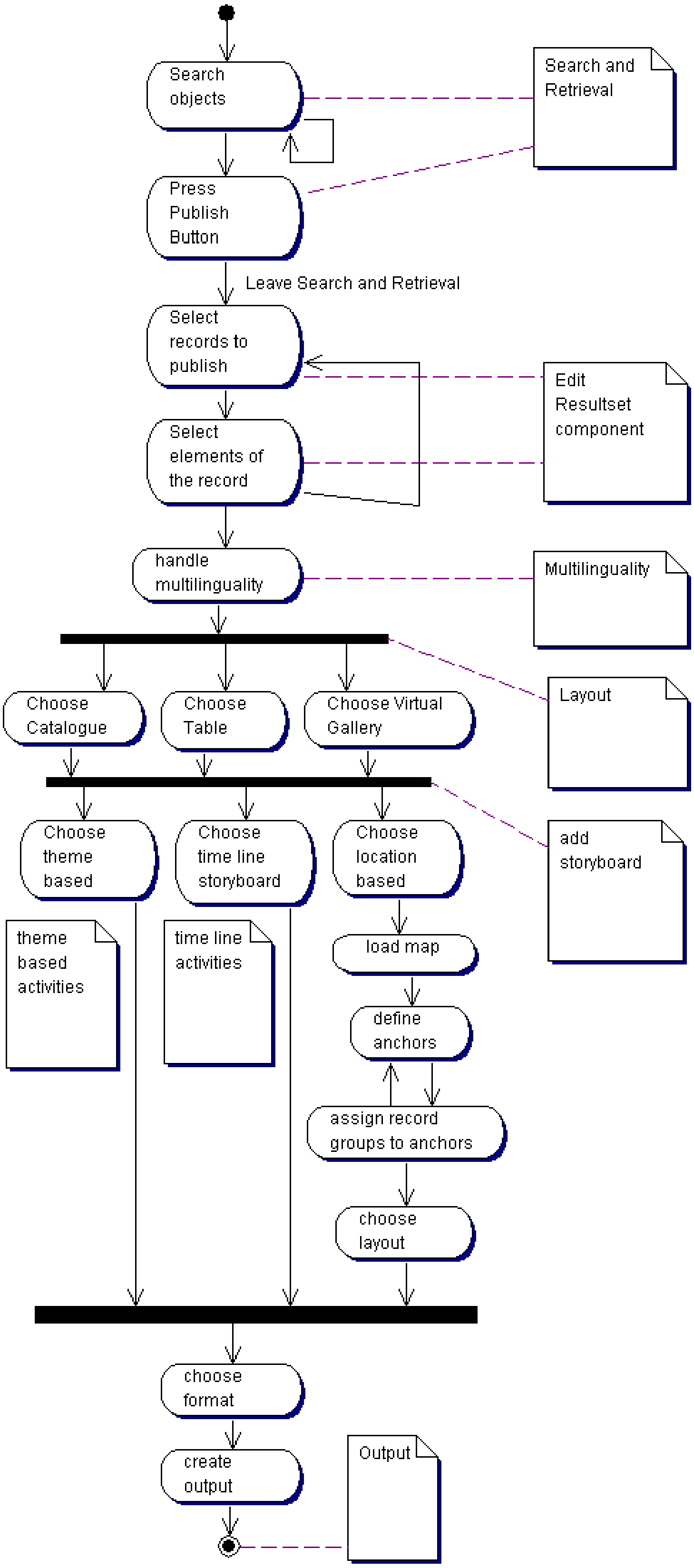
Figure 3: *Example of VRML Output*

4.3.1 Advantages of using the TM to VRML tools

- VRML file size is very small
- Easy to generate VRML files
- A concrete way to visualize TM since there are not many available tools in the market and their cost is high.
- Possible to have the tool online in a server and dynamically generate VRML Topic Maps

4.4 Publisher

4.4.1 REGNET publishing process



The above figure shows the overall publishing process. The "search and retrieval" and "edit resultset component" are provided by AIT and SI respectively. The integration with the Search & Retrieval interface is available in the first version of the publishing prototype, the editing component will be available in the second prototype. Multilinguality is not part of the first prototype and therefore was omitted in the current implementation. In the first prototype a location aware storyboard mechanism is available. The other functionalities are available as shown in the process and are described below.

4.4.1.1 Search objects

The users issues a search for the objects they want to publish to the Search & Retrieval user interface. If they are satisfied with the data returned, the publication process can be continued. The Search & Retrieval Subsystem provides the data to the Publishing Component in the format of the REGNET DTD.

4.4.1.2 Edit ResultSet

In the second prototype this step will enable the user to:

- Select records:
  The records, each represented by a unique identifier, are displayed in a window, and the user can choose the objects not to be published by marking them. This allows a fine grained selection of the data to be published.

- Select elements of a record:
  The fields of the REGNET DTD, will be shown and can be selected by the user. If the users selects it will be included in the publication prototype. This allows the filtering of content data according to the record structure.

4.4.1.3 Handle Multilinguality

This part of the process manages the multilinguality of the publication and will be effective in the second prototype of the REGNET system.

Multilingual lookups are used for associating labels with particular fields in a record set using stylesheets. A label is the description which preceeds a record element. For instance, the information included by the element <am_titles>Scherdegen </am_titles> could be displayed in the publication as: >>**Titel:** Scherdegen<<. In an English publication the German label "Titel" would be changed into "title" and it would be displayed as >>**title:** Scherdegen<<. In an italian document this label would be changed to "titolo" and be displayed as >>**titolo:** Scherdegen<<

Selecting the right label depending on the language chosen by the user is called "multilingual lookup".

4.4.1.4 Handle Layout

The Electronic Publishing provides 3 predefined layouts: Virtual Gallery, Table and Catalogue:

- Virtual Gallery: The virtual gallery presents the search result as a interactive, web based presentation either in HTML or in SMIL.
- Table: The table layout presents the search result in a table either in HTML or PDF format.
- Catalogue: The catalogue presents object data in a catalogue like manner.

4.4.1.5 Add *Location* Storyboard

In order to sort and group all records or to provide a navigational aid, the user can choose a storyboard, according to the LATCH definition. In the current implementation a location based storyboard is supported. In the second prototype time based and theme based storyboards will follow.

The location based publication is based on a central map from which the items of interest can be reached by clicking anchors spread over the map. This map can be uploaded by the user.

The location based authoring consists of the following steps: In the first step, the anchors (i.e. location information) are defined and can be positioned on the map. In the second step, records respectively groups of records are assigned to anchors.

4.4.1.6 Create Output

The electronic publishing component supports three types of output formats depending on the type of publication selected (the layout of the publication).

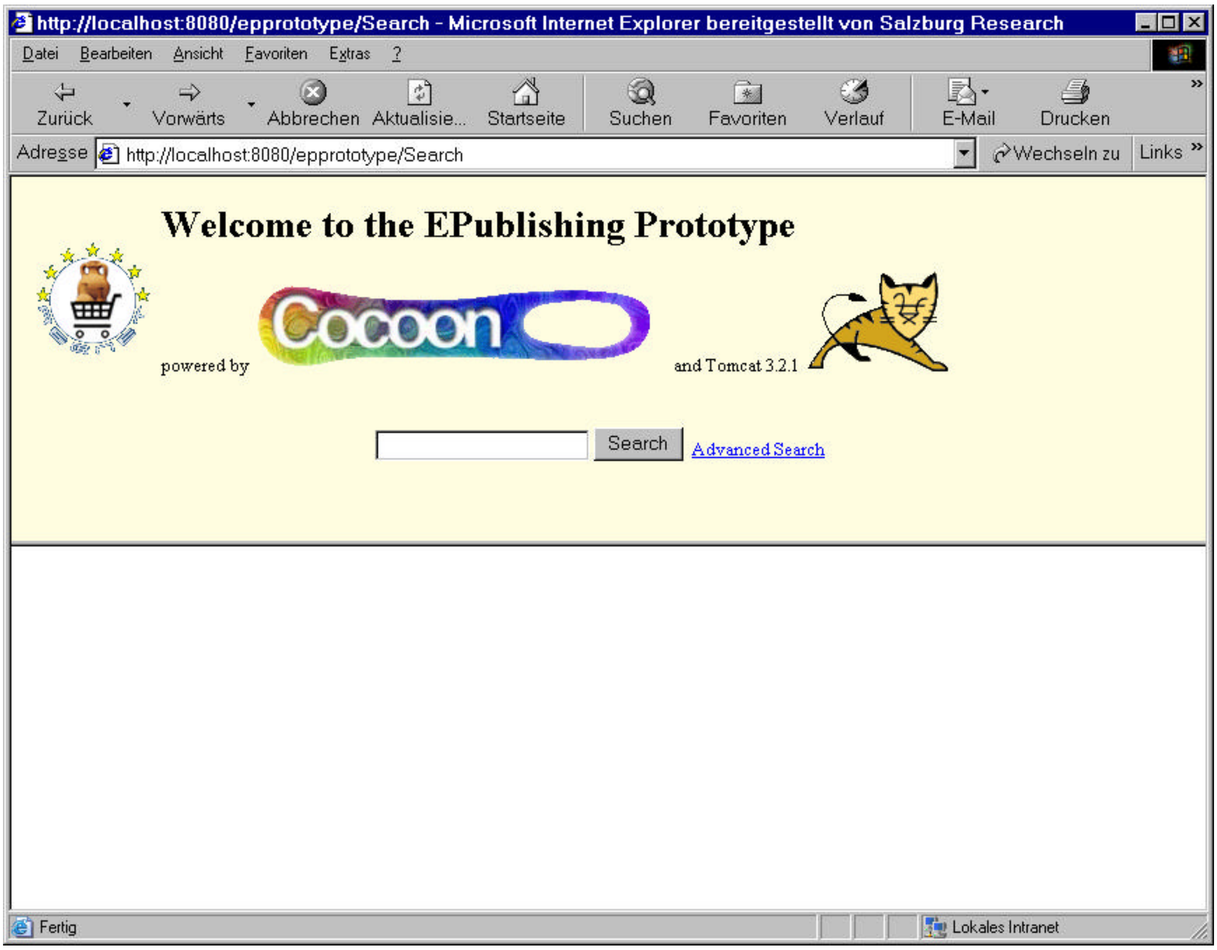
- HTML: Catalogues, Virtual Galleries and Tables can be represented in HTML.
- SMIL: Virtual Galleries can be represented in SMIL providing interactive mechanisms and presentation like features.
- PDF: Catalogues and Tables can be represented in a PDF document.

In the subsequent section the user interfaces of the current prototype are described in detail.

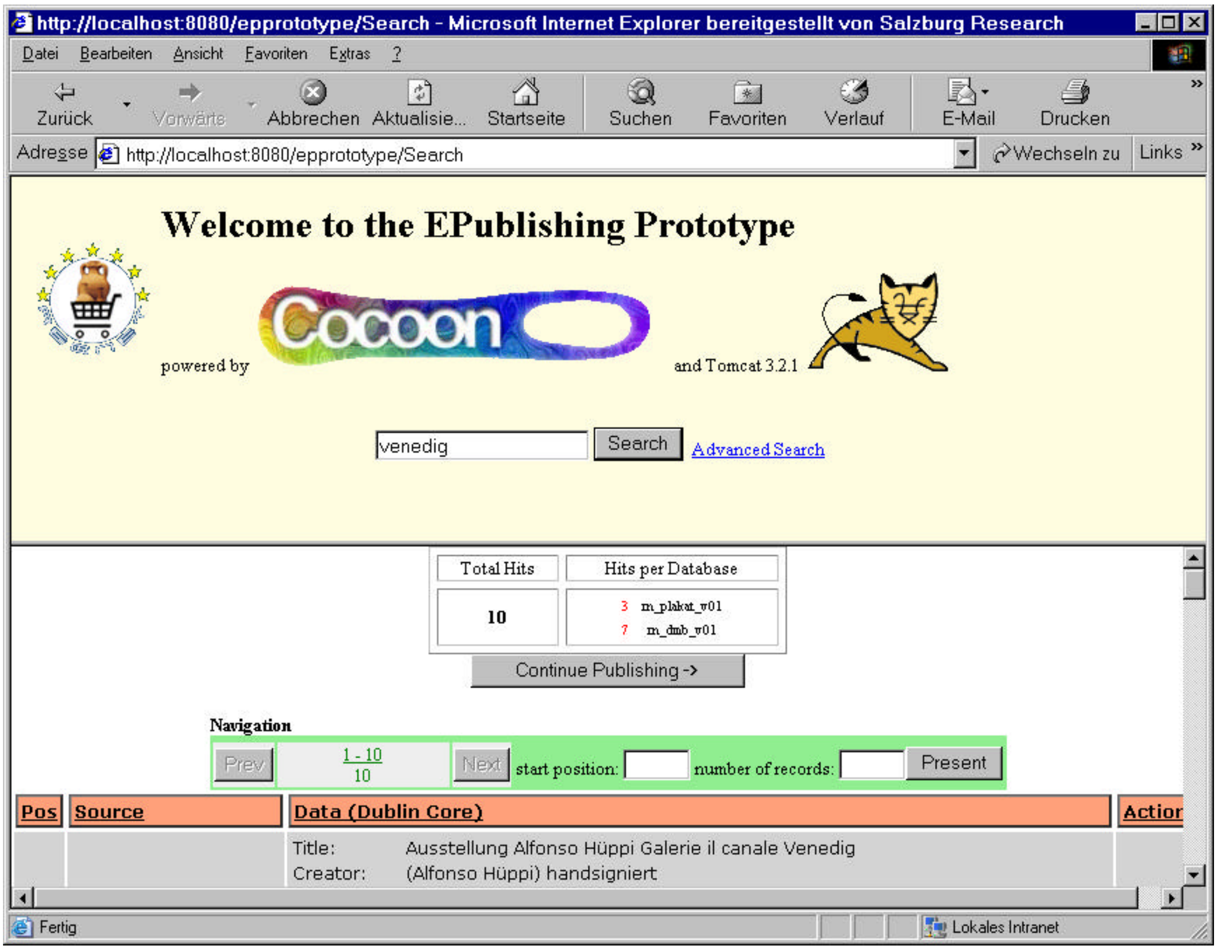
4.4.2 Publishing user interface

4.4.2.1 Input

The input data for the Electronic publishing component is produced by the Search & Retrieval subsystem. Due to that, the first step in the publishing process issues a search to the Search & Retrieval subsystem.


http://localhost:8080/epprototype/Search - Microsoft Internet Explorer bereitgestellt von Salzburg Research
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Vorwärts Abbrechen Aktualisie... Startseite Suchen Favoriten Verlauf E-Mail Drucken
Adresse http://localhost:8080/epprototype/Search
Wechseln zu Links
Welcome to the EPublishing Prototype
powered by
and Tomcat 3.2.1
Search
Advanced Search
Fertig
Lokales Intranet

After pressing the "Search" Button the result of the search is displayed and a button for continuing the publishing is displayed ("Continue Publishing"):


http://localhost:8080/epprototype/Search - Microsoft Internet Explorer bereitgestellt von Salzburg Research
Datei Bearbeiten Ansicht Favoriten Extras ?
Zurück Vorwärts Abbrechen Aktualisie... Startseite Suchen Favoriten Verlauf E-Mail Drucken
Adresse http://localhost:8080/epprototype/Search
Wechseln zu Links
Cocoon
Fertig
Lokales Intranet

Welcome to the EPublishing Prototype

powered by Cocoon and Tomcat 3.2.1

venedig Search Advanced Search

Total Hits	Hits per Database
10	3 m_plakat_v01 7 m_dmb_v01

Continue Publishing ->

Navigation

Prev 1 - 10 10 Next start position: number of records: Present

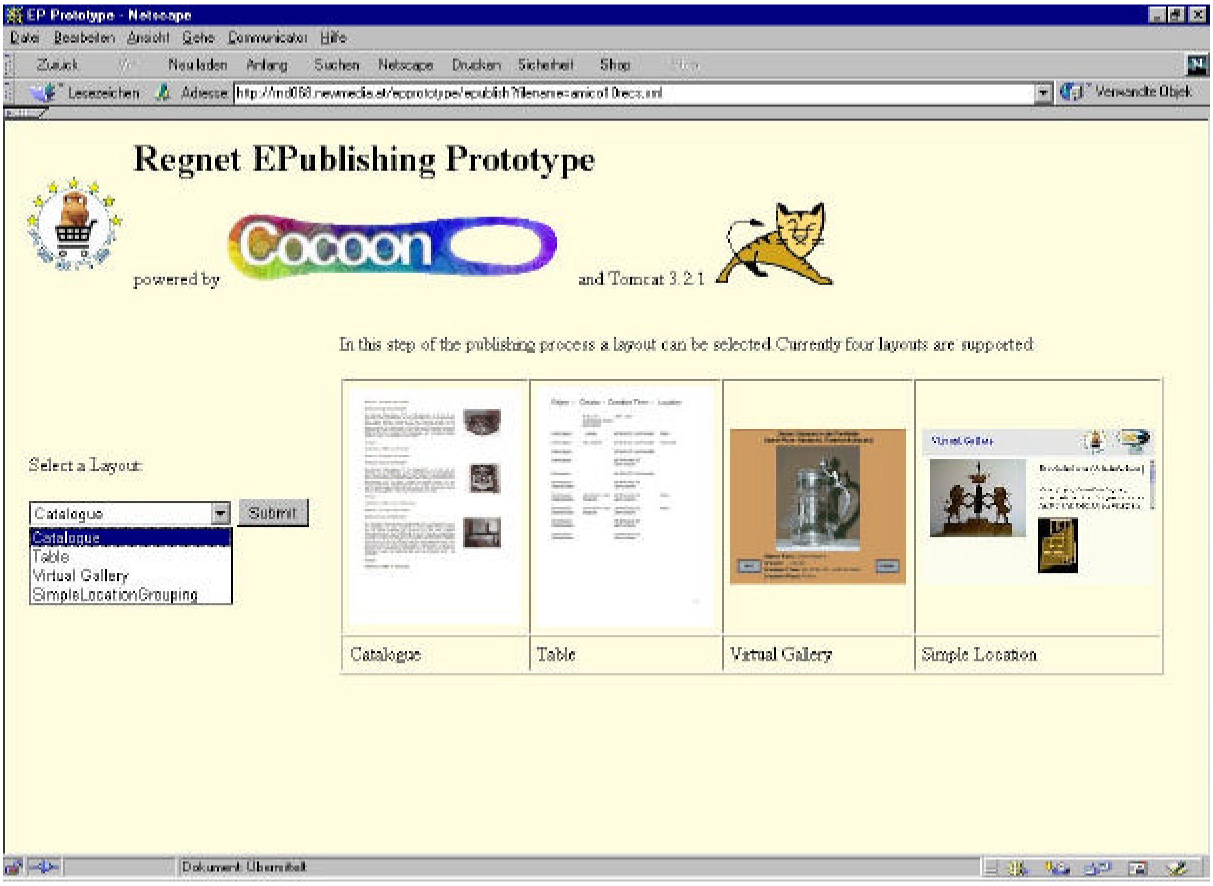
Pos	Source	Data (Dublin Core)	Actior
		Title: Ausstellung Alfonso Hüppi Galerie il canale Venedig Creator: (Alfonso Hüppi) handsigniert	

After pressing the "Continue Publishing" button, the handle layout step is displayed.

4.4.2.2 Handle Layout

In the handle layout step the user can select the layout type of the publication. In the current implementation 4 layouts are available:

- Virtual Gallery: produces a virtual gallery of the selected records.
- Catalogue: produces a catalogue of the selected records.
- Table: produces a table of the selected records.
- Simple Location: produces a interactive map of the selected records.



EP Prototype - Netscape

http://nd068.newmedia.at/epprototype/epublish?filename=amicol0recs.xml

Regnet EPublishing Prototype

powered by Cocoon and Tomcat 3.2.1

In this step of the publishing process a layout can be selected. Currently four layouts are supported.

Select a Layout:

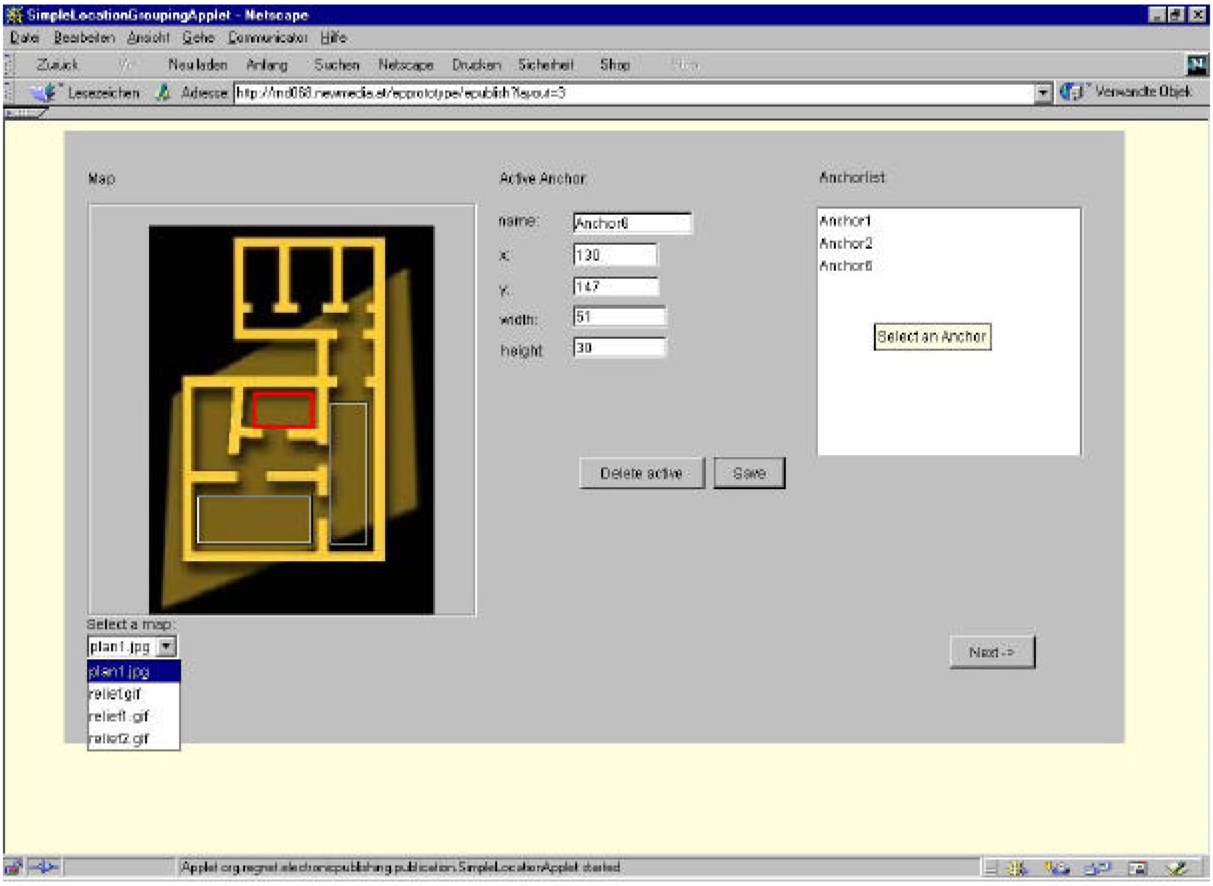
Catalogue

Dokument: Übermittelt

4.4.2.3 Layouts

SimpleLocationGrouping

Load map and define anchors


SimpleLocationGroupingApplet - Netscape
Datei Bearbeiten Ansicht Gehe Communicator Hilfe
Zurück Vor Neu laden Anfang Suchen Netscape Drucken Sicherheit Shop Stop
Lesezeichen Adresse
Verwandte Objek
Map
Active Anchor
Anchorlist
name:
x:
y:
width:
height
Select an Anchor
Delete active
Save
Select a map:
Next ->

Adresse: http://nd068.newmedia.at/epprototype/epublish?layout=3

name: Anchor6
x: 130
y: 147
width: 51
height 30

Anchorlist:
Anchor1
Anchor2
Anchor6

Select a map: plan1.jpg
plan1.jpg
relief.gif
relief1.gif
relief2.gif

Applet org.regnet.electronicpublishing.publication.SimpleLocationApplet started

A map may be selected for displaying the data on. On the selected map anchors can be placed which are visualised in the right region of the dialog - the anchor list. If an anchor is marked in the list it becomes the "active" anchor and can be edited. At the same time the active anchor is highlighted with red colour on the map. The location of an anchor on the map is defined through x- and y- coordinates relative to the image loaded. Besides a diameter of the visual representation of the anchor can be defined. In addition anchors can be given a name like "Salzburg" or "dining room". If there are already records assigned to the anchor they will be displayed in the text field named "assigned records". This field is not editable, because assigning records can only be done in the following step.

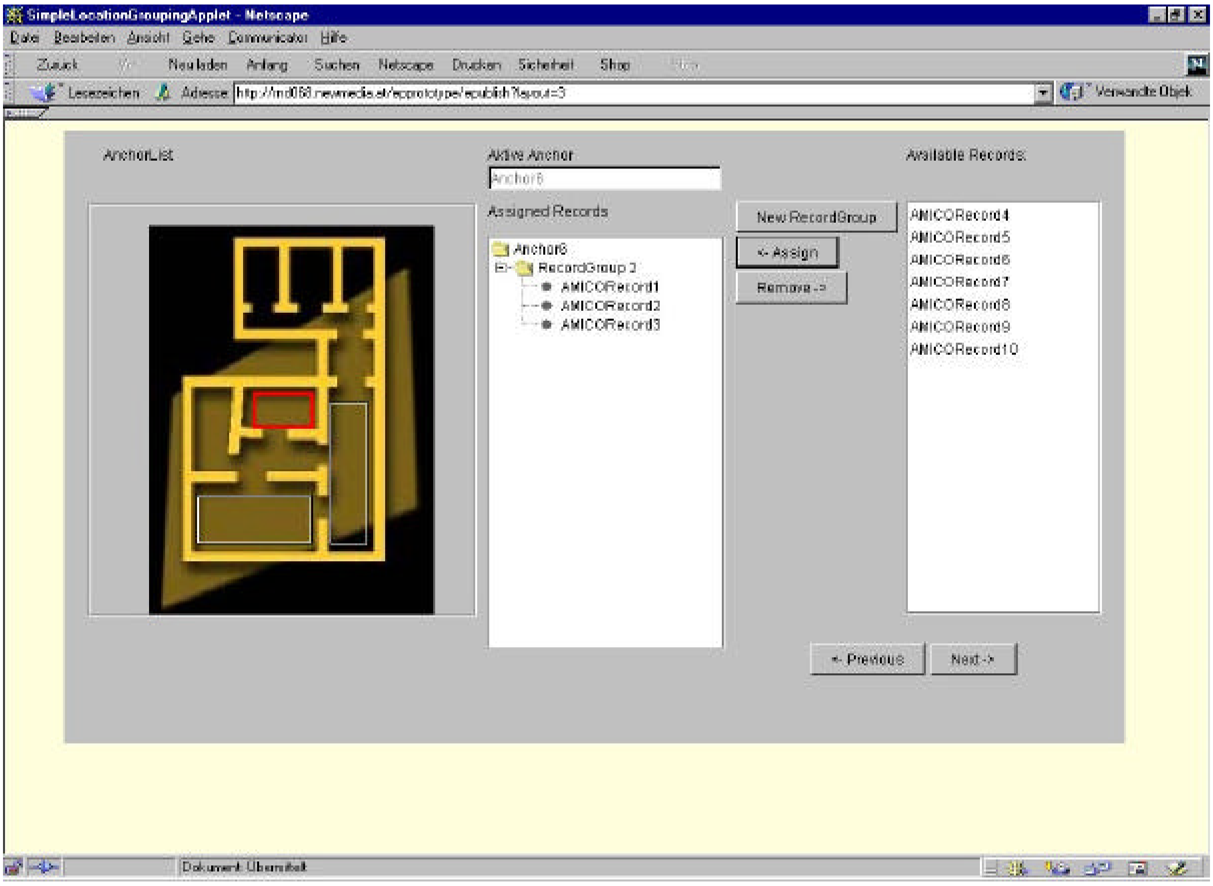
By simply creating a new rectangle in the map a new anchor will be defined and activated. The position of the anchor can be defined by entering the x and y co-ordinates by hand.

By pressing the "Save" button , the anchor is taken up in the anchor-list on the right.

The button "Delete active" removes the currently active anchor from the map and from the list of anchors.

Pushing the button "Next" moves on to the next editing step - assigning records.

Assign records to anchors



SimpleLocationGroupingApplet - Netscape

Adresse: http://nd068.newmedia.at/epprototype/epublish?layout=3

Aktive Anchor: Anchor6

Assigned Records:
- Anchor6
  - RecordGroup 3
    - AMICORecord1
    - AMICORecord2
    - AMICORecord3

Available Records:
- AMICORecord4
- AMICORecord5
- AMICORecord6
- AMICORecord7
- AMICORecord8
- AMICORecord9
- AMICORecord10

This dialog allows to assign records or groups of records to an anchor. To activate an anchor double-click it on the map on the left side. An activated anchor is highlighted in red.

With "New Recordgroup" the user defines a new record group, that is automatically assigned to the currently active anchor.

Records can be assigned by selecting them in the available records list on the right side of the dialog and clicking the "Assign"-button. The records are then shifted from the "Available records"-list to the "Assigned records"-list in the middle.

The "Remove"-button adds the records selected in the "Assigned records" list to the "Available records" list and removes them from the "Assigned records" list.

If a user wants to define an additional anchor, she can go back to the previous dialog by clicking the "Previous"-button.

Virtual Gallery

For virtual gallery a predefined stylesheet is used for processing. This stylesheet will be configurabel in the second prototype.

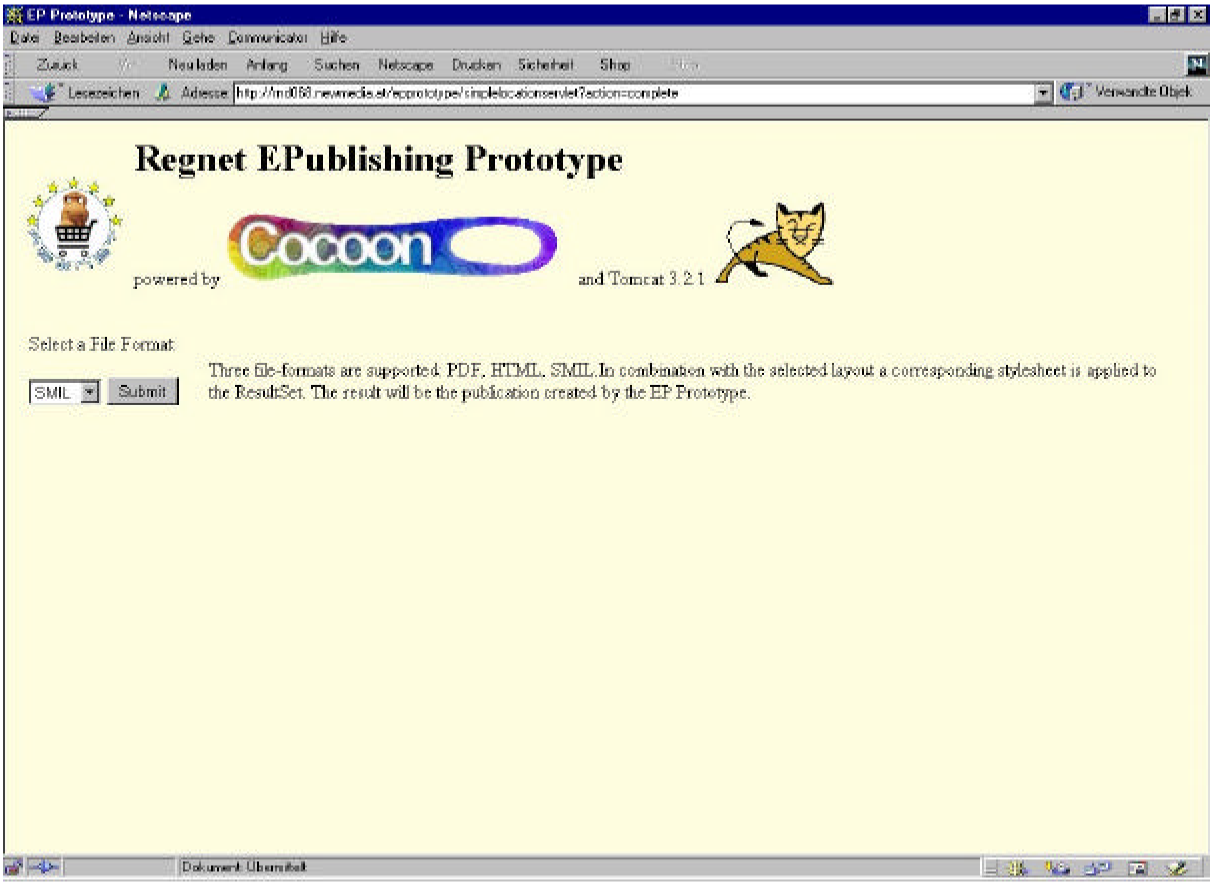
Catalogue

For catalogue a predefined stylesheet is used for processing. This stylesheet will be configurabel in the second prototype.

Table

For table a predefined stylesheet is used for processing. This stylesheet will be configurabel in the second prototype.

4.4.2.4 Create Output


EP Prototype - Netscape
Datei Bearbeiten Ansicht Gehe Communicator Hilfe
Zurück Vor Neu laden Anfang Suchen Netscape Drucken Sicherheit Shop Stop
Lesezeichen Adresse http://nd068.newmedia.at/epprototype/simplelocationservlet?action=complete
Verwandte Objek
Cocoon
SMIL
Submit
Dokument: Übermittelt

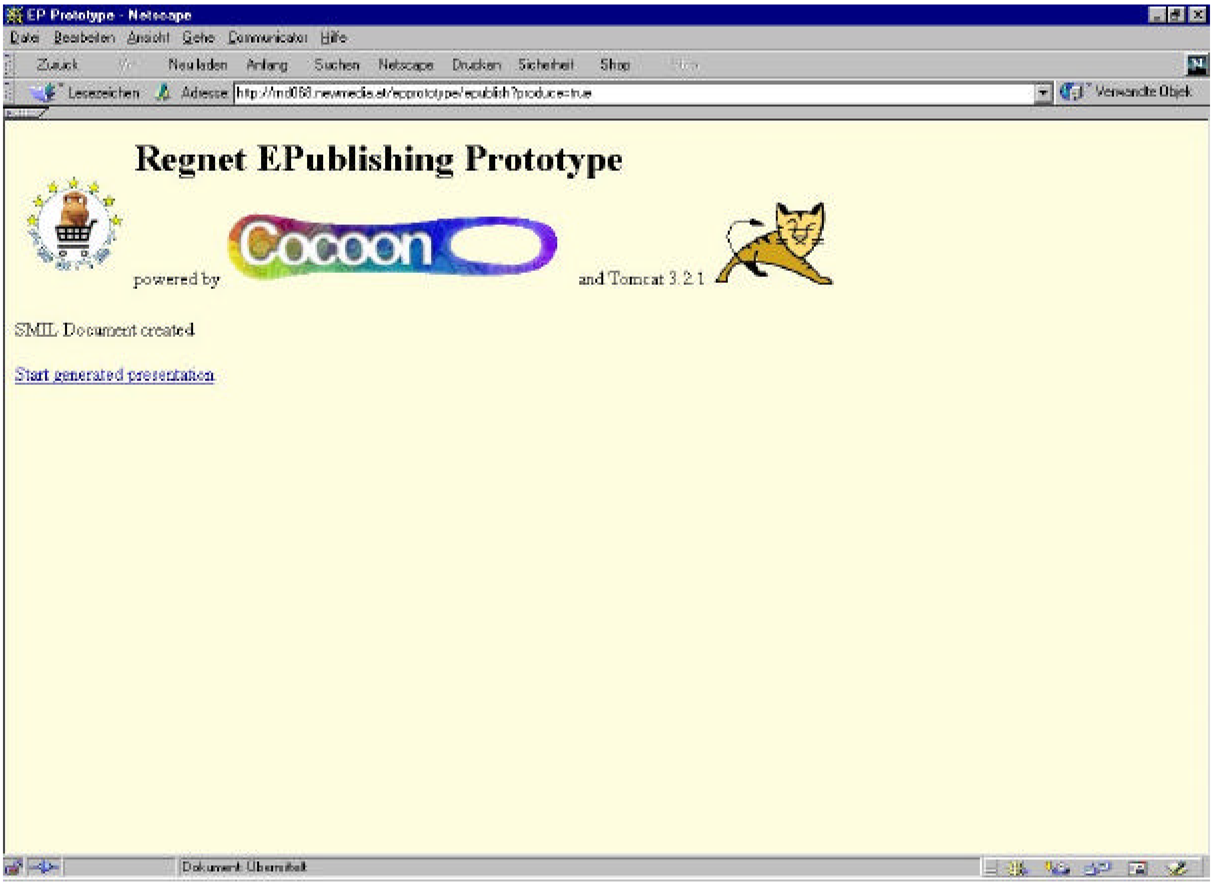
Regnet EPublishing Prototype

powered by and Tomcat 3.2.1

Select a File Format

Three file-formats are supported: PDF, HTML, SMIL.In combination with the selected layout a corresponding stylesheet is applied to the ResultSet. The result will be the publication created by the EP Prototype.

One of the three supported output formats can be chosen depending on the layout of the presentation. The supported formats are: HTML, PDF, SMIL. After pressing submit the publication is produced an can be previewed by clicking on the according link.


EP Prototype - Netscape
Datei Bearbeiten Ansicht Gehe Communicator Hilfe
Zurück Vor Neu laden Anfang Suchen Netscape Drucken Sicherheit Shop Stop
Lesezeichen Adresse http://md068.newmedia.at/epprototype/epublish?produce=true
Verwandte Objekt
Dokument: Übermittelt

Regnet EPublishing Prototype

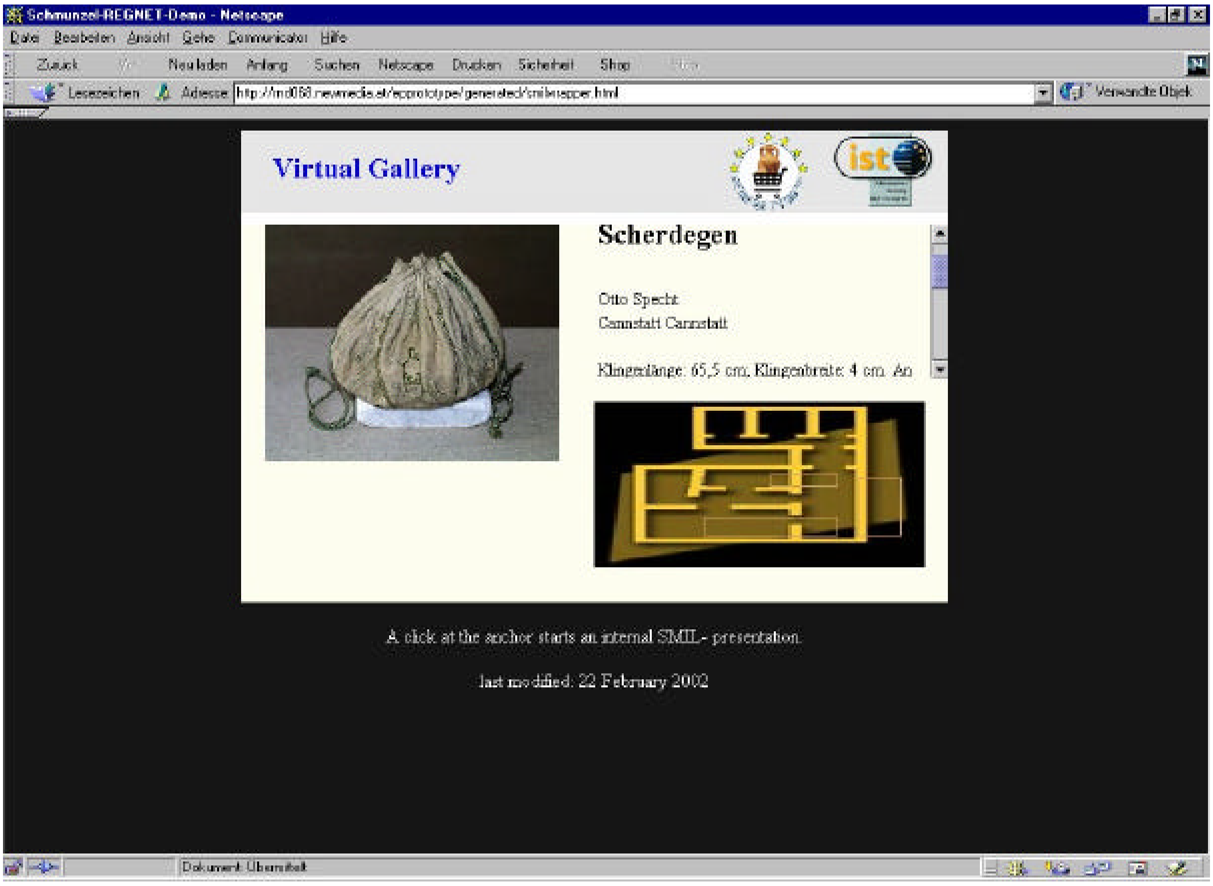
powered by Cocoon and Tomcat 3.2.1

SMIL Document created

Start generated presentation

4.4.2.5 Preview

According to the generated output format different preview applications are started (e.g. Adobe Acrobat Reader for PDF). For SMIL presentations a component of SR is used for visualization, the Schmunzel player. The player must be configured to be displayed properly. The subsequent screenshot show SMIL presentation of based data in the Schmunzel player.


Schmunzel-REGNET-Demo - Netscape
Datei Bearbeiten Ansicht Gehe Communicator Hilfe
Zurück Vor Neu laden Anfang Suchen Netscape Drucken Sicherheit Shop
Lesezeichen Adresse http://md068.newmedia.at/epprototype/generated/smilwrapper.html
Verwandte Objek
Dokument: Übermittelt

Virtual Gallery

Scherdegen

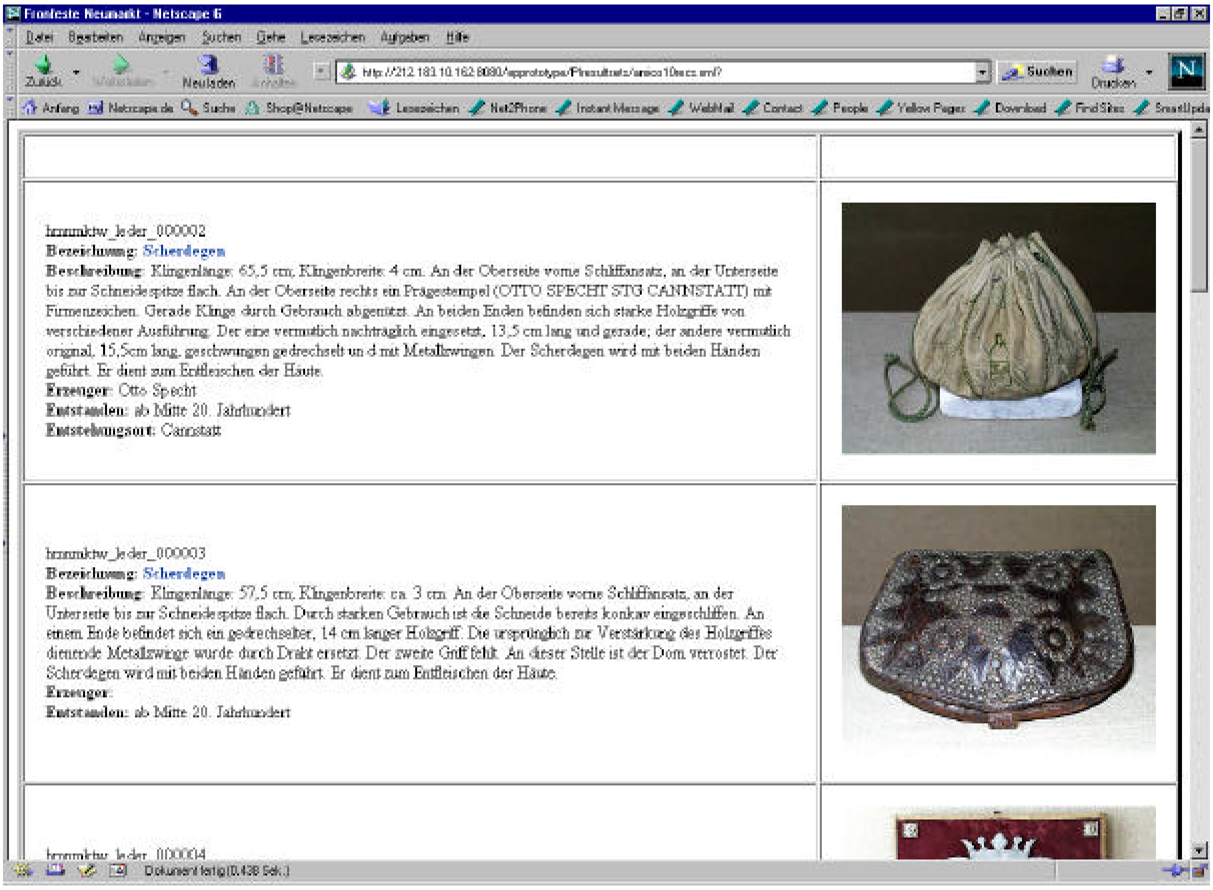
Otto Specht
Cannstatt Cannstatt

Klingenlänge: 65,5 cm, Klingenbreite: 4 cm. An

A click at the anchor starts an internal SMIL- presentation.

last modified: 22 February 2002

The output of a catalogue in HTML:

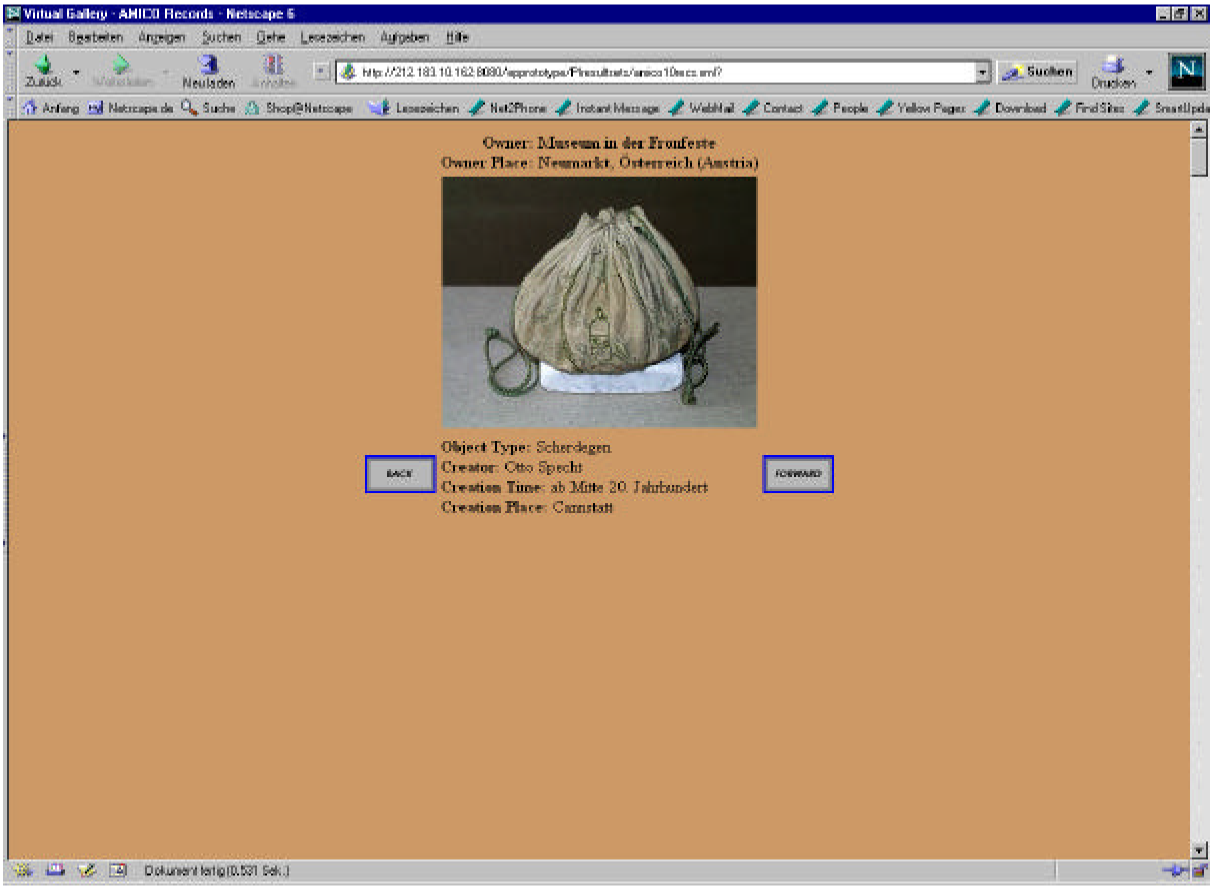

Fronfeste Neumarkt - Netscape 6
Datei Bearbeiten Anzeigen Suchen Gehe Lesezeichen Aufgaben Hilfe
Zurück Weiterleiten Neuladen Anhalten
http://212.183.10.162:8080/apprototype/Presultsets/arsico10recs.xml?
Suchen
Drucken
Anfang Netscape.de Suche Shop@Netscape Lesezeichen Net2Phone Instant Message WebMail Contact People Yellow Pages Download Find Sites SmartUpda
Dokument fertig (0.438 Sek.)

hmmktw_leder_000002
Bezeichnung: Scherdegen
Beschreibung: Klingenlänge: 65,5 cm, Klingenbreite: 4 cm. An der Oberseite vorne Schliffansatz, an der Unterseite bis zur Schneidespitze flach. An der Oberseite rechts ein Prägestempel (OTTO SPECHT STG CANNSTATT) mit Firmenzeichen. Gerade Klinge durch Gebrauch abgenützt. An beiden Enden befinden sich starke Holzgriffe von verschiedener Ausführung. Der eine vermutlich nachträglich eingesetzt, 13,5 cm lang und gerade; der andere vermutlich original, 15,5cm lang, geschwungen gedrechselt un d mit Metallzwingen. Der Scherdegen wird mit beiden Händen geführt. Er dient zum Entfleischen der Häute.
Erzeuger: Otto Specht
Entstanden: ab Mitte 20. Jahrhundert
Entstehungsort: Cannstatt

hmmktw_leder_000003
Bezeichnung: Scherdegen
Beschreibung: Klingenlänge: 57,5 cm, Klingenbreite: ca. 3 cm. An der Oberseite vorne Schliffansatz, an der Unterseite bis zur Schneidespitze flach. Durch starken Gebrauch ist die Schneide bereits konkav eingeschliffen. An einem Ende befindet sich ein gedrechselter, 14 cm langer Holzgriff. Die ursprünglich zur Verstärkung des Holzgriffes dienende Metallzwinge wurde durch Draht ersetzt. Der zweite Griff fehlt. An dieser Stelle ist der Dorn verrostet. Der Scherdegen wird mit beiden Händen geführt. Er dient zum Entfleischen der Häute.
Erzeuger:
Entstanden: ab Mitte 20. Jahrhundert

hmmktw_leder_000004

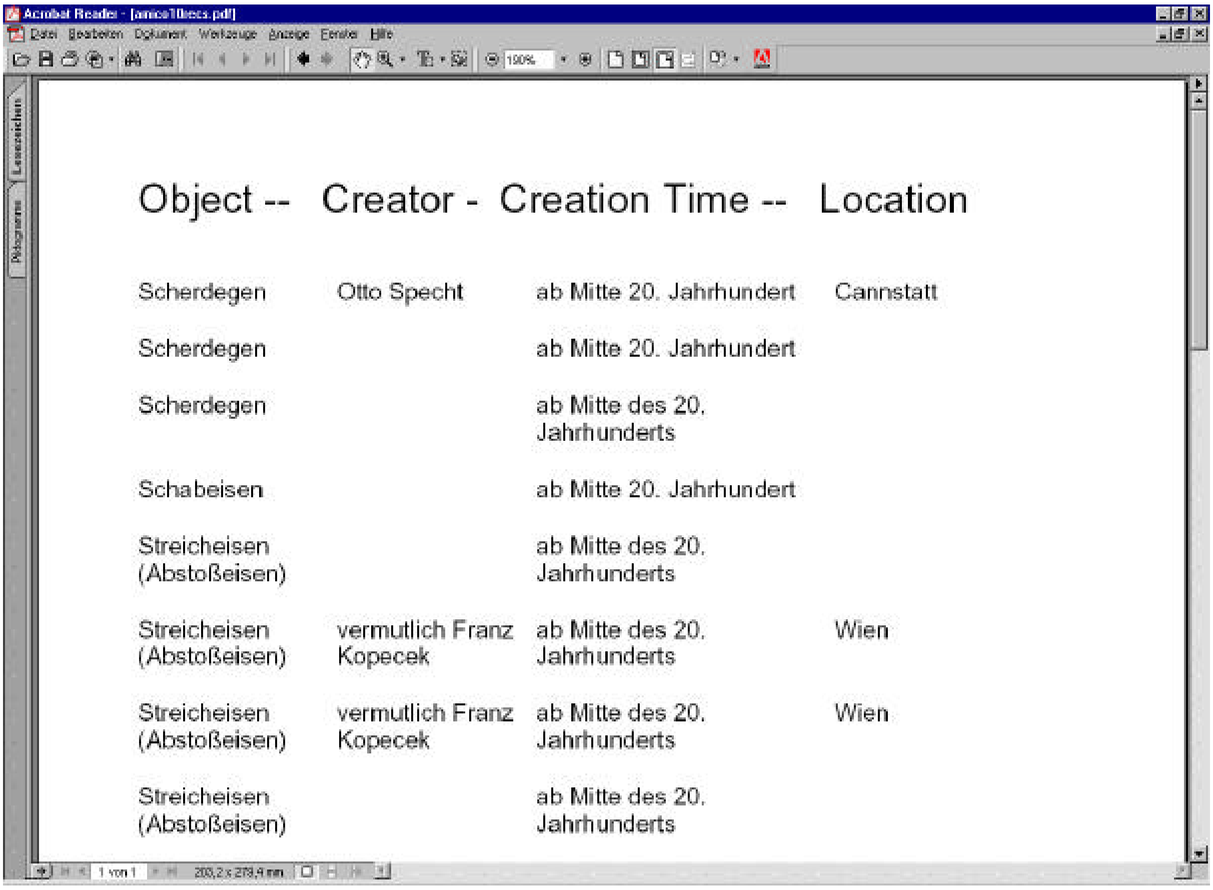
The output of a virtual gallery in HTML:


Virtual Gallery - AMICO Records - Netscape 6
Datei Bearbeiten Anzeigen Suchen Gehe Lesezeichen Aufgaben Hilfe
Zurück Weiterleiten Neuladen Anhalten
http://212.183.10.162:8080/approtype/Presultsets/amico10recs.xml?
Suchen
Drucken
Anfang Netscape.de Suche Shop@Netscape Lesezeichen Net2Phone Instant Message WebMail Contact People Yellow Pages Download Find Sites SmartUpda
BACK
FORWARD
Dokument fertig (0.531 Sek.)

Owner: Museum in der Fronfeste
Owner Place: Neumarkt, Österreich (Austria)

Object Type: Scherdegen
Creator: Otto Specht
Creation Time: ab Mitte 20. Jahrhundert
Creation Place: Cannstatt

The output of a table in PDF:


Acrobat Reader - [amico10recs.pdf]
Datei Bearbeiten Dokument Werkzeuge Anzeige Fenster Hilfe
100%
Lesezeichen
Piktogramme
1 von 1
203,2 x 279,4 mm

Object --	Creator -	Creation Time --	Location
Scherdegen	Otto Specht	ab Mitte 20. Jahrhundert	Cannstatt
Scherdegen		ab Mitte 20. Jahrhundert	
Scherdegen		ab Mitte des 20. Jahrhunderts	
Schabeisen		ab Mitte 20. Jahrhundert	
Streicheisen (Abstoßeisen)		ab Mitte des 20. Jahrhunderts	
Streicheisen (Abstoßeisen)	vermutlich Franz Kopecek	ab Mitte des 20. Jahrhunderts	Wien
Streicheisen (Abstoßeisen)	vermutlich Franz Kopecek	ab Mitte des 20. Jahrhunderts	Wien
Streicheisen (Abstoßeisen)		ab Mitte des 20. Jahrhunderts	